ECONOMIC REPORT

of the

PRESIDENT

TOGETHER WITH THE ANNUAL REPORT *of the*
COUNCIL OF ECONOMIC ADVISERS

APRIL 2026

ECONOMIC REPORT *of the* PRESIDENT

TOGETHER WITH THE ANNUAL REPORT *of the*
COUNCIL OF ECONOMIC ADVISERS

APRIL 2026

Contents

*For a detailed table of contents of the Council's *Report*, see page 11.

*For a detailed table of contents of the Council's *Report*, see page 11.

Economic Report
of the
President

Economic Report of the President

April 13

To the Congress of the United States:

In the inaugural year of my Administration, we've laid the groundwork to make the American economy great again. My policies—including landmark tax cuts, record deregulation, renewed trade deals, and secure borders—unleash lasting job creation and drive business expansion. By revitalizing the economy and making America the best place in the world to start and grow a business, my Administration is succeeding in making life better for the average American family. This Report will detail some of the policies and goals of my second term so far.

My Administration, and the American people, inherited an underperforming economy. Under Biden, inflation hit 40-year highs and real wages shrank substantially for the typical worker. Although some saw their paychecks increase, inflation eroded purchasing power, hitting lower earners the hardest. Meanwhile, seemingly strong job growth was bolstered by government and adjacent sectors, and paid for by the taxpayer. The first summer after I assumed office, Americans faced the prospect of the largest tax hike in history. Uncontrolled illegal immigration inflated the price of housing and lowered real wages for Americans—all while burdening taxpayers with hundreds of billions of dollars in benefits paid to these illegal immigrants annually. During my Presidency, Democrats in Congress allowed federal government funding to lapse, causing significant economic harm.

So far, we have averted and alleviated these problems. My Administration and Republicans in Congress passed the One Big Beautiful Bill Act (OBBBA), the largest tax cut in American history. For the second time, I passed landmark tax legislation helping workers and businesses to flourish and spark an investment boom. Passed in my first term, the Tax Cuts and Jobs Act (TCJA) succeeded in delivering an additional 2.5 percent of real GDP growth and a $4,992 increase in average real wages compared to CBO baseline estimates. The OBBBA not only cemented key TCJA provisions, but also delivered more wins the American people voted for.

The CEA estimates that, in the first four years of implementation, OBBBA will increase real GDP by 4.6 to 4.9 percent, which equates to about 1.1 to 1.2 percent higher average growth per year. Strong fundamentals demonstrate our progress towards this goal.

Permanently extending lower tax rates and full expensing of capital investment eases obstacles to business formation and expansion. These and other relevant provisions are estimated to increase inflation-adjusted (real) investment by 7.3 to 10.2 percent in the first four years of implementation. This investment will drive more and better jobs for Americans, higher wages, and enhanced competitiveness in the global arena. In 2025, real nonresidential business fixed investment increased 5.5 percent, significantly exceeding the 3.7 percent pace recorded in the final two years of the previous Administration. Some of this investment is incentivized to occur within my landmark Opportunity Zones, which draw businesses to overlooked pockets of our nation.

I pledged and delivered no tax on tips, no tax on overtime, and tax relief for seniors through the OBBBA. In addition to this targeted relief, families will continue to receive a doubled Child Tax Credit, and all taxpayers will benefit from lower tax rates relative to TCJA expiration. In addition to this immediate relief, the OBBBA will generate long-run gains for Americans. After four years, OBBBA will boost average annual real wages $4,000 to $7,200 per worker across all industries and demographics, corresponding to $7,600 to $10,900 higher annual after-tax-take-home pay for a typical family with two children. These gains will support American workers in recovering the roughly $3,000 in spending power they lost during the previous Administration. To give the next generation a stake in the American economy, the OBBBA will provide every American child born from 2025-2028 a Trump Account worth $1,000, to which their parents, their parents' employers, and philanthropists can contribute.

When combined with deregulatory policies and tariffs, this monumental legislation will substantially reduce the deficit. The TCJA demonstrated that instead of levying higher taxes on a slow-growing economy, we can collect greater revenues at lower rates from a faster-growing one. By growing the economy, our policies will decrease federal debt to 94 percent of GDP versus a 117 percent TCJA-expiration baseline over a 10-year budget window. In the long term, this sounder fiscal path will deliver lower interest rates, more affordable housing, reduced inflation, and lasting economic stability for American families.

My Administration is right-sizing the Federal workforce and clamping down on waste, fraud, and abuse. In the final two years of the Biden Administration, the public sector drove over 25 percent of job growth. In my Administration to date, the private sector has accounted for the overwhelming majority of net nonfarm job growth, helping to put the economy on a sustainable trajectory. Due to this and other cost-saving initiatives, the Federal deficit is down $362 billion in 2025 compared to 2024.

Excessive regulation, often imposed by unelected bureaucrats, stifles growth and raises the cost of living for Americans. My Administration is committed to removing 10 regulations for each new regulation imposed, with many agencies exceeding this goal. The American people will continue to hear about deregulation throughout this *Report* and throughout my Administration as the Federal Government steps out of the way of American prosperity.

A number of these deregulatory actions target the energy sector. Misguided energy policies have increased costs and created unnecessary barriers to business and innovation. My Administration pursues an agenda of energy abundance. We need more energy and are committed to delivering it. Accordingly, my Administration has aggressively removed red tape, reduced permitting timelines, and ended the preferential treatment of intermittent energy sources over dispatchable energy. These reforms help deliver abundant energy precisely when America needs it—now. Energy is a critical input to virtually every good and service we produce; its abundance is critical to the competitiveness of our businesses and our national security.

For decades, Americans have been resigned to an unfair position in international markets. Once the foremost manufacturing nation in the world, we have ceded many of our industries and jobs to other countries. We offered access to our market in the name of "free trade," while other nations engaged in unfair trade practices, tariffed our goods to protect their own key industries, and pursued nonmarket practices. As a result, Americans have lost not only access to important manufacturing jobs, but control of some industries critical to our national security.

Tariffs have already catalyzed trade deals that substantially open foreign markets to American firms and aim to close our persistent trade deficit. These trade deals are broad and deep. Some have contributed to the trillions of dollars of new pledged investment into the United States, while others have lowered existing tariffs and nontariff barriers on U.S. exports and even worked to dismantle the epidemic flow of fentanyl into our country. These agreements work toward an overarching aim: to bring about more advantageous and sustainable trade in the long term.

Under the previous Administration, millions of illegal immigrants were permitted to cross our borders. Record flows of illegal immigrants depressed wages for Americans, inflated the demand for housing, and drained the welfare system. My Administration has closed the border, reducing illegal border crossings to effectively zero, and continues to reverse the economic damage imposed on American taxpayers and communities as a result of unfettered immigration.

The full suite of my policies is invigorating our economy and making life more affordable for Americans. My trade policy now incentivizes companies to invest, manufacture, and hire in America—a goal made possible by pro-growth tax policies, diminishing red tape, and abundant energy.

In just the first year, we have enacted far-reaching reforms whose full benefits will compound over this term and beyond. As they do, I will work tirelessly to continue to deliver wins for Americans, and to put Americans First. The policies and successes outlined in the Report that follows demonstrate how we can make America great again.

The White House
April 2026

The Annual Report of the Council of Economic Advisers

★★★★★★

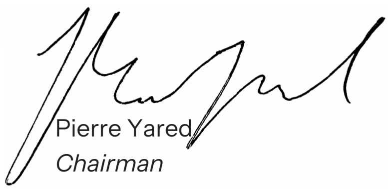
Letter of Transmittal

Council of Economic Advisers
Washington, April 13, 2026

Mr. President:

The Council of Economic Advisers herewith submits its 2026 Annual Report in accordance with the Employment Act of 1946, as amended by the Full Employment and Balanced Growth Act of 1978.

Sincerely yours,



Pierre Yared
Chairman

Aaron Hedlund
Member

Contents

Figures

Tables

Boxes

★★★★★★

Chapter 1

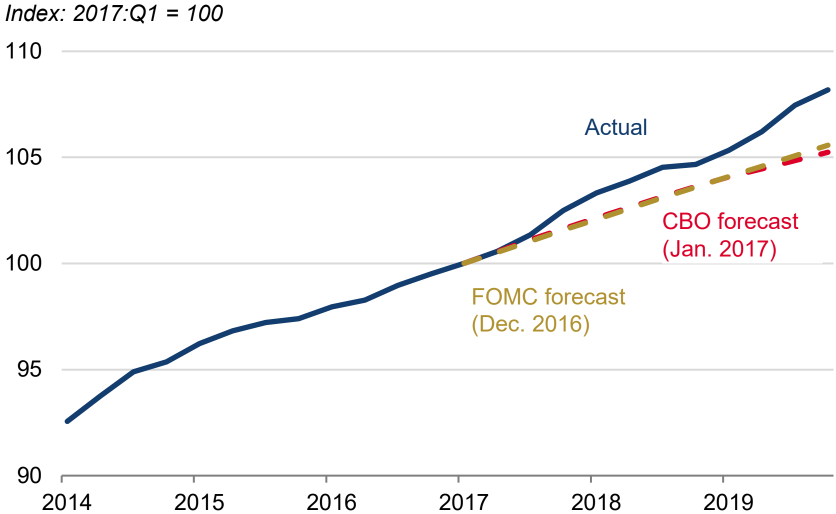
The Economic and Fiscal Benefits of the One Big Beautiful Bill Act

Passed on July 4, 2025, the One Big Beautiful Bill Act (OBBBA) builds upon the 2017 Tax Cuts and Jobs Act (TCJA) from President Trump's first Administration. It does so by making the TCJA's reduced tax rates and increased deductions permanent while also expanding its provisions for full expensing of investments. Simultaneously, the OBBBA contains provisions that reduce government spending. This chapter's economic and fiscal analysis of the key tax and spending provisions of the OBBBA demonstrates that the law will meaningfully boost economic growth, increase workers' paychecks, and bend the arc of national debt in a more sustainable direction.

The Successful Legacy of the 2017 Tax Cuts and Jobs Act

The 2017 Tax Cuts and Jobs Act was born out of a need to revitalize the economy. The TCJA enacted broad-based tax cuts for households and businesses to boost growth driven by the private sector, provide better and more abundant employment opportunities, raise wages, and increase after-tax take-home pay. Specifically, the TCJA cut the U.S. corporate tax rate from 35 to 21 percent, bringing what had previously been the highest corporate tax rate among Organization for Economic Cooperation and Development nations down to internationally competitive levels. In addition, the TCJA lowered taxes on pass-through businesses, partly by reducing the personal income tax rate and partly by enacting a 20 percent deduction for pass-through businesses. Full expensing of equipment investment was also introduced by the TCJA, incentivizing all types of businesses to build up their productive capacity. Individual taxpayers also benefited from cuts in the personal income tax rate, in addition to a near-doubling of the standard deduction and a doubling of the child tax credit. Although the TCJA made a number of provisions permanent, including the 21 percent corporate tax rate, several important elements of the TCJA

Figure 1-1. Post-TCJA GDP Growth Has Outperformed Forecasts



Sources: Bureau of Economic Analysis; Federal Reserve Board of Governors; CBO; CEA calculations.
Note: CBO = Congressional Budget Office; FOMC = Federal Open Market Committee. Real GDP values are indexed to 2017:Q1; FOMC and CBO forecasts originally are presented in growth rates and are turned in to nominal values and indexed to 2017:Q1.

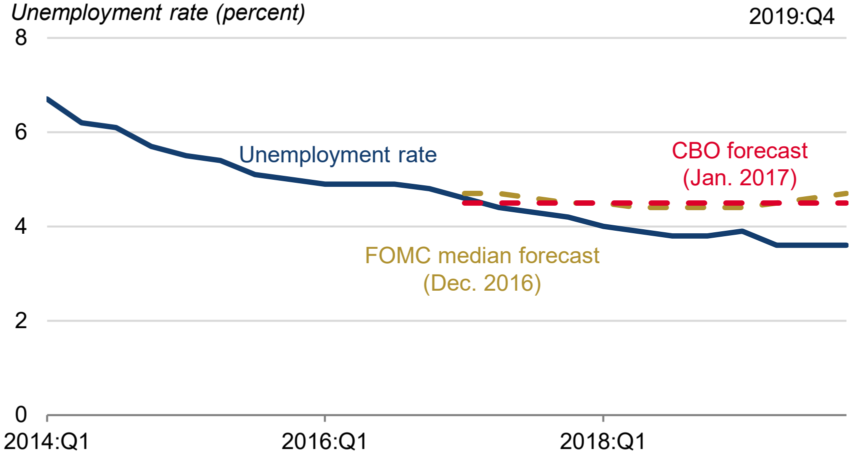
were slated to expire. Among these expiring elements were lower tax rates for individual and pass-through business income, the enhanced standard deduction for individuals, the 20 percent deduction for pass-through income, and full expensing of equipment.

The economic policies of the first Trump Administration proved successful, yielding higher economic growth and lower unemployment rates than projected by the Congressional Budget Office (CBO) in January 2017 and by the Federal Open Market Committee (FOMC) in December 2016, as displayed in figures 1-1 and 1-2. These supply-expanding policies also kept inflation contained near the Federal Reserve's 2 percent target.

Highlights of the macroeconomic strength of the prepandemic period include:

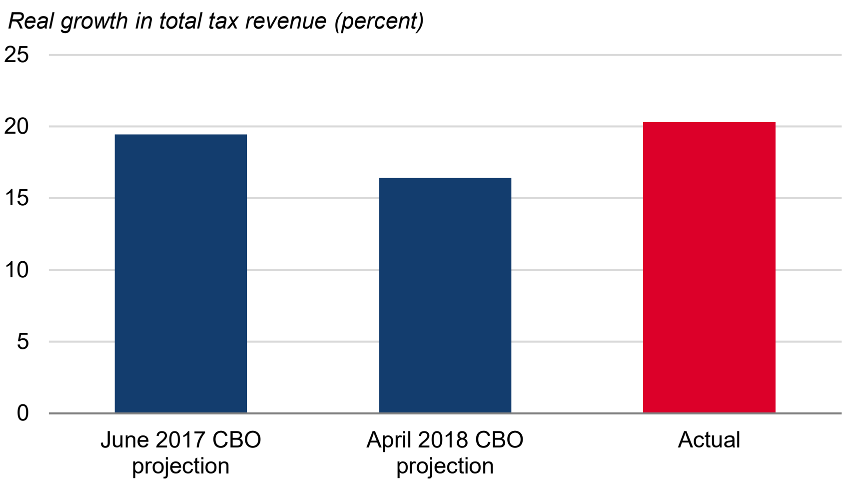
- *Overall real workers' earnings growing roughly twice as fast:* From January 2017 to February 2020, relative to the post–Great Recession period from July 2009 to December 2016 during the Obama Administration, real wages grew roughly twice as fast, outperforming expectations.
- *Workers at the bottom benefiting most:* After experiencing near-zero growth in that 2009–16 period, workers in the bottom 10 percent of the income distribution experienced earnings growth more than twice as fast as those in the top 10 percent.
- *Income for the typical family rising by the highest level on record:* Real

Figure 1-2. The Post-TCJA Unemployment Rate Has Outperformed Forecasts



Sources: Bureau of Labor Statistics; Federal Reserve Board of Governors; CBO.
Note: CBO = Congressional Budget Office; FOMC = Federal Open Market Committee.

Figure 1-3. Cumulative Real Growth in Total Tax Revenue, 2017–24



Source: Congressional Budget Office (CBO).

income jumped by $6,400 in the year after the TCJA passed, the highest yearly increase on record.

- *Poverty reaching record lows:* The strong economy lifted nearly 7 million people out of poverty through 2019, leading to the lowest recorded poverty rate since data on the topic first became available in 1959.

The TCJA was also fiscally sound, despite some claims to the contrary. In April 2018, soon after passage of the TCJA, the CBO forecasted that growth in real tax revenues through 2024 would be about 4 percentage points ($1.1 trillion) lower than without the TCJA. However, as shown in figure 1-3, this was not the case. Instead, the economy under the TCJA achieved the same level of revenue in 2024 as what the CBO forecasted if TCJA was not enacted and taxes remained at their prior higher levels. This was accomplished through higher gross domestic product (GDP) growth and stable revenues as a share of GDP. Revenue as a share of GDP was 17.1 percent in 2024, just as it was in 2017 before the TCJA.

The One Big Beautiful Bill Act: Avoiding the Largest Tax Increase Ever

The One Big Beautiful Bill Act (OBBBA) makes permanent some of the key features of the TCJA and adds further pro-growth provisions. Some of its key components include:

- Permanent extension of lower tax rates for small businesses from the TCJA, including the 20 percent deduction for pass-through business income;
- Permanent full expensing for equipment;
- Permanent full expensing for research and development (R&D);
- Temporary full expensing for new factories;
- Permanent extension of lower individual tax rates and higher individual deductions from the TCJA;
- Temporary no income tax on overtime, no income tax on tips, and tax relief for seniors; and
- Permanent extension and enhancement of Opportunity Zone incentives in distressed areas.

Without the OBBBA, key parts of President Trump's 2017 tax cuts would have expired, leading to a $4 trillion tax hike over 10 years, the largest nominal increase in history, inflicting serious damage on the U.S. economy. The CEA estimates that if the TCJA had expired and the OBBBA had not been passed, the level of U.S. real GDP would have been about 4 percent lower after 4 years. This would have led to about 6.1 million fewer full-time-equivalent jobs due to less hiring and increased layoffs. Lower long-run GDP resulting from this recession would have produced more than $4 trillion in deficits due to a smaller tax base and more government spending on unemployment insurance and other safety net programs.

According to the CEA's analysis, this downturn would have been driven by two key factors. First, higher tax rates and lower deductions for pass-through businesses would slow small business creation, growth, and hiring. Second, these businesses would be hit by reductions in spending on their products, as consumers would need to contend with higher tax rates and lower deductions on individual income. Altogether, these would exacerbate increased business closures and layoffs along with reduced job creation.

The most vulnerable people would have borne the brunt of this hardship. Low-income communities would lose investment, jobs, and housing as Opportunity Zones lapsed. Youth, minorities, and workers with less education tend to see the worst labor market outcomes during recessions (Bell and Branchflower 2011; Boulware and Kuttner 2024; Ozkan and Sullivan 2025). Even after recessions are over, they also tend to have the longest-lasting effects on these groups, in the form of persistently lower wages and higher mortality rates (Finkelstein et al. 2025; Schwandt and von Wachter 2023). In sum, the most vulnerable would have been most affected.

Benefits of the OBBBA for Blue-Collar Workers

The OBBBA's tax cuts represent a continuation of the tax policies that were instrumental in creating prosperity during the first Trump Administration. In addition to renewing key TCJA provisions, the OBBBA creates new incentives to grow America's domestic manufacturing base. Furthermore, it delivers targeted relief to those workers most affected by the lingering results of the high inflation during the Biden Administration. According to an analysis by the CEA (2025a):

- No tax on tips is projected to save the average tipped worker about $1,675 per year, and no tax on overtime will save the average overtime worker between $1,400 and $1,750 per year (CEA 2025d).
- These substantial savings are targeted to workers who are more economically fragile. Recent data show average overtime workers' earnings are about $73,000; the average tipped worker earns $41,000. Both these numbers are below the average income of all full-time workers.
- Temporary full expensing for new factories and lower tax rates on domestic manufacturing is projected to enhance America's industrial base and boost economic opportunity for workers with and without a college degree.
- Enhanced Opportunity Zone incentives are projected to help drive more than $100 billion in investment, create more than 1 million new jobs, and lead to hundreds of thousands of new homes in distressed communities, especially in rural areas.

Furthermore, the Joint Committee on Taxation (2025a) finds that the percentage decline in Federal taxes is smaller for the top 1 percent under the OBBBA, causing the top 1 percent to shoulder a greater share of total Federal taxes.

To quantify the effects of the OBBBA's business tax provisions, the CEA utilizes a model of the user cost of capital (UCC). This model is an extended version of the UCC model employed by the CEA in 2017, which accurately estimated the effects of the TCJA. Intuitively, lower taxes and more generous expensing provisions reduce the cost of purchasing additional capital such as machinery or factories. This leads businesses to buy extra capital, which in turn generates extra output. More formally, the model is based on research by Auerbach and Hassett (1992) and is capable of considering the dynamic effects of both temporary and permanent policy changes. The UCC model is further enriched with four separate capital stocks (equipment, structures, intellectual property, and residential) and two separate sectors (C-corporate and pass-through). This enables analysts to consider the key tax rate provisions of the OBBBA (which differ for C-corporations and pass-throughs) and its key expensing provisions (which differ by type of capital). For illustrative purposes, in the case of permanent policy changes only, UCC is calculated as follows:

$$UCC_{i,s} = (r + \delta_i)\frac{1 - \tau_s\lambda_i}{1 - \tau_s},$$

where r is the interest rate, δ is the depreciation rate for capital of type i, τ is the tax rate on businesses in sector s, and λ is the net present value of depreciation allowances for capital of type i. UCC can be calculated under a variety of scenarios, including a scenario where the TCJA's nonpermanent provisions are allowed to lapse and one where the OBBBA has been passed. These are the two that most are relevant for determining the effects of the OBBBA's passage.

The key parameter in such a model is the UCC's elasticity of investment, which specifies the percent change in investment resulting from a given change in the user cost of capital. A UCC elasticity of –1 is used. In addition to being the neoclassical benchmark, this number is consistent with empirical estimates of the elasticity and is the same elasticity used by the CEA in 2017 in estimating the effects of the TCJA. The CEA (2018) discusses this parameter choice in detail.

To make this more concrete, consider a specific numerical example. Suppose C-corporations experience no change in tax rates but have full expensing of their equipment investment restored. Relative to a baseline where full expensing completely lapses, it is possible to calculate the resulting change in C-corporate equipment investment as shown here. In this case, $\tau_c = 0.253$ represents the 21 percent C-corporate tax rate plus the 4.3 percent average State tax rate. And $\lambda_i = 1$ represents full expensing of equipment, whereas $\lambda_i = 0.85$ represents the net present value of the Internal Revenue Service's depreciation allowances for equipment in the absence of full expensing. C-corporate investment in equipment thus increases about 4.8 percent as a result of this change:

$$\Delta I_{e,c} = \Delta UCC_{e,c} = -1 * \left(\frac{1-(0.253)*1}{1-(0.253)} - \frac{1-(0.253)*0.85}{1-(0.253)}\right) \Big/ \left(\frac{1-(0.253)*0.85}{1-(0.253)}\right) = 4.8\%$$

The increased investment resulting from reduced user costs gradually builds up the capital stock to a new level, which leads to GDP increasing to a new steady state level over time as well. The conversion of additional capital of each type into additional aggregate output is determined by the income share of each type of capital, data which are available in the Multifactor Productivity Tables produced by the Bureau of Labor Statistics. For illustrative purposes, continuing with the previous example, in the long run, the additional capital increases GDP by $\Delta Y = \omega_c \alpha_e \Delta I_{e,c} = 0.18$ percent, where α_e is the share of GDP accruing to equipment, and ω_c is the share of the capital stock held by C-corporations. Note that, to consider the total effects of full expensing of equipment, it is necessary to sum this effect with the effect through the pass-through sector. The CEA (2025b) describes the methodology, assumptions, and data inputs to the model in greater detail in its methodological appendix.

To compute effects on wages, the CEA relies on an elasticity of wages with respect to tax rates on pass-through business income from Risch (2024). Additionally, following the approach taken by the CEA in 2017 in estimating the effects of the TCJA's passage, a range of elasticity of wages with respect to the corporate income tax rate is used, with the lower estimate coming from Azémar and Hubbard (2015) and the upper estimate from Felix (2007). Again, the methodological appendix of CEA (2025b) describes the approach in greater detail.

Low Tax Rates for Main Street Businesses

The CEA first studies the effect of extending the low tax rates for businesses that were set to expire. These include the individual rate cuts applicable to pass-through business owners, the 20 percent deduction for pass-through income (section 199A), and the current tax rates for global intangible low-taxed income and foreign-derived intangible income.[1] Allowing these provisions to expire, and the resulting reversion of rates to higher levels, would have created significant disincentives for economic activity.

The CEA finds that, compared with the TCJA's expiration, these OBBBA provisions raise investment by 0.9 to 2.7 percent and boost real GDP by 0.1 to 0.2 percent during the first four years. They raise investment by 1.3 to 3.0 percent and boost real GDP by 0.2 to 0.4 percent during the 10-year budget

[1] While the OBBBA provides for a small increase in the foreign-derived intangible income and global intangible low-taxed income tax rates, it makes favorable changes to the calculation of this income that offset the slightly higher tax rates.

Table 1-1. The One Big Beautiful Bill Act's Macroeconomic and Fiscal Effects: Lower Tax Rates for Small Businesses

Investment (%)		Level of GDP (%)		Annual wage (dollars)	
4-year	*10-year*	*Year 4*	*Year 10*	*Year 4*	*Year 10*
0.9 to 2.7	1.3 to 3.0	0.1 to 0.2	0.2 to 0.4	2,331 to 3,947	2,427 to 4,123

Source: CEA calculations.

window. The provisions raise real wages by about $2,300 to $4,000 after four years, as shown in table 1-1.[2]

Expensing Provisions to Incentivize Investment

The CEA also analyzes the permanent full expensing of equipment investment and R&D incorporated in the OBBBA, along with the temporary four-year provision for full expensing for new factories. In each of these cases, full expensing reduces up-front costs and frees up cash flow to enable businesses to make critical investments in expanding capacity and driving innovation. Workers ultimately benefit from the resulting higher productivity and stronger labor demand driven by these additional investments.

The CEA finds that the permanent full expensing of equipment and R&D boosts investment permanently by 2.7 to 3.2 percent, with GDP initially climbing by 0.2 to 0.3 percent during the first four years, and ultimately ending up 0.4 to 0.5 percent higher at the end of the 10-year budget window. During the first four years, these provisions cause wages to rise by about $1,100 to $2,300, with the wage effect growing to a range of about $1,250 to $2,500 after 10 years.

Temporary factory expensing leads to an investment surge of 3.1 to 3.8 percent during the first four years, adding another 0.1 to 0.2 percent to GDP and raising wages by about $500 to $900, with the wage effect gradually fading over time after the expiration of the provision (table 1-2).

The CEA finds that, when combined, all the business tax provisions in the OBBBA will generate an increase in investment of 6.7 to 9.7 percent during the first four years, with GDP 0.4 to 0.6 percent higher and average annual wages about $3,900 to $7,100 higher at the end of that period. Over a 10-year horizon, these provisions will increase investment by 5.2 to 7.7 percent, and GDP will be 0.7 to 1.0 percent higher. Average annual wages will increase by about $4,200 to $7,400 (table 1-3). (Also see box 1-1.)

[2] These estimates differ very slightly from those in CEA (2025b) because the model has been enriched to consider a more realistic baseline. The baseline here is gradual TCJA expiration, as would have occurred under the pre-TCJA current law (lower rates persist in 2025 but expire in 2026; bonus depreciation on equipment at 40 percent in 2025, 20 percent in 2026, and 0 percent in 2027 and onward). Subsequent sections of this chapter rely on the same baseline. The baseline in CEA (2025b) was immediate TCJA expiration.

Table 1-2. One Big Beautiful Bill Macroeconomic and Fiscal Effects: Full Expensing Provisions

Investment (%)		Level of GDP (%)		Annual wage (dollars)	
4-year	*10-year*	*Year 4*	*Year 10*	*Year 4*	*Year 10*
Permanent full equipment and R&D expensing					
2.7 to 3.2	2.7 to 3.2	0.2 to 0.3	0.4 to 0.5	1,104 to 2,288	1,253 to 2,463
Temporary full factory expensing					
3.1 to 3.8	1.2 to 1.5	0.1 to 0.2	0.1	510 to 883	486 to 854

Source: CEA calculations.

Table 1-3. The One Big Beautiful Bill Act's Macroeconomic and Fiscal Effects: Business Provisions Combined

Investment (%)		Level of GDP (%)		Annual wage (dollars)	
4-year	*10-year*	*Year 4*	*Year 10*	*Year 4*	*Year 10*
6.7 to 9.7	5.2 to 7.7	0.4 to 0.6	0.7 to 1.0	3,945 to 7,118	4,166 to 7,439

Source: CEA calculations.

Box 1-1. Analysis from the CEA's Nonlinear Model

To validate these results, the CEA also employs a more sophisticated nonlinear model. In this model, each firm owns stocks of capital (in structures, s; equipment, e; and intellectual property, p) that are used to make output. Each period, firms must choose how much of each type of capital to own in the next period. The firms, however, face a cost of adjusting their stocks of capital upward or downward. Their choices for optimal capital stocks in the next period can be characterized as the solution to this problem:

$$
\begin{aligned}
V_t\left(K_s, K_e, K_p\right) = \max \Bigg\{ & (1-\tau_t)Y \\
& - (1-\tau_t\lambda_t^s)\left[K_s' - (1-\delta_s)K_s + \frac{\phi}{2}K_s\left(\frac{K_s'}{K_s} - 1\right)^2\right] \\
& - (1-\tau_t\lambda_t^e)\left[K_e' - (1-\delta_e)K_e + \frac{\phi}{2}K_e\left(\frac{K_e'}{K_e} - 1\right)^2\right] \\
& - (1-\tau_t\lambda_t^p)\left[K_p' - (1-\delta_p)K_p + \frac{\phi}{2}K_p\left(\frac{K_p'}{K_p} - 1\right)^2\right] \\
& + \beta V_{t+1}(K_s', K_e', K_p') \Bigg\},
\end{aligned}
$$

subject to $0 \leq K_j' - (1 - \delta_j)K_j$ for $j = \{s, e, p\}$, where

- Y is the output of the firm, set to be $Y = z(K_s^{\alpha s}, K_e^{\alpha e}, K_p^{\alpha p})^{\theta}$.
- $V(K_s, K_e, K_p)$ is the value of the firm when it enters the period with capital stocks of quantities K_s, K_e, K_p.
- K_s', K_e', K_p' are the capital stocks for the firm next period, chosen this period.
- τ_t is the tax rate paid by the firm.
- λ_t^s, λ_t^e, λ_t^p are parameters that control the degree to which investment of each type can be expensed.
- β is the discount rate on future values.

To match the model to the data, two types of firms are allowed for: C-corporations and pass-through entities. These firms solve the same problem but face different tax rates, so their solutions will vary. Setting ϕ = 8 delivers a one-period elasticity of investment with respect to a permanent change in the user cost of −1.1 (i.e., roughly in accord with the UCC elasticity used in the preceding UCC model). The CEA calibrates the model with the relevant policy parameters (τ_s for C-corporations and pass-throughs and λ_s for each variety of capital) under both the scenario where the TCJA had expired and the scenario where the OBBBA is law. Additional parameters in need of calibration are the capital income shares for each category of capital, which can be obtained from the Bureau of Labor Statistics' Multifactor Productivity tables, and the relative size of the C-corporate and pass-through sectors, which can be obtained from IRS data on statistics of income.

These, too, are the same sources as used for the preceding UCC model. The model is then solved numerically. Finally, effects on overall GDP can be determined by adjusting downward to account for the fact that the increases in output yielded by the model apply only to the C-corporate and pass-through sectors, not to government or private households, which account for about one-quarter of overall GDP (table 1-i).

The results are broadly in line with the UCC model used for the CEA's main estimates. The business tax provisions of the OBBBA increase GDP by 0.4 to 0.5 percent after 4 years (compared with 0.5 to 0.7 percent) and by 0.8 to 1.0 percent after 10 years (compared with 0.7 to 1.0 percent). In other words, the more sophisticated nonlinear model bears out the CEA's main estimates.

Table 1-i. One Big Beautiful Bill Macroeconomic and Fiscal Effects: Nonlinear Model (All OBBBA Business Tax Provisions)

Investment (%)		Level of GDP (%)	
4-Year	*10-Year*	*Year 4*	*Year 10*
6.7 to 7.3	4.8 to 5.4	0.4 to 0.5	0.8 to 1.0

Source: CEA calculations.

Pillar Two of the OBBBA: Individual Tax Relief

The OBBBA extends and strengthens the larger child tax credit and standard deduction of the TCJA while also providing new relief in the form of no income tax on overtime, no income tax on tips, and tax relief for seniors who are often reliant on fixed-income streams. The CEA quantifies the economic impact of these measures by following the same methodology from its May and June 2025 reports. Specifically, the CEA's analysis takes into account the permanent increase in GDP owing to stronger labor supply, along with the short-run demand-side boost to GDP from households raising their consumption in response to higher take-home pay. The labor supply effects are estimated using elasticities from work by Chetty, Manoli, and Weber (2011). The short-run demand-side boost is estimated through a multiplier effect with a value of the multiplier implied by an MPC of 0.4, consistent with, among others, Auclert, Rognlie, and Straub (2024); Kaplan and Violante (2022); and Carroll and colleagues (2017). We note that this approach yields a more modest multiplier than typical directly estimated tax cut multipliers, as reviewed in Ramey (2019).

Making Permanent and Strengthening the TCJA's Individual Tax Relief

Extending the low tax rates and the larger standard deduction from the TCJA increases the incentive to work, which boosts labor supply and permanently raises GDP. In addition to preventing the standard deduction from reverting to pre-TCJA levels, the OBBBA raises the standard deduction between 2025 and 2026 by a further $1,000 for single filers and $2,000 for married filing jointly (Senate Finance Committee n.d.). Rather than letting the child tax credit get cut in half from $2,000 to its pre-TCJA value of $1,000, the OBBBA increases the child tax credit even further and indexes it to inflation, bringing the child tax credit to $2,200 per child. Importantly, the OBBBA also maintains earned income requirements for the refundable portion of the child tax credit, which strengthens the incentive for households to have at least one gainfully employed worker.

The CEA finds that, relative to the TCJA's expiration, these provisions raise the level of real GDP by 3.9 percent over the first four years, permanently boosting take-home pay by about $2,340 for a typical family with two children. In the long run, real GDP is 1.7 percent higher because of these provisions (CEA 2025b).

No Tax on Tips, No Tax on Overtime, and Tax Relief for Seniors

The OBBBA, however, goes beyond just extending the TCJA's individual tax provisions. It additionally enacts no tax on overtime, no tax on tips, and tax relief for seniors over a four-year period.

Currently, a worker with overtime pays taxes both on his or her base pay and the premium from working overtime. The OBBBA eliminates the income tax on the overtime premium for most overtime workers. For example, suppose an hourly worker earning $20 an hour gets paid $30 an hour for overtime hours (the $20 base rate plus a $10 premium). This worker would pay no tax on the $10 premium per hour he or she earns when working overtime. The CEA finds that this change will cause overtime workers to increase their overtime hours by 4.7 percent, leading to a 0.2 percent increase in aggregate labor supply while the provision is in effect. The CEA estimates that the average overtime worker will receive a tax cut of between $1,260 and $1,400 per year.[3]

To estimate the impact of no tax on tips, the CEA uses the Joint Committee on Taxation's revenue estimate of tip exemption from the OBBBA and the number of tipped workers according to the Statistics of Income W-2 tabulations (Joint Committee on Taxation 2025b; Internal Revenue Service n.d.). Based on these sources, the CEA finds that no tax on tips will increase average take-home pay for tipped workers by $1,300 a year.[4]

The OBBBA includes a generous $6,000 bonus deduction for seniors. Using the Joint Committee on Taxation's revenue score for this provision and estimates from the Department of the Treasury provided to the CEA on the number of qualifying seniors who would likely benefit from the provision, the CEA finds that the bonus senior deduction will increase the average take-home pay for each qualifying senior person by about $670 a year (Joint Committee on Taxation 2025b).

The provisions for no tax on overtime, no tax on tips, and senior tax relief, along with the OBBBA's provision making auto loan interest tax-deductible, boost GDP by 0.3 to 0.4 percent while they are in effect (table 1-4).

A Deeper Exploration of the Effects of the OBBBA on Seniors

Under the OBBBA, 51.4 million seniors—88 percent of all seniors receiving Social Security income—will pay no tax on their Social Security. This is 14.2 million seniors more than under the pre-OBBBA law (table 1-5).

In table 1-6, multiple scenarios are considered that are representative of the benefits of the OBBBA to seniors receiving Social Security income. First, consider the case of a senior filing as a single taxpayer receiving the current average retirement benefit of about $24,000 (per Social Security

---

[3] The $1,260 end of the range comes from dividing the projected fiscal impact of this provision, $25.6 billion, by the number of people who are expected to benefit (20 percent of 101.7 million overtime-eligible workers). The $1,400 end of the range comes from calculating the tax savings for a worker earning $28.16 per hour who is in the 22 percent income tax bracket, assuming they work 8.67 hours of overtime each week, based on calculations using American Community Survey data. The calculation is 0.5*28.16*0.22*8.67*52, where the 0.5 is because workers are still taxed on their base pay but not the 50 percent overtime premium. The CEA's June report provides further details.

[4] The $1,300 estimate comes from dividing the projected fiscal impact of this provision, $7.8 billion, by the 6 million workers who are expected to benefit.

Table 1-4. One Big Beautiful Bill's Macroeconomic and Fiscal Effects: Household Tax Relief

	Level of GDP (%)	Typical boost to annual take-home pay (dollars)
Permanent household tax relief		
Year 4	3.3 to 3.8	2,340
Year 10	1.7	2,340
Temporary no tax on overtime and tips, senior tax relief, and deductible auto loan interest		
Year 4	0.3	1,260 to 1,400 overtime; 1,300 tips; 670 per senior
Year 10	0	0
All OBBBA household tax relief		
Year 4	3.6 to 4.2	Up to 3,600 to 3,740*
Year 10	1.7	1,700

Source: CEA calculations.

*Includes permanent household tax relief plus no tax on overtime.

Table 1-5. The Benefits of OBBBA for Seniors

Seniors	*Millions of beneficiaries*	*Percentage of beneficiaries*
Those age 65 and over receiving Social Security income	58.5	100
Those with exemptions and deductions exceeding taxable Social Security income*		
… under pre-OBBBA law	37.2	64
… under OBBBA	51.4	88

Source: U.S. Treasury, July 1, 2025.
*Includes seniors who receive Social Security income but have no such income in their adjusted gross income.

Administration data). The maximum amount of Social Security included in taxable income is 85 percent of the benefit, which would be $20,400 in this case. Under the OBBBA, in 2025 this senior will be entitled to $23,750 in deductions: the $15,750 standard deduction, the $2,000 current-law additional deduction, and (if this taxpayer's adjusted gross income is $75,000 or less) the $6,000 new OBBBA senior deduction. This means that the OBBBA would lead to deductions that exceed the senior's taxable Social Security income (table 1-6).

Table 1-6. Deductions for Seniors under the One Big Beautiful Bill for 2025

Type of deduction	*Single senior under OBBBA*	*Single senior before OBBBA*
New senior deduction	$6,000	$0
Standard deduction	$15,750	$15,000
Existing senior deduction	$2,000	$2,000
Total	**$23,750**	**$17,000**
Type of deduction	*Married seniors under OBBBA*	*Married seniors before OBBBA*
New senior deduction	$12,000	$0
Standard deduction	$31,500	$30,000
Existing senior deduction	$3,200	$3,200
Total	**$46,700**	**$33,200**

Source: CEA calculations.

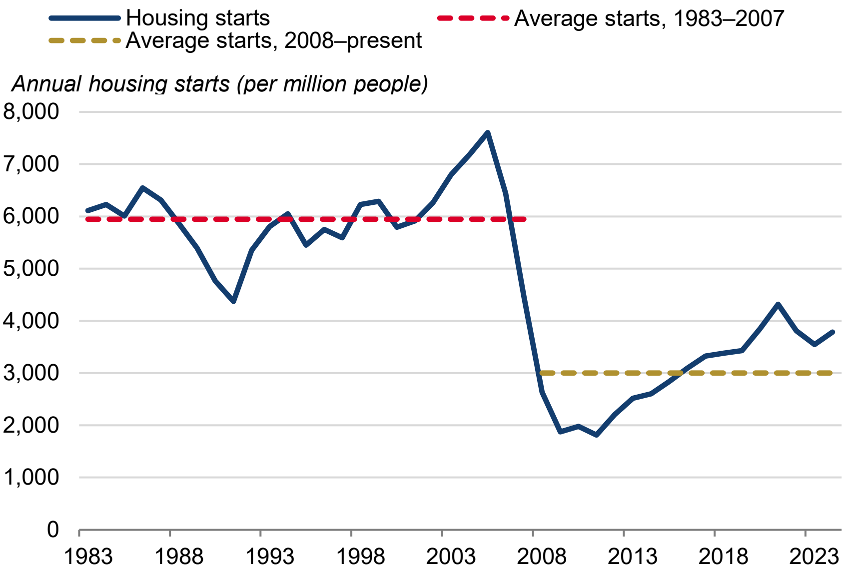
Second, consider a married couple of seniors both receiving $24,000 in Social Security retirement benefits. The couple will have a total of $48,000 in Social Security income, of which at most 85 percent is taxable ($40,800). Under the OBBBA, this couple will also be entitled to deductions that exceed their taxable Social Security income.

Seniors often have sources of income beyond just Social Security, and there will be benefits for seniors in such situations as well. Consider, for example, a married senior couple receiving $40,000 in Social Security income and another $40,000 in income from an individual retirement account or a 401(k). Calculations by the Treasury Department show that, if the TCJA had been allowed to expire, in 2026 this couple would be expected to owe $3,150 in taxes, whereas under the OBBBA, they will owe only $1,210—a reduction of nearly $2,000. About $1,200 of this reduction is due solely to the new $12,000 OBBBA senior deduction claimed by the couple.

Making Permanent and Enhancing Opportunity Zone Incentives

Opportunity Zones are another important feature of the TCJA that were extended and enhanced by the OBBBA. Recent studies have found that the first round of Opportunity Zones associated with the TCJA directed $89 billion in investment into distressed communities (Glasner, Ozimek, and Lettieri 2025), created over 1 million jobs (Arefeva et al. 2025), and led to the construction of over 300,000 new housing units that would not otherwise have been built (Glasner, Ozimek, and Lettieri 2025). To build upon this successful legacy and combat deteriorating rural housing affordability (CEA 2025c), the OBBBA strengthens Opportunity Zones by making the incentives permanent and providing enhanced incentives for rural areas to ensure an even more robust flow of investment. To the extent that rural areas have less onerous regulatory barriers to business formation and the development of new housing supply, Opportunity Zones are likely to play an even more meaningful role in addressing problems like the housing affordability crisis by helping to reverse the shortfall in new housing construction that has emerged over the past 15 years, shown in figure 1-4.

Figure 1-4. Average Housing Starts per Million People, 1983–2024



Sources: Census Bureau; CEA calculations.

Summarizing the Economic Impact of All the OBBBA's Tax Provisions

The CEA finds that the package of business and individual tax provisions under the OBBBA will, taken as a whole, raise investment by 6.7 to 9.7 percent over the next four years and by 5.2 to 7.7 percent during the 10-year budget window. This investment will increase the level of real GDP by 4.6 to 4.9 percent during the next four years (about 1.1 to 1.2 percent higher average growth per year) and by 2.4 to 2.7 percent through the 10-year budget window (about 0.2 to 0.3 percent higher average growth per year). The CEA estimates that real take-home pay for a median-income family with an overtime worker and two children will increase by up to about $7,500 to $10,900, driven both by higher wages and less tax taken out of Americans' paychecks by the Federal government. Americans of all backgrounds benefit from these tax provisions. In addition, struggling and

Table 1-7. Summary of the Economic Impact of the OBBBA's Tax Provisions

All business and individual provisions

	Investment (%)	*Level of GDP (%)*	*Annual take-home pay (dollars, year 4)*
4-year	6.7 to 9.7	4.6 to 4.9	7,545 to 10,858*
10-year	5.2 to 7.7	2.4 to 2.7	

Impact in Opportunity Zones

	Investment	*Added jobs*	*New homes*
	$100+ billion	1+ million	At least 300,000

Source: CEA calculations.
*Take-home pay for a median-income family with an overtime worker and two children.

previously left-behind communities will benefit from the surge of investment, jobs, and housing supply enabled by the permanent extension of Opportunity Zones (table 1-7).

The Fiscal Impact of the Trump Administration's Economic Policies Anchored by the OBBBA

The prospects for continued economic prosperity and low taxes also depend on the fiscal trajectory of the United States. Before COVID-19, Federal debt held by the public as a share of GDP was under 80 percent (U.S. Office of Management and Budget and Federal Reserve Bank of Saint Louis 2026). Since then, this ratio has climbed to nearly 100 percent, and the CBO projects that, under its baseline assumptions of sub-2 percent economic growth and a $4 trillion tax hike from the expiration of the TCJA, that the debt-to-GDP ratio will rise to 117 percent in 2034. In this subsection, the CEA projects America's fiscal trajectory under alternative scenarios that incorporate the OBBBA and related Trump Administration economic policies.

The Impact of the OBBBA and Related Trump Administration Economic Policies on Deficits and Debt

A key question when scoring the costs of any policy change is what baseline will be used. In the context of OBBBA, two main baselines were used: the "current law" and "current policy" baselines. The current law baseline, as its name implies, assumed that the nonpermanent provisions of the TCJA would expire and a major tax hike would occur as a result, consistent with pre-OBBBA current law. The current policy baseline, again consistent with its name, assumed that pre-OBBBA current policy would continue indefinitely, with tax rates and expensing

Table 1-8. Summarizing Key Differences between pre-OBBBA Current Law, pre-OBBBA Current Policy, and the OBBBA

Aspect of law/policy	Current law	Current policy	OBBBA
Corporate tax rate	Stays at TCJA levels	Stays at TCJA levels	Stays at TCJA levels
Individual/ passthrough tax rates	Increase to pre-TCJA levels	Stays at TCJA levels	Stays at TCJA levels
Expensing provisions	No full expensing of any investment	40% expensing of equipment	Full expensing of equipment, R&D, factories
Tax on tips and overtime	Taxed as normal income	Taxed as normal income	No tax on tips and overtime

Source: CEA calculations.

provisions continuing as they were in 2025 before the OBBBA's passage. In short, the key difference was that the current law baseline assumed a $4 trillion tax hike, and this was the baseline generally used by the CBO in its estimates. To a casual observer, this made the OBBBA look quite costly (table 1-8).

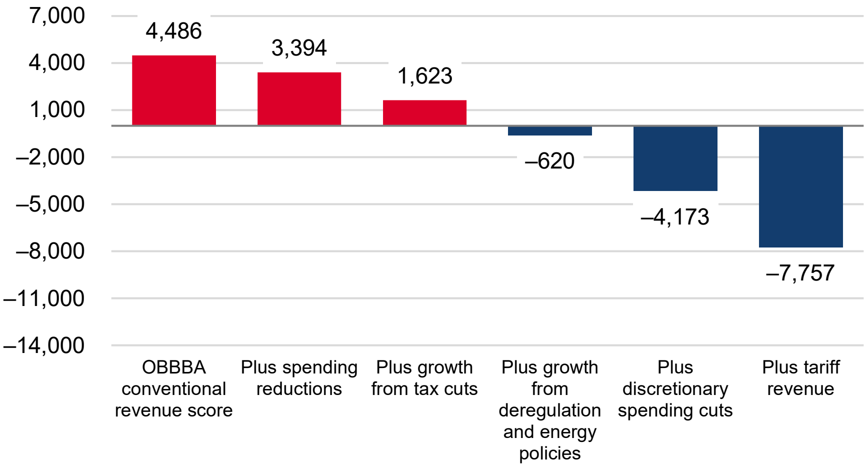
Relative to the CBO's pre-OBBBA current law baseline, which entailed a tax hike associated with the TCJA's expiration, the OBBBA reduces revenues by $4.486 trillion. Relative to the CEA's estimated pre-OBBBA current policy baseline, the OBBBA reduces revenues by only $726 billion. The first bar in figure 1-5 shows the revenue score relative to the CBO's pre-OBBBA current law baseline, while the first bar in figure 1-6 uses the pre-OBBBA current policy baseline. As a matter of proper interpretation, it is important to recognize that under the most recent CBO baseline forecast before the OBBBA's passage, revenue as a share of GDP is projected to rise above current and historic levels (from 17.1 percent to 18.2 percent by 2034). Thus, the CBO scores any policy that prevents or moderates such an increase as revenue reducing.

As scored by the CBO, the OBBBA lowers noninterest outlays by $1.091 trillion over the period 2025–34. Netting the change in outlays against the change in revenues produces an overall conventional OBBBA score of $3.394 trillion of higher primary deficits over the budget window relative to the CBO's pre-OBBBA current law baseline. However, relative to pre-OBBBA current policy, the OBBBA reduces primary deficits by $365 billion over 10 years before including revenue feedback from higher growth. The second bar in figures 1-5 and 1-6 shows these scores.

The third bar in each figure updates the OBBBA score to account for the primary deficit reduction from higher economic growth induced by the OBBBA's tax provisions. Adjusting by the midpoint of these estimates causes

Figure 1-5. Primary Deficit Impact of Trump Administration Policies Compared with Current Law Baseline (pre-OBBBA)

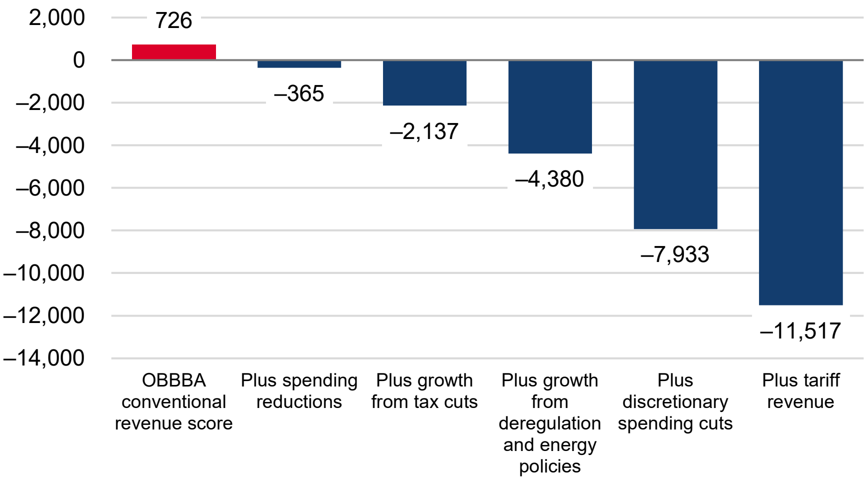
10-year deficit impact ($ billions)



Sources: Congressional Budget Office; Office of Management and Budget; CEA calculations, using midpoint growth estimates.
Note: Positive numbers indicate higher deficits relative to the current policy baseline. Negative numbers indicate deficit reduction.

Figure 1-6. Primary Deficit Impact of Trump Administration Policies Compared with Current Law Baseline (pre-OBBBA)

10-year deficit impact ($ billions)



Sources: Congressional Budget Office; Office of Management and Budget; CEA calculations, using midpoint growth estimates.
Note: Positive numbers indicate higher deficits relative to the current policy baseline. Negative numbers indicate deficit reduction.

the OBBBA to only increase 10-year primary deficits by $1.623 trillion relative to the CBO pre-OBBBA current law baseline, and the OBBBA reduces primary deficits by $2.137 trillion using the pre-OBBBA current policy baseline. Augmenting the growth from the OBBBA tax provisions, a recent CEA analysis finds that the deregulatory policies of the Trump Administration, elements of which depend on or are enhanced by the OBBBA, add another 0.3 to 0.8 percentage point to annual real economic growth (CEA 2025e). Energy policies apart from deregulation add another 3 to 12 basis points of annual real economic growth. Faster economic growth from the tax cuts and deregulation as well as the spending reductions in the OBBBA reduce primary deficits by $620 billion relative to the CBO pre-OBBBA current law baseline and by $4.380 trillion relative to the pre-OBBBA current policy baseline (using the midpoint of growth).

The Mid-Session Review of the White House Office of Management and Budget (OMB) provides estimates related to other elements of the Trump Administration's economic agenda, including over $3.5 trillion in discretionary spending cuts and $3.5 trillion in tariff revenue over the period 2025–34. Accounting for the reduced discretionary spending raises the primary deficit savings to $4.173 trillion relative to the CBO pre-OBBBA current law baseline and $7.933 trillion relative to the pre-OBBBA current policy baseline. Finally, including tariff revenue, the CEA calculates that together, the Trump Administration's economic policies analyzed in this chapter reduce primary deficits by $7.757 trillion relative to the CBO's baseline and by $11.517 trillion relative to the pre-OBBBA current policy baseline.

An alternative way to evaluate the fiscal implications of the Administration's economic policies is by quantifying their impact on the stock of debt relative to GDP (the debt-to-GDP ratio), which offers several advantages over focusing on changes in primary deficits. [5] First, the debt-to-GDP ratio is easier to interpret than changes in primary deficits relative to some reference point. Second, the debt-to-GDP ratio takes into account the compounding effect of interest expenses—reduced primary deficits mean reduced interest payments on debt in the future, and this indirect effect is captured in the debt-to-GDP ratio. Third, the debt-to-GDP ratio, in conjunction with the interest rate, is a better barometer for the burden that a country faces in making payments on the debt.

The CBO projects, under its baseline for sub-2 percent economic growth and the expiration of the TCJA, that the debt-to-GDP ratio will reach 117 percent in 2034. The CEA-adjusted conventional score for the OBBBA would take this ratio even higher, to 126 percent in 2034, ignoring any increase in economic growth. After accounting for economic growth from the OBBBA's tax provisions, the CEA finds that the debt-to-GDP ratio is 118 percent—very similar

[5] Official budget projections are contained in the President's Budget and developed by OMB. These estimates may differ from official budget projections for a multitude of reasons, including methodological differences between the CEA and OMB, timing of analyses, and data availability.

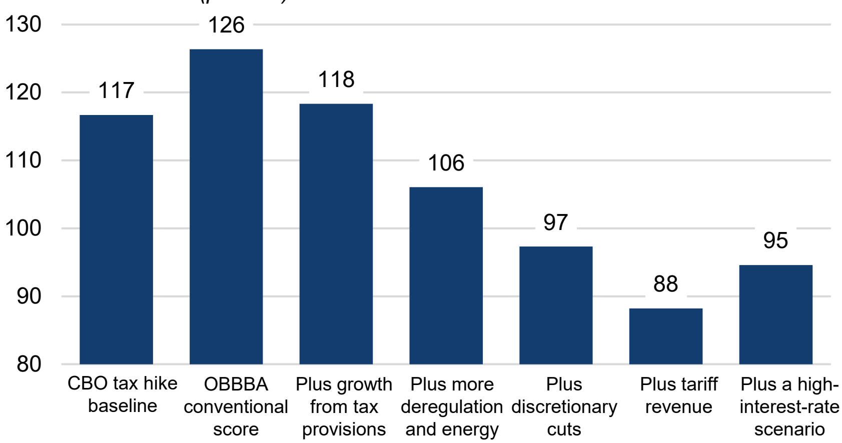
to the CBO pre-OBBBA current law baseline. The CBO's baseline deserves an important caveat, however, because it does not include the impact of higher unemployment insurance payments and other social safety net spending from the recession that could have ensued from the expiration of the TCJA.

The CEA projects that incorporating the additional growth from the Trump Administration's deregulatory and energy policies, which in many cases depend on or are enhanced by the OBBBA, causes the debt-to-GDP ratio to be 106 percent in 2034—considerably lower than this ratio under the CBO's pre-OBBB A current law baseline. Taking into account the discretionary spending reductions results in an even lower debt-to-GDP ratio of 97 percent in 2034. Finally, tariff revenue drives the debt-to-GDP ratio to 88 percent in 2034 under the midpoint scenario for economic growth under the Administration's economic policies.

As a sensitivity test, if real economic growth averages only 2.5 percent over the 10-year budget window, the debt-to-GDP ratio under the OBBBA without accounting for the discretionary spending cuts or tariff revenues is 113 percent in 2034, which is lower than the CBO's pre-OBBBA current law baseline forecast of 117 percent. Including the discretionary spending cuts and tariff revenues causes the debt-to-GDP ratio to be 102 percent in 2034 under this alternative scenario. This analysis shows that, even under more conservative assumptions, the Administration's economic agenda successfully halts the rising burden of debt. As another robustness check, if the interest rate on government debt is allowed to be 0.7 percentage point above the CBO baseline for the entirety of the 10-year window, this also leads to a debt-to-GDP ratio of 95 percent in 2034 once growth, tariff revenue, and discretionary cuts are considered. So, again,

Figure 1-7. Debt-to-GDP Ratio in 2034 under Various Scenarios

Debt-to-GDP ratio (percent)



Sources: Congressional Budget Office (CBO); Office of Management and Budget; CEA calculations.

the qualitative takeaway that the Administration's policies restrain debt growth remains the same (figure 1-7).

Conclusion

The OBBBA paves the way for a period of economic prosperity and fiscal sustainability. The OBBBA contains important ingredients needed to help working Americans recover the purchasing power they lost over the prior four years to the inflation exacerbated by the prior Administration and make greater strides toward achieving their economic aspirations. The CEA has studied the effects of the business tax provisions of the OBBBA through a user cost of capital model and the individual tax provisions through a model of labor supply and a short-run consumption multiplier. The CEA finds that, relative to a pre-OBBBA current law baseline, the OBBBA will produce substantial increases in investment, on the order of 7 to 10 percent over 4 years and 5 to 8 percent over 10 years. The GDP will also rise to levels 4.6 to 4.9 percent higher than baseline after 4 years and 2.4 to 2.7 percent higher after 10. Average annual wages will rise by $4,200 to $7,400 after 4 years. Combined with reduced taxes on individual income, this translates into a take-home pay increase of $7,500 to $10,900 dollars for a median-income family with a worker who does overtime and two children. Critically, the CEA estimates that the OBBBA and the broader Trump Administration economic policies that it supports will bend the trajectory of debt downward, placing America on a stable path into the future.

★★★★★★

Chapter 2

Promoting Prosperity through Regulatory Reform

Excessive regulation causes a cascade of economic challenges that ultimately harm American families and businesses. It does so by stifling productivity through rising compliance costs and reducing competition by erecting barriers to entry. Soaring compliance costs divert resources away from innovation and investment and toward bureaucratic requirements, discouraging growth and entrepreneurship (Gutiérrez and Philippon 2017; Wölfl et al. 2010; Coffey, McLaughlin, and Peretto 2020).

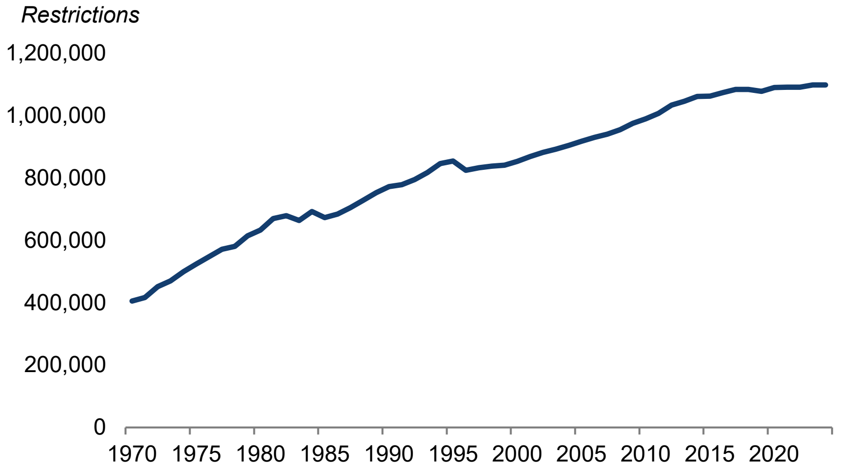
When regulatory complexity makes it prohibitively expensive for new competitors to enter markets, the dense regulatory framework functions as a protective moat around established businesses, protecting them from competition (Stigler 1971). These regulatory hurdles reduce start-up activity, limit job creation, and ultimately lead to higher prices and fewer choices for consumers (Bailey and Thomas 2017; Chambers, McLaughlin, and Stanley 2019; Bradley 2025). Small firms, lacking the resources to navigate complex regulatory landscapes, bear a disproportionate burden that can drive them out of business entirely (Crain and Crain 2014; Cordes, Dudley, and Washington 2022). In response to the significant economic challenges posed by regulations, President Trump has initiated a record level of agency deregulatory rulemakings, presidential actions (including Executive Orders, presidential memoranda, and presidential proclamations), and rescissions under the Congressional Review Act, resulting in over $5 trillion in regulatory costs that are in the process of being cut.

This chapter first focuses on the empirical costs of regulations and the potential savings from comprehensive regulatory reform. Then it discusses the various justifications for and negative consequences stemming from the use of regulations. Finally, the chapter provides a detailed summary of the Trump Administration's current regulatory reform efforts.

The Empirical Costs of Regulation

A regulation is an authoritative rule or order that carries the force of law and is created and maintained by an authority—typically a government agency or executive branch body—to control or govern conduct within its area of responsibility or jurisdiction (Cornell Law School n.d.). Since individual regulations can vary significantly in length and complexity, a practical method to measure the level of Federal regulations is to sum the number of binding restrictions (i.e., words connoting a binding legal obligation, such as "shall," "must," "may not," "required," and "prohibited") in the *U.S. Code of Federal Regulations* (*CFR*). Using this measure, total binding restrictions increased from about 400,000 in 1970 to 1.1 million in 2024, reflecting an average annual growth rate of 1.9 percent (see figure 2-1). This is consistent with the 2.4 percent average

Figure 2-1. Regulatory Restrictions in the *U.S. Code of Federal Regulations*, 1970–2024



Source: RegData; 1970–2023 available at quantgov.org, Data for 2024 are to be released with RegData 6.0.
Note: Data for 1970–2019 are reported by the source as annual time series observations, while 2020–23 are reported as daily time series observations spanning the period January 1, 2020 to October 24, 2023. In the latter case, final observations for each year were employed to extend the annual time series. The annual observation for 2024 was obtained from prerelease access to RegData 6.0.

annual growth in the *CFR*'s total page count over this period.[1] This expansion has translated into significant economic costs.

Crain and Crain (2014) estimate that compliance costs averaged $13,000 per employee in 2012 (when expressed in 2024 dollars), with small firms facing disproportionately higher burdens than large firms. The regulatory environment thus enhances the returns to scale for established firms, discourages start-up activity, and misallocates capital.

Empirical studies confirm these effects. Gutiérrez and Philippon (2017) document underinvestment among U.S. firms since the early 2000s, which has been driven in part by regulatory barriers that reduce competition. Bailey and Thomas (2017) show that industries subject to heavier regulations have fewer start-ups, slower job creation, and lower exit rates for large firms. These findings align with Stigler's (1971) regulatory capture theory, which posits that regulations often serve entrenched special interests rather than the general public.

At the macroeconomic level, Coffey, McLaughlin, and Peretto (2020) estimate that Federal regulatory expansion slowed U.S. growth in gross domestic product (GDP) by 0.8 percent a year between 1980 and 2012. Given that real GDP grew at just under 2.8 percent a year over this period, the U.S. economy would have been nearly 25 percent larger (about $5.4 trillion, in 2024 dollars) if regulations had not grown over this period. Since this estimate excludes regulations enacted after 2012, lost output is likely much larger.

Finally, regulations have regressive effects. Chambers and O'Reilly (2022) find that increased Federal regulations are associated with higher income inequality at the State level, while Chambers, McLaughlin, and Stanley (2019) link regulatory accumulation to higher State-level poverty rates. These results suggest that regulatory burdens fall most heavily on small businesses and low-income households.

Potential Savings from Regulatory Reform

The Competitive Enterprise Institute estimates that the annual total cost of Federal regulations stood at a towering $2.1 trillion as of 2024 (Crews 2024). Exacerbating this significant burden, the Biden Administration finalized new regulations with $1.8 trillion in lifetime present value costs in just four years (Goldbeck 2025). Rolling back these Biden-era rules alone would result in substantial long-run cost savings, equivalent to an annual increase of 0.29 percentage points in U.S. GDP growth over a 20-year horizon.[2] However, this

[1] According to RegStats (2023), the *CFR* page count increased from 54,834 in 1970 to 190,260 in 2023, the last year reported.

[2] This assumes that every dollar of regulatory costs stem from deadweight losses and the rules yield no market benefits. While this assumption is surely violated in practice, it also ignores the countervailing growth enhancing impact of deregulation on total factor productivity, as reported by Coffey, McLaughlin, and Peretto (2020).

figure is conservative compared with Mulligan's (2024) estimate of $5.8 trillion. Mulligan attributes the discrepancy to agencies systematically underreporting opportunity and resource costs, often quantifying only clerical burdens such as paperwork hours while neglecting broader economic effects.

Mulligan's (2024) analysis of agency rulemaking found that for every $1 in reported costs, the "big four" regulators—the Department of Health and Human Services, the Federal Communications Commission, the Consumer Financial Protection Bureau, and the Department of Labor—failed to account for an additional $16 in missing costs. Excluding these regulators, agencies only reported about 59 percent of expected costs.

Adjusting for these omissions, Mulligan projects that Biden-era regulations cost roughly $5.8 trillion. Reducing this estimate by 13.3 percent to account for differences in projected versus actual agency self-reported costs, Biden's regulations cost society $5.02 trillion, with potential savings from reform equivalent to a boost in GDP growth of 0.78 percentage points over two decades.[3] These growth effects translate into substantial fiscal benefits. Using projections by the Office of Management and Budget (OMB), the additional economic activity generated by deregultion would reduce Federal deficits by $1.1 trillion to $2.9 trillion over the next decade.[4]

Beyond its impact on growth, regulatory accumulation also drives inflation. Firms facing new compliance requirements typically pass their costs on to consumers by charging higher prices, disproportionately burdening lower-income households that spend a larger share of their income on regulated necessities such as housing and utilities. Furthermore, regulations reduce firms' flexibility to expand output in response to growing demand, amplifying price pressures. Beach and Sheppard (2025) estimate that freezing regulatory growth for a decade would lower the price level by 5.7 percent, which is equivalent to reducing the annual inflation rate by 0.6 percentage point.

The Economic Challenges of Applying Regulations

At the Federal level, most regulations are promulgated by executive branch agencies through notice-and-comment rulemaking (as prescribed by the Administrative Procedure Act), which rely on statutory authority granted by

---

[3] Using these findings, Mulligan analyzed the Biden Administration's regulatory costs using data from 41 months in office and projected costs for the remaining seven months. He estimated agencies would self-report $2.077 trillion in regulatory costs over Biden's full term, with adjusted true costs reaching about $5.792 trillion. The actual agency-reported costs were $1.8 trillion—13.3 percent below Mulligan's forecast. Adjusting his "true cost" estimate accordingly reduces the cost of Biden-era regulations to $5.02 trillion.

[4] According to table 2-4 in the FY 2025 *Analytical Perspectives* (OMB 2025), a sustained 1-percentage-point increase in real GDP growth results in deficit reduction of about $3.7 trillion over the 10-year budget window.

acts of Congress.[5] These regulations are formulated by agencies so they can ostensibly pursue the goals and directives set out in statutes by Congress. However, some regulatory requirements are directly promulgated by Congress via statute.

The central question is whether regulations are an effective tool for influencing economic outcomes. Economic theory provides a framework. The First Welfare Theorem holds that in a perfectly competitive market with no externalities, complete information, and well-defined property rights, any competitive equilibrium outcome is Pareto efficient (Mas-Colell, Whinston, and Green 1995). In such cases, regulation cannot improve welfare. However, when these assumptions fail—through market power, externalities, asymmetric information, or inadequate provision of public goods—government intervention may be justified.

In other words, in markets with robust competition that keeps monopoly power in check and where fully informed market participants completely absorb both the costs and benefits of their transactions, government intervention is unable to alternatively allocate resources so that everyone will be better off. Of course, if any of these underlying assumptions are not met, markets will not allocate resources with perfect efficiency, a condition known as market failure. The presence of market failures does not mean that the market has entirely failed or that government intervention will necessarily yield a more desirable result, just that the market fails to perfectly achieve the optimal result. Real-world government intervention aimed at addressing such market failures can produce market failures of its own, and thus a balancing of failures is in order. The next subsections consider the most common underlying causes of market failure—including market power, externalities, asymmetric information, public goods, and bounded rationality—along with the challenges associated with regulatory remediation.

Market Power

When markets are not competitive, firms can exploit their market power to raise prices above what would prevail in a marketplace with vigorous competition. When faced with higher prices, consumers purchase less of the overpriced product, despite the fact that additional output could be produced at a cost below the subjective value of that output from the buyers' perspective.

[5] Agencies increasingly use guidance documents which supposedly interpret or clarify regulations or advise the public on matters of regulatory compliance. Guidance documents are not subject to the Administrative Procedure Act's procedural safeguards because they technically have no legal force and are not binding. But, as a practical matter, many guidance documents do bind regulated entities and can have a large economic impact. Failure to comply with guidance documents carries the risk of adverse enforcement action, and thus regulated parties generally obey the edicts contained in guidance documents (Zinberg 2024).

Moreover, the loss in purchasing power faced by consumers, since they must pay more for the products they do purchase, has subsequent effects in other markets since consumers must alter their spending patterns for other goods and services. Thus, resources are no longer efficiently allocated within the economy. Addressing this form of market failure through public policy is fraught with challenges. The use of economic regulations—that is, rules designed to control prices or producer entry—have been curtailed since the 1970s, since such policies have a poor track record (e.g., the dismantling of the Civil Aeronautics Board in 1978).[6] While the regulation of natural monopolies—that is, industries where output is most efficiently supplied by a single producer due to economies of scale—makes sense in some instances (e.g., large public utilities are still regulated by public utility commissions in many States), regulation is not always the best remedy to promote competition. In cases where there is a significant concentration of market power or a proposed corporate merger would reduce competition, the Department of Justice and the Federal Trade Commission can engage in antitrust enforcement using laws such as the Sherman Antitrust Act (1890) and Clayton Antitrust Act (1914).

However, in some cases, monopolies are contestable through disruptive innovation and competitor entry. History is littered with examples of short-lived monopolies, including the BlackBerry mobile phone and the Yahoo search engine, to name just two. In some instances, existing regulations may act as a barrier to entry, which actually inhibits competition. In such cases, deregulation may be the best option to promote competition. For example, 35 States and the District of Columbia have Certificate of Need (CON) laws that require prospective healthcare providers to obtain government permission before entering new markets or expanding operations. Bailey (2016) finds that CON laws increase overall healthcare spending by 3.1 percent, and Medicare spending by 6.9 percent. The widespread rollback of CON laws would thus boost competition among healthcare providers and reduce prices.

Externalities

An externality refers to an impact, which can be either positive or negative, on a third party outside a market transaction. A classic example of a negative externality is air pollution from an electric utility, which imposes costs on a community that are not paid for by the producers nor the consumers of energy. Because these broader pollution costs (e.g., negative health effects) are disregarded by both producers and consumers, there is an overproduction of both power and pollution.

To tackle this problem, regulators can either mandate changes to the method of production to reduce the extent of the externality (e.g., pollution abatement technology) or impose a tax on production to reduce both output

[6] For a detailed history of economic regulation, see CEA (2019, chap. 2).

and pollution (i.e., a Pigouvian tax).[7] Yet Hayek (1945) argued that central planners lack the required knowledge needed to allocate resources efficiently, meaning that interventions may often introduce new inefficiencies. Evidence from healthcare shows that government failures can exceed the market failures they attempt to remedy (CEA 2019, chap. 4). Furthermore, the public choice school of thought, which began with Buchanan and Tullock (1962), argues that the incentives of regulators may not align with the public interest, casting further doubt on the efficacy of government intervention. Alternatives such as private negotiation (Coase 1960) and community governance (Ostrom 1999) can sometimes internalize externalities more effectively.

Assymetric Information

Markets also fail when one party holds superior information. For any economic system to efficiently allocate resources, the participants must have access to all the necessary information germane to their decision-making. Otherwise, buyers and sellers cannot properly assess the value or level of demand for goods and services, or determine the lowest-cost means of production. In such a world, profitable production would be rare and chronic shortages would be commonplace. This is the crux of Hayek's criticism of socialism and explains intuitively why markets are superior to central planning, since markets aggregate and transmit this information in the form of price signals that guide efficient resource allocation. However, in a market economy, asymmetric information can still exist.

Akerlof's (1970) "market for lemons" illustrates how adverse selection can undermine markets. For example, since only the seller of a used car knows its true quality, buyers, unable to distinguish good cars from bad, are only willing to offer a price equal to the car's expected quality, which reflects the likelihood of getting a lemon—a bad car. In the case of a good car, this price is too low and the seller will not agree to the low-ball offer or will preemptively withhold their car from the market, knowing they will not receive a fair selling price. Sellers of lemons will accept a similar offer, and thus the only cars being sold are lemons.

Adverse selection in life insurance markets is another manifestation of this asymmetric information problem. In this case, customers seeking insurance are more likely to anticipate the need for insurance due to poor health, perceived health risks (e.g., family history), or occupational hazards, while insurance companies, not in possession of this information, struggle to charge actuarially fair rates. To mitigate this problem, those at an informational disadvantage can either seek this information from third-party sources (e.g., vehicle history reports for cars and credit reports for borrowers) or mandatory disclosures from those with an information advantage (e.g., health questionnaires). With regard

[7] The concept of a Pigouvian tax was first formulated in Pigou (1920). For a criticism of Pigouvian taxes, see Demsetz (2011).

to the disclosures, there is a limited role for regulations to ensure that adequate and truthful information is provided.

Public Goods

Outside the competitive equilibrium framework for private goods and services, another driver of resource misallocation stems from the inadequate provision of public goods (and services), which are special since their consumption is both nonrival (i.e., one person's consumption does not diminish the available supply to others) and nonexcludable (i.e., one cannot easily prevent others from consuming them). Clean air is a classic example of a public good.[8] Such goods, although they may be highly valued by individuals, cannot be profitably produced since firms cannot compel consumers to pay for them. In some cases, the government can either directly provide public goods (e.g., national defense) or promote their provision through regulation. For example, pollution restrictions curb toxic emissions and promote improved air quality. However, these policies result in a trade-off between private and public goods, since either (1) resources must be used to produce public goods and thus cannot be employed in the production of private output, or (2) productivity in the private goods market declines because some modes of production are no longer legal (e.g., more pollution-intensive production). Regulation can promote provision, but at the cost of reduced private output. Policymakers must weigh these trade-offs carefully.

Bounded Rationality and Behavioral Regulation

Some behavioral economists argue that consumers are irrational, justifying paternalistic regulation. Thaler and Sunstein (2003) advanced this view, but evidence suggests that consumers are more rational than regulators assume.[9] For example, Sallee, West, and Fan (2015) find that consumers respond strongly to fuel costs when purchasing vehicles, directly contradicting the rationale behind Corporate Average Fuel Economy (CAFE) standards, which assume consumers undervalue fuel efficiency. Mannix and Dudley (2015) note that if the most energy-efficient products truly offered billions in savings, consumers would have adopted them voluntarily—without market intervention.[10]

When this theory of bounded rationality is applied to the realm of finance, regulators contend that consumers seeking high-interest credit (e.g., payday loans) are victims of predatory lending. However, Agarwal and Bos (2019) find that 64 percent of pawn borrowers in their sample would likely have been

---

[8] Note that in some cases, negative externalities (e.g., too much air pollution) can be framed as a lack in the provisioning of public goods (e.g., not enough clean air).

[9] Cass Sunstein served as President Obama's Administrator of the Office of Information and Regulatory Affairs within the Office of Management and Budget.

[10] Susan Dudley served as President George W. Bush's Administrator of the Office of Information and Regulatory Affairs.

rejected if they had applied for credit at a mainstream financial institution, indicating that the majority of such borrowers are both rational and well informed regarding their credit options.

The fact that regulators continue to mischaracterize consumer behavior as irrational, despite overwhelming evidence to the contrary, calls into question the objectivity of their own decision-making. Viscusi and Gayer (2015) note that that government agencies often cite behavioral irrationalities to justify intervention, yet this rationale overlooks the fact that government decision-making suffers from the same behavioral limitations. Indeed, these policies are crafted by agents of the government who are presumably just as fallible as the general population. This problem is exacerbated by the fact that agency officials with a narrow policy scope likely have a tendency to exclude relevant concerns outside this scope. Thus, as Gayer and Viscusi (2013, 263) put it, "fuel efficiency and energy efficiency matter, but nothing else does." These shortcomings on the part of regulators lead to flawed rules seeking to address nonexistent problems. This unnecessary regulation thus creates market failures in the name of repairing them.

Given the narrow scope for economically efficient rulemaking, an obvious question arises: why are there so many Federal regulations? At the latest count, the *CFR* contains over 100 million words of regulatory text, and this does not include agency guidance documents. This huge volume of rules clearly goes well beyond the set of reasonable and appropriate rules most people would support, and also beyond the often-less-extensive statutory framework from which the regulations are supposed to derive. A plausible explanation is that regulations are in many instances a form of hidden taxation. Viewed this way, regulations are off-budget mandates designed to accomplish policy objectives without the need for explicit taxes and subsidies.

A Framework for Improving Regulation

Given the challenges of optimally regulating dynamic markets, regulators should focus their efforts on curtailing significant externalities that threaten consumer well-being, workplace safety, or the environment. When such risks are identified, agencies should follow sound rulemaking principles and consider nonregulatory alternatives that achieve the desired outcome. For example, well-designed public education campaigns can often achieve outcomes more effectively than prohibitions, punitive taxation, or civil penalties (e.g., efforts to reduce adult smoking or increase seatbelt usage).

When regulation is deemed necessary, agencies must ensure that expected social benefits outweigh social costs. Moreover, rules should be compared with alternative uses of scarce resources to determine whether they yield the highest social return. For instance, Thomas (2019) estimated that the

National Highway Traffic Safety Administration's backup camera rule cost $31 million per life saved (in 2024 dollars), crowding out more cost-effective private risk-reducing expenditures such as safer transportation choices.

Recognizing these trade-offs, both Trump Administrations have implemented regulatory budgets to discipline rulemaking. It is also the case that historically, individual analyses do not account for the cumulative impact of multiple regulations on the ability of an industry or consumer to pay for them, despite periodic calls to better consider such effects. In his first Administration, President Trump implemented the Federal regulatory budget through Executive Order 13771, which required the elimination of two regulations for every new rule introduced, but it actually achieved a 5.5-to-1 ratio in practice. More importantly, it introduced the idea of a regulatory cost cap, mandating that the total incremental costs of new regulations must be zero or less, unless otherwise required by law or approved by OMB. In response to the Biden Administration's rescission of his first Administration's regulatory budget framework, President Trump issued Executive Order 14192, which mandates that for every new regulation issued, agencies must eliminate at least 10 existing ones. It sets a regulatory cost cap for fiscal year 2025, requiring that the total cost of new regulations must be less than zero. Together, these orders promote efficiency and reduce the economic drag of overregulation by treating regulatory costs with the same discipline as fiscal expenditures.

Another strategy employed by President Trump is the use of regulatory sunsetting to efficiently eliminate obsolete and ineffective rules.[11] The fundamental idea behind sunsetting is simple: all regulations should be regularly reexamined to ensure that the rules operate as intended and that actual benefits exceed costs. Otherwise, obsolete and antiquanted rules which still have the force of law will needlessly accumulate. Automatically sunsetting regulations forces agencies to proactively justify the continued existence of rules that would otherwise persist indefinitely. This also eliminates the need to individually repeal bad rules through new notice-and-comment rulemaking, which takes 18 months on average (Yackee and Yackee 2012).[12] Expanding the use of sunsetting would allow Administrations to expand the scope of their deregulatory reform efforts.

Such a disciplined approach to rulemaking is likely to have a greater positive impact on social welfare in the long run than a situation in which agencies

---

[11] At the end of President Trump's first Administration, the U.S. Department of Health and Human Services promulgated a final rule adding sunsets to its rules (see 86 *FR* 5694). This rule was later rescinded by the Biden Administration (see 87 *FR* 32246). In his second term, President Trump issued Executive Order 14270, which mandates rulemaking to add sunsets to energy-related regulations across multiple agencies.

[12] In some instances, rules can be immediately repealed for "good cause" by way of interim final rulemaking, thus sidestepping the normal requirements for a Notice of Proposed Rulemaking under the Administrative Procedure Act. This, however, exposes the issuing agency to legal risks if the rule is challenged in Federal court.

are unconstrained by a regulatory budget. The reason for this is threefold. First, each dollar in social costs consumed by new rules yields a relatively high social return as measured by net benefits. This promotes efficiency at the start of the rulemaking process. Second, appropriate retrospective review of rules helps to eliminate costly regulatory burdens that no longer achieve the benefits that were anticipated when the original rules were promulgated. This promotes long-run efficiency over the life cycle of rules. Third and finally, since a regulatory budget economizes the use of scarce private resources to achieve social aims, it promotes increased long-run economic growth and technological innovation, which gives future generations better technology and greater resources with which to pursue worthwhile regulations.

Current Reform Efforts

Recognizing these economic challenges, the Trump Administration has implemented comprehensive measures to roll back regulatory overreach. President Trump worked with Congress to eliminate 22 regulations by way of the Congressional Review Act as of December 15, 2025, surpassing a record he set over the entirety of his first Administration. In his first 100 days in office, President Trump set a record by issuing over 20 presidential actions (i.e., Executive Orders, presidential memoranda, and presidential proclamations) to promote deregulation and regulatory reform. These actions cover a wide range of topics, including a freeze of all pending regulatory proposals, averting an estimated $180 billion in additional costs over the long-run; ending diversity, equity, and inclusion programs; removing obstacles to domestic energy production and resource extraction while sunsetting obsolete energy regulations; targeting regulations that increase the cost of living (e.g., food, housing, and healthcare); promoting American leadership in artificial intelligence (AI) and digital assets; and rescinding unconstitutional regulations that suppress competition–to name a few. A complete list of President Trump's 2025 presidential actions with a deregulatory effect is provided in table 2-1.

President Trump's memorandum, "Delivering Emergency Price Relief for American Families and Defeating the Cost-of-Living Crisis," directs all executive branch departments and agencies to provide emergency price relief to American families. Federal agencies are currently working to reduce living costs, including the Environmental Protection Agency (EPA), and the departments of Agriculture, Commerce, Energy, Health and Human Services, Housing and Urban Development, Interior, Labor, and Transportation.

Under the President's directive, these agencies are taking action to lower housing costs and expand housing supply, eliminate unnecessary administrative expenses and rent-seeking practices that drive up healthcare costs, remove

Table 2-1. Presidential Actions with a Deregulatory Effect

Executive orders	*Date in 2025*
14148: Initial Rescissions of Harmful Executive Orders and Actions	Jan. 20
14151: Ending Radical and Wasteful Government DEI Programs and Preferencing	Jan. 20
14153: Unleashing Alaska’s Extraordinary Resource Potential	Jan. 20
14154: Unleashing American Energy	Jan. 20
14156: Declaring a National Energy Emergency	Jan. 20
14178: Strengthening American Leadership in Digital Financial Technology	Jan. 23
14179: Removing Barriers to American Leadership in Artificial Intelligence	Jan. 23
14181: Emergency Measures to Provide Water Resources in California and Improve Disaster Response in Certain Areas	Jan. 24
14192: Unleashing Prosperity Through Deregulation	Jan. 31
14219: Ensuring Lawful Governance and Implementing the President’s “Department of Government Efficiency” Deregulatory Initiative	Feb. 19
14236: Additional Rescissions of Harmful Executive Orders and Actions	Mar. 14
14241: Immediate Measures to Increase American Mineral Production	Mar. 20
14255: Establishing the United States Investment Accelerator	Mar. 31
14260: Protecting American Energy from State Overreach	Apr. 8
14261: Reinvigorating America’s Beautiful Clean Coal Industry and Amending Executive Order 14241	Apr. 8
14264: Maintaining Acceptable Water Pressure in Showerheads	Apr. 9
14267: Reducing Anti-Competitive Regulatory Barriers	Apr. 9
14270: Zero-Based Regulatory Budgeting to Unleash American Energy	Apr. 9
14275: Restoring Common Sense to Federal Procurement	Apr. 15
14276: Restoring American Seafood Competitiveness	Apr. 17
14281: Restoring Equality of Opportunity and Meritocracy	Apr. 23
14284: Strengthening Probationary Periods in the Federal Service	Apr. 24
14285: Unleashing America's Offshore Critical Minerals and Resources	Apr. 24
14293: Regulatory Relief to Promote Domestic Production of Critical Medicines	May 5
14294: Fighting Overcriminalization in Federal Regulations	May 9
14295: Increasing Efficiency at the Office of the Federal Register	May 9
14299: Deploying Advanced Nuclear Reactor Technologies for National Security	May 23

14300: Ordering the Reform of the Nuclear Regulatory Commission	May 23
14302: Reinvigorating the Nuclear Industrial Base	May 23
14304: Leading the World in Supersonic Flight	June 6
14308: Empowering Commonsense Wildfire Prevention and Response	June 12
14318: Accelerating Federal Permitting of Data Center Infrastructure	July 23
14331: Guaranteeing Fair Banking for All Americans	Aug. 7
14335: Enabling Competition in the Commercial Space Industry	Aug. 13
14337: Revocation of Executive Order on Competition	Aug. 13
14365: Ensuring a National Policy Framework for Artificial Intelligence	Dec. 11
14366: Protecting American Investors from Foreign-Owned and Politically-Motivated Proxy Advisors	Dec. 11
14369: Ensuring American Space Superiority	Dec. 18
Presidential memoranda and proclamations	*Date in 2025*
Delivering Emergency Price Relief for American Families and Defeating the Cost-of-Living Crisis	Jan. 20
Regulatory Freeze Pending Review	Jan. 20
Regulatory Relief for Certain Stationary Sources to Promote American Energy	Apr. 8
Directing the Repeal of Unlawful Regulations	Apr. 9
Updating Permitting Technology for the 21st Century	Apr. 15
Rescission of Useless Water Pressure Standards	May 9
Protecting the Great Lakes from Invasive Carp	May 9
Stopping Radical Environmentalism to Generate Power for the Columbia River Basin	June 12
Simplifying the Funding of Energy Infrastructure and Critical Mineral and Material Projects	June 30
Regulatory Relief for Certain Stationary Sources to Further Promote American Energy	July 17
Regulatory Relief for Certain Stationary Sources to Promote American Chemical Manufacturing Security	July 17
Regulatory Relief for Certain Stationary Sources to Promote American Iron Ore Processing Security	July 17
Regulatory Relief for Certain Stationary Sources to Promote Security with Respect to Sterile Medical Equipment	July 17
Memorandum of Understanding between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland Regarding the Technology Prosperity Deal	Sep. 18
Regulatory Relief for Certain Stationary Sources to Promote American Mineral Security	Oct. 24
Regulatory Relief for Certain Stationary Sources to Promote American Coke Oven Processing Security	Nov. 21

Source: CEA analysis.

counterproductive requirements that increase home appliance costs, and expand employment opportunities for Americans.

Initial progress has been substantial:

- *Environmental regulations:* Reconsideration of the 2009 Endangerment Finding, which lays the groundwork to rescind the EPA's multipollutant emission standards for light-, medium-, and heavy-duty vehicles. When accounting for consumer preferences and perceptions of vehicle quality, the resulting net benefit to consumers from relaxing the de facto electric vehicle mandates is just under $4.7 trillion in net present value (EPA 2025, appendix B, table RIA-5).
- *Energy efficiency standards:* On May 9, 2025, the President signed four Congressional Review Act resolutions permanently blocking a Biden-era Department of Energy (DOE) appliance efficiency and reporting rule, as well as conservation standards for gas-fired instantaneous water heaters, walk-in coolers and freezers, and commercial refrigerators, freezers, and refrigerator-freezers. Rolling back all seven DOE appliance conservation rules could yield $23 billion in savings.[13]
- *Fuel economy standards:* The One Big Beautiful Bill Act (OBBBA) eliminated monetary penalties for automakers that fail to meet the Department of Transportation's stringent CAFE standards, and the National Highway Traffic Safety Administration has initiated rulemaking to rescind the 2024 CAFE standards, resulting in about $109 billion in additional savings.
- *Healthcare affordability:* The OBBBA delayed implementation of the very costly 2024 Centers for Medicare & Medicaid Services (CMS) nursing home staffing rule, which would have forced many nursing homes to shut down, stranding seniors in need of care. Subsequently, CMS issued an interim final rule to repeal this regulation.
- *Small business relief:* The Financial Crimes Enforcement Network issued an interim final rule rolling back the agency's 2022 Beneficial Ownership regulation, which would have compelled all companies to disclose their owners and imposed severe civil and criminal penalties for violations, including a fine of $500 per day if a violation continued and up to two years in prison. Now, only foreign firms registered to do business in the United States must comply with these disclosure requirements. The Financial Crimes Enforcement Network estimates that eliminating this rule will save businesses over 91 million hours annually in reporting burdens and $9 billion in reporting costs.

The Trump Administration's comprehensive approach to regulatory reform represents a fundamental shift toward supply-driven economic growth

[13] The seven energy conservation rules for appliances include gas-instantaneous water heaters, conventional cooking products, dishwashers, clothes washers, clothes dryers, consumer furnaces, and commercial water heating equipment.

and prosperity. By systematically removing regulatory barriers, implementing disciplined frameworks for future rulemaking, and prioritizing the needs of families and businesses, these policies are poised to deliver substantial benefits to the American economy.

Strengthening American Leadership in Technology

Technological innovation drives U.S. economic growth by enhancing productivity, which promotes higher real wages and improved living standards for American workers. Transformative technologies, like AI, create entirely new markets, industries, and career paths. Beyond economic benefits, innovation strengthens national security and builds economic resilience. By advancing domestic manufacturing capabilities and reducing dependence on foreign industrial supply chains, technological progress helps secure America's energy independence and strategic autonomy.

However, existing regulatory restrictions and regulatory uncertainty threaten American leadership in technology. Recognizing these opportunities and challenges, President Trump has signed several Executive Orders designed to accelerate technological innovation and cement American leadership in emerging high-growth sectors, particularly digital finance and AI.

To promote continued, rapid innovation in digital finance, President Trump issued Executive Order 14178, "Strengthening American Leadership in Digital Financial Technology." This Presidential action marks a significant policy reversal by revoking stifling regulatory restrictions on digital finance innovation, specifically President Biden's Executive Order 14067 and the Department of the Treasury's "Framework for International Engagement on Digital Assets."

President Trump's directive establishes several key policy objectives designed to position the United States as a leader in the digital finance sector. First, the order prioritizes protecting Americans' fundamental rights to access and participate in public blockchain networks without facing undue governmental restrictions. It seeks to bolster the dollar's sovereignty by actively supporting the development and global adoption of dollar-backed stablecoins, reinforcing the dollar's position in the international digital economy. Additionally, the Executive Order ensures fair access to banking services for all individuals and businesses, regardless of their involvement in digital assets.

The order also calls for establishing clear, technology-neutral regulatory frameworks that will foster innovation in digital assets and blockchain technologies while providing necessary legal certainty for market participants. Perhaps most notably, the order explicitly prohibits the "establishment, issuance, circulation, and use" of any Central Bank Digital Currency within the United States. This prohibition reflects concerns about consumer privacy and financial freedom, positioning private stablecoins as the preferred alternative for digital dollar representation. By embracing private sector solutions over government-issued digital currencies, the order signals a market-driven approach to digital financial innovation.[14]

To further improve regulatory clarity about digital assets and promote U.S. leadership in blockchain technology, President Trump signed the "Guiding and Establishing National Innovation for U.S. Stablecoins Act" (i.e., the GENIUS Act) into law on July 18, 2025. While not deregulatory in nature, the GENIUS Act eliminated regulatory uncertainty by establishing comprehensive standards for liquid assets backing stablecoin issuance and mandating public disclosures, along with annual audits to verify reserve holdings and enhance transparency. The legislation paves the way for banks and approved nonbank issuers to enter this rapidly growing and lucrative market, while simultaneously subjecting stablecoin providers to anti–money laundering and sanctions compliance regulations.

To promote sustained, rapid development of AI, President Trump issued Executive Order 14179, "Removing Barriers to American Leadership in Artificial Intelligence." This Presidential action seeks to strengthen the United States' position as the global leader in AI by eliminating regulatory obstacles that may hinder AI innovation. The order prioritizes the development of AI systems that remain "free from ideological bias or engineered social agendas." To accomplish these goals, the order requires a comprehensive review of all policies and initiatives established under the previous administration's Executive Order 14110, which created a complex web of AI development restrictions that threatened to impede innovation. Furthermore, Executive Order 14179 directs federal agencies to identify and suspend any existing measures that conflict with the new policy direction. Furthermore, the order mandates the creation of a strategic action plan designed to "sustain and enhance America's global AI dominance" in competition with international rivals, particularly China. Through these coordinated efforts, President Trump aims to position the United States at the forefront of AI development while maintaining competitive advantages over foreign competitors in this critical technological domain.

Unleashing American Energy

Affordable and reliable energy serves as the backbone of the U.S. economy, powering every sector while keeping production and living costs manageable. This energy foundation ensures accessible transportation, supports millions of

[14] Private stablecoins are cryptocurrencies engineered to maintain a stable value relative to a reference asset, typically a national currency like the dollar. Dollar-backed stablecoin issuers achieve this stability through a reserve mechanism: they hold one dollar in reserve for each stablecoin issued and guarantee redemption at par value upon demand. This convertibility mechanism creates a reliable one-to-one peg with the underlying currency, providing users with the benefits of digital assets while minimizing price volatility.

jobs, and proves especially critical for emerging high-growth industries such as AI, robotics, and data centers. Beyond economic benefits, domestic energy production strengthens national security by reducing America's dependence on foreign energy sources. Therefore, President Trump has taken decisive action to eliminate unnecessary regulatory restrictions and also regulatory uncertainty that threatens domestic energy production.

In April 2025, President Trump issued three Executive Orders and one presidential proclamation to boost American energy output. A key component of this initiative, Executive Order 14260 ("Protecting American Energy from State Overreach"), aims to address State and local climate regulations that are unconstitutional or conflicting with Federal energy policies, thus providing energy producers with greater regulatory clarity and reduced compliance risks. The Executive Order specifically targets certain State-level policies, citing New York's climate change legislation—which retroactively imposes billions of dollars in penalties on energy companies for historical greenhouse gas emissions—and California's cap-and-trade program, which establishes infeasible emission reduction targets.[15]

To meet America's growing electric power needs and support the growth and development of data centers and industrial applications, President Trump issued four Executive Orders related to nuclear power in May 2025.[16] Collectively, these orders seek to quadruple domestic nuclear energy capacity between 2024 and 2050 and support the development of advanced Generation III+ reactors and small modular reactors. To achieve these goals, the orders implement much-needed reforms at the Nuclear Regulatory Commission, encompassing its "structure, personnel, regulations, and basic operations" (90 *FR* 22587). Furthermore, these orders mandate the deployment of advanced reactors across facilities operated by the Department of War and DOE, and establish a "fuel bank . . . of high assay low-enriched uranium . . . for any project from the private sector which receives authorization to construct and operate at a [DOE]-owned or -controlled site and that is regulated by [DOE] for the purpose of powering AI and other infrastructure" (90 *FR* 22581). The orders also initiate reforms of the bureaucratic reactor testing process at National Laboratories and establish a pilot program to construct and operate test reactors outside the National Laboratories but subject to DOE oversight.

To promote increased coal-powered electricity production and overcome the regulatory uncertainty associated with this power generation source,

[15] The New York retroactive penalty program was authorized by the state Climate Change Superfund Act (2024) and the California cap-and-trade system is principally authorized by the California Global Warming Solutions Act of 2006.

[16] These are Executive Order 14299 ("Deploying Advanced Nuclear Reactor Technologies for National Security"), Executive Order 14300 ("Ordering the Reform of the Nuclear Regulatory Commission"), Executive Order 14301 ("Reforming Nuclear Reactor Testing at the Department of Energy"), and Executive Order 14302 ("Reinvigorating the Nuclear Industrial Base").

President Trump issued Executive Order 14261. This Presidential action aims to revitalize the American coal industry through several key mechanisms. The order addresses growing energy demand from AI data centers and manufacturing facilities by promoting coal technology development and increasing Federal investment in the sector. Notably, the order reclassifies coal as a "mineral," thereby extending Federal mineral policy benefits to coal operations. This represents a significant policy reversal from the Biden Administration's efforts to transition domestic electricity generation away from coal-based sources.

In order to streamline energy regulations and eliminate obsolete rules, President Trump signed Executive Order 14270, which mandates that key agencies—including EPA, DOE, the Federal Energy Regulatory Commission, and the Nuclear Regulatory Commission—assign sunsetting expiration dates to all existing and proposed energy-production regulations. Under this system, current regulations will automatically expire one year after the sunset rule takes effect, unless agencies successfully justify their extension through notice-and-comment rulemaking. New regulations face even stricter limitations, with a maximum five-year lifespan before mandatory review and potential elimination.

Conclusion

Since returning to office, the President has prioritized comprehensive regulatory relief for American families and businesses. These reforms are projected to generate over $5 trillion in potential long-run savings through a systematic reduction of regulatory burdens.

The scale of this opportunity reflects the regulatory expansion of the previous Administration, which finalized regulations with record estimated costs ranging from $1.8 trillion to $5 trillion in present value. Reversing these regulations—assuming their costs directly reduced GDP without offsetting market benefits—could boost annual U.S. GDP growth by 0.29–0.78 percentage point over the next two decades.

President Trump has already signed executive actions that target key areas of the American economy, including consumer essentials, energy and natural resource production, and technological innovation. By targeting essentials like food, housing, energy, and healthcare, while simultaneously promoting innovation in digital finance and AI, the Administration's approach positions the United States for sustained growth and prosperity. Thoughtful deregulation can simultaneously boost growth, reduce inflation, and improve fiscal sustainability—outcomes that benefit all Americans.

★★★★★★

Chapter 3

Rebuilding America's International Trade Policy

The current international trade policy is the engine of American economic strength, industrial capacity, and global leadership, and it safeguards national security. It shapes the competitiveness of U.S. workers and firms, the resilience of critical supply chains, and the Nation's ability to lead in advanced manufacturing, technological innovation, and energy production. International trade is a critical component of the American economy, opening up additional markets for U.S. businesses to sell their products and enabling the valuable exchange of goods and services across borders. This process fosters efficiency, increases product variety for consumers, and drives economic growth.

Foreign unfair trading practices and beggar-thy-neighbor trade and industrial policies in other countries have created tremendous problems across the U.S. economy and negate the efficiencies of trade, to the detriment of American workers and industry. Decades of these practices have resulted in massive U.S. trade deficits, have disrupted the livelihoods of American workers, and have created vulnerabilities in supply chains and critical industries that pose risks for national security (Autor, Dorn, and Hanson 2016). When President Trump returned to office in January 2025, he did so with a clear mandate from the American people: to confront a trade system that had drifted far from balance, fairness, and reciprocity, and to restore trade policy as a tool that serves American workers, industries, and national security.

The Administration inherited a trading system plagued by large and persistent goods deficits, structural asymmetries in market access, and global trade practices that too often advantaged foreign producers while undermining American production. The United States no longer produces many key manufactured products and inputs across the modern global value chain, and the trajectory was one of continued decline. Meanwhile, despite the openness of the U.S. market, American exporters continued to face tariffs, nontariff barriers, discriminatory regulations, and unfair state-backed industrial policies abroad. Loopholes and outdated enforcement mechanisms weakened the integrity of U.S. trade laws and customs systems, allowing unfair competition to flourish at scale.

In 2025, the President crafted the new America First Trade Policy that does not allow other countries to treat us unfairly and grow at the expense of our citizenry and economy. It recognizes and is centered in U.S. sovereignty and national interests. The Administration has pursued a comprehensive strategy to rebuild the U.S. industrial base, rebalance trade relationships, enforce reciprocity, close loopholes that undermine American workers, and use America's market power to secure better terms with trading partners. President Trump has leveraged trade policy as a catalyst for investment—driving unprecedented levels of domestic and foreign capital into U.S. manufacturing, energy, technology, and infrastructure.

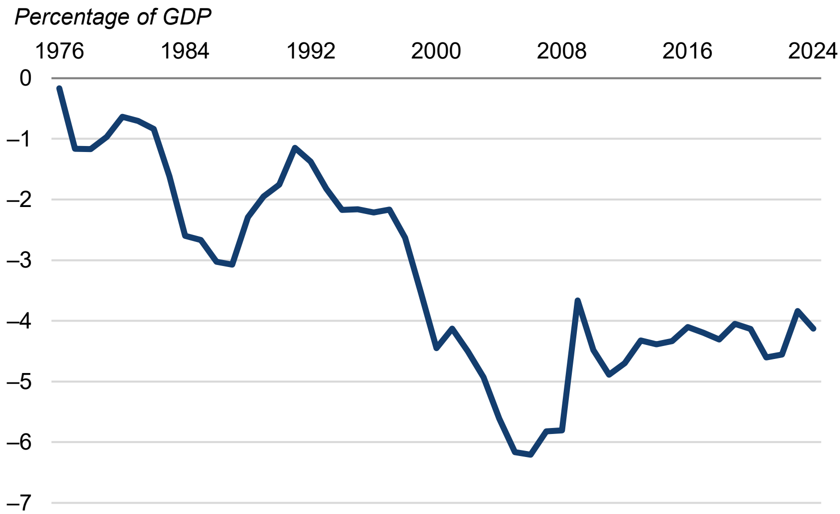
This chapter describes the trade conditions facing President Trump upon his return to office, outlines the Administration's approach to restoring balance and fairness, and highlights some of the recent major trade and investment achievements that have already begun to reshape America's economic trajectory and to strengthen its national security.

Balancing Trade

Upon returning to office, President Trump confronted a trade system that was structurally misaligned with America's economic and national security interests. These distortions included nonreciprocal tariff regimes, extensive foreign subsidies, state-directed overcapacity, and regulatory barriers that limited U.S. exports while foreign producers benefited from access to the U.S. market. The result was degradation of America's industrial base and wages across our economy.

After decades of balanced trade and trade surpluses, the United States began running consistent trade deficits in goods in the second quarter of 1976 (BEA 2026). The United States' goods trade balance, which is the difference between its exports and imports of goods, was in a deficit of $1.2 trillion in 2024:

Figure 3-1. U.S. Goods Trade Balance as a Share of GDP, 1976–2024



Sources: Bureau of Economic Analysis; CEA calculations.
Note: Negative trade balances indicate a trade deficit.

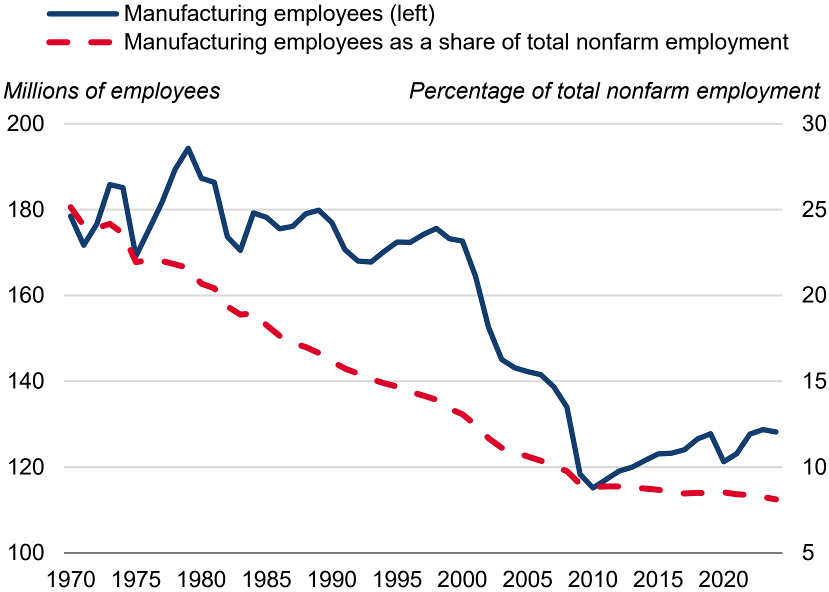
the United States bought about $3.3 trillion in goods from other countries, but only sold approximately $2.1 trillion of goods to them (BEA 2026). This represents an increase of almost 40 percent from the value of the 2020 goods trade deficit. The 2024 goods trade deficit amounts to 4.1 percent of U.S. gross domestic product (GDP), a marked increase from the late 1990s, when the goods trade deficit consistently hovered around 2 percent of GDP (figure 3-1).

In recent years, the U.S. trade deficit has become increasingly pronounced across several key sectors of the economy. For example, between 2011 and 2024, the U.S. agricultural trade balance fell from a surplus of $39.3 billion to a deficit of $37.6 billion. Similarly, U.S. trade in advanced technology products deteriorated from a surplus of $5.3 billion in 2000 to a deficit of $29.7 billion in 2024. And from 1997 to 2024, U.S. manufacturing employment likewise fell from a high of 17.4 million workers down to 12.8 million (figure 3-2).

In 2024, in addition to running the largest aggregate goods trade deficit in world history, the United States ran bilateral goods trade deficits with most of its major trading partners (figure 3-3). The United States' largest goods trade deficit was with China, at $295 billion.

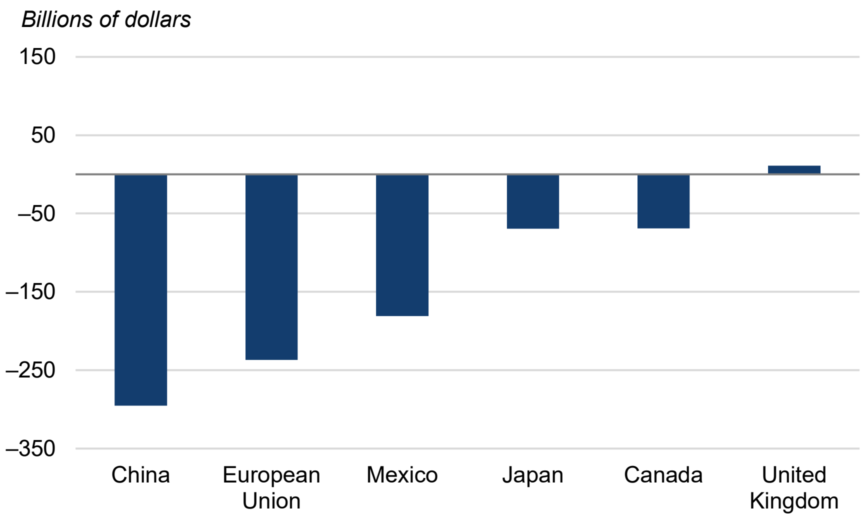
In 2025, the United States improved its goods trade balance with many countries, including China, the United Kingdom, Italy, Germany, and South Korea. The goods trade deficit has greatly narrowed during the Trump Administration, from a monthly average deficit of $101 billion in 2024, to $87 billion in November 2025 (U.S. Census Bureau and BEA 2026).

Figure 3-2. U.S. Manufacturing Employment and Share of Total Employment, 1970–2024



Source: Bureau of Labor Statistics.

Figure 3-3. U.S. Goods Trade Balance, by Country, 2024



Sources: Bureau of Economic Analysis; CEA calculations.

Table 3-1. Top Five Changes in U.S. Goods Imports, 2024 versus 2025, January through October, by Trading Partner

Trading partner	Change in goods imports (in billions of dollars)	Percentage change in goods imports
Top five decreases		
China	–97.1	–26.7
Canada	–20	–5.8
Germany	–6.4	–4.8
South Korea	–5.7	–5.2
Singapore	–4.7	–12.9
Top five increases		
Taiwan	59.6	61.5
Switzerland	54.4	125.3
Vietnam	45.5	40.4
Ireland	39.8	46.8
Mexico	23.9	5.6

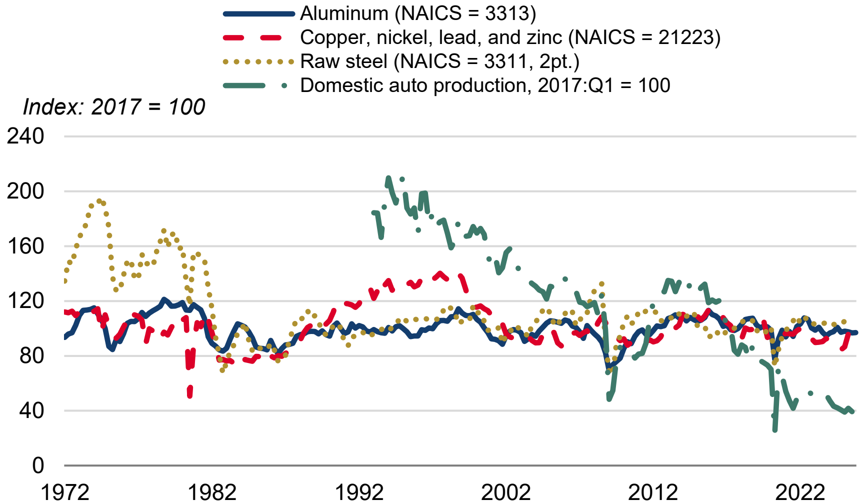
Sources: Trade Data Monitor; CEA calculations.
Note: Changes in goods imports are equal to goods imports in January–October 2025 minus January–October 2024.

This past year also produced important changes in U.S. bilateral trading patterns, most notably a reduction in imports from China, with U.S. goods imports from China falling by $97.1 billion (table 3-1) (U.S. Census Bureau and BEA 2026). Imports from China in 2025 (through October) fell to 9.3 percent of total U.S. imports, which is near the 8.9 percent level in 2000—the year before China joined the World Trade Organization—and down significantly from 13.4 percent in 2024 (Alfaro and Chor 2025). Table 3-1 shows that goods imports also fell from Canada, Germany, South Korea, and Singapore, while increasing with Taiwan, Switzerland, Vietnam, Ireland, and Mexico.

Aligning Policy with Sovereignty, National Security, and Industrial Resilience

Sectoral tariffs designed to address supply chain and national security vulnerabilities are a key component of the Trump Administration's trade policy. President Trump is utilizing his authority to deal with threats to the national security and economy of the United States. For example, President Trump has used Section 232 of the Trade Expansion Act of 1962 to address threats to impair the national security of the United States posed by imports of certain articles and their derivatives; these threats arise from, among other things, import dependence in industries critical to the United States' defense, industrial, and economic capabilities. The Administration has used this authority to assess

Figure 3-4. U.S. Production of Steel, Aluminum, Copper, and Automobiles, 1972–2025



Sources: Board of Governors of the Federal Reserve System; Bureau of Economic Analysis.
Note: NAICS = North American Industry Classification System. NAICS code 3313 refers to alumina and aluminum production and processing. NAICS code 21223 refers to copper, nickel, lead, and zinc mining. NAICS code 3311, 2pt. refers to a partial grouping of NAICS code 3311 (iron and steel mills and ferroalloy manufacturing) and NAICS code 3312 (steel product manufacturing from purchased steel).

where sustained import pressures, global excess capacity, or supply chain concentration threatened the ability of U.S. producers to meet national security demands, especially in times of stress or conflict.

Actions taken under Section 232 have focused on rebuilding domestic productive capacity in core manufacturing sectors, including steel, aluminum, copper, lumber, automobiles, and trucks. These industries underpin infrastructure development, defense production, and broader economic activity, but over the past decades, domestic production in each has stagnated or declined (figure 3-4). These measures have, among other things, incentivized domestic production and investment in U.S. facilities and operations.

President Trump's use of Section 232 authority over the past year has demonstrated a deliberate strategy to craft an America First Trade Policy aligned with national security and industrial competitiveness objectives. These actions have been used to strengthen the conditions under which U.S. manufacturers can invest, expand, and compete globally. By rebuilding the domestic industrial base in strategically significant sectors, the Administration is ensuring that the United States maintains the production capacity, workforce, and technological capabilities necessary to support long-term economic growth and national security.

Trade Agreements Designed to Deliver Results

Since the start of his second Administration in 2025, President Trump has worked to address America's trade imbalance and the trade deficit's negative consequences. By implementing a global tariff regime and establishing newly negotiated, historic trade agreements with some of the United States' largest trading partners, the Trump Administration has instituted a system that works in favor of American interests. By rebalancing economic ties with America's trading partners, these agreements commence a shift away from the unequal arrangements that limited access for American producers, and move toward a framework that secures meaningful market access abroad and incentivizes domestic investment. This strategy, therefore, delivers benefits for American workers, manufacturers, farmers, ranchers, and businesses.

The United States–European Union Economic Framework

In August 2025, the United States and the European Union announced a comprehensive Framework on an Agreement on Reciprocal, Fair, and Balanced Trade (DOC, IEA, and USTR 2025a). Under this framework, the EU will eliminate tariffs on all U.S. industrial goods and provide preferential market access for numerous U.S. agricultural and seafood products. The United States has established a tariff regime that includes a 15 percent baseline rate on EU-originating goods, with exclusions for some components and resources that are not readily available in the United States. The framework is designed as a fundamental first step in the Trump Administration's effort to expand market access for American producers and to ensure fair trade (European Commission 2025; White House 2025a).

In the U.S.-EU trade framework, the European Union outlined plans to purchase $750 billion in U.S. energy products through 2028, to increase procurement of U.S. military and defense equipment, and to purchase at least $40 billion in U.S. artificial intelligence (AI) chips. European firms have pledged to invest an additional $600 billion across strategic U.S. sectors over the same period. Simultaneously, the agreement includes cooperation on standards and efforts to reduce or eliminate nontariff barriers in key industries, such as automobiles, digital trade, and food products (European Commission 2025; White House 2025a).

This framework reflects a broader alignment of American and European strategic interests. Both sides have committed to enhancing cooperation on reliable, diversified energy supplies and promoting cross-border investment flows to sectors that are critical to national security and technological innovation (European Commission 2025). By modernizing the trade relationship between the United States and the EU, the new framework supports long-term growth and competitiveness for the U.S. and EU economies (DOC, IEA, and USTR 2025a).

The United States–Japan Strategic Trade and Investment Partnership

In July 2025, the United States and Japan announced their Strategic Trade and Investment Agreement. This agreement strengthens economic relations between two of the world's largest economies through a mutual commitment to long-term prosperity and a more balanced economic alliance (White House 2025b).

One of the agreement's central provisions is Japan's $550 billion commitment to invest in the United States. Japan's investment is structured to expand American industries by channeling Japanese capital into crucial American industries, such as energy infrastructure and production, semiconductor manufacturing, and critical minerals mining and refining. Through this arrangement, Japanese investment will strengthen U.S. production capacity and deliver tangible economic benefits for American workers (White House 2025b).

In addition to Japan's investment commitments, the agreement establishes a 15 percent baseline tariff framework on most goods from Japan, while also expanding access to Japan's markets for U.S. producers. The framework includes increased Japanese purchases of U.S. agricultural products and improved treatment of U.S.-manufactured vehicles and industrial goods in the Japanese market (White House 2025b).

The United States–United Kingdom Economic Prosperity Deal

In May 2025, the United States and the United Kingdom agreed on the U.S.-U.K. Economic Prosperity Deal. The agreement establishes a framework to expand reciprocal trade and removes harmful trade barriers for American producers (DOC, IEA, and USTR 2025b). In the deal's framework, the United Kingdom agreed to improve market access for certain U.S. goods, including significant duty-free quotas for American beef and ethanol (Jozepa and Webb 2026). The United States agreed to provide adjusted tariff treatment for select U.K. products, thus expanding commercial opportunities for both nations (DOC, IEA, and USTR 2025b). In addition to modifying tariff provisions, the Economic Prosperity Deal includes commitments to streamline issues related to customs and enhance regulatory cooperation in agricultural exchange (White House 2025c).

The pharmaceutical arrangement provides a key provision that addresses long-standing concerns about pricing and market access for innovative medicines. In this framework, the United Kingdom committed to reforms that improve pricing outcomes for innovative pharmaceuticals and support greater investment in pharmaceutical development. In return, the United States agreed to provide favorable trade treatment for U.K.-originating pharmaceuticals and certain medical technologies (USTR 2025a).

Modernizing the United States' Trade and Investment Ties with Taiwan

In February 2026, the United States and Taiwan announced their Agreement on Reciprocal Trade, building on their January 2026 investment agreement that commits Taiwan-based firms to at least $250 billion in investment in U.S. semiconductor, energy, and AI production. This investment is complemented by an additional $250 billion in Taiwanese government financing and credit support for a semiconductor supply chain and ecosystem in the United States. These commitments are intended to expand semiconductor manufacturing capacity on American soil, reinforcing U.S. leadership in the foundational technologies that are essential both for economic growth and national security (USTR 2026a; DOC 2026).

The Agreement on Reciprocal Trade modernizes the bilateral trade relationship by expanding market access for U.S. exports. For example, the agreement removes Taiwan's trade barriers on U.S. agriculture and industrial exports. The agreement establishes clear trade conditions and promotes fair competition, ensuring that American businesses are able to succeed in Taiwan's markets (USTR 2026a).

Fundamentally, the integrated trade and investment deals with Taiwan will support high-value job creation, develop advanced manufacturing capabilities, and reduce vulnerabilities in critical supply chains. Simultaneously, U.S. firms are provided with improved access to Taiwan's markets, which strengthens the United States–Taiwan economic relationship in the direction of innovation and economic security. By aligning strategic tariff treatment with investment incentives, this trade framework with Taiwan encourages firms to contribute to domestic capacity expansion.

Deepening the United States' Partnership with South Korea

Building upon decades of goodwill and a fruitful alliance, the United States and South Korea have recently advanced a strengthened economic partnership. Their November 2025 agreement emphasizes commercial cooperation and durable trade terms (USTR 2025b).

A key aspect of this modernized partnership is South Korea's commitment to invest in the United States. This investment is structured to support American economic and strategic goals. Included in this investment framework is $200 billion in Korean government investment in U.S.-approved projects crucial for America's national and economic security, and $150 billion in Korean government investments that will aid in the expansion of U.S. shipbuilding capacity. This framework ensures that investments flow toward the United States' domestic production capacity and will enhance its manufacturing competitiveness for the long term (White House 2025d).

The United States and South Korea have also reaffirmed their past trade agreements, ensuring the continuation of their mutually beneficial relationship. These renewed agreements include terms that support market conditions for U.S. exporters and reinforce cooperation across a variety of strategically important industries. The renewed economic partnership between the United States and South Korea will help strengthen America's domestic manufacturing base while remaining integrated with this key strategic partner (USTR 2025b).

Advancing the United States–India Economic Partnership

In February 2026, the United States and India reached an agreement on a mutually beneficial and reciprocal trade framework, which will serve as the foundation for reaching a broader trade agreement in the future. The framework reflects India's commitment to eliminate or significantly reduce tariffs on U.S. industrial and agricultural goods. In turn, the United States agreed to reduce tariff rates on Indian goods to 18 percent. Additionally, both sides agreed to negotiate more robust rules of origin and address long-standing nontariff trade barriers (White House 2026a).

Critical to this agreement is India's substantial commitment to purchase $500 billion in U.S. exports over the next five years. This commitment will strengthen domestic industries, including aerospace, energy, technology products, and minerals. This agreement is expected to increase demand for American industry and support high-quality jobs and resilient supply chains. By leveraging American market access to secure more competitive exports and large-scale investments, the framework deepens the U.S.–India economic partnership in ways that advance American competitiveness and prosperity (White House 2026a).

Delivering Export Growth and Supply Chain Resilience Through Additional Agreements

In addition to the above-mentioned partnerships and deals with the United States' largest trading partners, the Trump Administration has also announced numerous bilateral trade and framework agreements aimed at expanding market access and improving trading conditions for U.S. goods and services. These initiatives will strengthen both the U.S. economy and national security by reducing trade barriers, supporting exports, and strengthening commercial commitments with U.S. partners around the world:

- The United States reached a reciprocal trade deal with Indonesia that opens the Indonesian market to U.S. exports on a favorable basis. The deal grows export opportunities for U.S. makers and producers by strengthening cooperation in key supply chains (White House 2026b).

- The United States and Malaysia announced a trade deal in which Malaysia commits to granting preferential treatment to U.S. exports for a range of industries and diminishing nontariff barriers. The agreement also establishes a partnership for developing critical minerals (USTR 2025c).
- The United States and Cambodia achieved a trade deal that completely eliminates tariffs on U.S. goods, creating market access for the entirety of U.S. exports. The agreement also breaks down nontariff barriers for American exporters (USTR 2025d).
- The United States and Thailand declared a framework for fair trade that eliminates tariffs on 99 percent of goods, including industrial, food, and agricultural products. Thailand also agreed to reduce nontariff barriers and adopt certain regulatory standards (USTR 2025e).
- The United States and Vietnam announced a framework for fair and balanced trade that removes tariffs on almost all U.S. goods, including food and agricultural products. The deal provides U.S. exporters with broad access to Vietnam's market (USTR 2025f).
- The United States reached a framework for a trade agreement with El Salvador that reduces nontariff barriers on U.S. exports and facilitates market access for U.S. producers. This agreement expands business opportunities for U.S. manufacturers and exporters (USTR 2025g).
- The United States announced a trade agreement with Argentina that provides preferential market access and reduces nontariff barriers for U.S. products. This deal strengthens the U.S.-Argentina bilateral relationship by facilitating trade and investment and streamlining regulation (USTR 2025h).
- The United States and Ecuador announced a framework for a trade deal that removes or reduces tariffs and nontariff barriers, particularly for U.S. agricultural exports (USTR 2025i).
- The United States reached a framework for a trade agreement with Guatemala aimed at facilitating preferential market access for U.S. exporters to the Guatemalan market and lessening nontariff barriers to U.S. trade (USTR 2025j).
- The United States' framework for a trade deal with Switzerland and Liechtenstein creates unprecedented market access for key United States agricultural and industrial exports by reducing tariff and nontariff barriers, increasing cooperation to strengthen supply chain resilience, and encouraging substantial new Swiss investment in the United States (White House 2025e).
- The United States' trade agreement with Bangladesh creates preferential market access and removes nontariff barriers for American industrial and agricultural products, strengthens intellectual property protections for American technologies and innovations, and increases supply chain

resilience (USTR 2026b).

- The United States' framework for a trade deal with North Macedonia will eliminate duties on all U.S. industrial and agricultural exports to North Macedonia and break down additional nontarrif barriers (USTR 2026c).

President Trump's trade agreements represent a fundamental realignment of the United States' approach to trade relationships. Each agreement was and is being negotiated with the interest of the nation at mind: protecting America's national security, economy, workers, farmers, and businesses. These agreements demonstrate this Administration's commitment to use trade not only as a means for development but also a tool to advance U.S. economic strength and safeguard America's national security.

Trade as a Driver of Investment and Industrial Renewal

By enforcing fair and reciprocal trade, restoring confidence in American manufacturing, securing energy dominance, and aligning trade policy with national economic and security priorities, the Trump Administration has catalyzed an unprecedented wave of domestic and foreign investment. Over the past year, both domestic and foreign companies have committed trillions of dollars to build factories, expand capacity, deploy advanced technologies, and create durable jobs across the United States.

Across technology, artificial intelligence, semiconductors, pharmaceuticals, energy, infrastructure, and food production, hundreds of billions of dollars are being deployed into projects across the country. Tariffs play a critical role in spurring these investments. As part of trade deals and other agreements, President Trump has secured trillions of investments and purchase commitments for the United States from domestic and foreign companies as well as foreign governments.

Closing Loopholes and Reasserting the Rule of Law in Trade

The Trump Administration has prioritized fighting customs fraud and addressing current loopholes in U.S. trade policy. U.S. Customs and Border Protection (CBP) has increased trade enforcement efforts under the Enforce and Protect Act and related authorities, uncovering significant unpaid duties often related to the misrepresentation of country of origin and the transshipment of goods through intermediary countries in several high-profile cases (CBP 2025a).

In addition, the Department of Justice has increased its role in enforcing U.S. trade laws by pursuing actions against companies that engage in fraud or evade duties (DOJ 2025a, 2025b). On August 29, 2025, the Department of Justice launched a cross-agency Trade Fraud Task Force with the Department of Homeland Security to combat and prevent trade fraud, which deprives the government of revenue and weakens national security (DOJ 2025c). The task force has resolved several cases of significant illegal duty and tariff evasion via country-of-origin misrepresentation and transshipment (DOJ 2025d; Pillsbury Winthrop Shaw Pittman LLP 2025).

The End of De Minimis

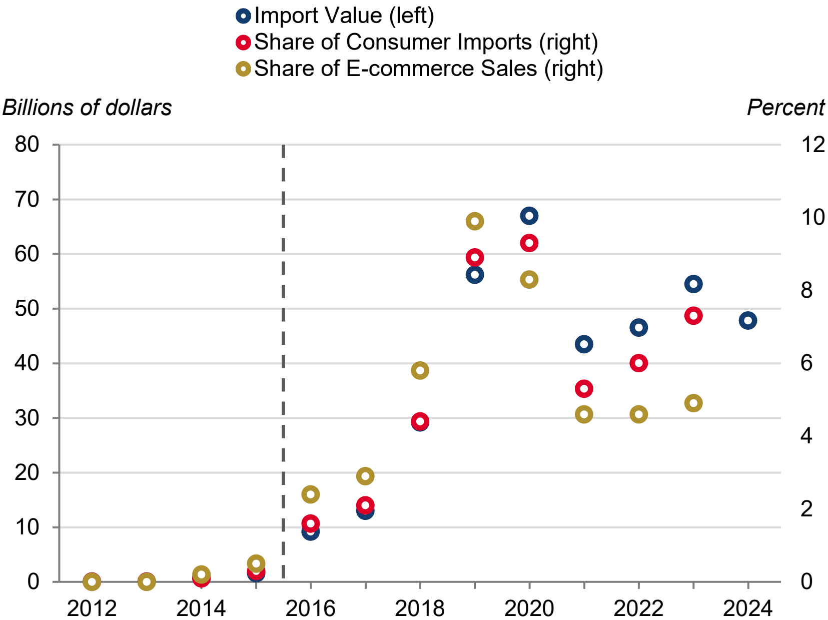
In 2025, the Trump Administration closed the de minimis loophole for shipments. De minimis treatment allowed shipments with self-declared values below a threshold to enter the United States without paying duties, and facing little inspection when compared with regular entry channels. When Congress created the de minimis rule in 1938, that threshold was $1; in 2025, it was $800. De minimis shipments have skyrocketed from 134 million in 2015 to 1.36 billion in 2024 (CBP 2025).

Created by an amendment to the Tariff Act of 1930 in 1938, the original purpose of de minimis, which is Latin for “too trivial or minor to merit consideration,” was “to avoid expense and inconvenience to the Government disproportionate to the amount of revenue that would otherwise be collected” (19 USC 1321). There were three categories: (1) bona fide gifts mailed from abroad, with a $5 limit; (2) articles brought in by travelers for household use, also $5; and (3) “any other” de minimis items, including commercial goods, at $1. In 1938, many of the technologies that now improve the productivity of customs officials in assessing duties did not exist. The shipping container, for instance, would not exist until 1956, and the packaging of maritime goods that arrived to U.S. ports was not uniform. To prevent customs officials from assessing duties that were not worth the cost of assessing them, Congress authorized the Secretary of the Treasury “to admit articles free of duty when the expense and inconvenience of collecting the duty … would be disproportionate to the amount of such duty.” The de minimis rule had a wide-ranging impact on competition, public health and safety, and revenue.

In 1952, Congress debated HR 5505, the “Customs Simplification Act.” There were proposals to increase the thresholds, but domestic industry successfully convinced Congress to maintain the $1 “all other” de minimis threshold (Public Law 1953). It was not until 1978 that Congress raised the “all other” threshold to $5, citing inflation adjustments (S. Rep. No. 95-778, at 28-29, May 2, 1978).

In 1994, the year the North American Free Trade Agreement went into effect, Congress raised the threshold to enable commercial shipments to enter without paying duties or facing inspection. The Customs Modernization Act, or “Mod Act,” increased the bona fide gift threshold from $50 to $100; from $25 to $200 for traveler articles; and a large increase from $5 to $200 for “all other” de minimis.

Figure 3-5. Import Statistics for De Minimis



Source: Fajgelbaum and Khandelwal (2025).

A more significant change was the U.S. Customs Service amending its regulations, under 19 USC sec 143.26, allowing express shippers to import goods without using a customs broker. For the first time in U.S. history, those who merely shipped goods were granted the right to import without being an importer of record or a customs broker representing the importer of record. These two changes caused the first major explosion in de minimis imports.

The de minimis threshold was increased further to $800 in March 2016, after which de minimis imports increased even more, both as a share of e-commerce sales and as a share of all imports (figure 3-5). The increased use of de minimis treatment likely exacerbated "the retail apocalypse" of the late 2010s. During the 2010s, a number of iconic American brick-and-mortar retailers, such as Toys R Us and Sears, filed for Chapter 11 bankruptcy protection, shuttering stores. Peer-reviewed research has found that local increases in e-commerce spending cause declines in brick-and-mortar retail sales (Chava et al. 2023).

Of course, e-commerce—and its benefits—would have existed without the de minimis rule, but because of de minimis treatment, brick-and-mortar retailers faced e-commerce competition subject to a tariff rule that privileged foreign direct-to-consumer business models over themselves. If a direct-to-consumer business sold to a U.S. consumer and shipped the good subject to de minimis treatment, no duty would be paid on the good. If Toys R Us or Sears sold the exact same good as wholesale merchandise, such a shipment would almost certainly have exceeded the $800 de minimis threshold. Thus, de minimis treatment tilted the playing field against U.S. brick-and-mortar retailers by exposing their supply chains to tariff liability that eluded direct-to-consumer shipments.

Public health and safety. Trade and trade policy are also important factors in national security and public health, and the end of de minimis treatment reflects the Administration's commitment to using trade policy as a tool to achieve national security and public health goals. According to Customs and Border Patrol, in 2024, de minimis shipments accounted, by count, for around 98 percent of narcotics seizures, 97 percent of counterfeit goods seizures, and 77 percent of health and safety seizures, including weapons parts and fentanyl precursors (CBP 2025).

Revenue. Ending de minimis treatment prevents large volumes of low-value shipments from entering the United States without paying the duties that would apply if shipped through other customs processes. By restoring parity between small-package imports and other goods, the reform strengthened enforcement and ensured that all imported products competing with U.S. manufacturers are subject to the same trade rules. The impact of closing the de minimis loophole has been immediate and measurable. According to the Department of Homeland Security, U.S. Customs and Border Protection has collected more than $1 billion in duties that previously went uncollected under the exemption (CBP 2025), underscoring the scale of revenue loss under the prior system and the effectiveness of the reform.

Conclusion

The America First Trade Policy set forth by President Trump has restructured the United States' approach to international trade. By insisting upon fairness, enforcing preexisting authorities, and linking trade outcomes to domestic production and investment, the Administration has reshaped the role of trade, using it as a strategic tool to strengthen the American economy and bolster national security.

Across the economy, trade policy has been pursued in conjunction with wider efforts to rebuild the manufacturing base, secure critical supply chains, expand energy exports, and expand America's leadership in cutting-edge technologies. The exercise of U.S. trade authorities, combined with strategic agreements and frameworks, has improved American access to foreign markets while simultaneously fostering domestic investment. These efforts reinforce the linkage between trade, industrial competitiveness, and national security, creating conditions for the next golden age of economic flourishing.

This new course has already begun to yield tangible results. The evidence demonstrates a clear shift away from concentrated, heavily subsidized foreign suppliers, toward more diversified global supply chains, thereby reducing America's economic dependence on potentially adversarial nations and strengthening national security.

Chapter 4

Achieving Energy Dominance to Power American Prosperity

The United States has vast energy resources and the extensive technical expertise to produce the energy needed by its increasingly high-tech economy. But prior policies have prevented the United States from capitalizing on these comparative advantages. For much of the last two decades, U.S. energy policy has been driven by the climate agenda, with a strong focus on transitioning from conventional energy sources on which the country has relied for over a century—petroleum, natural gas, and coal—to new, less-carbon-intensive energy sources that are at this point less reliable—most notably, solar and wind power (U.S Energy Information Administration 2011, 2014).

This focus on renewables has exposed Americans to higher energy costs and has created national security threats from adversarial suppliers of key energy commodities and equipment. The reality is that the United States—and the world—will continue to rely on conventional energy sources for decades to come and that policy makers need a better framework within which to address U.S. energy needs (Yergin, Orszag, and Arya 2025; International Energy Agency 2020).

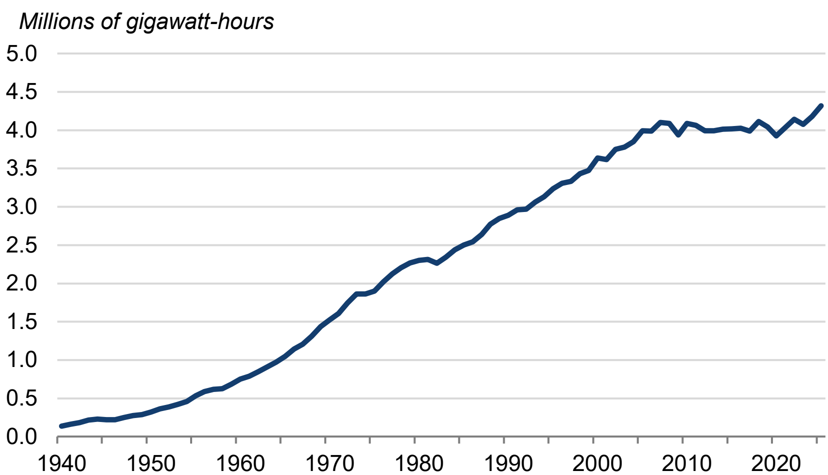
The United States has already achieved global dominance in oil and gas production, thanks to domestic technological advances facilitated by a favorable regulatory environment (MacAvoy 2000; Council of Economic Advisers 2019, 5). It became a net exporter of natural gas and petroleum in 2017 and 2020, respectively, and is the top global producer of these commodities as of the end of 2023 (U.S. Energy Information Administration 2023a, 2023b). As a result, the United States is now more integrated into global energy markets and wields more geopolitical leverage.[1] The United States can achieve a similar dominance in electricity supply by investing in domestic supply chains for energy technologies and high-value manufactured goods, including nuclear reactors, geothermal equipment, and energy storage. As the United States enters the artificial intelligence era, the Trump Administration is implementing policies that will enable the country to provide American businesses and households with secure access to affordable energy at the scale and reliability the U.S. economy needs.

A New Era of Energy Growth

After more than a decade of near-zero growth (figure 4-1), United States' demand for electricity is projected to increase by 2 percent or more a year over the next decade (Bank of America Institute 2025; International Energy Agency 2025) as the economy continues to reindustrialize, electrify, and scale up artificial intelligence (AI) integration. Demand for data center capacity and AI is already contributing meaningfully to electricity demand and economic activity in the nation. In 2025 alone, electricity demand is on track to grow by almost 3 percent (data from the Edison Electric Institute), and some analyst

[1] E.g., European countries are beginning to replace natural gas imported from Russia with U.S. liquefied natural gas (Abnett 2025).

Figure 4-1. Annual U.S. Electricity Output, 1940–2025



Sources: EEI weekly electric output data; CEA calculations.
Note: 2025 output is projected based on actual output through September 13, 2025.

estimates suggest that capital expenditures related to data centers accounted for as much as 0.5 percent of quarterly growth in gross domestic product during the first half of 2025 (Weisenthal and Alloway 2025). Table 4-1 lists over $3 trillion in recently announced investments with a component of a data center or AI.

The United States will need a substantial amount of energy to meet this growth in demand. Consider the recent growth in power demand from computing. Data center power consumption is often expressed in terms of energy per server rack—a metal frame that holds computer chips and other processing equipment. Before AI, computer chips used in traditional cloud applications consumed 3–5 kilowatts (kW) of energy per rack—the equivalent of about 3–5 homes (Greenstone 2025). Modern, high-density AI chips are substantially more power intensive and require as much as 120 kW per rack. Advanced, AI-capable chips slated for release toward the end of 2027 will consume as much as 600 kW per rack (Moss 2025). That is a 120-fold increase over simple cloud racks. Without a sufficient (and sufficiently reliable) energy supply, the U.S. economy will not be able to fully benefit from AI-induced productivity gains and other socially beneficial innovations that may follow. More importantly, if data centers become a burden on the energy grid, Americans will face higher electricity bills and lower disposable income, resulting in a drag on the economy.

The U.S. Department of Energy estimates that by 2030, electricity load will grow by about 100 gigawatts (GW), with 50 GW coming from data centers and the rest of the economy contributing the balance (U.S. Department of Energy 2025). At the end of 2024, over 2,000 GW of new generation capacity was waiting to connect to the grid (Rand et al. 2024), with about 1,600 GW anticipated to be online by 2030. However, actual completion rates of projects in the queue have been low—only 14 percent of capacity across all projects, and even lower for solar and storage projects (Rand et al. 2024, 3, 28). At historic completion rates, the current interconnection queue would result in just over 200 GW of new generation by 2030. Importantly, only about 25 GW of this would be dispatchable natural gas capacity—enough to cover only a quarter of the anticipated demand growth. The remainder would be made up of solar (96 GW), wind (32 GW), and storage (45 GW). This presents several challenges.

The first challenge is that intermittent solar and wind power need to be backed up by dispatchable sources in order for electricity to be supplied reliably. Existing grid-scale storage is limited by its scale and duration. It can complement, but cannot replace, thermal generation. The second challenge is that intermittent resources produce substantially less electricity than dispatchable generators of the same capacity because there are times when the sun does not shine and the wind does not blow. In 2024, the U.S. wind turbine fleet produced at 34.3 percent of its capacity, while solar photovoltaic panels produced at 23.2 percent (U.S. Energy Information Administration 2025b). By contrast, combined-cycle natural gas plants produced at 60.5 percent of capacity (U.S. Energy Information Administration 2025a) and nuclear plants at 90.8 percent

Table 4-1. Data Center Projects Announced Since the Start of the Second Trump Administration

Investor	Investor country	Announcement date	Products	Type of energy	Investment horizon (years)	Announced investment (billions of dollars)
OpenAI, Oracle, Softbank	United States, Japan	January 21, 2025	AI data centers and infrastructure		4	500
ADQ, Energy Capital Partners	United Arab Emirates, United States (50-50)	March 19, 2025	Energy infrastructure and power generation for data centers		-	25
United Arab Emirates	United Arab Emirates	March 21, 2025	AI infrastructure, semiconductors, energy, and manufacturing		10	1,400
NVIDIA	United States	April 14, 2025	AI chips and supercomputers		4	500
Saudi Arabia	Saudi Arabia	May 13, 2025	AI data centers, energy solutions and fund		4	600
Amazon	United States	June 4-9, 2025	Data center infrastructure	Nuclear	27	30
Blackstone, QTS	United States	July 15, 2025	Data center and energy infrastructure	Natural gas	10	25
CoreWeave	United States	July 15, 2025	Data center expansion		-	6
Google	United States	July 15, 2025	Data center and energy infrastructure		2	25
Google	United States	July 15, 2025	Hydropower repowering and new projects for data centers	Hydroelectric	20	3
Total						3,114

Sources: White House (2025b); Talen Energy (2025).

(U.S. Energy Information Administration 2025b). At these capacity factors, 200 GW of anticipated capacity additions would yield only 58 GW of actual energy.[2]

The second challenge is that the average renewable project is smaller than the average dispatchable project, which increases the logistical complexity of meeting growing energy demand. Data center developers have been approaching utilities with requests for more than 1 GW of power (see Skidmore 2025). The average solar project that entered the interconnection queue in 2024 had a nameplate capacity of 169 MW; the average storage project, 181 MW; the average onshore wind project, 242 MW; and the average natural gas project, 431 MW (Rand et al. 2024, table 11). Even if they could produce power at 100 percent of their capacity, wind and solar would be unable to provide uninterruptible power to data centers and they would still need to backed up by dispatchable resources. Given the state of current technology, the United States would not be able to sustain the growing demand for power—and certainly not the energy-intensive data center industry—without additional dispatchable thermal generation.

Since entering office in January, the Trump Administration has shifted energy priorities to ensure that the United States can meet rising power demand in a manner that does not jeopardize U.S. economic growth or national security because of dependence on imports of critical energy equipment.

The Shortcomings of Previous Policy

For the last two decades, U.S. energy policy has focused on making the nation more energy independent and addressing climate change. The former focus dates back to at least the 1970s. In 1973, in response to the Arab oil embargo and the ensuing energy crisis, President Nixon launched Project Independence, vowing by 1980 to "meet America's energy needs from America's own energy resources" (Nixon Foundation 2016).[3] After the September 11, 2001, terrorist attacks, President George W. Bush signed the Energy Policy Act of 2005, which made energy security synonymous with national security and highlighted the need to diversify the country's energy base to include renewables (Bipartisan Policy Center 2012, 14–15).

The latter focus—climate change—came to the forefront of U.S. energy policy in about 2015, when the United States and 194 other parties entered into the Paris Agreement, pledging to reduce greenhouse gas (GHG) emissions in efforts to limit global warming (United Nations 2015). Since then, the U.S. government has spent hundreds of billions of dollars incentivizing investment

[2] Battery systems are assumed to provide one discharge cycle per day. Thus, the capacity factor of a 4-hour grid-scale battery would be 4/24 = 16.7 percent; see National Laboratory of the Rockies (2024).

[3] The Watergate scandal distracted policymakers from the energy agenda, and Project Independence was abandoned.

in wind and solar generation. This has led to an influx of wind and solar generation capacity (U.S. Energy Information Administration 2025c), and to a wide-scale proliferation of Chinese-made equipment, including solar panels and lithium grid-scale batteries (U.S. Energy Information Administration 2025g; International Energy Agency 2022, 2024; Institute for Energy Research 2024). Relying on imported energy components jeopardizes the energy independence agenda, while relying on Chinese energy equipment creates a national security threat. Today, the United States is more dependent on intermittent power than it has been in at least a century, and this has exacerbated higher energy costs and led to reliability challenges for the U.S. power grid (U.S. Energy Information Administration 2024b; Wolverton, Shadbegian, and Gray 2022).

The Cost of the Energy Transition

Despite the fact that the United States has spent hundreds of billions of dollars incentivizing renewable energy investment (Lazzari 2008, 10, 18), electricity has not become more affordable for Americans. The average residential electricity price rose at the rate of inflation between 2013 and 2022, and faster since then (U.S. Energy Information Administration 2024a, 2025d). Behind the average, however, is a large amount of State- and sector-level variation. Residential prices have grown the most (Wiser, Barbose, et al. 2025, 15, 16). Real (inflation-adjusted) prices increased substantially in some States and declined in others (Wiser, Barbose, et al. 2025, 21). The messaging about renewables has consistently been that more renewables will lead to lower electricity prices because wind and sunlight are free. In theory, zero fuel costs should translate into lower generation costs and pass through to consumers in the form of lower electricity prices. But there are two problems with this argument.

First, a renewable generator does not produce as much electricity as a dispatchable generator of the same capacity because, in addition to maintenance-related downtime, solar and wind generators produce no energy when there is no sun or wind. Because renewables operate at lower capacity factors than dispatchable generation (see above), an increasing share of intermittent renewables means that fewer actual MWs are available to the grid, increasing the need for redundancies like grid-scale storage and dispatchable backup generation. This duplicates costs.

Second, "zero cost of fuel" is a generation-side argument that ignores the transmission-and-distribution (T&D) side of power markets. To understand why electricity prices have been rising, we need to understand how electricity markets function.

The U.S. grid was originally designed to generate electricity at large, dispatchable power plants and to carry it along wires to consumers. Most generators in the United States operate in a competitive environment (Borenstein and Bushnell 2015), with the lowest-cost generators being dispatched ahead of higher-cost ones.[4] T&D utilities buy electricity from generators and send it via power lines to consumers. They also invest in maintaining and modernizing power lines and other grid components and in building new transmission and distribution infrastructure. Power lines and other supporting grid infrastructure are considered to be a natural monopoly and regulators guarantee T&D companies a certain rate of return on the capital that these companies invest in the grid. In a competitive generation market, firms increase revenues by reducing costs. But in a regulated T&D market, revenues are dictated by the policies of regulators. Since regulators guarantee T&D companies a return on their grid investment, companies face incentives to “empire-build”—that is, invest as much as possible without necessarily considering the cost-effectiveness of the money spent (e.g., Dunkle Werner and Jarvis 2025).

Now consider what happens when renewables start to make up a larger share of generation. Since wind and sunlight are indeed free, generation costs fall. However, much of the existing (aging) grid infrastructure was designed to efficiently handle one-way power flows. Adding renewables and batteries to the grid introduces multidirectional electricity flows and requires modern grid infrastructure that is able to handle such flows. Renewables also increase supply volatility (e.g., from changing wind patterns or cloud cover) and fluctuations in frequency and voltage, making it more challenging to keep the grid balanced at all times.[5] All this means that, on average, more aggressive renewable integration results in particularly large increases in grid costs (U.S. Energy Information Administration 2024c). And higher grid costs result in higher T&D expenses, which regulators pass down to consumers in the form of higher electricity prices. Other idiosyncratic factors have also played an important role in rising electricity costs, including recovery costs from wildfires in California and hurricanes in Florida, scarcity of important components like gas turbines and power transformers, and global geopolitics, like the upward pressure that the Russia-Ukraine war has put on natural gas prices. These factors have caused electricity prices to change at different rates in different parts of the country, with Californians seeing by far the largest price increases (Wiser, O’Shaughnessy, et al. 2025, 4).

Research shows that on average, T&D costs in the United States have been rising faster than generation costs have been falling, leaving consumers with higher electricity bills (Wolverton, Shadbegian, and Gray 2022). Utilities’

[4] Some parts of the country still have vertically integrated power markets with limited or no competition among generators, but the vast majority of the U.S. population lives in regions where generators compete on price.

[5] Investigations revealed that the widespread power outage that occurred on the on the Iberian Peninsula on April 18, 2025, was caused by unusually large voltage oscillations (North American Electric Reliability Corp. 2025b). Although the investigations did not directly blame renewable energy for the blackout, having a high share of renewables online increases the chance of voltage and frequency imbalances. See, e.g., Barth et al. 2024, 5–6, table 3, 17.

spending on T&D has increased more than 2.5 times since 2003, from less than $30 billion a year to nearly $80 billion (U.S. Energy Information Administration 2024b), and this spending is being passed on to consumers through rate increases. Electric utilities requested $13 billion in rate increases between 2013 and 2015, and $39 billion between 2022 and 2024 (U.S. Energy Information Administration 2024b). Recent academic research shows that, across most of the United States, residential electricity prices are higher than the social marginal cost (SMC) of electricity (Borenstein and Bushnell 2022, 80).[6] The SMC is the cost that includes the negative effects of pollution and other environmental externalities associated with electricity generation, and represents the socially optimal price of electricity. Prices above or below the SMC distort consumption decisions, resulting in lost economic benefits. In California—the nation's leader in solar power generation—retail electricity prices are several times higher than their SMC (Borenstein, Fowlie, and Sallee 2022, 4).

Market and Regulatory Challenges and Solutions

In order to restore the security, reliability, and affordability of the U.S. energy supply, the Trump Administration has taken executive and legislative actions to incentivize investment in reliable, dispatchable generation; eliminate burdensome regulations; streamline permitting and approvals for energy infrastructure projects; and invest in domestic supply chains to reduce import dependence and the national security concerns that come with that dependence (White House 2025a; U.S. Congress 2025). Since the start of the Administration, companies and governments have pledged over $1 trillion in U.S. energy-related spending (see table 4-2) (White House 2025b). What follows is a discussion of specific energy market challenges and the Administration's formulated solutions to these challenges.

Project Approvals Are Cumbersome and Slow

Most energy infrastructure projects face long permitting and approval timelines. All projects with a Federal nexus (those located on Federal lands, receiving Federal funds, etc.) must go through a review mandated by the National Environmental Policy Act (NEPA). This review assesses the scope of a project's environmental damage and creates a mitigation and remediation plan (U.S. Environmental Protection Agency 2025a). In 2024, a NEPA review took more than two years to complete, prolonging the completion times of many energy and infrastructure projects (Council on Environmental Quality 2025, 1,3,5).

[6] The research discussed here is based on data from 2014 to 2016. Electricity prices have increased since then, and so has renewable integration. More renewable generation should have lowered the SMC, which suggests that the gap between the SMC and prices has only grown.

Table 4-2. Energy-Specific Investment Pledged Since the Start of the Second Trump Administration

Investor	Investing country	Announcement date	Products	Investment horizon (years)	Investment (billions of dollars)
GE Vernova	United States	January 29, 2025	Grid equipment manufacturing expansion	2	0.10
Clarios	United States	March 3, 2025	Energy storage and battery production	10	6.00
VentureGlobal	United States	March 6, 2025	Expansion of LNG export facility		18.00
ADQ, Energy Capital Partners	United Arab Emirates/United States	March 19, 2025	Energy infrastructure and power generation for data centers		25.00
Schneider Electric	France	March 25, 2025	Energy infrastructure	2	0.70
Saudi Arabia	Saudi Arabia	May 13, 2025	AI data centers, energy solutions and fund		20.50
Qatar Investment Authority	Qatar	May 14, 2025	Golden Pass LNG and other energy projects	10	-
Amazon	United States	June 4-9, 2025	Data center infrastructure, in part powered by nuclear	27	-
JERA	Japan	June 12, 2025	LNG purchases	20	200.00
Mitsubishi	Japan	June 20, 2025	Solar power generation	3	3.90
Blackstone, QTS	United States	July 15, 2025	Data center and energy infrastructure		-
Google	United States	July 15, 2025	Hydropower repowering and new projects for data centers	20	3.00
Anthropic	United States	July 15, 2025	Crypto cybersecurity and energy research funding		0.00
Capital Power	Canada	July 15, 2025	Gas facility upgrade and expansion	10	3.00
FirstEnergy	United States	July 15, 2025	Grid expansion and apprenticeship program	4	28.00
TC Energy	Canada	July 15, 2025	Natural gas pipeline modernization and maintenance	5	0.40
PPL	United States	July 15, 2025	Expanding grid capacity and modernizing transmission	3	6.80
Energy Innovation Center Infrastructure Academy	United States	July 15, 2025	Regional energy worker training facility and microgrid (natural gas)		2.10
Westinghouse	United States	July 15, 2025	10 new nuclear reactors	5	-
Homer City Redevelopment	United States	July 16, 2025	Buying natural gas for power plant	0	15.00
European Union	European Union	July 28, 2025	Purchases of US energy	3	750.00
South Korean Government	South Korea	July 31, 2025	US energy products	3.5	100.00+
Hitachi Energy	Japan	August 4, 2025	Grid infrastructure and manufacturing facilities	1	0.01
Total					1182.51

Sources: White House (2025b, 2025i); Talen Energy (2025); Open Access Government (2025); TC Energy (2025); Marcellus Drilling News (2025); PR Newswire (2025).
Note: Unless specified in source document, energy-specific portion of investment for data center projects is estimated as the average spending on power generation and transmission. Averages based on analysis by McKinsey & Company (see Noffsinger 2025, Exhibit 2).

The Trump Administration has carried out a substantial overhaul of NEPA. It put Federal agencies in charge of streamlining and coordinating reviews, and expediting approvals (*Federal Register* 2025, 10613). Under the national energy emergency declaration, the Administration has compressed the timeline for NEPA reviews from two years to 28 days and 14 days for projects with and without a significant environmental impact, respectively (U.S. Environmental Protection Agency 2025b). Larger and more complex energy infrastructure projects, like pipelines and power grids, face particularly long approval timelines because they may fall under the jurisdiction of multiple agencies or require more rigorous studies (Council on Environmental Quality 2025, 5–6).

Regulatory overhaul will make it easier to construct needed infrastructure and solve the "trapped energy" problem. In Texas' Permian Basin, for example, natural gas prices at the Waha hub often turn negative because a lack of pipelines keeps produced gas from getting to market (Disavino 2025). At the same time, during extreme winter weather, New York and New England resort to using old coal- and oil-based peaking plants to meet electricity demand because the lack of pipeline capacity does not allow enough natural gas to reach the regions' gas generators (North American Electric Reliability Corp. 2025a; U.S. Energy Information Administration 2025e). Better connecting natural gas production sites with large power demand markets will benefit both producers and consumers by helping to keep gas production profitable while reducing electricity costs.

The Nuclear Energy Industry Needs a Reboot

The Trump Administration has overhauled the Nuclear Regulatory Commission and has reduced approval times for new nuclear reactors from over one decade to one year (White House 2025c, 2025d, 2025e, 2025f). This overhaul, in combination with executive actions that have reprioritized baseload generation, has led utilities to embark on restarting nuclear reactors that were in early stages of the decommissioning process (Crownhart 2024; Talen Energy 2025). Increased interest in nuclear power from data center developers and other large loads is already helping to increase the amount of clean baseload generation on (and off) the grid and to ensure that the United States remains at the forefront of the global AI race. Further technological and commercial developments in small modular reactor designs may also help advance the U.S. nuclear industry, both at home and abroad.

Connecting a New Generation to the Grid Is Slow

The process of connecting new electricity generation projects to the grid is another area in which projects are experiencing long waiting times and which the Trump Administration is streamlining. To connect to the grid, all new power generation projects must follow an interconnection queue. While in the queue, projects undergo impact studies to figure out what grid upgrades or transmission equipment is needed before connecting a new project to power lines, and how much the needed upgrades and equipment will cost.

The queue is long, with a median wait of three years (Rand et al. 2024). Generous renewable tax credits have substantially extended the length of the queue in recent years. The Inflation Reduction Act of 2022 (IRA), for example, led to a massive influx of solar projects into the queue. At the end of 2024, over 80 percent of all generation projects in the queue were solar and storage, compared with about 14 percent in 2014 (Rand et al. 2024). As noted earlier in this chapter, renewable energy and hybrid projects (renewables + storage) are typically smaller and more complex than conventional generation (Rand et al. 2024, table 11). They require more advanced studies and costly grid upgrades, which delays interconnection. Because the queue is long, and all new projects have to wait in line, project developers get in line as soon as they think they have a project. This overwhelms the resources that grid operators have to process projects, further adding to the backlog. Most projects end up not being built. The historic completion rate has been about 14 percent in terms of capacity.

The Biden Administration sought to reduce the interconnection queue in 2023 by issuing Federal Energy Regulatory Commission (FERC) Order 2023. The order requires projects to be at a more advanced stage before entering the queue; pay larger deposits to enter the queue; and pay penalties for not meeting study deadlines or withdrawing from the queue (FERC 2023). It also reorders the queue based on readiness status, rather than entrance date (FERC 2023). These regulatory changes should prevent the most speculative projects from queueing and expedite approvals. The bigger impact on the backlog, however, will come from the exit of renewable projects that are no longer economically feasible under the provisions of the One Big Beautiful Bill Act of 2025 (OBBBA), which President Trump signed into law on July 4, 2025. The OBBBA phases out renewable energy tax credits by 2028, thereby disincentivizing renewable developers from pursuing marginally economic projects and reducing taxpayers' costs of subsidizing renewable electricity (FERC 2023).

To further speed up capacity additions, the U.S. House of Representatives has passed a bill instructing FERC to prioritize dispatchable projects that are already in the interconnection queue (FERC 2023). Several regions are either already doing this or are revising processes and introducing legislation that would do this (New York ISO 2025, 14–15). For example, in May 2025 PJM identified 51 existing and new projects to prioritize in the queue, all of which are dispatchable technologies (PJM 2025).

Domestic Production Capacity of Critical Equipment Is Insufficient to Meet Demand

The long wait for necessary equipment is also limiting near-term investment in generation capacity and grid infrastructure. Dispatchable power plants planned to be constructed before 2030 are nearly all natural gas plants (U.S. Energy Information Administration 2025h), but delivery timelines for natural gas turbines are currently between three and five years because limited global manufacturing capacity is unable to keep up with a recent spike in demand. For voltage transformers, the bulk of which are imported (Thomas, Boucher, and Medrek-Laske 2025), the wait is between two and four years (Norton Rose Fulbright 2025; Anderson 2025). To maintain sufficient generation in the short term, the Trump Administration has delayed the retirement of existing power plants in regions that are particularly vulnerable to generation shortfalls (White House 2025g). To address the longer-term need for domestic component availability, the Trump Administration has called on industry participants to expand manufacturing capacity, reduce the backlog of orders, and speed up deliveries. The industry's response has been notable. For example, at the end of January 2025, GE Vernova committed to invest $600 million to expand its manufacturing of natural gas turbines and electrical components (GE Vernova 2025); and in September 2025, Hitachi announced a $1 billion investment in manufacturing capacity for critical grid components (Hitachi 2025), while ABB announced a $110 investment to expand manufacturing of circuit breakers and switching devices (ABB 2025).

State Policies Often Conflict with Federal Priorities

Another challenge is posed by State policies, which sometimes conflict with Federal policy priorities. U.S. States can put in place their own environmental laws, as long as the protections they provide are at least as strict as Federal protections. Some States have put in place strict rules that were intended to improve environmental outcomes, but that have also meaningfully increased the cost of living for residents. President Trump's Executive Order on State overreach put a spotlight on burdensome State-level policies with the intention of mitigating their worst effects (White House 2025h).

New York and California are two examples of States with burdensome energy policies. California's environmental laws and regulations—the strictest in the nation—have raised the State's housing construction costs, along with gasoline, electricity, and food prices. For example, retail electricity prices in California "are two to three times higher than social marginal cost (SMC), which is defined as the going-forward cost to the utility of providing additional electricity to an existing customer, inclusive of pollution costs" (Borenstein, Fowlie, and Sallee 2022, 4) Since the start of this century, California has achieved sizable reductions in power sector GHG emissions (about 40 percent), but the transportation sector remains the State's top polluter (California Air Resources Board 2024, 11). To address transportation emissions, California recently attempted to ban auto dealerships from selling new gasoline vehicles (see box 4-1 for a detailed discussion)—a move that President Trump, along with the U.S. Congress, subsequently blocked via the Congressional Review Act.[7] The ban on new gasoline vehicles would have reduced consumer choice and substantially increased the price of car ownership for its residents. Also see box 4-2 on California.

Lawmakers in the State of New York have also put in place costly environmental regulations, including a ban on fossil fuels in all new buildings (the All-Electric Buildings Law) that was set to take effect on January 1, 2026 (New York Assembly). The State also has a history of denying approvals to build new natural gas pipelines (New York Public Interest Group 2025; Maldonado 2025), which have left the State with insufficient fuel for power generation during peak winter cold (North American Electric Reliability Corp. 2025a). Governor Hochul recently reversed stance on both of these policies, approving an undersea natural gas pipeline and pausing implementation of the All-Electric Buildings Law (Zanger 2025). Examples like this highlight the costs that policymakers inadvertently impose on their constituents when they ignore the constituents' preferences and the underlying structural parameters in the market they are trying to regulate (Holland, Mansur, and Yates 2021, 338).

Conclusion

Since the start of his second Administration, President Trump has brought the focus of energy policy back to domestic resources, technologies, and expertise. Without a sufficient, reliable, and affordable energy supply, Americans will not be able to benefit from economic growth and an improved standard of living. However, policymakers must also consider other important constraints, including national security, when crafting policies for a sector that underpins the U.S. economy. Implementing policies that reduce market distortions and regulatory burdens, as the OBBBA and many of the Trump Administration's executive actions have done, is already attracting investment to the energy sector's highest-value commodities and technologies. Pairing such policies with supply chain and human capital development will help shield the United States from certain foreign threats and dependencies, and ensure that the United States can deliver its energy needs in a safe and secure manner.

[7] For California's Advanced Clean Cars II (ACCII) regulations, see California Air Resources Board, n.d. Sixteen other States and Washington, DC, have adopted some variation of ACCII. See U.S. Department of Energy, n.d.

Box 4-1. Local Policies Do Not Solve Global Problems

The early focus of U.S. environmental policy was on reducing air and water pollution that caused hazards to human health (Nixon 1970). As time went on, and the most serious pollution-related health hazards were eliminated, U.S. policy shifted focus to reducing global greenhouse gas (GHG) emissions. The inherent challenge with this approach is that the United States cannot meaningfully alter global GHG emissions. As a result, the United States bears heavy costs through government-driven decarbonization efforts without being able to capture a meaningful share of the potential benefits of such actions. Canada and Mexico also benefit from the United States' decarbonization efforts, regardless of whether they reduce their own carbon emissions. So do other countries. The United States and the European Union have been spending large sums subsidizing low-carbon electricity technologies in order to reduce GHG emissions. The EU, for example, projected spending €662 billion on climate goals between 2021 and 2027 (European Commission n.d.), while the United States' Inflation Reduction Act (IRA) devoted an estimated $1 trillion to climate projects between 2023 and 2032 (University of Pennsylvania 2023). Yet, emissions in other parts of the world have been growing faster, and annual global energy-related emissions in 2024 set a record high (International Energy Agency 2025b).

Over the last 20 years, the United States has achieved sizable emissions reductions (Gaffney, King, and Larsen 2025). In large part, these reductions are due to the shift toward natural gas use in power generation, with renewables playing a smaller role (U.S. Energy Information Administration 2021). Because of diminishing returns, it is becoming more costly and challenging to reduce emissions beyond what the United States has already achieved. The cost of marginal abatement in the United States is high relative to much of the rest of the world.

At the end of 2023, U.S. GHG emissions were 16 percent lower than in 2005 (EDGAR 2024). China's emissions, by contrast, increased by 95 percent over the same period. Cumulatively, since 2005, the United States has decreased its emissions by 1,163 million tons of CO_2 equivalent (Mt CO_2eq) while China has increased its emissions by 7,753 Mt CO_2eq. China's increase in emissions over this time has been three times larger than the aggregate emissions reductions in the United States and the 27 EU member countries, and Chinese emissions continue to rise. Although China pledged that its CO_2 emissions will peak before 2030 (Ministry of Ecology and Environment 2022), it is not clear when the peak will actually occur. Assuming China's emissions do peak by 2030 and that the subsequent emissions decline will mirror that of the United States, it would take about 6 years for China to offset 25 years of U.S. efforts to get to net-zero.

These calculations do not account for rising emissions in other parts of the world. In India, where coal fuels nearly three-quarters of all electricity needs, CO_2 emissions have more than doubled since 2005, making the country the world's third-largest emitter (International Energy Agency n.d.). India now has the largest population in the world, and it is young (Silver, Huang, and Clancy 2023). India's economy is also outpacing China's, which means that India's emissions will continue to rise.

Thus, in the context of voluntary climate commitments, unilateral domestic efforts by the United States and other Western nations have fallen far short of their stated goal. By using domestic policy levers to address the global climate problem, policymakers have been ignoring both the free-riding challenges embedded in GHG abatement and the concept of diminishing returns, resulting in energy and environmental policies that increase the cost of energy, and the cost of living more broadly, for Americans.

Consider the cost of reducing emissions under the Inflation Reduction Act. The IRA made an estimated $1.045 trillion in Federal funding available to climate-related projects (University of Pennsylvania 2023), but, despite all the money involved, it was set to deliver relatively modest incremental reductions in GHG emissions (Larsen et al. 2022, figures 1 and 3). Researchers estimated that U.S. GHG emissions in 2030 would be 7–8 percentage points lower under the IRA than they would have been under pre-IRA policy—a reduction of 439-660 million metric tons of CO_2-equivalent (Larsen et al. 2022, figures 1 and 3). This translates into an emissions reduction cost of roughly $1,600 to $2,400 per ton of emissions—an order of magnitude larger than the Biden Administration's adopted social cost of carbon of $204 per metric ton of CO_2 (for 2023).

To an average American, the cost of not being able to keep the lights on is arguably greater than the negative externality from an extra ton of CO_2 emissions. A recent study estimates the cost of a one-day electricity outage for a household in Illinois to be between $458 and $648 (Wing et al. 2025, table 2), with region-wide losses in gross domestic product amounting to as much as $2.2 billion (Wing et al. 2025, table 4). Because no electricity is generated during an outage, there are no associated emissions—an outage is a forced emissions reduction. Given the average emissions intensity of U.S. electricity generation, reducing emissions by denying people access to electricity comes at an implicit average cost per unit of abatement of over $50,000 per metric ton of CO_2 for households and over $60,000 per ton of CO_2 for the regional economy. This makes the importance of energy to Americans and the U.S. economy patently clear.

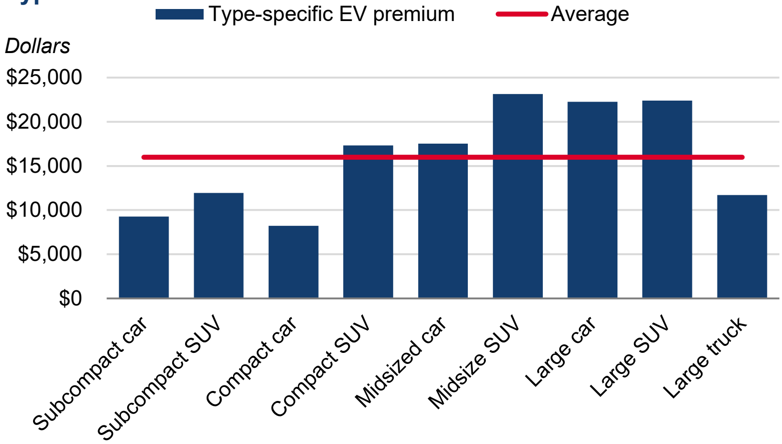
Box 4-2. The Costs of California's Green Mandates

In June 2025, President Trump, along with the U.S. Congress, ended California's effort to phase out gasoline vehicles by revoking three waivers granted to the State by the U.S. EPA under the Biden Administration (Yamashita and Wholf 2025). The waivers allowed California to implement these three rules:

- The Advanced Clean Cars II (ACCII) rule, which required all new passenger vehicles sold in California to be zero-emission—electric, plug-in hybrid, and fuel cell—by 2035 (California Air Resources Board n.d.).
- The Advanced Clean Trucks rule, which required an increasing share of all medium- and heavy-duty trucks sold in California to be zero-emission (California Air Resources Board 2023).
- The Heavy-Duty Low NOx (Omnibus) regulation, which required heavy-duty vehicles to comply with strict nitrogen oxide (NOx) emissions standards. These rules would have raised the cost of vehicle ownership for California residents by reducing available vehicle choice and raising the price of options that remained available. They would have also put added stress to California's power grid, and increased the cost of doing business for California's firms by raising fleet ownership and transportation costs. To the extent that manufacturers impose uniform standards, like NOx regulations, across all their vehicles because it can be cheaper than varying production standards across States, these costs would have risen not only for Californians but all Americans.

Electric vehicles, on average, sell for higher prices than their internal combustion engine counterparts across all vehicle classes (see figure 4-i). In 2024, the average electric vehicle (EV) premium across

Figure 4-i. Average Premium for Electric Vehicles, by Vehicle Type



Sources: Edmunds.com; CEA calculations.
Note: EV = electric vehicle; SUV = sport-utility vehicle.

all vehicle types exceeded $15,000. Requiring all new vehicle sales to be zero-emissions, therefore, creates a tax on new vehicles. The CEA's analysis shows that between 2026 and 2035, California's ACCII rule would have substantially increased upfront vehicle purchase costs for Californians, resulting in a $70 billion loss in consumer surpluses (or more than $5,000 per household). It would have also made cars less affordable and prevented some car purchases from taking place altogether. Using existing estimates of cross-price elasticity of demand between electric and internal combustion vehicles (an elasticity of 1.6–2.0; Sheldon and Dua 2019) and adjusting by California's share of the U.S. auto market (12–12.6 percent, for both total sales and new vehicle registrations; National Automobile Dealers Association 2024a, 2024b), the resulting deadweight loss to California is estimated to be $21.6 billion.

There are benefits from alleviating excess strain on the grid. A higher share of electric vehicles requires a more resilient grid with more dispatchable baseload generation. Since 2021, California's power generation capacity has increased by 60 percent. Dispatchable generation, however, has risen by only 11 percent (California Energy Commission n.d.) The largest increase in capacity has come from solar photovoltaic panels. As Spain and Portugal's recent blackout showed, a high share of intermittent renewables creates operational challenges for the grid, increasing the potential for grid failure (Jopson 2025). California's intent to ban the sale of new gasoline vehicles and to power a higher share of electric vehicles with solar energy would have increased the potential for unstable grid conditions and would have required costly redundancies. The cost of putting these redundancies in place would, in turn, have raised the price of electricity for California residents, who already face some of the highest residential electricity prices in the continental United States (U.S. Energy Information Administration 2025f).

The Public Advocate's Office of California estimated in 2023 that it would cost the State $26 billion to upgrade its power distribution system "to meet California's transportation electrification goals" (Public Advocate's Office 2023). Not all this investment is avoided by revoking ACCII. After all, EV sales have been strong in California (California New Car Dealers Association 2025, 2). But, by forcing a faster EV penetration rate, ACCII requirements would have undoubtedly led to higher grid investment requirements. The $26 billion in estimated distribution upgrades does not include the cost of taxation or addressing potential challenges associated with a high share of intermittent supply. If grid upgrades are paid for by tax revenues, raising $26 billion in taxes could cost consumer $35.9 billion because of the distortionary effect that taxes have on behavior (Saez, Slemrod, and Giertz 2012, 8–9). Even assuming that only half the estimated distribution investment is attributed to ACCII, total investment requirements to make California's grid sufficiently well-supplied and resilient to high EV charging loads would likely have been in the tens of billions of dollars (table 4-i).

Table 4-i. Annual Costs of California's Advanced Clean Cars II Rule

		Assuming EV premium declines linearly to zero by 2035			Assuming EV premium declines consistent with historic trend		
Model year	*ZEV/PHEV requirement (%)*	*Average EV premium (dollars)*	*Annual cost to consumers (millions of dollars)*	*Cost per household (dollars)*	*Average EV premium (dollars)*	*Annual cost to consumers (millions of dollars)*	*Cost per household (dollars)*
2026	35	15,970	9,610	715	15,970	9,610	715
2027	43	14,196	10,494	779	12,900	9,537	708
2028	51	12,421	10,891	806	10,420	9,136	676
2029	59	10,647	10,799	797	8,417	8,538	630
2030	68	8,872	10,372	763	6,799	7,948	585
2031	76	7,098	9,274	680	5,492	7,176	526
2032	82	5,323	7,505	549	4,436	6,254	457
2033	88	3,549	5,369	391	3,583	5,421	395
2034	94	1,774	2,868	208	2,894	4,678	340
2035	100	0	0	0	2,338	4,020	291
Total			77,183	5,690		72,317	5,324

Sources: California Air Resources Board; Edmunds.com; Census.gov; California Department of Finance; CEA calculations.
Note: Totals may differ due to rounding. EV = electric vehicle; ZEV = zero-emissions vehicle; PHEV = plug-in hybrid electric vehicle.

Chapter 5

The Revolution of Artificial Intelligence

For centuries, most of the world's economies grew at a similarly slow rate. However, the "Great Divergence" that occurred with the Industrial Revolution caused industrializing nations to accelerate their growth relative to the rest of the world (Pomeranz 2000). Today, artificial intelligence (AI) is a potentially transformative technology whose effects are often compared with those of the Industrial Revolution.

The world is witnessing clear leaders in AI investment, performance, and adoption metrics across different nations. The Trump Administration is laying the groundwork for American AI dominance by accelerating innovation, infrastructure development, and deregulation while establishing global supremacy through technology exports. If the AI revolution is as transformative as the Industrial Revolution, could this lead to the second Great Divergence? Of course, the future impact of AI is uncertain, so this chapter focuses on empirical data that can be measured today.

The chapter begins by reviewing analyses of the potential for AI-led economic growth, and it then discusses estimates of AI's impact on both gross domestic product (GDP) and the labor force. Recognizing that these effects are uncertain and thus need constant monitoring, the chapter then highlights metrics for tracking the breakneck pace of AI investment, performance, and adoption. It goes on to then discuss how different countries are faring on these metrics. The incredible speed of change cannot be overstated; many of these metrics are doubling every few months and increasing manyfold each year. This means that the AI of the future will likely be very different from today's AI. The chapter concludes by reviewing the actions President Trump is taking to ensure that

America continues to lead on AI. As the President has said, “America is the country that started the AI race. And as President of the United States, I’m here today to declare that America is going to win it” (Voice of America 2025).

The Future Outlook

The last 25 years have seen a great convergence as the world’s richest nations have grown more slowly than many developing nations. However, the advent of generative AI, based on large language models (LLMs), will initiate a new wave of profound economic transformation in the United States, promising significant boosts to productivity and growth. As AI technologies become more integrated into the workplace, economists are reevaluating long-term projections for GDP.

Yet this period of innovation is not without its complexities. This chapter focuses on the long-term analysis of structural trends, because not every AI-related investment will be profitable, and the short run always contains the potential for substantial volatility.

Background on Artificial Intelligence

The last few years have seen a rapid explosion in both AI capabilities and jargon, so it is useful to begin with a review of several key terms being used in the AI space. “Artificial intelligence” can refer to a wide variety of computer systems, from chess-playing computers like Deep Blue to generative AI apps like ChatGPT. For most of AI’s history, AI was only capable of making decisions among a relatively small set of options. The recent surge in AI interest has coincided with the rise of “generative” AI, which is so called because it is able to “generate” text, images, or video. “Large language models” are types of generative AI that can create text (Cloudflare n.d.). They are “large” because of their trillions of parameters, and are “language” because they are trained on large amounts of text written in natural languages (Cloudflare n.d.; Stryker n.d.). Agentic AI is a subset of generative AI that goes beyond mere content creation and can execute actions in order to accomplish goals (Google Cloud n.d.).

One framework for understanding the intelligence of an AI model considers this intelligence on two dimensions: (1) its ability to perform different tasks, from writing essays, to identifying objects in pictures, to writing computer code, to solving math problems; and (2) how AI’s capabilities on that task compare with human-level intelligence. Today’s AI systems have “specialized” (or “narrow”) intelligence because, though they may be superhuman at a particular task (e.g., no human can multiply as fast as a calculator can), AI is not able to perform all the tasks a human can. Humans are capable of performing a wide variety of different tasks. Thus, we say that humans have "general" intelligence, while current AI (including both ChatGPT and Agentic AI) has "specialized" intelligence.

Artificial general intelligence (AGI) would be a hypothetical AI that could perform all the intellectual tasks that humans can (Google Cloud 2026), but the exact definition of AGI is hotly debated, and some definitions only require that AGI perform "many but not all" human tasks. Artificial superintelligence, sometimes just called "superintelligence," is AI with an intelligence that surpasses that of humans (Google Cloud 2026). The boundary between AGI and superintelligence is similarly contentious, partly because these terms encompass different aspects of AI: "AGI" and "specialized AI" describe the generality of tasks an AI can perform, while "superintelligence" describes AI's capabilities for these tasks. However, a "mere" AGI is already superintelligent if it can perform all human tasks, but at computer speeds. Accounting for semantic disagreements, it is worth nothing that OpenAI, Anthropic, xAI, Meta, and Google all aim to create AGI or superintelligence (OpenAI 2023; Heath 2024; Musk 2025; Perkel 2025; Dragan et al. 2025).

This brings up an important caveat to this chapter's analysis: the limitations of analyzing the economics of AI. As noted by Hanson (2001, 6), AI that could perform all human tasks would lead to absolutely explosive growth and to a very different world than that seen today. Thus, the implications of AGI (both economic and otherwise) are an important topic deserving further study, but are generally outside the scope of this chapter's analysis, which focuses on "narrow" or "specialized" AI.

The Impact of Artificial Intelligence on GDP

Economists often think of the productive power of an economy as coming from three factors: the quantity of labor, the quantity of capital, and total factor productivity (TFP). TFP is a measure of an economy's efficiency and technological progress. Rising TFP indicates that an economy is producing more goods and services from the same amount of labor and capital, or the same output with fewer inputs. This improvement in efficiency is a key driver of long-run economic growth and higher living standards (Zymek 2024). For rich countries like the United States, whose capital stocks are already very high, economic growth mainly comes from increasing TFP (Shackleton 2013; Prescott 1998; Wolla 2013).

The productivity gains from increasing TFP are eventually translated into higher overall economic output, or GDP. However, the effect of a new technology occurs with a time lag, as businesses must first successfully adopt the new technology and then adapt their operations (Tang, Wang, and Xu 2022). Many of the productivity gains of the 1990s emerged from technological investments that occurred in the 1970s and 1980s. Similar technological investments that occurred during the Great Depression bore fruit during the 1950s and 1960s

(Ferguson and Wascher 2004). As a result, while TFP is an important indicator, it is not a leading indicator of AI's impact on the U.S. economy. Instead, research-and-development (R&D) spending on AI and the output of AI firms serve as early indicators of technological progress (Blanco, Gu, and Prieger 2016; Chou, Chuang, and Shao 2014). For example, AI-related R&D occurs well before the resulting innovations are widely adopted and then have a macroeconomic effect.

A variety of recent studies have attempted to quantify the effects of AI on GDP levels. These studies have produced a broad range of estimates (table 5-1): AI could increase GDP by 1 percent or up to more than 45 percent. This wide range reflects the high degree of uncertainty surrounding the economic characteristics of AI. However, it is worth noting that in the first half of 2025 alone, AI-related investment increased GDP by an annualized rate of 1.3 percent, harkening back to the scale of railroad investment during the Industrial Revolution (CEA calculations; Hausman, Pereria, and Pereria 2014) and seemingly ruling out the lowest few estimates.[1] Midrange estimates for the effects of AI on GDP include those from a variety of companies such as Oxford Economics (with an increase of 1.8 to 4 percent after 8 years), McKinsey (an increase of 2.4 to 4.1 percent in the long run) and Goldman Sachs (an increase of 7 percent after 10 years). High estimates include those by PricewaterhouseCoopers (an increase of 8 to 15 percent after 10 years) and by a Bank for International Settlements paper by Aldasoro and colleagues (2024; an increase of 20 to 45 percent after

Table 5-1. Estimates of AI's Impact on GDP Level

Study	Impact on GDP level (%)	Time horizon	Region
Acemoglu (2024)	0.9 to 1.6	10 years	U.S.
Penn Wharton Budget Model (2025)	1.5	10 years	U.S.
Oxford Economics (2024)	1.8 to 4	8 years	U.S.
McKinsey (2023)	2.4 to 4.1	Long run	Global
Alonso et al. (2022)	4.7 to 19.5	Long run	U.S.
Goldman Sachs (2023)	7	10 years	Global
PricewaterhouseCoopers (2025)	1 to 15	10 years	Global
Aldasoro et al. (2024)	20 to 45	10 years	U.S.
Hanson (2001)	≥45	See note	Global

Sources: The sources are the works listed under “Study”; also see the reference list.
Note: Except for Hanson (2001), the works listed here give the impact of AI on GDP levels, not GDP growth rates.

[1] Note that this 1.3 percent value for AI is the impact of AI investment on the level of GDP, even before any productivity gains from that investment are reaped. CEA staff could not locate this exact statistic for railroads during the Industrial Revolution, but U.S. investment in railroads roads grew from 0.2 percent of GDP in 1830 to 0.9 percent in 1839, and to a maximum of 2.6 percent of GDP in 1854 (Hausman, Pereria, and Pereria 2024).

10 years, for their approaches assume that all sectors of the economy will be at least somewhat affected by AI). Alonso and colleagues (2022) have a wide range of estimates (4.7 to 19.5 percent), reflecting uncertainty over whether AI will substitute more for skilled or unskilled labor (the latter of which would yield the divergence and therefore the high-end growth estimate for the United States). For comparison, a 2010 study by the Information Technology and Innovation Foundation indicated that the information technology (IT) revolution boosted U.S. GDP by about 14 percent (Andes et al. 2010; FRED 2025a).[2] These estimates all assume that AI can partially but not completely substitute for human labor: in the case where AI could do all human tasks, capital becomes a substitute for labor and annual economic growth increases to 45 percent (Hanson 2001, 6).

International Economic Growth Before AI

Even before AI, different countries may have been on different growth paths, with the United States exhibiting accelerating growth in potential GDP while growth in Europe and China was slowing. For Europe versus the United States, this was largely due to structural factors such as stronger U.S. productivity growth (especially in technology) and America's better business environment. For China, after decades of rapid growth, growth is now slowing to be more like that of emerging markets (Gourinchas 2025).

AI-led growth may be especially important for China, because its once-rapid growth has slowed in recent years to a level much more comparable to that of other emerging markets. Similar to China, AI-led growth may be especially important for Europe. Although the rise of China is one oft-repeated geopolitical story of the 21st century, another one that is less discussed, although perhaps no less important, is the decline of Europe. The European Union fell from 27 percent of world GDP in 1980 to just 14 percent in 2025 (IMF 2025). This was not just because of high growth rates in emerging markets but also because Germany and many other EU countries have a growth rate lower than that of other advanced economies. This trend continues with AI, where the EU lags behind the United States and China on various AI metrics. For example, cumulative private AI investment in the United States exceeded $470 billion between 2013 and 2024, compared with roughly $50 billion across all EU countries combined (Haag 2025).

Recognizing the critical role AI can play for future growth, the United States and many of its Allies have banded together through "Pax Silica," America's international partnership on AI supply chains (U.S. State Department 2025a). Pax Silica members range from major upstream semiconductor equipment manufacturers like Japan to downstream data center investors like Qatar (U.S. State Department 2025b). This varied group is united by a forward-looking

[2] The Information Technology and Innovation Foundation indicates $2 trillion. Its report was published in early 2010. The 2009 U.S. GDP was $14.5 trillion (FRED 2025a).

view of AI and technology. Thus, it is not surprising that Pax Silica members are growing more than twice as fast as their peers, with a 2.5 percent average real GDP growth rate between the release of ChatGPT in 2022:Q4 and the latest data, for 2025:Q3, versus 1.1 percent on average for Group of Seven countries (CEA calculations).

The Impact of AI on Labor, and Jevons' Paradox

Current evidence presents a mixed picture of AI's employment effects. Brynjolfsson, Chandar, and Chen (2025, 16) show that employment is falling for early-career workers in AI-exposed occupations like computer coding and customer service. Other studies have found no correlation between AI exposure and current unemployment rates (Gimbel et al. 2025). Still others have found that, while employment fell in sectors where AI can directly substitute for human labor, AI exposure actually increases employment in sectors reliant on AI-capable tasks (Johnston and Makridis 2025, 17). Notwithstanding the current impact of AI, overall unemployment is currently at a rate of just 4.4 percent as of December 2025 (U.S. Bureau of Labor Statistics 2025).

In the short run, if AI increases labor's efficiency, that reduces the amount of labor needed to create a given amount of output, potentially decreasing employment. But historical precedent suggests that efficiency gains can often increase (rather than decrease) total utilization of that resource—a phenomenon known as Jevons' Paradox (Alcott 2005). Jevons' Paradox occurs if a technological advance reduces the amount of a resource (like labor) needed for a specific application. This actually causes overall usage of that resource to increase, as usage expands to new applications. For Jevons' Paradox to occur and thus employment to increase with AI adoption, three conditions must be satisfied: first, AI must meaningfully boost worker productivity; second, the resulting cost savings must translate into lower prices; and, third, the lower prices must increase consumer demand faster than efficiency gains reduce per-unit labor needs (Rosalsky 2025).

Although these may seem like strong conditions, Jevons' Paradox has been observed occurring in many different fields. Jevons first described the paradox in 1865, when the increasing efficiency of coal in iron engines actually increased the demand for coal, iron, and other resources (Alcott 2005). In agriculture, increases in irrigation efficiency may increase water consumption (Tang, Wang, and Xu 2020). Improvements in energy-efficient lighting have increased both the number of light bulbs demanded and the amount of electricity used in lighting (Dibal 2025). Jevons' Paradox even occurs in topics seemingly unrelated to production: increases in road capacity will increase the numbers of drivers on the road (Duranton and Turner 2011; Hymel 2019; Hsu and Zhang 2014). And specifically for AI and jobs, a similar situation may be occurring for radiologists, a job once predicted to be replaced by AI (Agten and Ruthven 2025), but which is now seeing historically high employment rates (Mousa 2025).

In the longer term, the key issue is comparing and contrasting AI to prior disruptive technologies. Historical analogies suggest that disruptive technologies (e.g., steam power, electricity, computers, and the Internet) ultimately lead to greater employment and earnings (Hötte, Somers, and Thedorakopoulos 2023). AI could be the exception if the technology either develops agency (so that it can work as independently as humans do) or if it dramatically increases worker productivity without generating new labor demand (Ayres 1990; Cooper, Gumbel, and Lund 2018; Donaldson 2018; Feigenbaum and Gross 2024). But the general precedent of past technological changes is that they create a variety of new fields. In 1860, 43 percent of U.S. employment was in agriculture, compared with 1.2 percent in 2015 (Elvery 2019). During these years, a huge range of new professions have been created, many reliant on the new technology. Now the majority of current workers are in jobs created since 1940, ranging from "wind turbine technician" to "software developer" to "textile chemist" to "mental-health counselor" (Autor et al. 2024).

Key Metrics to Track

One of the most important points to focus on, in order to understand AI, is the speed of progress and change. The amount of computer power spent to train an AI model has not merely doubled every year; since 2010, it has increased at an average of about fourfold per year (Roldán and Sevilla 2024). Similarly, top AI companies are seeing revenues triple each year and are projecting future growth more rapid than that seen in the rapid-growth phases of Google, Amazon, or Microsoft (see figures 5-5 and 5-7 below). Because many of these metrics are doubling every few months and increasing manyfold each year, this means that change resulting from AI can be very rapid.

Similar to how market analysts monitor housing starts or manufacturing output to predict broader economic health, a specific set of indicators can reveal AI's growing influence in the U.S. economy. AI's impact on GDP materializes in changes in total factor productivity, so this measure is highlighted first. But, because TFP is a lagging indicator, other metrics that serve as leading indicators of AI's impact are also considered. These metrics, which track the expanding scale of AI-related investment, the accelerating capabilities of AI, and the rising adoption of AI, collectively serve as economic barometers for the AI revolution. These metrics are interrelated: investment is a direct signal that companies are pouring resources into advancing the technology, which results in increased model performance and lower unit costs. Better capabilities at lower costs spur AI usage, which is reflected in the revenues of AI firms. This section begins by discussing these metrics in the United States and then turns to a cross-country analysis.

Total Factor Productivity

AI is so important for growth because of its potential impact on total factor productivity. But previous technological revolutions have had a complicated relationship with productivity. Computers were once only mainframes that took up entire rooms, but now they can fit in your pocket. In 1987, the economist Robert Solow (1987) famously quipped "You can see the computer age everywhere but in the productivity statistics." Explanations for the apparent lack of impact of computers ranged from time lag, to the inability of economists to measure their real benefits, to claims that computers do not actually increase productivity (Triplett 1999). As a result, while the impact of AI on TFP may be the key question, other metrics must be relied on as well.

Investment

Investment in the AI ecosystem has been massive, both for the models themselves and for the surrounding infrastructure.

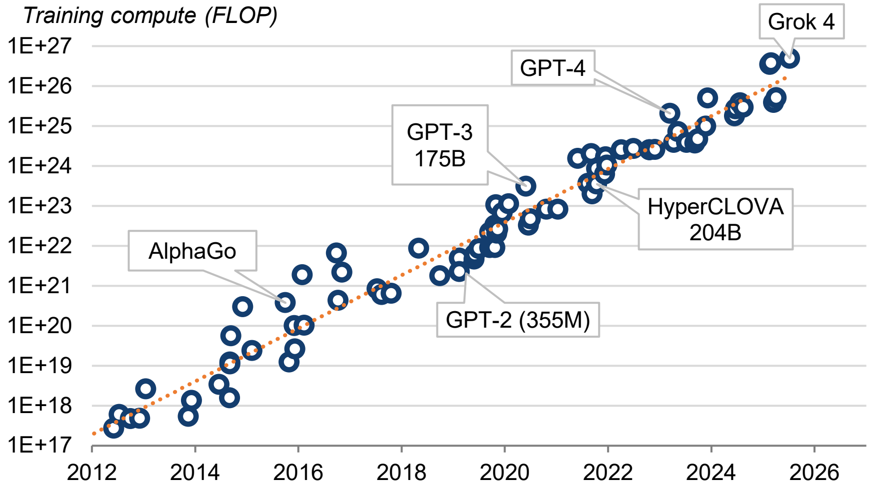
AI models. AI models exhibit a predictable tendency for model performance to increase as developers increase the number of parameters in the model, the size of the training data set, and the amount of computer power used to train the model. Known as "scaling laws," these empirical relationships have enabled model developers to increase the performance of their AI models not solely by relying on fundamental scientific breakthroughs, but simply by throwing more resources at the problem. Similar empirical relationships are seen in other fields, such as Moore's Law, in which the number of transistors on an integrated circuit doubles every two years. Because scaling laws are not laws of nature but are observed empirical relationships, they could someday end. But they have characterized the current deep-learning era, where the amount of compute spent on training computer models has increased by more than 1 billion-fold since 2012 (figure 5-1) (Epoch AI 2025).

A staggering amount of investment has been required to meet these needs. Global corporate AI investment reached $252 billion in 2024. Generative AI alone is up 19 percent year over year, reaching $34 billion (Stanford Institute for Human-Centered Artificial Intelligence 2025). This investment has been concentrated in the United States, which had $94 billion in private sector AI investment in 2024 (figure 5-2) (Our World in Data 2025b).

From 2016 to 2024, the energy and amortized hardware costs to train (build) an AI model have grown at an average rate of 2.4 times a year, while cloud compute costs (figure 5-3) have grown at an average rate of 2.5 times a year (Cottier et al. 2024). As a result of almost a decade of annually doubling costs, Grok 4, an AI model published in July 2025, cost about $490 million to train (Edelman, Emberson, and Saunders 2025).

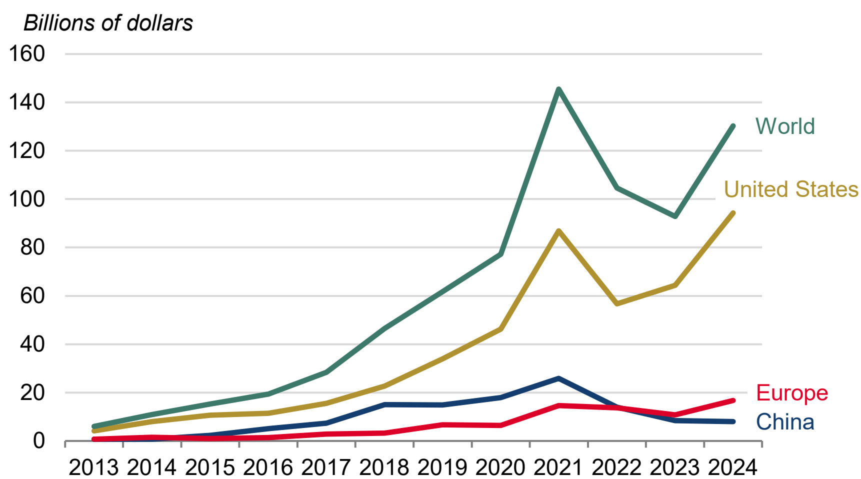
Sustained investment in model training despite increasing costs indicates a commitment to developing more capable and complex AI systems. Many

Figure 5-1. The Amount of Computing Power Used to Train AI Models



Source: Epoch AI (2025).
Note: Training compute (FLOP) refers to the number of floating point operations used to train an AI model.

Figure 5-2. External Funding for Privately Held AI Companies

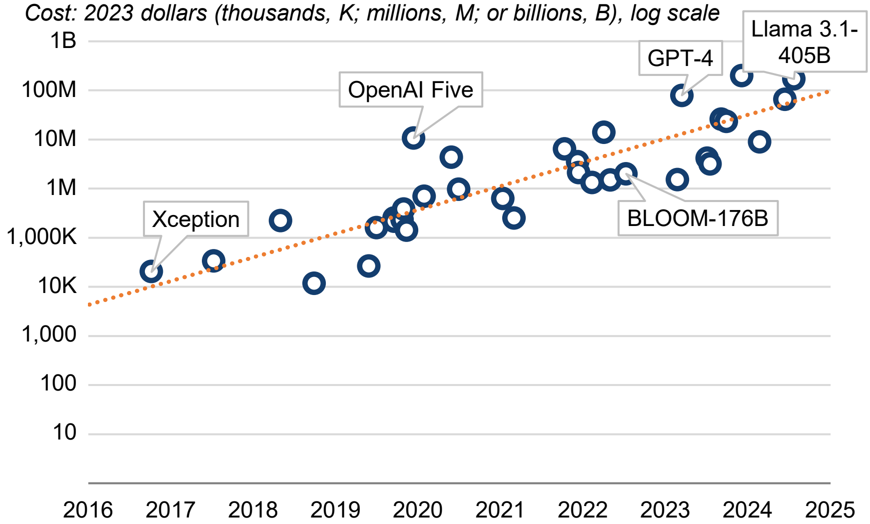


Sources: Quid (2025); U.S. Bureau of Labor Statistics (2025); Our World in Data (2025a).
Note: This figure only includes private companies whose private funding is at least $1.5 million.

investment indicators are available globally, so for additional discussion of investment, see the cross-country comparisons below .

AI infrastructure. Beyond just investment in model training, investment in data centers and related equipment surged in 2025 due to the increasing

Figure 5-3. Cloud Compute Cost to Train AI Models



Source: Epoch AI (2025).
Note: Estimated cloud compute costs are the product of a historical cloud rental cost and the number of training chip-hours. These costs are for the final training run of models.

proliferation of AI technology. Investment in information processing equipment and software in the United States increased at an annual rate of 28 percent during the first half of 2025, up from 5.5 percent annual growth in 2024 (FRED 2025d). Alternatively put, in 2025:Q2, this investment was already more than $125 billion higher (in annual terms) than it was at the end of 2024. Information processing equipment and software comprise one quarter of all U.S. investment (FRED 2025b, 2025c). The fact that an already-large category is growing at a very rapid rate means that AI is now driving an investment-based surge in U.S. GDP, as opposed to a surge driven by consumption or unsustainable government spending.

Performance

Continuous investment in AI has increased the performance of AI models in terms of their capabilities to solve different tasks, the length of tasks they can successfully perform, and reducing the cost per "token" produced by an AI model.[3] Two measures of performance are considered: benchmark scores and cost per token.

Improving benchmark scores. Benchmarks are sets of standardized tasks designed to evaluate specific AI capabilities, such as reasoning, coding, and language understanding. As LLMs become more powerful, they achieve

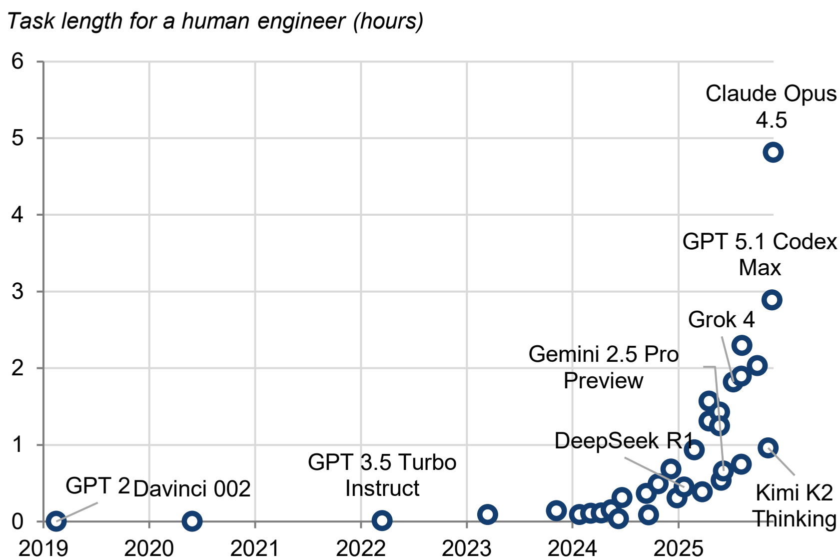
[3] AI models break the text you give them down into individual tokens, so tokens are a measure of the amount of data processed by AI models.

near-perfect scores on older benchmarks, a phenomenon known as "benchmark saturation" (Bansal et al. 2021). For example, from 2023 to 2024, AI performance on the computer coding benchmark SWE-bench jumped from 4 percent to 72 percent. Similar phenomena have occurred in benchmarks for graduate-level question answering, advanced math, and a variety of other academic subjects (Stanford Institute for Human-Centered Artificial Intelligence 2025).

However, while frontier AI are vastly better than humans at many exams and tasks, the best current AI agents often struggle with stringing together longer sequences of actions. As a result, they are currently unable to carry out substantive projects by themselves and are unable to fully substitute even for low-skill computer-based work like a remote executive assistant (METR 2025) . But this means that the length of tasks that models can complete is a helpful lens for understanding AI capabilities. The length of tasks that AI are able to successfully complete is also increasing, doubling every 7 months for the past 6 years (figure 5-4). This means that AI is becoming better able to manage larger and larger projects on its own and thus complete increasingly more complicated tasks.

Falling cost per token. A "token" is the basic unit of input to an LLM, for example, a single word or number. A decrease in the cost per token makes AI more affordable. This can occur because of smaller, more efficient models (software) or better hardware. Depending on the model, prices are falling at least 9 times a year, and up to 900 times a year (Cottier et al. 2025).

Figure 5-4. Lengths of Software Engineering Tasks That AI Can Complete with a 50 Percent Success Rate



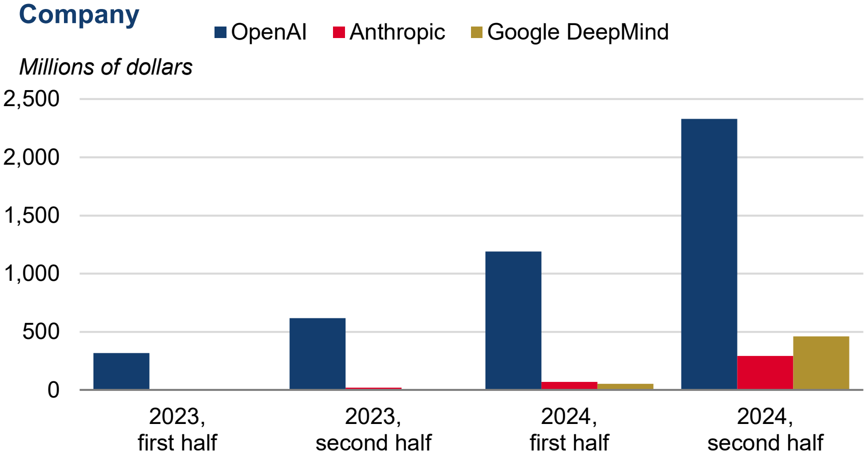
Source: METR (2025).

Adoption and Usage

As a result of improved AI capabilities and falling costs, the use of AI has spread throughout the economy. This can be tracked through revenues of frontier AI companies, the use of AI in the production of goods and services, and an increasing share of Americans using AI in the workplace.

Revenue. AI companies have seen rapid, but not unprecedented, growth, but their future growth could exceed all historical examples. Startups can often see explosive growth, and OpenAI, Anthropic, and Google DeepMind each had over 3 times annualized revenue growth as of the second half of 2024 (figure 5-5) (Emberson, Owen, and Snodin 2025).

Figure 5-5. Revenue from Sales of AI Products to the Public, by Company

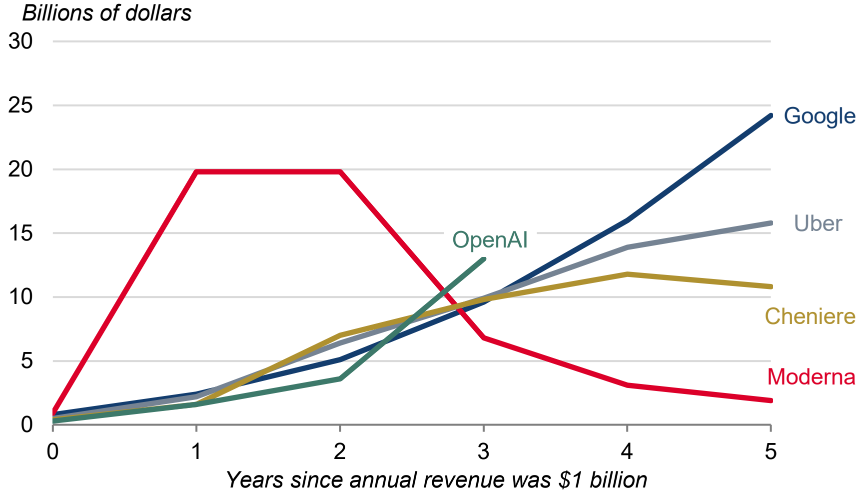


Sources: Epoch AI (2025).
Note: Google DeepMind revenue data are estimates based on mobile app usage and web traffic.

This is much faster than the market average: Standard & Poor's 500 companies had a blended year-over-year earnings growth rate of 10.3 percent in the last quarter of 2024 (Consello 2025). But AI company growth so far is comparable to that of top tech unicorns like Google and Uber during their initial high-growth phases (figure 5-6) (Burnham 2025). So, while this growth is impressive (Amazon only had two years of this level of revenue growth) (Companies Market Cap n.d.), it is not unprecedented.

However, what may be unprecedented is the future growth of AI companies. For example, despite skepticism, OpenAI claims that it will roughly double its revenue each year from 2026 to 2028 (Muppidi 2025; Burnham 2025). In order to try and understand this claim, it is helpful to compare this growth with the historical growth of previous big tech unicorns; such revenue growth from

Figure 5-6. Actual Revenue of OpenAI versus Other Companies' Historically Rapid Revenue Increases



Source: Epoch AI (2025).

OpenAI would be far higher than the growth rate seen by these previous big tech unicorns (figure 5-7) (Burnham 2025).

Business usage. Use of AI by organizations jumped from 55 percent in 2023 to 78 percent in 2024 (Stanford Institute for Human-Centered Artificial Intelligence 2025). In particular, the use of AI in the production of goods and services increased from less than 4 percent of firms in 2023 to about 10 percent of firms in September 2025 (figure 5-8) (U.S. Census 2025).

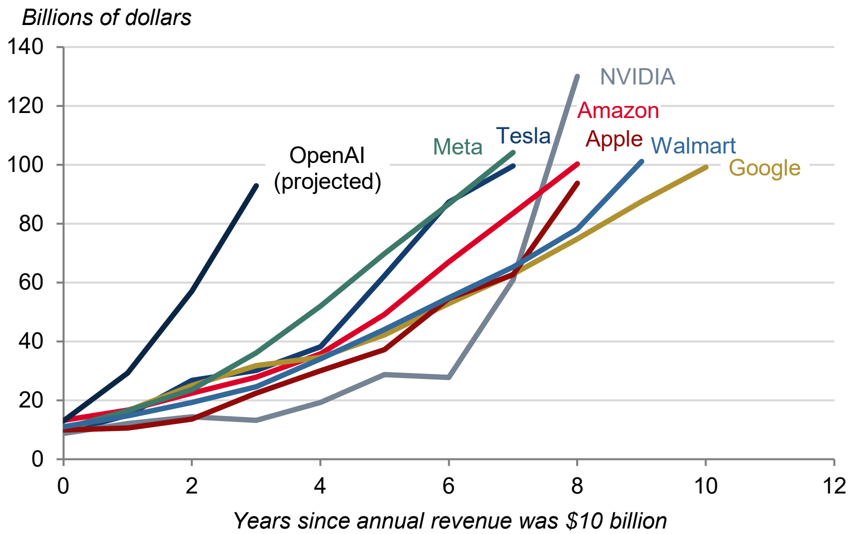
The share of businesses with paid subscriptions to AI has grown at an even faster rate, from 7 percent of companies in January 2023 to 45 percent today (Kharazian 2026). A similar story occurs with U.S. workers, about 40 percent of whom are now using generative AI at work (figure 5-9) (Hartley et al. 2025).

Critical minerals. Many minerals are critical parts of the AI supply chain. Silicon is the main building block for most semiconductor chips, while gallium and germanium are two other key components. (Hong 2025) The International Energy Agency (2025) estimates that by 2030, data centers alone could demand over 10 percent of today's world supply of gallium.

Cross-Country Comparisons

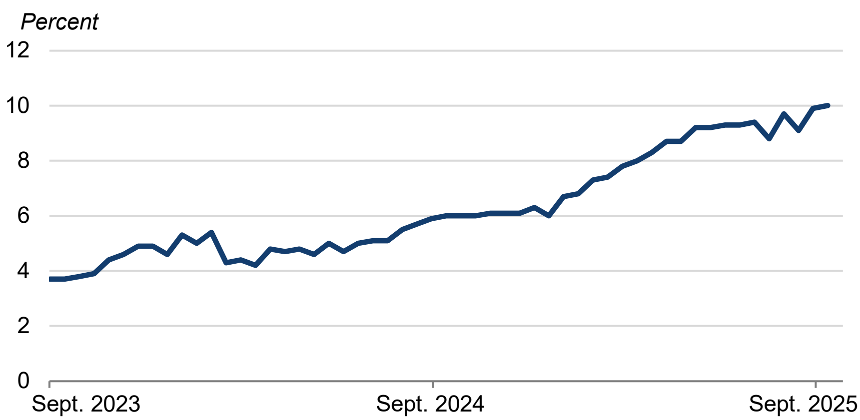
There are many ways to rank countries on AI, with many groups developing their own indices (Ferres et al. 2025, 1-18; Stanford Institute for Human-Centered Artificial Intelligence 2025; IMF 2023) Using the lens of investment, performance, and adoption of AI, this section compares countries to determine which is leading in AI. In general, the United States ranks first in most metrics, with China second, and the EU third.

Figure 5-7. Projected Revenue of OpenAI versus Other Companies' Historically Rapid Revenue Increases



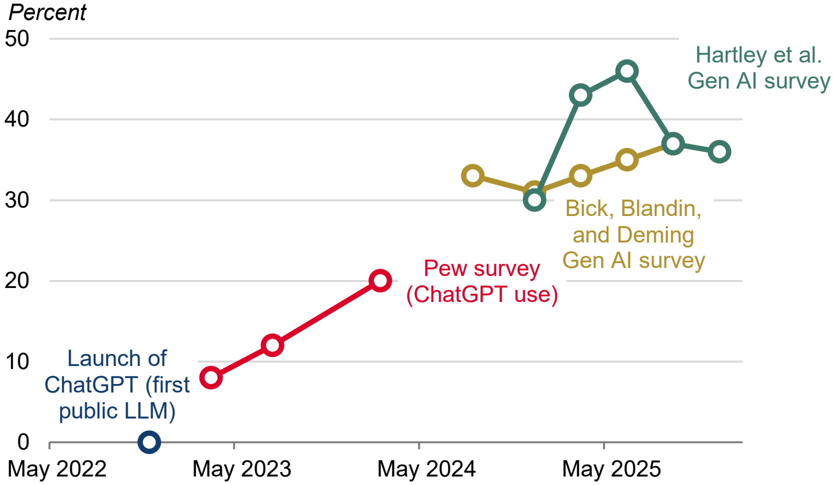
Source: Epoch AI (2025).

Figure 5-8. Percentage of U.S. Firms Using AI to Produce Goods and Services



Sources: U.S. Census Business Trends and Outlook Survey (2025, biweekly data); Haver data (2025).

Figure 5-9. Percentage of U.S. Workers Who Use Generative AI at Work



Sources: Pew (2024); Bick, Blandin, and Deming (2024); Hartley et al. (2025)

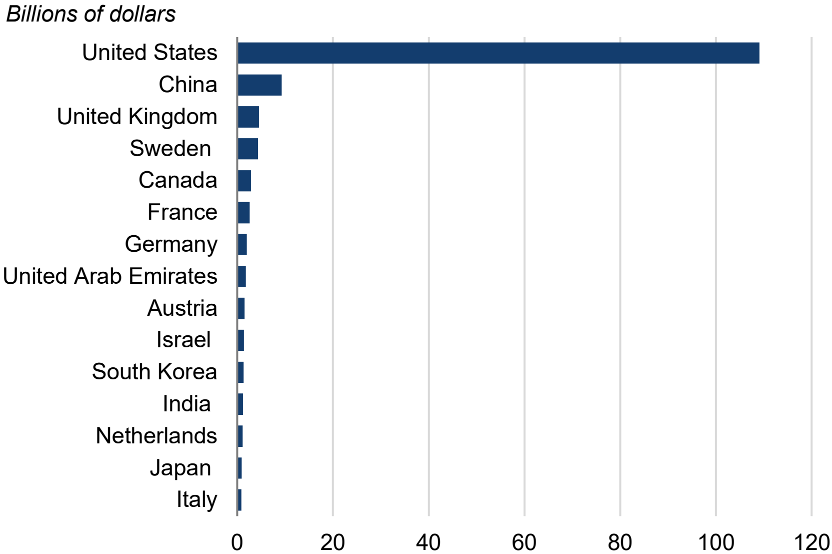
Investment

Tracking overall AI investment is difficult, because it is split across a variety of companies throughout the AI supply chain, from chips to data centers to AI labs, and over a variety of public and private sources. Looking at total R&D spending, in 2022, Israel's R&D spending equaled 6.0 percent of its GDP, a higher share than any other country in the world. Israel was immediately followed by South Korea (5.2 percent), Taiwan (4.0 percent), the United States (3.6 percent), and Japan (3.4 percent). By comparison, China spent 2.6 percent, and the EU spent 2.1 percent (National Science Foundation 2025).

For private investment, America's private companies are leading in AI R&D. The United States had $109 billion in private AI investment in 2024, compared with $9 billion for second-place China, with the United Kingdom, Sweden, and Canada rounding out the top five (figure 5-10) (Stanford Institute for Human-Centered Artificial Intelligence 2025). Unsurprisingly, then, the United States has about 75 percent of reported venture funding in generative AI startups (Haag 2025).

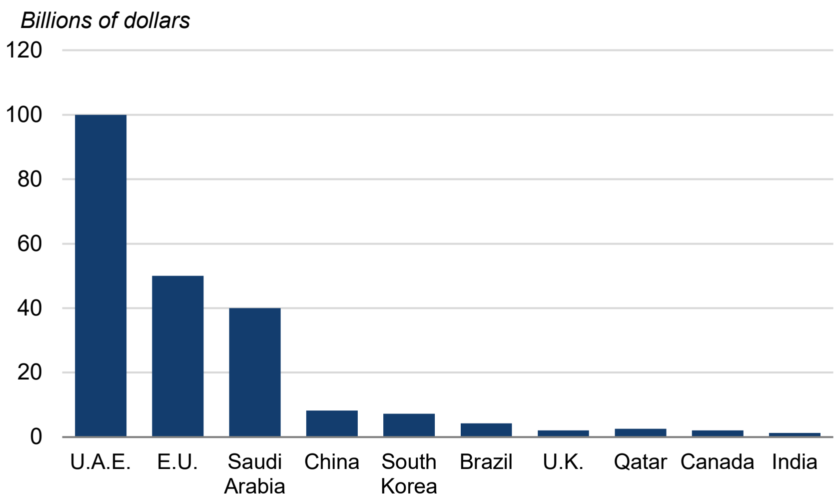
However, private investment in private AI companies is not the only type of investment. Other countries have sought to catch up, with a variety of special AI investments by governments or sovereign wealth funds (figure 5-11) (Benaich 2025). In addition to expected players like the EU and China, several Middle Eastern countries are investing heavily in AI. China has a large amount of public sector AI spending, with an estimated $56 billion in 2025 (Kaur 2025). Saudi Arabia's Public Investment Fund established a new AI company, Humain, with a $10 billion venture fund (Public Investment Fund of Saudi Arabia 2025;

Figure 5-10. Private Investment in AI, by Country, 2024



Sources: Quid (2024); Stanford HAI Artificial Intelligence Index Report (2025d).

Figure 5-11. Number of Notable Announcements of Direct AI Spending by Nations and Sovereign Wealth Funds



Source: Benaich (2025).
Note: This graph focuses on spending from direct government investment and sovereign wealth funds and thus does not include many other traditional sources of AI funding, such as from government funding of general R&D. These totals include target spending amounts for future years. This compilation of AI spending announcements is not exhaustive.

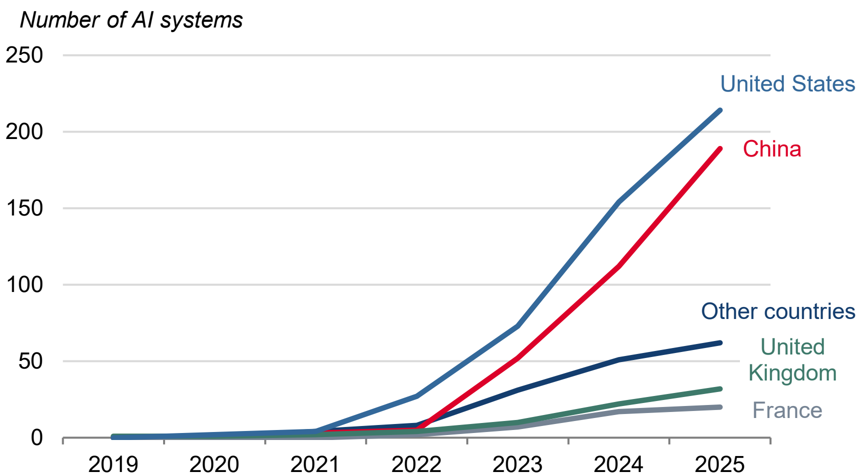
Turak 2025). Likewise, the United Arab Emirates is partnering with OpenAI, NVIDIA, and other U.S. companies to build a variety of data centers as part of the Stargate project (Open AI 2025).

The nature of AI investment could look very different outside the United States, especially in developing countries. For example, when these countries created national telephone networks, many leapfrogged landlines and went straight to mobile phones (Ritchie 2024). A similar phenomenon could occur in developing countries and their use of AI, whereby datacenters might face electrical reliability concerns, and the main AI interaction platform could be smartphones.

Performance

Given the large investments in AI in the United States, it is unsurprising that America leads, with 154 AI systems of size about equal to GPT-3, about half the world total of 331 in 2024 (figure 5-12) (Our World in Data 2025a). However, due to the rapid speed of AI advancement, the performance gap between the best models of each country is relatively small. According to a report by Microsoft, "Only seven countries—the [United States], China, France, South Korea, the [United Kingdom], Canada, and Israel—rank among the top 200 models, and the distance between the frontier (United States) and the last of these (Israel) is now just 11 months" (Cveko 2025).

Figure 5-12. Cumulative Number of Large-Scale AI Systems by Country

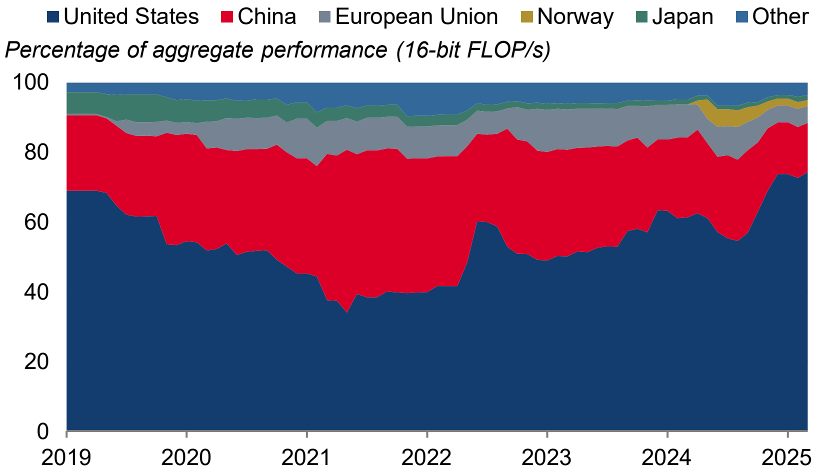


Sources: Epoch AI (2025); Our World in Data (2025b).
Note: This graph covers AI systems with training compute exceeding 10^{23} FLOPs of compute. The "other countries" category includes Australia, Canada, Finland, Germany, Hong Kong, Israel, Japan, Russia, Saudi Arabia, Singapore, South Korea, Switzerland, and the United Arab Emirates.

Adoption and Usage

As a result of heavy investment, as of May 2025, the United States has about 74 percent of the world's compute capacity for AI (figure 5-13) (Heim et al. 2025), and much of the foreign AI hardware was originally made by U.S. companies. For example, almost all Chinese AI models are trained on U.S. hardware (figure 5-14) (Adamson et al. 2025).

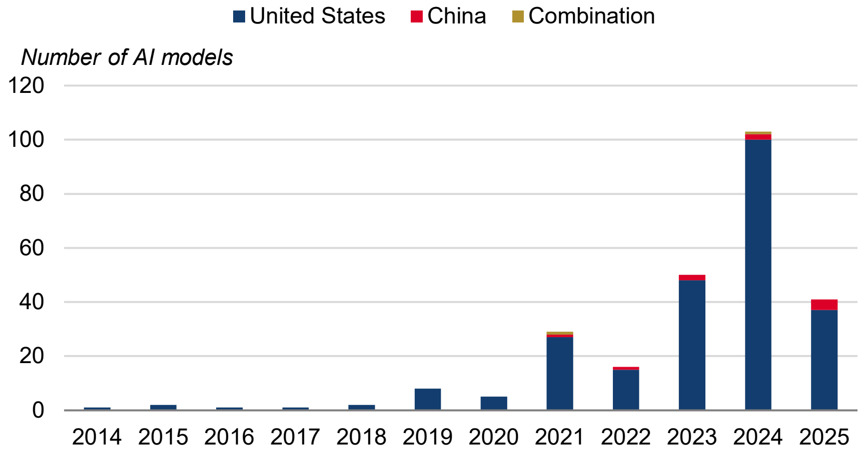
Figure 5-13. Percentage of Graphics Processing Unit Clusters (Weighted by Cluster Performance) by Country or Region



Source: Epoch AI (2025).
Note: The United States introduced export controls on key equipment and AI chips to China in October 2022, and strengthened these controls in October 2023 and December 2024 (Heim et al. 2025). As of March 2025, this data set represents about 10 to 20 percent of global graphics processing unit cluster performance.

Usage is more broadly distributed, with Israel and Singapore showing the highest per capita usage of the Claude AI model (Appel et al. 2025, 16). OpenAI shows similar trends, with the United States representing only 19 percent of ChatGPT traffic (Similarweb 2025). In general, middle-income economies have disproportionately high usage of generative AI relative to the size of their economy, and, in aggregate, accounted for 50 percent of global AI usage in 2024, while low-income economies accounted for less than 1 percent (Liu and Wang 2025, 27), partially due to a lack of electricity (Demombynes et al. 2025, 21). In general, AI adoption is highly correlated with GDP, with significantly higher uptake in industrial countries relative to developing countries. Key factors driving this divergence are differential access to "building blocks" of AI, including electricity, data centers, Internet access, language, and digital skills (Microsoft 2025).

Figure 5-14. Chinese AI Models by Country of Hardware Origin



Sources: Adamson et al (2025); Epoch AI (2025).
Note: Chinese AI models refer to models whose developers included a Chinese organization.

The Trump Revolution

The Trump Administration is pursuing a number of policies to improve America's position on each of the investment, performance, and adoption indicators, with many policies improving multiples of these at the same time. Deregulation reduces the cost of constructing data center infrastructure, incentivizing AI investment. The One Big Beautiful Bill Act (OBBBA) makes it easier for Americans to invest, and trade agreements are attracting foreign investment. All this investment leads to the AI performance necessary for American AI to dominate, while U.S. energy dominance provides the electricity to meet the increasing demand from AI.

Investment

The OBBBA (Public Law 119-21, signed July 4, 2025) restored and expanded full, immediate expensing for qualified investment and extended pro-investment business provisions, shifting after-tax hurdle rates in favor of building now (Ceballos et al. 2025). The Federal corporate income tax rate remains at 21 percent (Azebu and Varma 2025). The law preserves and refines a range of internationally focused provisions (Ceballos et al. 2025), and it invested more than $1 billion in critical minerals across a variety of AI initiatives (BPM 2025). The CEA's analysis predicts that the OBBBA will increase annual GDP growth by more than 1 percent over the four years after its passage, and raise real wages by $4,000 to $7,200 per worker (White House 2025e).Of particular relevance to the AI boom, the OBBBA brings back 100 percent bonus depreciation for

IT infrastructure and data center equipment (BPM 2025). The CEA estimates that, altogether, the OBBBA will lead to a 7–10 percent increase in investment, incentivizing the building of data centers, power infrastructure, and chip manufacturing (White House 2025e).

As part of trade deals and other agreements, President Trump has secured trillions of dollars in investment commitments from foreign countries. The European Union, in its trade agreement, specifically committed to buy $40 billion of U.S. AI chips, and the United Arab Emirates specifically mentioned AI as one of the key sectors that its $1.4 trillion in U.S. investment will be directed toward.

Performance

The Trump Administration's AI policy is outlined in its 2025 "AI Action Plan" and several related Executive Orders. The policy focuses on attaining American international dominance in AI by rapidly building data centers, enabling and accelerating innovation, and upholding free speech in AI models (White House 2025c).

To reach these goals, the action plan outlines concrete steps. For example, regarding the rapid buildout of data centers, the plan recommends establishing new categorical exclusions under the National Environmental Policy Act for data centers in order to fast-track the permitting process. To enable and accelerate innovation, the plan recommends direct investment in AI technology by various Federal agencies, along with establishing AI Centers of Excellence, where researchers and startups are incentivized to rapidly deploy and test AI tools in contexts committed to the open sharing of data and results. Regarding the upholding of free speech, the plan recommends that Federal procurement guidelines be updated to mandate that the government will only contract with AI developers that ensure their systems are objective and free from top-down ideological bias (White House 2025c).

Excessive regulation harms economic activity by increasing costs (Crain and Crain 2014, 26), stifling competition (Ashton 2023) and innovation (Aghion et al. 2023, 2895) and raising consumer prices (Chambers, Collins, and Krause 2019, 59). This can reduce growth (Coffey et al. 2020, 15), startup activity, and job formation (Bailey and Thomas 2018, 3), and increase the poverty rate (Chambers, McLaughlin, and Stanley 2018, 143), with a disproportionate impact on small businesses (Crain and Crain 2014, 54).

On July 23, 2025, President Trump signed an Executive Order to accelerate permitting for data centers as well as their underlying energy and manufacturing infrastructure (Federal Register 2025a). Then, on December 11, President Trump signed an Executive Order to reduce barriers at the state level as well (*Federal Register* 2025b).

As previously studied by the CEA, deregulatory efforts by the Trump Administration aim to ameliorate these issues and deliver benefits to the AI sector along with other sectors throughout the economy. The CEA estimates that these deregulatory efforts are capable of delivering meaningful productivity gains that translate into an extra 0.3 to 0.8 percentage point of GDP growth each year for two decades—and a cumulative increase of about 6 to 17 percent by 2045 (White House 2025d).

Adoption and Usage

President Trump has made energy dominance one of the priorities of his Administration (White House 2025). The Administration has already taken important actions to stimulate domestic production and reduce costs by resuming Federal leasing for energy development, issuing new permits for liquefied natural gas export terminals, and supporting advanced nuclear development, among others. Not counting deregulation, the CEA estimates that policies that support American energy dominance could raise U.S. GDP by at least 0.3 to 1.2 percent by 2035, without accounting for synergies with AI (White House 2025a).

Even more so than traditional data centers, generative AI data centers are especially electricity-hungry, and AI data centers are forecasted to grow from 4 percent of U.S. electricity demand in 2023 to 7 to 12 percent by 2028 (Luna and Pomerleau 2025). To accommodate this increase in demand, the "AI Action Plan" includes concrete policy actions related to building up the energy grid. In particular, it recommends exploring grid management technologies and upgrades to power lines in order to optimize and stabilize the existing grid, in tandem with prioritizing the construction and connection of new power plants using a variety of energy sources to the grid. By April 2025, the U.S. Department of Energy (2025) had already identified 16 potential sites with the energy infrastructure that positions them for rapid data center construction.

Conclusion

The AI revolution, with its parallels to the Industrial Revolution, presents a profound economic inflection point with the potential to significantly increase the GDP of countries that embrace it. The world is witnessing clear leaders in AI investment, performance, and adoption metrics across different nations. The United States, as demonstrated by its comprehensive "AI Action Plan" and related Executive Orders from the Trump Administration, is pursuing a strategy focused on accelerated innovation, infrastructure development, and establishing global dominance through technology exports and deregulation to lay the groundwork for American AI dominance.

★★★★★★

Chapter 6

Protecting and Rebuilding the American Dream of Homeownership

America has been in the midst of a national housing affordability crunch that reached historic severity due to policies of the prior Administration. Because of skyrocketing house prices and mortgage rates, a typical homebuyer at the end of 2024 could expect to pay $2,400 in monthly principal and interest on a mortgage, representing over a $1,000 increase relative to what a typical buyer faced at the end of 2019, when interest rates were closer to 4 percent and median house prices were about $90,000 lower. This payment increase is even larger after accounting for the spillover effects of higher house prices on rising property taxes and homeowner insurance premiums. These trends have pushed the dream of homeownership further out of reach; data from the National Association of Realtors show that the age of a typical first-time buyer has risen from 28 years in the early 1990s to a record high of 40. In his first year back in office, President Trump has taken strong actions to make it easier for families to afford a house while also protecting the nest eggs of those already in the market, and the best is yet to come.

The Trump Administration's Commitment to Current and Future Generations of Homeowners

The Trump Administration has shifted economic policy decisively away from the Biden Administration's approach of government-driven demand and government-impaired supply to a new posture of private-sector-driven demand and healthy supply unleashed by deregulation, pro-growth tax relief, and America First trade. By expanding economic potential, these policies have enabled the yield on 10-year Treasury bonds to fall by half a percent, putting downward pressure on mortgage rates. President Trump also instituted a plan for Fannie Mae and Freddie Mac to buy $200 billion worth of mortgage bonds to further reduce mortgage rates. In total, mortgage rates are now nearly a full percentage point down from their January 2025 level, which promises substantial savings for the American people absent further rapid house price appreciation.

The Trump Administration is also committed to addressing drivers of housing demand that compete with American families. First and foremost, President Trump has secured the U.S. border and has reversed the open borders policy of the Biden Administration that led to waves of illegal immigrants bidding up rents and house prices. In addition, President Trump issued an Executive Order to ban institutional investors from buying up any additional single-family homes that could otherwise go to an American homeowner and called upon Congress to codify the policy in legislation. The Trump Administration is also committed to responsibly expanding housing supply (White House 2025). For example, President Trump is taking decisive action to cut through red tape and bureaucratic obstruction that are blocking families from rebuilding from the California wildfires (White House 2026). The One Big Beautiful Bill Act made Opportunity Zones incentives permanent—which have led to hundreds of thousands of new homes that would otherwise not have been built (Glasner, Ozimek, and Lettieri 2025)—and enhanced the incentives in rural areas where State and local housing supply regulations are often less onerous, which allows dollars to go further. The Department of Housing and Urban Development (HUD) is prioritizing affordability and ending the mission creep from the Biden Administration's coercive green activism and suburban social reengineering. One of HUD's most significant accomplishments is the rollback of the Biden Administration's onerous Affirmatively Furthering Fair Housing rule that forced communities to waste time and resources drafting "equity plans" in order to receive Federal funds. The Biden Administration also imposed an analogous equity plan mandate on Fannie Mae and Freddie Mac, which the Federal Housing Finance Agency (FHFA n.d., 2026) has reversed as part of broader efforts to reverse regulatory overreach. To facilitate supply, the Federal Housing Administration (FHA) has reduced multifamily mortgage insurance premiums to their statutory minimum, thereby ending the penalty that builders faced for not meeting the Biden Administration's green energy rules. These actions are just a sample of the efforts under way to restore housing affordability while protecting home values.

This chapter first chronicles the evolution and driving forces behind the housing affordability crunch and then discusses policies that can be implemented at every level of government to help restore the dream of homeownership, beginning with President Trump's recent announcements. The chapter documents a dramatic increase in real (inflation-adjusted) house prices over the past quarter century and a sizable decline in homeownership across every age category. Although the steep rise in house prices during the 2000s housing boom is often attributed to looser credit, real house prices also rose rapidly during the decade of historically low interest rates from 2012 to 2021 amid much tighter lending standards. The CEA's analysis concludes that the robust house price appreciation during this period was driven by strong demand running up against a wall of tight supply due to bureaucratic costs and delays that function like a six-figure "bureaucrat tax" on the cost of building a new home. With the release valve of new supply malfunctioning from overregulation, buyers with rising purchasing power from falling rates and growing wages consistently bid up the prices of an increasingly scarce stock of housing, causing the would-be savings to instead be capitalized into high prices, property taxes, and homeowner insurance premiums.

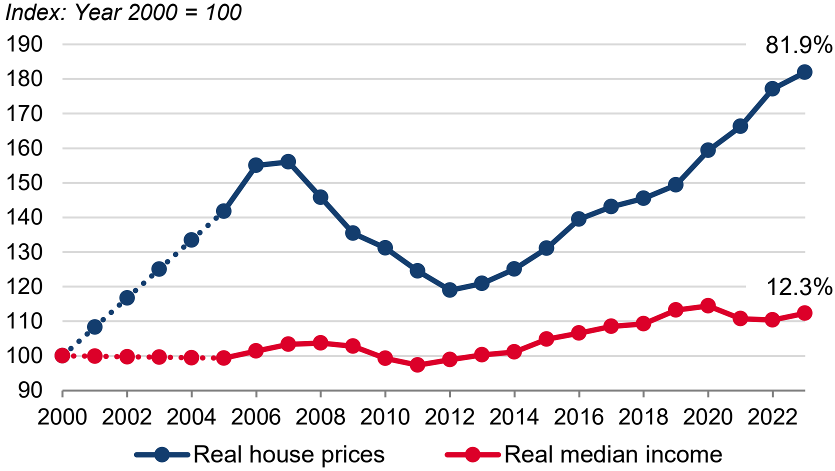
Since 2022, high interest rates that the Federal Reserve engineered to combat the historic inflation of the Biden Administration have had the side effect of dampening house price appreciation by sapping buyers' purchasing power. However, the Biden Administration unleashed new demand into the housing market through the surge of illegal immigrants that it permitted to enter the country and exacerbated housing supply chokepoints through green energy building code mandates that added an estimated $31,000 to the cost of a new home through extraneous add-ons and expensive materials unrelated to safety. The consequences of these policies and the California-style fees, mandates, and red tape that impair supply in many States and localities are stark. Census New Residential Sales data reveal that the share of new homes available for under $300,000 fell from a little shy of 1-in-2 in 2019 to *1-in-6* in 2024. These higher costs are a hardship not just for young families trying to break into the market for the first time but also to families looking to build an in-law suite for aging parents, workers seeking jobs, and businesses looking to expand.

This chapter concludes by describing State and local "best practices" that would tackle the bureaucrat tax and bolster President Trump's recently announced Federal actions. These best practices are the result of the CEA's analysis and engagement with leading industry professionals, policymakers, and academics. The CEA's assessment is that nationwide adoption of these best practices would deliver stable house prices, help prevent soaring property taxes and homeowner insurance premiums, and unleash a wave of homebuilding innovation to create millions of jobs and trillions of dollars in new gross domestic product (GDP). The actions described in this chapter present a win for current and future owners: stable nest eggs for the current generation and new nest eggs for the next.

Chronicling the Deterioration in Housing Affordability

Figure 6-1 plots the cumulative real growth of income and housing prices for homeowners relative to their year-2000 values (indexed to 100) up through

Figure 6-1. Average Real Income and House Prices for Median–Income Homeowners

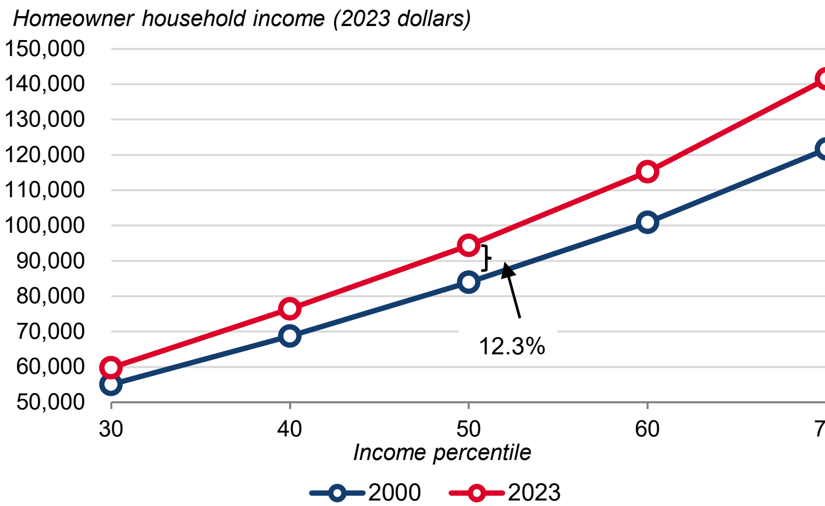


Sources: Census Bureau, American Community Survey; Bureau of Economic Analysis; CEA calculations.

2023, the last year of data as of the writing of this *Report*. This figure shows that from 2000 to 2023, real house prices increased 82 percent—nearly seven times the rate of real income growth of 12 percent.[1] The housing boom from 2000 to 2007 is readily apparent, as is the bust from 2008 to 2011. Notably, real house prices have risen rapidly since 2012, though the relative pace of income and house price growth has fluctuated over this time period. From 2012 to 2016, real house prices grew by a cumulative 17.3 percent, while real incomes grew by only 7.8 percent. During the prepandemic period of President Trump's first Administration, from 2017 to 2019, real incomes kept up with real house prices, with both growing by a cumulative 4.4 percent. However, real house prices soared past incomes again (21.8 percent price growth versus no income growth) during the post-2019 period of historically low rates, COVID-era fiscal stimulus, and Biden immigration policies. Zooming back out, the rapid house price appreciation from 2012 to 2021 erased any purchasing power gains that new buyers might have expected from lower mortgage rates. Despite rates falling from 4.6 to 2.9 percent from the summer of 2011 to 2021, a new homebuyer in 2021 faced essentially the *same* real monthly payment from principal and interest as a buyer in 2011 but with *higher* escrow payments to cover property taxes and homeowner insurance. This pass-through of house prices to property taxes and insurance premiums helps explain why most homeowners prefer house

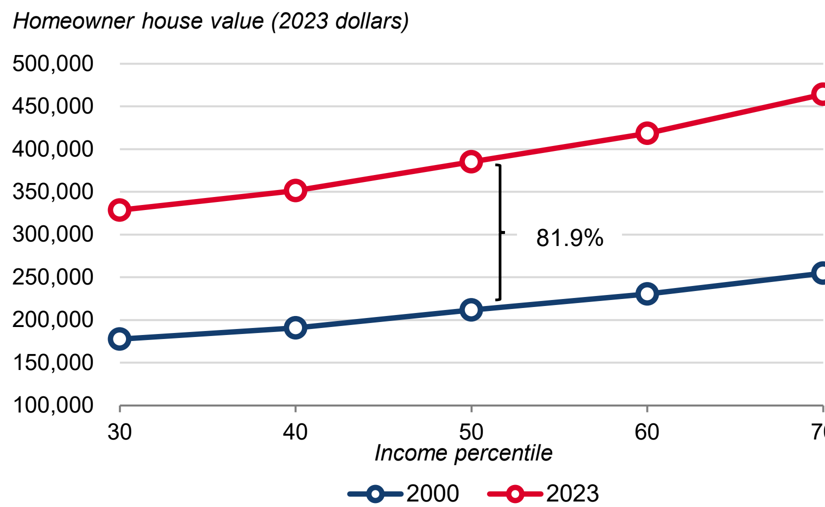
[1] The income and house price data given in figure 6-1 are derived from Census data. The CEA converts nominal income and house price data to real using the chain-type Price Index for Personal Consumption Expenditures, available at the FRED Economic Data database at the Federal Reserve Bank of Saint Louis, https://fred.stlouisfed.org/series/PCEPI.

Figure 6-2. Homeowner Household Income, 2000 versus 2023



Source: Census Bureau, American Community Survey; Bureau of Economic Analysis; CEA calculations.

Figure 6-3. Real Homeowner House Values, 2000 versus 2023



Sources: Census Bureau, American Community Survey; Bureau of Economic Analysis; CEA calculations.

prices to stay the same or fall in their area (57 percent fall, 32 percent stay flat) and only 11 percent want them to rise (Elmendorf, Nall, and Oklobdzija 2025).

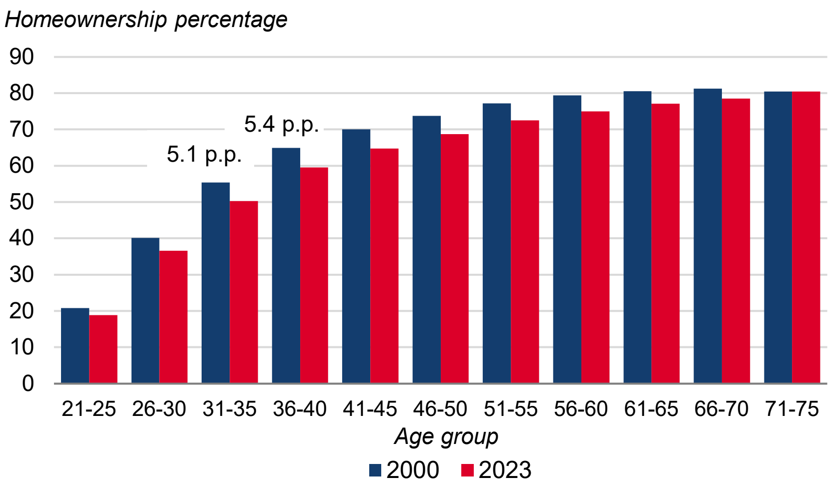
The patterns shown in figure 6-1 are widespread. For example, the CEA also computed real income and house price growth at the 30th, 40th, 50th, 60th, and 70th percentiles of homeowner income in 2000 and 2023. For each of these income deciles, Figure 6-2 shows real household income and figure

6-3 shows the real value of owned housing. Figures 6-2 and 6-3 show that at each decile of household income, real house prices have increased much more rapidly than real household income. For example, a median-earning homeowner in 2000 earned $84,000 and owned a house worth $212,000 (both in 2023 dollars), implying a price-income ratio of 2.5. In 2023, a median-earning homeowner earned $94,000 per year and owned a house valued at $385,000, yielding a price-income ratio of 4.1.

Homeownership and Other Spillover Effects of the Housing Affordability Crunch

If the increase in home prices from 2012 to 2021 was primarily a demand-driven phenomenon, one would expect to see a surge in homeownership akin to what was observed during the 2000s boom. In reality, the aggregate homeownership rate was nearly unchanged at the end of 2021 relative to the beginning of 2012 (65.5 and 65.4 percent, respectively) despite an aging population that should have pushed the homeownership rate up because of composition effects. Diving deeper into the data, the homeownership rate actually *fell* from 2012 through 2016, reaching a trough of 62.9 percent, before strong income growth during the first Trump Administration brought the homeownership rate back above 65 percent in 2019, where it has remained essentially flat ever since. Figure 6-4 controls for the aging of the population and shows that the homeownership rate actually declined between 2000 and 2023 across all age ranges.

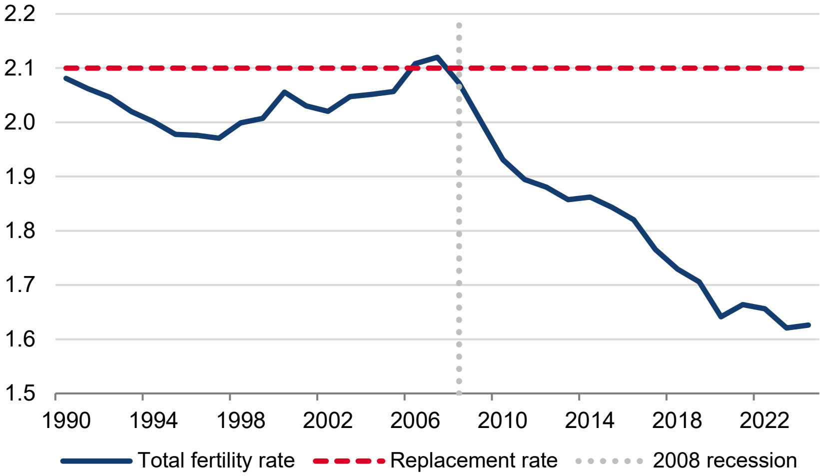
Figure 6-4. Homeownership Rate by Five–Year Age Group



Sources: Census Bureau, American Community Survey; CEA calculations.
Note: Data labels reflect the percentage-point (p.p.) gap between ownership rates in 2000 and 2023 by age bracket.

Figure 6-5. U.S. Total Fertility Rate

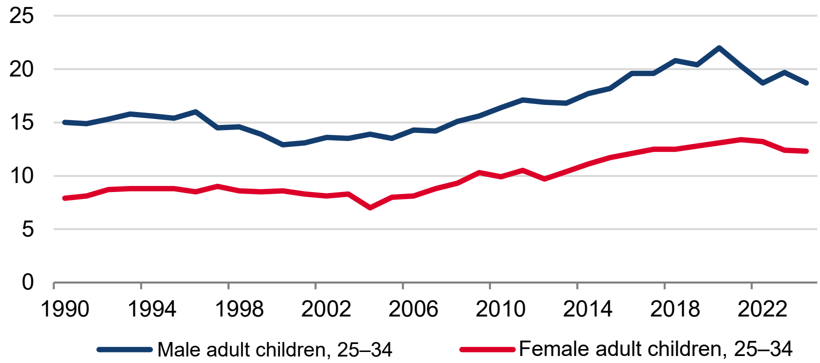
Births per woman during fertility window, 15-44



Sources: National Center for Health Statistics; CEA calculations.

Figure 6-6. Adult Children Living at Home

Percentage living at home



Sources: U.S. Census Bureau; CEA calculations.

This is not a surprising finding in light of house prices outpacing incomes, which makes it more difficult for buyers to satisfy loan-to-value *and* payment-to-income requirements when attempting to qualify for a mortgage.

As one might also expect, the largest declines are for Americans in their late 20s through early 40s during the prime family-formation years. At the same time that the homeownership rate declined by more than 5 percentage points for households age 31–40 years, the aggregate fertility rate declined and the percentage of adult children living at home increased, as shown in figures 6-5 and 6-6. Notably, the deterioration in these trends coincides with the sharp decline in new housing supply (which is discussed later in this chapter). Although common factors like changing tastes could be driving all these trends, a recent survey indicates that higher housing costs are *causing* milestone delays. In the survey, 51 percent say housing costs have delayed a major life decision, including 74 percent of those under the age of 34 and 68 percent of Hispanics (AFPI 2025a, 2026b).

The First Culprit: Adverse Sources of Demand Competing with American Families

In an environment of constrained supply and high interest rates, the last thing American homebuyers need is added competition for scarce homes, but that is exactly what they have faced from institutional investors and illegal immigrants. Whereas institutional investors were largely absent from the single-family home market before 2008, they have since bought up hundreds of thousands of homes that American families could otherwise potentially own.

Nationwide, estimates put the institutional-investor-owned share of single-family homes at about 1 percent, but in some metropolitan areas the share is above 5 percent. The deep pockets and added demand these investors bring to the market push up prices for regular homebuyers. Recent research quantifies the impact on house prices, finding that every 1 percentage point of the housing stock bought by institutional investors causes house prices to rise by 1.7 percent (Coven 2025). In areas like Atlanta that have a high concentration of institutional investor activity, the total price impact is about 6 percent (Austin 2022).

While research finds that institutional investor activity helped arrest the decline of house prices during the post-2008 housing bust (Lambie-Hanson, Li, and Slonkosky 2022; Oosthuizen 2026), the glut of supply from foreclosed homes and low recessionary demand is long gone. Economists and industry professionals look at months of supply data to evaluate housing market tightness, with 6 months of supply considered a balanced market, where supply and demand are in alignment without upward or downward pressure on prices. Over the past decade, the overall level of months of supply has regularly hovered at or under four months—indicating tight supply conditions—and reached an unprecedented low in 2020 and 2021 of two months when historically low interest rates and COVID-era migration fueled widespread bidding wars (Pinto and Peter 2026b).

Institutional homebuying can also alter the fabric of neighborhoods by shifting the composition of residents away from owning and toward renting. One recent paper finds that, when a corporation acquires a home and converts it from an owner-occupied property to a rental, homes within close proximity see their values decline because of higher crime. The mechanism the authors identify is a decline in social capital that typically accompanies owner occupancy (Billings and Soliman 2025).

Illegal immigration represents another source of government-enabled demand that unfairly competes with American families over a scarce supply of homes. The unprecedented surge of illegal immigration during the Biden Administration put an immense strain on America's rental markets, but linkages between rental and purchase markets mean that illegal immigration also has an impact on owner occupancy. The CEA finds that, averaging across 227 metropolitan areas, the surge in illegal immigration caused real house prices to rise by 3.2 percent from 2022 to 2024, explaining nearly half the realized increase in prices during this period.

President Trump is committed to ensuring that homes are for American families, not for corporations or for illegal immigrants. Ending these sources of competing demand makes room for added *American* demand from lower mortgage rates, ensuring better affordability outcomes for those who have been left behind.

The Second Culprit: The Government Bureaucrat Tax on Supply Inflating Building and Renovation Costs

Throughout most of the 20th century, housing supply acted as the critical release valve to ensure that house prices remained stable and affordable when housing demand rose in areas with rapid economic or population growth or when interest rate reductions boosted the purchasing power of prospective buyers. From the 1970s through the 1990s, real house prices remained roughly stable, even during periods of strong demand growth, with nominal house prices rising at a moderate, steady pace that allowed people to build equity and reduce their leverage while still being able to afford to move up the property ladder. However, in recent decades, something has caused this supply valve to malfunction. Instead of strong demand igniting new homebuilding, it disproportionately fuels rapid price appreciation that excludes people from the market, leads to significant hikes in property taxes and homeowner insurance premiums, and sows the seeds for boom-bust cycles. In economic terms, supply has become much less elastic (Albuquerque, Anundsen, and Aastveit 2020).

Providing perspective on the scale of the change, one recent paper examines a broad range of metropolitan areas and finds that each of them had a supply elasticity in the 2010s that was under one-fourth their elasticity in the 1970s (Glaeser and Gyourko 2025). Even previously supply-elastic metro areas have experienced large declines, leading the authors to conclude that the United States has been undergoing a "closing of the suburban frontier." Other papers (e.g., Aastveit, Albuquerque, and Anundsen, 2023; Howard and Liebersohn 2025; Gorback and Keys, forthcoming) also find that housing supply has become much less elastic over time and that demand growth increasingly gets capitalized into higher prices instead of more homeowners.

But what is the "something" that has caused the release valve to malfunction and supply to become less elastic? Evidence points strongly to the added costs and delays imposed on homebuilding and renovations by the worsening "bureaucrat tax" of California-style fees, mandates, regulations, and red tape in many States and localities. The economics literature examines the nature and severity of these inflationary supply barriers in several different ways. For example, Gyourko, Hartley, and Krimmel (2021) find that land use regulations, as measured by the Wharton Residential Land Use Regulatory Index (WRLURI), became more stringent between 2006 and 2018 across the country. Moreover, the increases were not limited to any one type of geography or specific aspect of housing supply regulation. For instance, even putting aside contentious issues of zoning and density, approval processes have become substantially more cumbersome over time. Gyourko and Krimmel (2021) find that, in some metro areas, the bureaucrat tax adds tens of thousands of dollars or more to land costs alone. Garcia and Molloy (2025) rule out the idea that mismeasurement due to quality improvements can explain away rising housing costs, and they find that productivity has fallen most in areas with tighter housing supply constraints. Other metrics also point to the worsening severity of the bureaucrat tax. For example, Ganong and Shoag (2017) show a significant rise in the number of per capita land-use court cases in recent decades. Bartik, Gupta, and Milo (2025) employ large language models to decode and interpret housing supply regulations in what they call "generative regulatory measurement," finding that regulatory regimes are complex and becoming more so over time. Other notable references on the topic include, but are not limited to, Gyourko and Molloy (2015); Jackson (2016); Glaeser and Gyourko (2018); Herkenhoff, Ohanian, and Prescott (2018); Baum-Snow and Duranton (2025); and Song (2025).

The consequences of the bureaucrat tax extend beyond higher housing costs to include lost productivity, economic opportunity, and GDP. Ganong and Shoag (2017) report that regional income convergence has declined over time, as fewer workers move to areas with better job opportunities because of prohibitively high housing costs. This impaired geographic mobility causes large GDP losses nationwide, as discussed both by Herkenhoff, Ohanian, and Prescott (2018) and Hsieh and Moretti (2019). The latter finds that U.S. GDP was reduced by a cumulative 36 percent from 1964 to 2009 because of the overregulation of housing supply.

Another casualty is lower productivity growth. Whereas overall productivity in the U.S. economy doubled from 1970 to 2020, construction labor productivity actually *fell* by 30 percent over this period (Yeh 2025). In fact, the construction sector has accounted for one-third of the decline in trend GDP growth since World War II—*a loss equivalent to $1 trillion every five years*. If building productivity had grown just 1 percent annually since 1970, overall labor productivity growth in the economy would have been nearly 0.2 percentage point higher annually (Goolsbee and Syverson 2023). A comparison of construction and automobile production is instructive. In 1939, the auto industry produced 4.8 cars per employee per year, and that rose to 25 by 2020. In residential construction, productivity is close to 1930s levels. D'Amico and colleagues (2024) point out that regulations disincentivize technological innovation and economies of scale. They also find that areas with strict regulation have lower productivity construction establishments and less construction.

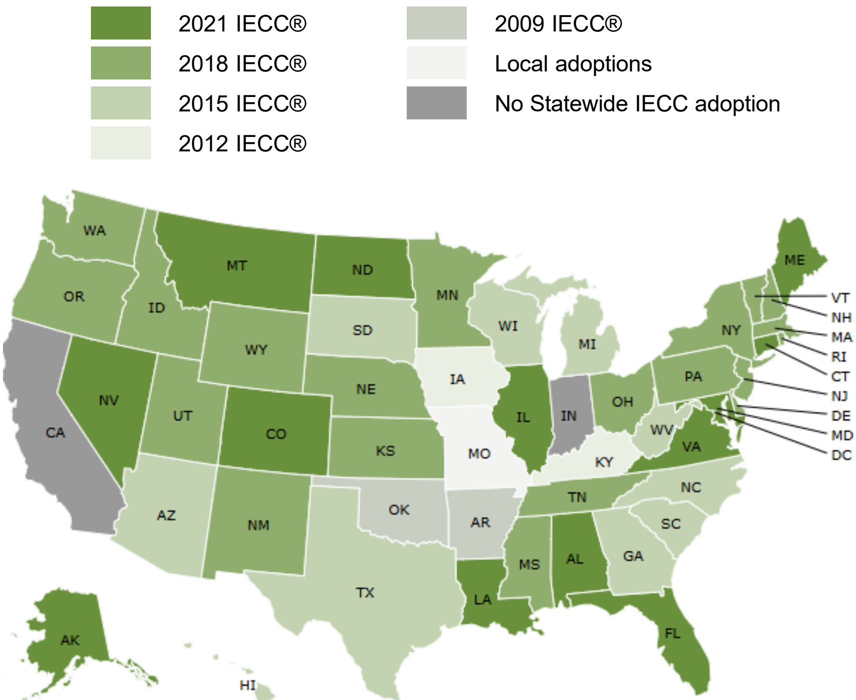
Finally, Lee and Yoo (2025) show that Americans are increasingly giving up on the possibility of ever owning a home, which spills over into many areas of economic decision-making. Specifically, the loss in the belief in the feasibility of homeownership is causing people to reduce their work effort, spend a higher fraction of their income instead of even attempting to save up for a home, and engage in riskier investment behavior.

Not Just a State/Local Issue: The Biden Administration's Coercive Green Energy Mandates

On June 1, 2022, the Biden Administration announced its "National Initiative to Advance Building Codes," which was developed and approved by Biden's National Climate Task Force (White House 2022). The announcement for the initiative stated that "agencies will advance the use of innovative incentives in Federal funding to support and reward jurisdictions for code adoption and enforcement." In other words, *the initiative coerced States and localities into adopting green codes*. According to the National Association of Home Builders (NAHB 2024), "building to the 2021 International Energy Conservation Code (IECC) can add up to $31,000 to the price of a new home and take up to 90 years for a home buyer to realize a payback on the added cost of the home." Specific items included in the initiative were:

- The Federal Emergency Management Agency (FEMA 2022) released a new building codes strategy in 2022 that included "amplify[ing] climate science messaging . . . to increase public demand for building codes" and advancing equity as core objectives. FEMA's 2022–26 strategic plan also mentioned "instill[ing] equity as a foundation of emergency management" (FEMA 2021).
- The Department of Energy deployed $225 million from the President's Bipartisan Infrastructure Law to "advance energy efficiency and resilience through building codes by … advancing environmental and energy justice priorities."
- HUD issued its 2024–27 Federal Climate Adaptation Plan in May 2024. The plan highlights the use of Notice of Funding Opportunities to award points for projects that "incorporate green and resilient building approaches and outcomes."
- HUD and the Department of Agriculture (USDA) required above-code

Figure 6-7. Adoption Rates for Statewide Building Codes

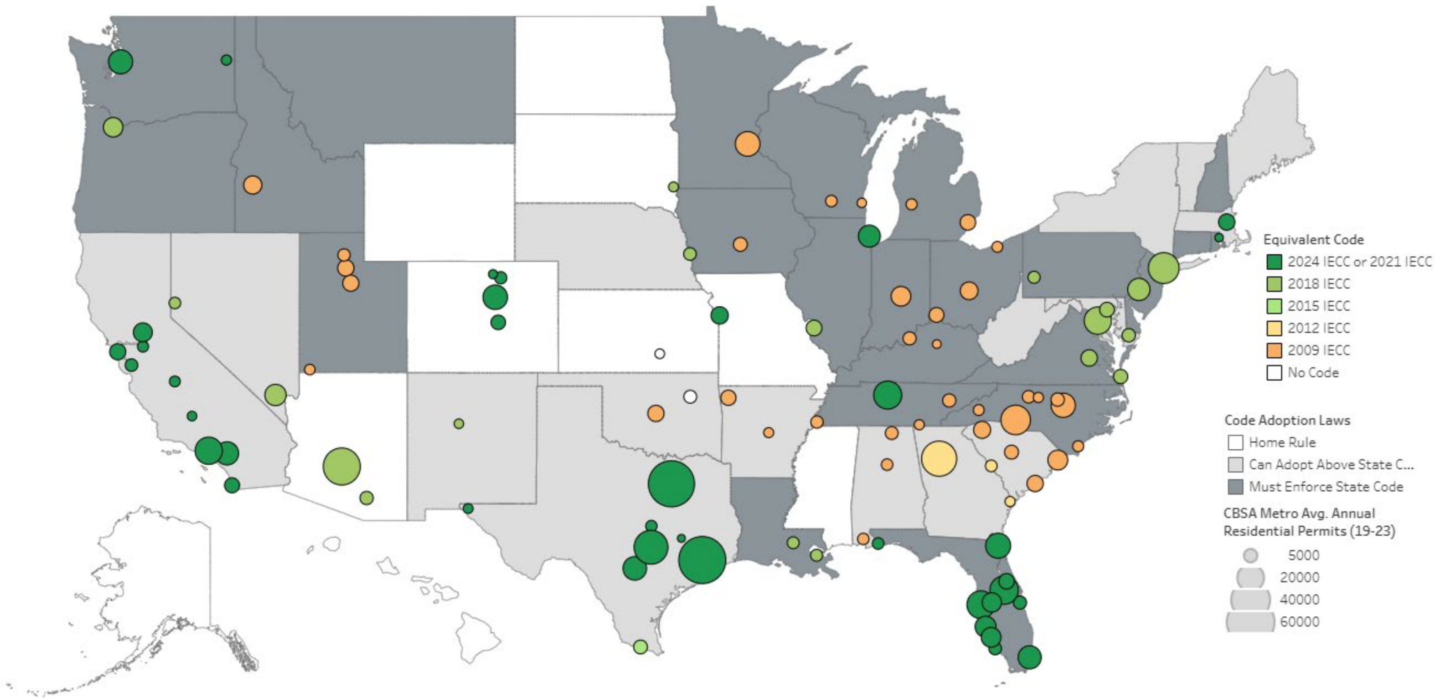


Source: International Code Council.
Note: Adoption information is provided for Sates where the IECC is adopted Statewide, adopted Statewide for certain categories of buildings, or adopted by a State body to guide local code adoption.

green and resilient construction standards in HUD- and USDA-assisted housing. In particular, in April 2024, HUD and USDA issued a Final Determination that requires all HUD- and USDA-financed single-family housing construction to be built to the 2021 International Energy Conservation Code (IECC) and HUD-financed multifamily housing be built to 2021 IECC or ASHRAE 90.1-2019 (HUD and USDA 2024).

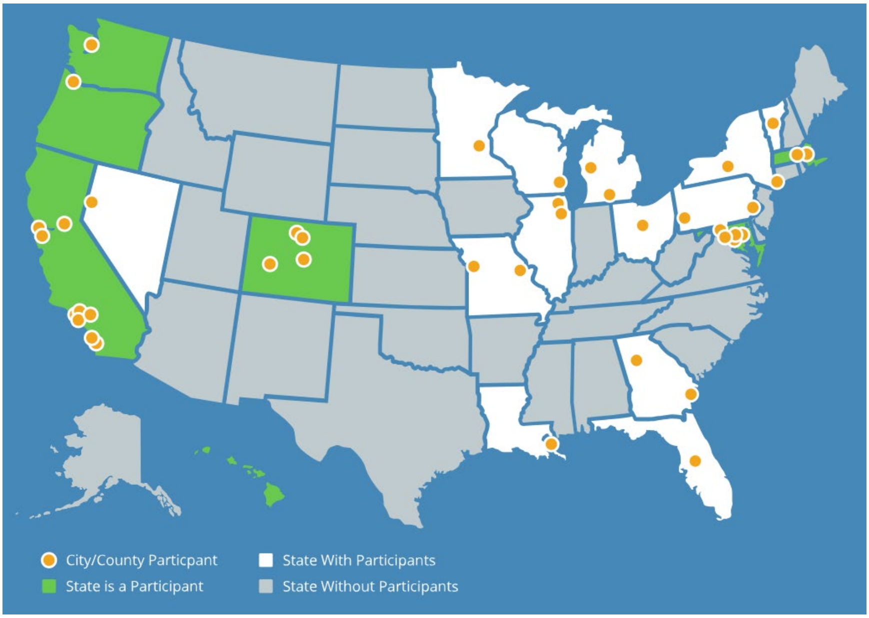
Fannie Mae also began offering preferential pricing (e.g., a lower interest rate) to finance “green certified” properties. Unfortunately, this use of Federal dollars by the Biden Administration succeeded in coercing several States and localities to adopt inflationary green energy mandates in their residential building codes. Figure 6-7 shows that many States have mandated adoption of the 2021 IECC energy codes, while in other cases, like California, the standards can be even *more* stringent or are adopted at the local level (figure 6-8). Figure 6-9 shows the Biden Administration’s National Building Performance Standards Coalition.

Figure 6-8. Energy Codes in the 100 Largest Metro Areas, by Permit Type and Number



Source: Energy Efficient Codes Coalition.

Figure 6-9. A Map of the Biden Administration's National Building Performance Standards Coalition



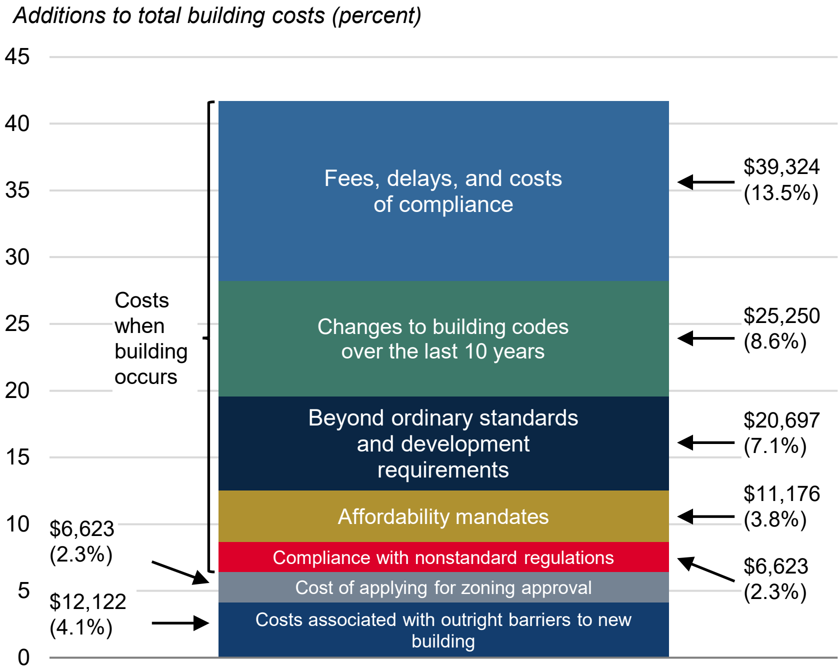
Source: National Building Performance Standards Coalition.

Green energy provisions have steadily and steeply grown for over a decade (International Code Council 2021). Whereas residential building codes were closer to 500 pages in the year 2000, they now exceed 1,100 pages from added regulations that cost homebuyers. It is also worth noting that nearly 9-in-10 American homeowners live in homes built before 2010, yet many parts of the country have banned building homes like these anymore for reasons that have nothing to do with health or safety. Beyond the immediate inflationary impact on residents of those States and localities, these mandates hurt taxpayers *nationwide* by increasing the cost per new unit constructed from Federal subsidies. In short, the mandates impaired the cost-efficiency of Federal housing programs, causing dollars to not go as far as they used to.

Quantifying the Bureaucrat Tax from State and Local Housing Supply Barriers

This section quantifies the magnitude of the bureaucrat tax and its constituent components. Beginning with the topline results, the CEA finds that the costs and delays described above translate into an effective 42 percent bureaucrat tax on housing supply, indicating that fees, mandates, regulations, and red tape make up about 29.5 percent (= 0.42/1.42) of the cost of a new home. As added

Figure 6-10. Decomposition of the Bureaucrat Tax



Sources: Emrath 2021, National Multifamily Housing Council, CEA calculations.

context, the NAHB estimates that the bureaucrat tax constitutes 24 percent of the cost of a new home, and the National Multifamily Housing Council (NMHC) reports an even higher share of 41 percent for multifamily housing (Emrath 2021; National Multifamily Housing Council 2022). Put even more concretely, *the bureaucrat tax adds over $100,000 to the cost of a new single-family home*. Another recent study finds that multifamily development costs 2.3 times more in California than it does in Texas and that government overhead is a major driving force of the gap (Ward and Schlake 2025). Impact and development fees average $29,000 per unit in California versus less than $1,000 in Texas, and it takes on average 22 months longer to complete a project in California than in Texas. The study also finds that California's subsidized "affordable" projects are *more expensive* to build than the market-rate construction. In short, papering over the bureaucrat tax with subsidies is not a real fix.

Before delving into the methodology for the CEA's estimated 42 percent bureaucrat tax, figure 6-10 quantifies each of the contributing factors by mapping the aggregate onto the decomposition of regulatory costs based on the NAHB and NMHC studies. This figure uses percentages and (paraphrased) labels from table 1 of the NAHB study, supplemented by the estimated impact of affordability mandates from table 1 of the NMHC study. Neither study includes estimates of how the impact of bans, literal or effective, on new building affect costs, so the bottom category, "costs associated with outright barriers to new building," is computed as a residual so that the total regulatory share is 29.5 percent.[2] The numbers are then converted back from their tax-inclusive regulatory share to their tax-exclusive rate, ensuring the total adds up to 42 percent. The imputed tax associated with outright barriers to new building comes out to 4.1 percent, but in localities that have no-building zones like greenbelts and urban containment boundaries, this tax is likely much larger. As an example, Boulder County, Colorado, has a large and long-established greenbelt, while Denver County, Colorado, does not. To assess its impact on house prices, the CEA uses census-tract-level data. After controlling for income, house prices in Boulder are 18 percent more expensive, which amounts to $113,000 for a median-priced home.[3]

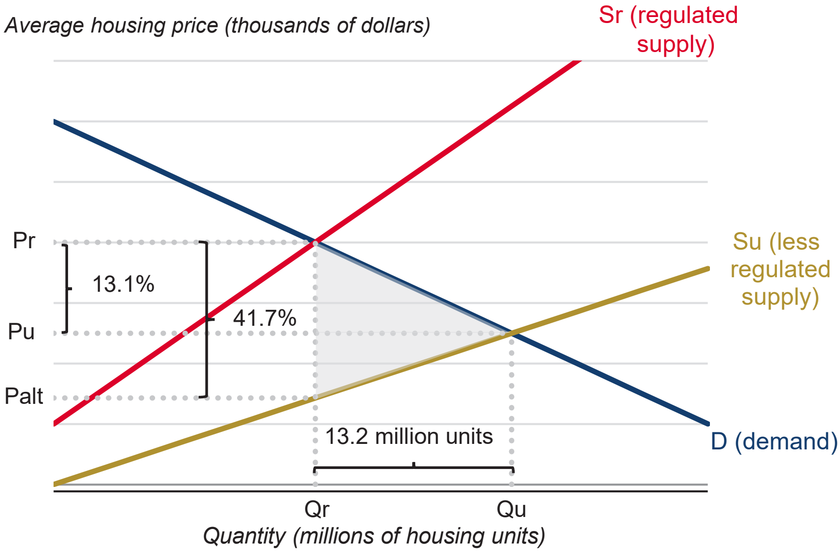
Methodological Overview of the CEA's Estimate of the Bureaucrat Tax

The CEA uses the classic tools of supply and demand to compute the impact of deregulation on housing markets. Figure 6-11 provides a stylized example. The downward-sloping blue line shows a hypothetical housing demand curve. The curve slopes down because as the price of housing declines (i.e., as the value of the y axis declines), people demand a larger quantity of housing (the value of the x axis increases).

The red and the gold lines in figure 6-11 provide stylized examples of two different supply curves. Each of these curves has an upward slope, because as the quantity of housing in an area increases (i.e., the x axis increases), it can become more difficult and expensive to add additional units to the stock (the y axis increases).[4] The red line represents a hypothetical supply curve in a jurisdiction that is heavily regulated, and the gold line represents a supply curve in a jurisdiction that is less regulated. The red line is everywhere above the gold line because regulation makes it more expensive to supply any quantity of housing. The wedge between the red and gold lines is the "bureaucrat tax."

[2] The estimate of the percentage increase in costs due to affordability mandates is from the NMHC study. The cost of regulation according to the NMHC study is 41 percent, but that estimate refers to multifamily units and the CEA is largely focusing on single-family homes.
[3] This example is intended to be illustrative, because controlling for income is not sufficient to measure the impact of a greenbelt on house prices. Koster (2023) studies the impact of greenbelts in England, and Hempel (2024) studies the impact of the Toronto greenbelt. Both papers find that greenbelts decrease the stock of housing and increase the price. We note that greenbelts are different than other forms of regulation (e.g., delays in providing permits) given that existing owners may like greenbelts, whereas presumably permitting delays likely provide few benefits to anyone.
[4] E.g., land with undesirable geographic features such as steep slopes may not be developed at first, but as a city expands and good land becomes scarce, developers might choose to build new housing on this land if the price of housing justifies the increase in construction costs.

Figure 6-11. Shift of the Housing Supply Curve and the Bureaucrat Tax Due to Regulatory Barriers



Sources: National Historical Geographic Information System; Baum-Snow and Han (2024); Federal Housing Finance Agency; U.S. Census Bureau; CEA calculations.
Note: This graph shows a hypothetical estimate based on the CEA's analysis using the sources listed. For simplicity, data are presented in linear space as opposed to log-log space, as used by the CEA in the estimate.

Two different housing market equilibria are shown in figure 6-11. In the first, corresponding to a regulated market, the equilibrium occurs at the intersection of the red supply curve and blue demand curve. The quantity and price of housing in this market are labeled *Qr* and *Pr*. In the second, a less regulated (or unregulated) market, the equilibrium occurs at the intersection of the gold supply curve and the blue demand curve at quantity *Qu* and price *Pu*. In figure 6-11, the price of housing in the unregulated market is lower than in the regulated market, and the unregulated market builds more homes than the regulated market. The vertical gap between the gold and the red supply curves at quantity *Qr* is the bureaucrat tax. Conceptually, it is the extra amount that people have to pay for their housing in regulated markets due to regulation (over and above the price of housing that would be present at that quantity if housing were unregulated). In this example, the size of the tax is 41.7 percent, marked as the difference between *Pr* and *Palt*. Ultimately, if the entire tax is removed, equilibrium prices are 13.1 percent lower, not 41.7 percent. At price *Palt*, there is excess demand; builders build more housing and, as builders increase production, costs naturally start to increase. Builders build housing until the cost of an additional unit of supply is equal to the willingness to pay of a buyer for that last unit, and that occurs in the unregulated market at price *Pu* and quantity *Qu*.

Data and Estimation

To get a sense of the impact of red tape, fees, mandates, and other regulatory supply barriers on housing markets—that is, the distance between the gold and the red lines in figure 6-11—the CEA uses the Wharton Residential Land Use Regulation Index. Gyourko, Hartley, and Krimmel (2021) describe the construction of the index and some of its properties. Briefly summarizing, for 2,450 "primarily suburban" communities, the chief administrative officer of the community completed a five-page survey on the presence or lack thereof of various types of regulations. The responses are tabulated and weighted, and then each community is assigned a score, its WRLURI value. The value of the WRLURI rises as housing production is increasingly regulated. The WRLURI is normed so that across all 2,450 communities, the average value is zero and the standard deviation is 1.

The CEA computes the impact on house prices and quantities nationwide if the regulatory burden to producing housing declines such that the nationwide average value of the WRLURI falls by 1 standard deviation. Referring to figure 6-11, conceptually, the red supply curve reflects the current situation of highly regulated housing markets and the gold supply curve reflects the new reality of housing markets once the WRLURI declines by 1 standard deviation. A reduction of about this magnitude would occur if all metropolitan areas more regulated than the Duluth metro area became equally as regulated as Duluth and if all areas less regulated than Duluth did not change.[5]

To quantify how variation in local regulation affects equilibrium prices (i.e., the gap between Pr and Pu in figure 6-11), the CEA regresses the natural logarithm of the price of housing at the census tract level in 2023 and 2024 on the WRLURI.[6] The CEA uses the natural logarithm of the price for the dependent variable so that the regression coefficient has the interpretation of the impact of a change of 1 standard deviation in the WRLURI on the growth rate of prices. Importantly, in this regression, the CEA includes border "fixed effects." This means that the identification of the impact on WRLURI on house prices is only coming from systematic variation in WRLURI values and prices among census

[5] The CEA estimates the WRLURI score for Duluth, MN-WI, to be −0.74. The housing-unit weighted average WRLURI of metros above Duluth is 0.45, constituting about 86 percent of total housing units. We multiply the difference between the weighted average mean of metros and Duluth (0.45 – [−0.74] = 1.19), by the share of housing units in metros above Duluth (86 percent) to derive the value of the housing-unit weighted reduction in WRLURI from the average to Duluth (1.19 * 86% = 1.02), while assuming no change in the restrictiveness of those metros with scores below Duluth.

[6] The CEA inflates median house prices at the census tract level from 2000 to 2023 and 2024 using census-tract-level house price indexes from the Federal Housing Finance Agency.

tracts that share a border.[7] The CEA's estimate is 0.1234,[8] implying that an increase of 1 standard deviation in the WRLURI is associated with a 13.1 percent increase in the price of housing among census tracts that share a border. Note this is an *underestimate* of the relationship of *all* housing regulations and house prices because it does not include the impact of either Federal or State regulations on house prices that are common across census tracts that share a border.

Next, the CEA computes the regulatory tax rate (i.e., the gap between the red and gold lines of figure 6-11 when measured at Qr) that is consistent with the CEA's estimate that a change of 1 standard deviation in the WRLURI is associated with a 0.1234 change in equilibrium log house prices. The Mathematical Appendix to this chapter shows that the formula to determine this tax rate is:

$$\exp\left[\left(\frac{m_s+m_d}{m_d}\right)0.1234\right] - 1 \qquad (1)$$

where m_s is the slope of the gold supply curve from figure 6-11 and m_d is the (negative) of the slope of the blue demand curve from figure 6-8. In this calculation, the CEA sets m_s = 2.61 and m_d = 1.43. The Mathematical Appendix shows how the CEA arrives at these estimates. Applying these values to equation 1 gives a "bureaucrat tax" associated with a change of 1 standard deviation in the WRLURI of 41.7 percent.

As a final step, the CEA computes the predicted increase in quantity (i.e., the change in quantity from Qr to Qu in figure 6-11) associated with a decline of 1 standard deviation in the WRLURI. The Mathematical Appendix shows that the percentage increase in quantity can be computed as

$$\exp\left[\left(\frac{1}{m_d}\right)0.1234\right] - 1 \qquad (2)$$

Given m_d = 1.43, this comes out to a 9.0 percent increase in the number of homes from higher supply.

[7] The basic idea behind identification is that census tracts that share a border should have a nearly identical set of amenities that may affect house prices and are otherwise hard to observe, e.g., proximity to parks. For identification to be valid, the variation in amenities and other attributes that affect house values must be randomly distributed across the border. Identification is not valid if areas that are systematically more regulated also, on average, have higher amenities that people tend to value (e.g., lower crime).

[8] The regression uses the number of housing units as weights. Standard errors are clustered by border ID and place. The standard error of this estimate is 0.0538.

Boosting Ownership, Protecting Home Values, and Limiting Monthly Payments in a Trump Boom

As mortgage rates continue to fall and income growth accelerates, supply will need to expand in tandem with higher demand to enable greater homeownership, ensure stable house prices, and shield against the return of rising property taxes and homeowner insurance premiums (Abramson and Landvoigt 2025).

Rapid House Price Appreciation and Monthly Liquidity

Although homeowners gain illiquid wealth from rising home values, their monthly liquidity often tightens because of the resulting payment increases they face from increases in property taxes and homeowner insurance induced by rapid house price appreciation, which can create financial distress. For perspective, data from the American Community Survey indicate that property taxes rose by 26 percent on average from 2019 to 2024, adding over $900 annually to the cost burden of a typical homeowner. For seniors age 75 to 84 years, many of whom live on fixed incomes, the average property tax increase was over $1,000. Since 2012, property taxes have increased by 62 percent, or over $1,750. Using 2012–24 American Community Survey data and controlling for State fixed effects, the CEA finds that each 1 percent rise in house prices is associated with a 0.41 percent rise in property taxes and a 0.42 percent rise in insurance premiums, with even larger pass-through magnitudes in some States and localities.

A prospective homebuyer's monthly liquidity is also one of the most important reasons for mortgage loan denials. Although policy discussions often center on down payments, the median homebuyer who takes out a mortgage to purchase a home only makes a 5 percent down payment (Urban Institute 2025). Fannie Mae and Freddie Mac allow down payments as low as 3 percent, FHA allows down payments of 3.5 percent (which most FHA borrowers elect), and Veterans Affairs loans have a zero percent minimum required down payment.[9]

Often, the more binding constraint that prevents homeownership is the allowed maximum debt-to-income ratio (Greenwald 2018; Bhutta and Ringo 2021; Ringo 2023). The debt-to-income (DTI) ratio measures a borrower's monthly mortgage payment—principal, interest, property taxes, homeowner insurance, and, if applicable, mortgage insurance and homeowner association dues—as a fraction of their monthly income. This ratio is called the front-end ratio. The back-end ratio also includes other revolving debt, such as credit cards and car loans. The front-end and back-end DTIs are both key underwriting criteria. For example, Fannie Mae often imposes a maximum back-end DTI of 36 percent for borrowers with moderate credit histories and total principal, interest, taxes, and insurance of 45 percent for borrowers with stronger credit

[9] The FHA Single Family Origination Trends report states that 61.5 percent of new loans had a loan-to-value ratio of 96 to 98 percent.

(Fannie Mae 2025). FHA uses 43 percent as a baseline for the maximum DTI (HUD 2025). An analysis of data from 2018 to 2021 finds that 28 to 30 percent of loan denials occurred because of a borrower's inability to meet the maximum DTI threshold, whereas only 12 to 19 percent of denials were because of collateral issues from an insufficient down payment (Garriga 2026). Even more recent data from 2023 show that 34.4 percent of loan denials were because of the debt-to-income ratio, versus only 9.3 percent due to an insufficient down payment (Zillow 2024).

What these findings establish is that high monthly *payments* are a serious impediment to homeownership, and the drivers of higher payments include high interest rates, high house prices, and high debt burdens from other sources like student loans and credit cards. The Trump Administration has already taken action to reform student loans through the One Big Beautiful Bill Act, and President Trump has recently announced actions to address high credit card interest rates. All things remaining equal, falling interest rates will make it easier for prospective buyers to satisfy DTI criteria, but rapid house price appreciation would make this more difficult.

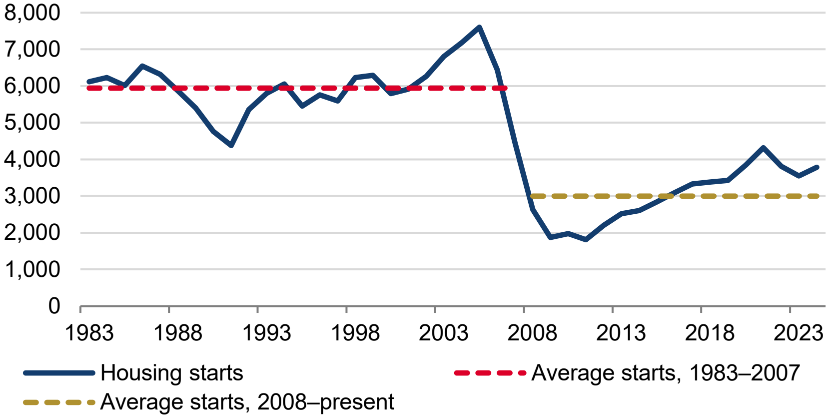
Ensuring Balanced Supply Growth to Guard Against Rising Prices

The future path of house prices in a booming Trump economy with falling mortgage rates and rising income will depend on the ability of housing supply to grow and keep up with demand. As discussed above, supply conditions have been tight for years, characterized by low months of supply—especially at affordable price tiers—and contractions in residential construction, which continue to subtract from otherwise robust GDP (Pinto and Peter 2026b; BEA 2026). Looking back further, to 2008, the rate of homebuilding has fallen by half relative to what had been a stable pace of 6,000 new single-family homes per million people per year for decades, as shown in figure 6-12 (with the trend going back even further, to the 1960s). The divergence from historical trends is also apparent in figure 6-13, which shows the total stock of single-family homes over time. If homebuilding and the growth of the single-family housing stock had continued at their historical pace instead of falling dramatically after 2008, there would be 10 million or more additional single-family homes today. This finding is broadly in line with estimates from other experts who use different methodologies to quantify a housing "shortage" of several million homes from a prolonged suppression of housing supply (Patel, Rajan, and Tomeh 2024; Congressional Research Service 2025; Glaeser and Gyourko 2025; Goldman Sachs 2025). Not only does the bureaucrat tax add over $100,000 to the cost of a home; it also acts as a barrier to homes being built.

Reversing the supply suppression from the large bureaucrat tax will help ensure that the full savings from lower mortgage rates flow to homebuyers by keeping home values stable and shielding against the return of soaring prices,

Figure 6-12. Average Single-Family Housing Starts per Million People, 1983–2024

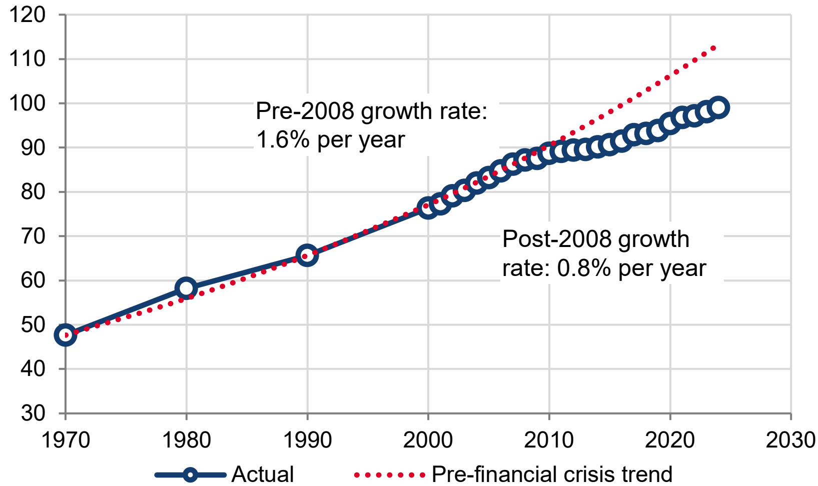
Annual housing starts per million people



Sources: Census Bureau; CEA calculations.

Figure 6-13. Single-Family Housing Stock

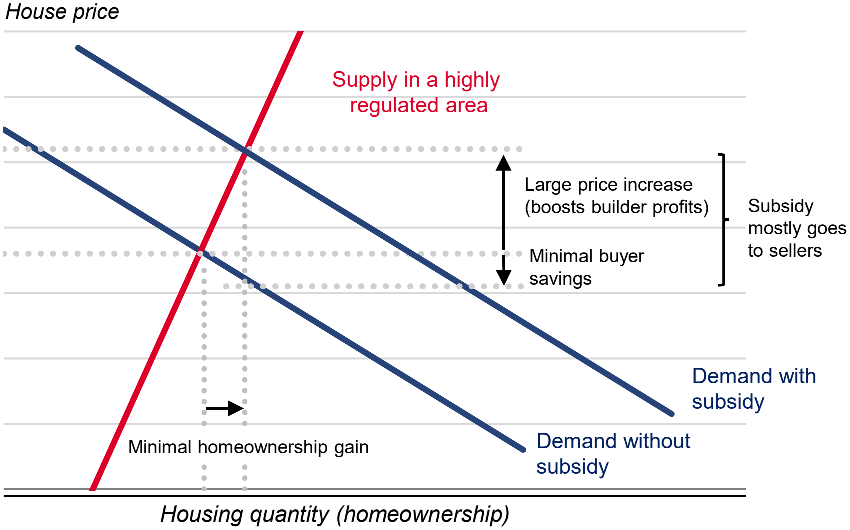
Millions of units



Sources: American Community Survey; U.S. Census Bureau; CEA calculations.

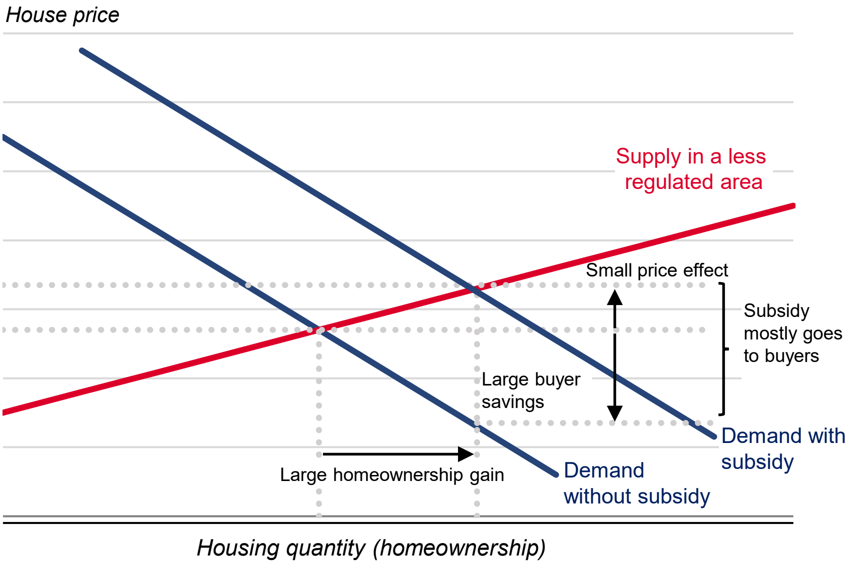
property taxes, and homeowner insurance premiums. For example, one recent analysis based on extensive research finds that, if rates fall back to their 2018 average of 4.5 percent but supply remains at suppressed levels, house prices would rise an additional 10 percent over the next three years and erase about half the savings to buyers (Pinto and Peter 2026a; Chudik and Kumar 2023; Liu et al. 2021). By contrast, restoring homebuilding to past levels would help

Figure 6-14. Subsidizing Demand in a Supply–Constrained Market



Source: CEA calculations.

Figure 6-15. Subsidizing Demand in a Supply–Abundant Market



Source: CEA calculations.

stabilize house prices and home values, passing more savings to buyers and boosting homeownership.

Under the Trump Administration, the Federal government has taken great steps to reduce the burden on homebuilders imposed by Federal regulations. Reform at the State and local levels to tackle the sources of the six-figure bureaucrat tax would greatly enhance the ability of supply to keep up with stronger demand. Figures 6-14 and 6-15 provide a visual illustration of the importance of reducing supply constraints to ensure stronger demand (depicted as a demand subsidy) boosts homeownership instead of housing inflation. In figure 6-14, with highly regulated supply, a demand subsidy fuels appreciation that increases the profits to sellers and builders, with minimal gain in homeownership. By contrast, in figure 6-15, with less constrained supply, most of the demand subsidy ends up as savings to buyers, with house prices exhibiting little change.

The Impact of Cutting the Bureaucrat Tax on Homebuilding, Economic Activity, and Affordability

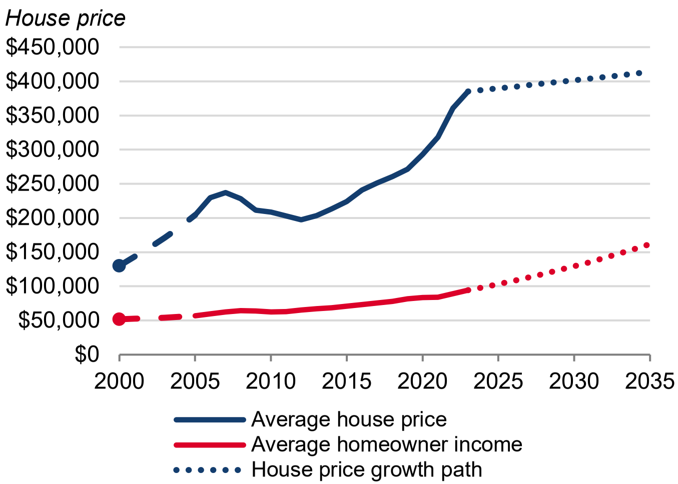
As discussed above, the CEA estimates that reducing the WRLURI by 1 standard deviation would boost the housing stock by 9.0 percent, which amounts to 13.2 million more homes starting from a baseline of 146.8 million homes using 2024 census data (U.S. Census Bureau 2025). In 2024, 1.621 million homes were completed, accounting for $559.11 billion in GDP, or about $345,000 per completed home.[10] The residential investment from building an additional 13.2 million homes would add about $4.0 trillion to GDP. Spread over 10 years, the result would be 1.3 percent added to annual GDP and 2 million new manufacturing and construction jobs.[11]

For individuals, the cost-savings and house price stability that result from slashing the bureaucrat tax make homeownership more accessible for new buyers and more *secure* for existing owners by relieving pressure on monthly budgets while protecting home values. Over time, supply growth also allows incomes to catch up after years of being outpaced by house price appreciation. For example, consider a median-income buyer purchasing a median-price home with a 10 percent down payment in a locality with a 1 percent property tax rate. Under Biden-era mortgage rates and price-income ratios, this buyer would pay more than 33 percent of their pre-tax income in monthly mortgage payments. If, instead, rates fall to 4.5 percent and house prices grow at just 0.6 percent per year over the next decade, the house price–income ratio would decline from 4.1 to 2.7, as shown in figures 6-16 and 6-17, which portray house price and income dynamics under alternative housing market conditions with strong

[10] For housing units, see FRED variable COMP621UTSA (https://fred.stlouisfed.org/series/COMPUTSA), total new privately owned housing units completed. For the contribution to GDP, see FRED variable A943RC1Q027SBEA (https://fred.stlouisfed.org/series/A943RC1Q027SBEA), private fixed investment in permanent site residential structures.
[11] This calculation takes into account the 13.1 percent price savings from the removal of the bureaucrat tax and assumes that each house takes one year to build and that the average GDP created per full-time construction and manufacturing worker is about $200,000.

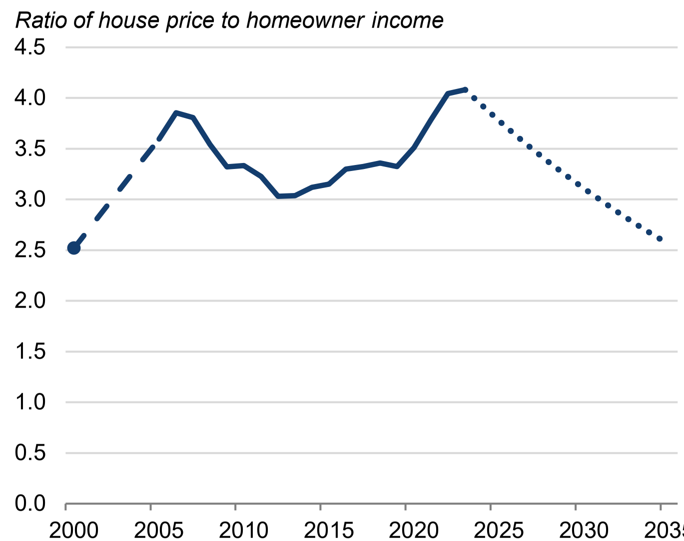
Figure 6-16. House Price and Income Dynamics under Alternative Housing Market Conditions with Strong Supply

A. Slower House Price Growth and Faster Income Growth Narrow the Gap Between House Prices and Incomes



Sources: U.S. Census Bureau; CEA calculations.
Note: Data are in nominal terms.

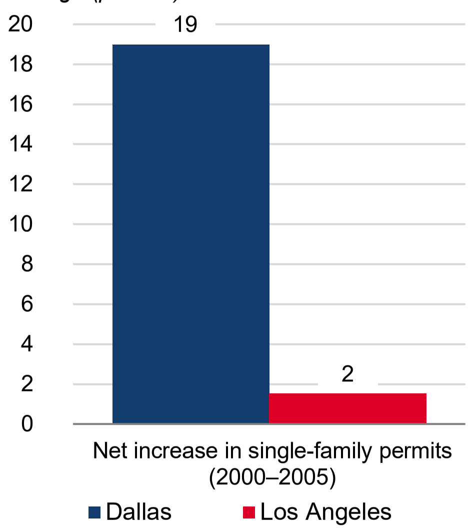
B. The House Price–Income Ratio Reverts to More Affordable Levels



Sources: U.S. Census Bureau; CEA calculations.

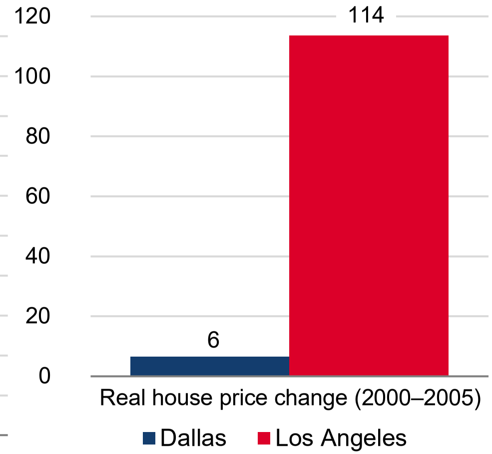
Figure 6-17. The 2000s Texas Miracle and the Importance of Supply for Affordability

A. Change in Single-Family Housing Permits Issued, Dallas versus Los Angeles, 2000–2005



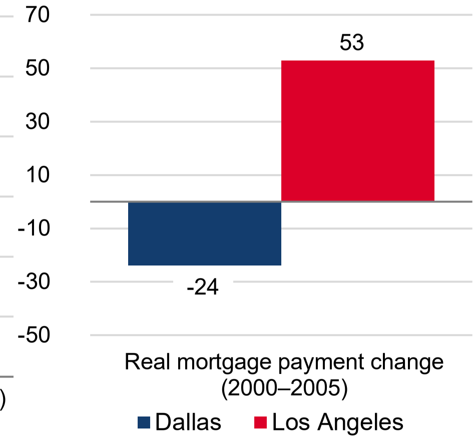
Sources: U.S. Census Bureau; CEA calculations.

B. Change in Real House Prices, Dallas versus Los Angeles, 2000–2005



Sources: Bureau of Economic Analysis; S&P Dow Jones Indicies; Freddie Mac; CEA calculations.
Note: Real price change estimates used in payment calculations are deflated using the monthly Personal Consumption Expenditures Price Index.

C. Change in Real Mortgage Payments, Dallas versus Los Angeles, 2000–2005



Sources: Bureau of Economic Analysis; S&P Dow Jones Indicies; Freddie Mac; CEA calculations.
Note: Real price change estimates used in payment calculations are deflated using the monthly Personal Consumption Expenditures Price Index.

supply.[12] Under these alternative housing market conditions, the buyer in this example would only spend 18 percent of their income on mortgage payments.

The 2000s Texas Miracle

There is a historical precedent for a Goldilocks scenario of falling interest rates, rising homeownership, and stable home values. Consider the 2000s housing boom. From 2000 to 2005, mortgage rates fell from 8.2 percent to 5.8 percent across the country, contributing to a house price boom across much of the country. However, the magnitude of price increases varied geographically, based in part on how unconstrained housing supply was to keep up with demand. Consider a comparison between Dallas and Los Angeles. In Los Angeles, the number of single-family home permits barely budged in response to the surge in housing demand because of tight restrictions on supply from California-style fees, mandates, regulations, and red tape. As a result, house prices surged by 114 percent, and the monthly principal and interest on a new mortgage actually increased by 53 percent because the surge in house prices more than offset the decline in mortgage rates. By contrast, single-family permits jumped in homebuilding-friendly Dallas, and real house prices only rose 6 percent. As a result, mortgage payments fell by 24 percent for new buyers. In other words, existing homeowners saw stable real house prices and gradually rising equity, while all buyers, including first-time buyers hopping on the first rung of the property ladder and those looking to upsize, benefited from increased affordability. Figure 6-17 provides a visual representation of this comparison.

State and Local Best Practices to Tackle the Government Bureaucrat Tax

This chapter's Appendix of Best Practices contains a comprehensive list of reforms States and localities can implement to tackle the government bureaucrat tax. This list reflects proposed changes that could rapidly incentivize new building by eliminating impediments, taxes, hold-ups, fees, processes, and schemes that serve as barriers to new development as described to the CEA during months of listening sessions with developers and land-use attorneys from all across the country, leading academics, think tanks, and industry-advocacy groups. The list addresses items that are called out by the 2021 NAHB and 2022 NMHC studies on the cost of regulation—for example, "Hard costs of compliance (fees, required studies, etc.)," "Fees paid by the builder after purchasing the lot," "Changes to building codes over the past 10 years," "Architectural design standards beyond the ordinary," and "Cost of affordability mandates (e.g. IZ)," among others. The CEA has sorted this list into these three broad classes:

- *Unleashing manufacturing innovation.* One reason high-quality, high-pro-

[12] This assumes 2.6 percent annual real income growth and constant real house prices after applying the CEA's 13.1 percent real price impact estimate from above.

ductivity manufacturing techniques have not been more widely adopted in building new homes (thus reducing costs while keeping quality high) is that building codes are often not aligned across localities or States. This makes achieving returns to scale difficult, typically a requirement for efficient manufacturing. Additionally, some State and local inspection procedures are not appropriate for off-site built housing, adding costs and delays. The best-practices solution is to align codes with accepted standards for modular, prefabricated, panelized, and other off-site built housing to enable "all of the above" quality construction techniques.

- *Streamlining the stages of homebuilding.* The process for receiving approvals and permits is often slow, expensive, and unpredictable. Additionally, States and localities often charge fees that are unjustified in size by costs or unrelated to the project at hand. The best-practices solution is to create a fast-track process for all housing developments that features capped timelines and permit fees, appropriate and justifiable impact fees, third-party inspections, and an expedited appeal process that ensures faster and less arbitrary dispute resolution.
- *Protecting consumer choice and private property rights.* Developers, landlords, renters, and homeowners are subjected to a wide range of mandates unrelated to true safety and welfare concerns that prescribe what and how they can and cannot build and what they are allowed and not allowed to do with their property. The best-practices solution is to curtail gratuitous mandates that restrict housing supply, such as restrictions on the number of units that can be built in any given time period, costly green energy building requirements, and discriminatory labor rules. These reforms should provide greater flexibility and consumer choice and stronger private property rights to landlords to help protect them from losses from fraud and nonpaying tenants. Also, new single-family housing construction requires new land, so best practices require the elimination of any rule, regulation, or policy that prohibits the development of new, detached single-family housing outside prescribed geographic limits.

Conclusion

President Trump understands real estate like no previous President in history, and his Administration is committed to protecting and restoring the American dream of homeownership. This chapter has identified culprits both in the form of adverse sources of housing demand that compete with American families for homes and the government bureaucrat tax on housing supply from increasingly pervasive California-style fees, mandates, regulations, and red tape that add expensive government overhead to the cost of building. The Trump Administration has already taken aggressive action to tackle the housing affordability crunch it inherited, beginning with the historic policies of the One Big Beautiful Bill Act to expand economic potential and bring down interest rates and extending to mortgage bond purchases to further lower rates combined with Federal deregulatory efforts to remove impediments to supply. As analyzed by the CEA, additional reforms of State and local policies would strongly enhance these efforts and enable new generations of Americans to build homes, build families, and build the kinds of communities that are the backbone of America.

Mathematical Appendix

Computing the regulatory tax rate: Consider two markets, an unregulated and a regulated market. Referring to the gold supply curve and blue demand curve of figure 6-11, the supply curve and demand curve for the unregulated market can be written as

$$\text{unregulated supply: } p = a + m_s q \quad \text{demand: } p = b - m_d q, \tag{1}$$

where a is the intercept of the supply curve, b is the intercept of the demand curve, m_s is the slope of the supply curve, and (negative) m_d is the slope of the demand curve. Note that p stands for the natural logarithm of the price per unit of housing in the market and q stands for the natural logarithm of the total quantity of housing in the market. An equilibrium in this market is a price where the quantity supplied is equal to the quantity demanded. After rearranging a few terms, the equilibrium (log) price in the unregulated market, p_u, satisfies

$$(m_s + m_d)p_u = m_s b + m_d a. \tag{2}$$

Consider now a regulated market with the same demand curve as the unregulated market, but with a possibly different intercept and slope of the supply curve:

$$\text{regulated supply: } p = (a + c) + (m_s + d)q. \tag{3}$$

In the equation above, regulation increases the intercept by c and increases the slope by d. Using the same logic as before, write the equilibrium log price in the regulated market, p_r, as having the following relationship:

$$(m_s + d + m_d)p_r = (m_s + d)b + m_d(a + c). \tag{4}$$

Now subtract equation 2 from equation 4 and rearrange terms:

$$(m_s + m_d)(p_r - p_u) = d(b - p_r) + m_d c. \tag{5}$$

From the demand equation, $b - p_r = m_d q_r$, so equation 5 can be rewritten as

$$(m_s + m_d)(p_r - p_u) = dm_d q_r + m_d c, \tag{6}$$

where q_r is the total housing quantity in the regulated area. Divide both sides by m_d to get

$$\left(\frac{m_s + m_d}{m_d}\right)(p_r - p_u) = dq_r + c. \tag{7}$$

The right-hand side of equation 7 is the shift in the supply curve evaluated at q_r, the equilibrium (log) quantity in the regulated market: c is the change in intercept, and dq_r is the additional increase from the change in slope. This is the natural logarithm of the regulation tax.

Now it is time to compute the size of this tax for a change of 1 standard deviation in the WRLURI. Note that the body of the chapter reports an estimate of the change in the equilibrium log price from a decline of 1 standard deviation in the WRLURI to be 0.1234, which is set equal to $p_r - p_u$. The CEA sets the (negative) of the slope of the demand curve, m_d, equal to 1.43 = 1 / 0.7, based on standard research (e.g., Polinsky and Ellwood 1979). Finally, for m_s, the slope of the unregulated supply curve, the CEA performs analysis on data from Baum-Snow and Han (2024). Baum-Snow and Han (2024) estimate the parameter γ in equation 8 separately for tens of thousands of census tracts spanning over 300 metropolitan areas:

$$q = constant + \gamma \cdot p. \tag{8}$$

This is the reverse of the relationship shown in figure 6-11, in which price is on the y axis and quantity is on the x axis.[13] Baum-Snow and Han report an average value for γ of 0.35. To see how γ varies with the WRLULI, the CEA regresses γ on the WRLULI and an estimate of the share of land in a metro area that is not developable due to geographic constraints.[14] The CEA finds that a decline of 1 standard deviation in the WRLURI is associated with an increase in γ of 0.0338

[13] In the equation above, *q* and *p* are the natural logarithms of the quantity and price of housing in a market, as before, and the parameter gamma is often referred to as the housing "supply elasticity" because it approximately measures the percentage change in housing quantity supplied to the market given a 1 percent change in the price of housing. For small changes, the change in the natural logarithm of a variable is nearly equal to the percentage change in that variable.

[14] The CEA defines this variable as the share of a metropolitan area covered by bodies of water, outside the borders of the United States, or having a slope steeper than 15 percent within 50 kilometers of the geographic center of the metro area. This approach is similar to that of Saiz (2010).

unit; that is, housing supply becomes more responsive to price.[15] To understand what this means, consider an area with a value of γ of 0.35, the national average. If that area were to experience a decline of 1 standard deviation in the WRLURI, its value of γ would be predicted to increase to 0.3838. This gives a national estimate of ms (the slope of the unregulated supply curve, consistent with a decline of 1 standard deviation in the WRLURI) equal to 1/0.3838 = 2.61.

Putting this all together, this analysis gives an estimate of

$$\left(\frac{m_s+m_d}{m_d}\right)(p_r - p_u) = \left(\frac{2.61+1.43}{1.43}\right)(0.1234) = 0.3485. \tag{9}$$

The tax rate associated with this is equal to exp(0.3485) – 1.0 = 41.7 percent.

Computing the increase in housing from deregulation: Finally, to understand the impact of reducing the regulation on quantities, note that knowing the equilibrium change in the log price, 0.1234, allows one to trace along the blue demand curve to determine the change in log quantity of housing. As mentioned above, the slope of the demand curve is –1.43, so the change in log quantity associated with a 0.1234 decline in log prices is –0.1234 divided by –1.43, equal to 0.0864. This translates into a 9.0 percent increase in the stock of housing. The total housing stock in 2024 was 146.8 million homes, so a 9.0 percent increase implies 13.2 million additional units.

Appendix of Best Practices to Tackle the Government Bureaucrat Tax on Housing Supply

The best practices fall into three categories:

First, unleashing manufacturing innovation:

- *The problem:* Construction productivity has fallen, leading to less building and higher costs.
- *The solution:* Align codes with accepted standards for modular, prefabricated, panelized, and other off-site built housing to enable "all of the above" quality construction techniques.

Second, streamlining the stages of homebuilding:

- *The problem:* The approval process for housing developments has become slower, more expensive, and less predictable, which reduces construction and pushes up prices and rents.
- *The solution:* Create a fast-track process for all housing developments that features capped timelines and permit fees, appropriate and justifiable impact fees, third-party inspections, and binding arbitration that ensures faster and less arbitrary dispute resolution.

[15] The robust standard error of the estimate is 0.007. There are 1,129 observations in the regression.

Third, protecting consumer choice and private property rights:

- *The problem:* Developers, landlords, renters, and homeowners are subjected to a wide range of mandates unrelated to true safety and welfare concerns that prescribe what and how they can and cannot build and what they are allowed and not allowed to do with their property.
- *The solution:* Curtail artificial mandates that restrict housing supply such as green energy building requirements, aesthetic requirements, discriminatory labor rules, and rent scammer protections while providing greater flexibility and consumer choice and stronger private property rights.

This appendix now specifies detailed best practices for each category:

Unleashing Manufacturing Innovation

Align codes for modular, prefabricated, panelized, or any other off-site built housing enforced by regulating entities or utilities with the latest version of these national standards:

- ICC/MBI 1200 Standard for Off-site Construction: Planning, Design, Fabrication and Assembly
- ICC/MBI 1205 Standard for Off-site Construction: Inspection and Regulatory Compliance
- ICC/MBI 1210 Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction
- ICC G6 Guideline on Advanced Panelization and Appendix N of the International Building Code

Streamlining the Stages of Homebuilding

A valid fast-track process that is consistent with deregulatory best practices achieves the listed cost savings by having these features:

- A list of all permits and approvals that a regulating entity or utility may require to grant the right to build. Builders that submit plans that conform to local zoning and building codes must have by-right approval;
- A list of all inspections and permits for construction that a regulating entity or utility may require;

[Eliminates costs associated with zoning applications, removing a 2.3 percent bureaucrat tax = $6,623]

- A binding timeline, which holds for all submissions and resubmissions, for when a regulating entity or utility must either grant or deny each of the required permits and approvals. A valid fast-track timeline is one that is no longer than 60 days for granting or denying the right to build and no longer than 30 days for permits and inspections during the construction process;
- A list of maximum possible fees (not including impact fees) that a regulating entity or utility may charge;

- Prohibitions of impact fees that are not directly quantifiably relatable to the specific development project;
- Prohibition of offsite project or infrastructure costs that are not reasonably necessitated by the specific development project;
- Prohibition of requiring revision of plans in response to a change in codes after the right to build is granted;
- The allowance of State-certified third-party inspectors to conduct any and all required inspections that are directly or indirectly related to the construction or development of the project;
- The right of the builder to choose any State-certified engineering, environmental, or other firm to do any necessary study that is directly or indirectly related to the construction or development of the project;
- A legal framework under which a plaintiff only has standing to challenge an approval or permit related to development if the plaintiff can demonstrate that the development would create a common-law nuisance or an immediate threat to the plaintiff's health, safety, or welfare;
- An expedited appeal process to resolve denials, conflicts, breached timelines, or other decisions. This process:
  - » Provides a property owner or builder the right to an appeal using an alternative or accelerated extrajudicial or court process that could include a "fast-track" court process, dedicated docket, mediation, or other alternative dispute resolution;
  - » Assigns jurisdictions, regulating entities, and utilities with the burden to prove that the denial, conflict, breached timeline, or other decision being appealed is necessary to protect substantial interests in public health, safety, or welfare, or is required by other legal considerations, and these interests demonstrably exceed the need for housing;
  - » Provides for fee reductions, economic damages, recovery of legal and associated costs or other penalties for unreasonable delays in adjudication.

[Eliminates excess burden associated with hard costs of compliance (fees, required studies, etc.), the pure cost of delay (if regulation imposed no other cost), land dedicated to the government or otherwise left unbuilt, and fees paid by the builder after buying the lot, removing a 13.5 percent bureaucrat tax = $39,324]

Protecting Consumer Choice and Private Property Rights

The set of deregulatory best practices include elimination of:

- Rent control: any provision that regulates the level or growth rate of residential rents, or the process by which landlords set rents;
- Impediments to addressing problems created by delinquent and disruptive tenants: any provision that regulates the timeliness of eviction of a nonpaying tenant, any provision that restricts a property owner's ability to fight fraud, and any provision that regulates a landlord's ability to choose

to not renew the lease of an existing tenant;

- Support for squatters, scammers, and other unauthorized occupants: any provision that protects individuals who occupy a property without a legal right agreed to by the property owner or other legitimate agreement and prevents property owners from immediately reclaiming their property;
- Affordable housing set-asides: any requirement that any units in any development be set aside for renters paying less than market-rate rents or owners paying less than market-rate prices;

[Eliminates costs associated with affordability mandates, removing a 3.8 percent bureaucrat tax = $11,176]

- Non-evidence-based building codes: building code features that are inconsistent with evidence-based standards promulgated by the Secretary of Commerce, the Secretary of Agriculture, the Secretary of Housing and Urban Development, the National Institute of Standards and Technology, or any other Federal Agency issuing evidence-based building standards;
- Burdensome and prescriptive energy efficiency building codes: as an alternative to prescriptive building codes designed to satisfy energy efficiency targets, builders must have the option to achieve a federally recognized energy rating index regardless of the means used to achieve this outcome. Additionally, electric-vehicle infrastructure requirements and on-site renewable energy requirements may not be mandated;
- Unreasonable building code adoption timelines: with the exception of evidence-based, safety-related changes, builders must have the right to comply with any code dated within 15 years at the time a development plan is submitted for approval. For example, any building code dated 2010 or later would be acceptable for development in 2025;

[Eliminates costs associated with changes to building codes over the past 10+ years, removing an 8.6 percent bureaucrat tax = $25,250]

- Discriminating against off-site built housing: apart from the off-site standards specified above, any requirement or provision that differentiates processes or outcomes based on mode of construction;
- Unreasonable aesthetic requirements: any provision that restricts the appearance of new single-family housing, unless it can be demonstrated on a case-by-case basis that the absence of aesthetic regulation for the development in question reduce the value of immediately adjacent properties;
- Discriminating against any form of home energy: any requirement or provision that by intent, or practical effect, eliminates choice in home energy sources;

[Eliminates standards (setbacks, etc.) that go beyond the ordinary and development requirements (layouts, mats, etc.) beyond the ordinary, removing a 7.1 percent bureaucrat tax = $20,697]

- Restrictions on worker characteristics: any requirement that regulates the attribute (e.g., race, ethnicity, or gender) or residence of any worker, manager, supervisor, or employee of a housing development project (before, during, or after completion);

- State add-ons to Federal codes: any State requirement that specifies building, environmental, or labor codes or provisions that reduce project profitability, or add to project risks or costs, over and above any such codes or provisions (or related codes or provisions) specified by the Federal government, except due to reasonable State-specific characteristics;
- Local add-ons to State codes: any municipal, regional, or county requirement that specifies building, environmental, or labor codes or provisions that reduce project profitability, or add to project risks or costs, over and above any such codes or provisions required by the State, except due to reasonable locality-specific characteristics;

[Eliminates costs associated with complying with nonstandard labor and other regulations, removing a 2.3 percent bureaucrat tax = $6,623]

- Growth moratoria: any policy that imposes geographic or unit-based limits on new development and construction within any given time period;
- Commuting penalties: any rule, regulation, or policy that penalizes or increases the cost of a development for being primarily accessible by automobile;
- Greenbelt and urban containment boundaries: any rule, regulation, or policy that by intent, or practical effect, prohibits development of new detached single-family housing and related infrastructure outside of prescribed geographic limits;
- Other barriers to single-family home construction as promulgated by the Federal government.

[Eliminates costs associated with outright barriers to new building, removing a 4.1 percent bureaucrat tax = $12,122]

Chapter 7

Strengthening America's Industrial Supply Chains

Although industrial processes have relied on complex supply chains for some time, recent disruptions that have threatened entire economies have substantially increased supply chains' prominence to businesses and policymakers. The COVID-19 pandemic exposed the fragility of global supply chains and demonstrated that, in times of need, critical supplies produced elsewhere may not be available to Americans. Worryingly, some countries have used their dominant position in upstream supply chains to disrupt downstream production throughout the world. Fortunately, businesses, researchers, and governments are taking proactive steps to better understand supply chains and their attendant risks, and to improve them. Securing its supply chains will be key to fulfilling America's next golden age of industrial production.

The Trump Administration has taken steps to recognize and address supply chain risks to American security. Through trade policy, bilateral negotiations, and investigations of national security risks, the Administration has substantively enhanced the competitiveness of American manufacturing as well as helped to secure domestic sourcing of critical inputs. Complementing these actions, fiscal policies, such as those in the One Big Beautiful Bill Act (OBBBA), spur the expansion of American research and investment to support the reshoring of American supply chains. Meanwhile, executive offices are also using the power of Federal procurement to support America's manufacturing capacity by providing anchor demand for nascent industries.

This chapter first details vulnerabilities embedded within modern supply chains. Next, it describes key barriers to improving supply chain resilience. Finally, it summarizes prominent actions taken during the first year of the second Trump Administration to strengthen America's supply chains.

The Problem: Supply Chain Risks

Comprehensive assessments of supply chain vulnerabilities and their aggregate implications are being impeded by two factors: first, limitations in granular, industry-specific data; and second, the relatively nascent theoretical literature available to study them. In particular, "despite the growing recognition of the importance of resilient supply chains, a systematic investigation of macroeconomic consequences of supply chain disruptions has remained largely elusive" (Acemoglu and Tahbaz-Salehi 2025, 680).

Technological advances have considerably expanded the breadth of products available to consumers, and this breadth often goes hand-in-hand with increased complexity of production. For example, the typical passenger car today contains about 30,000 components (Wakelin 2021), a twofold to fivefold increase from three decades ago (McAlinden and Smith 1993). At the same time, production processes have become increasingly multinational: in 2022, about 42 percent of the United States' trade derived from products shipped across multiple borders, about 5 percentage points more than in 2007 (Research Institute for Global Value Chains 2023). This refinement of inputs and expansion in sourcing reflect more sophisticated supply chains. Even as these supply chain advances have created novel opportunities and numerous benefits for the United States, they also reflect complexity that can embody considerable risk.

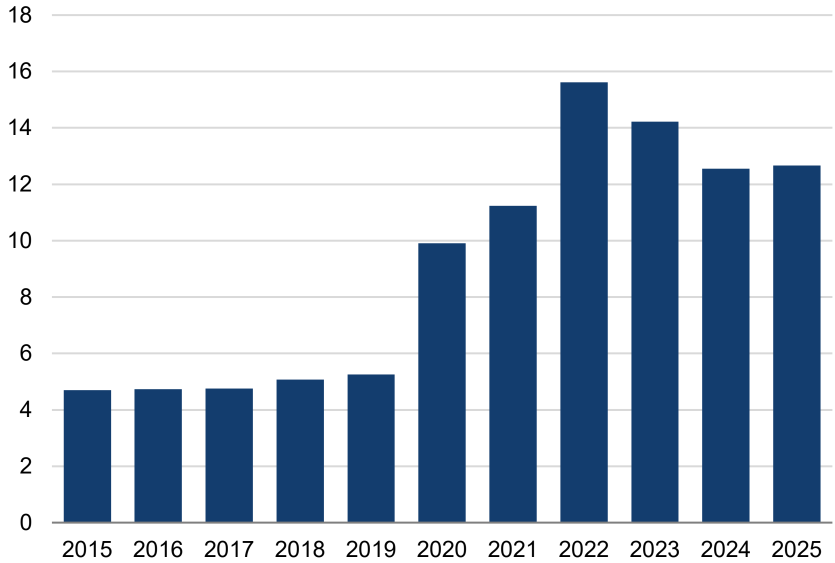
Public awareness of supply chain risks increased during the extraordinary events stemming from the COVID-19 pandemic. Lockdowns throughout the world, disruptions to logistics, and exceptional shifts in demand all coincided to exert extreme pressure on producers, including those of critical goods, such as personal protective equipment (Cecire et al. 2020). At the time, Federal actions, such as the use of the Defense Production Act (DPA), helped alleviate disruptions and enabled businesses to expand production faster than they could have on their own (U.S. Government Accountability Office 2021).

In subsequent years, many businesses recognized the benefits of taking more proactive measures to manage their supply chains, mitigate risks, and enhance resilience vis-à-vis disruptions. One illustration of businesses' increased focus on their supply chains is shown in figure 7-1: the number of major filings from publicly traded firms in the United States that mention "supply chain" has more than doubled from prepandemic levels, on an annual basis.

Since the COVID-19 pandemic, many businesses have increased their understanding of their supply chains, expanded their stockpiles, and engaged in

Figure 7-1. Number of Publicly Traded Firms in the United States That Mention "Supply Chain"

Thousands of SEC filings (10-K and 10-Q forms)



Source: SEC (Securities and Exchange Commission).

research and development to reduce their reliance on linchpin inputs. While these actions have considerably improved supply chain resilience, critical vulnerabilities persist. Such vulnerabilities were prominently highlighted in April 2025, when China abruptly implemented an export licensing system for certain rare earth elements (REEs) and derivative products. REEs have unique properties, making them exceptionally well suited for a vast range of uses, including consumer electronics, automobiles, and the defense industry. Because China accounts for nearly all the mining, processing, and refining of REEs globally, its export controls were enough to cause factory shutdowns around the world within weeks of implementation, including in the United States (McLain and Felton 2025).

At the time of this writing, the full aftermath of China's REE export licensing continues to evolve. Yet the Trump Administration has already taken multiple actions to ensure sustained access to REEs for American businesses. The Administration's actions to strengthen the U.S. critical minerals industry (National Archives 2025a) and secure pharmaceutical precursors (White House 2025a) have helped solidify cooperation with partners and allies to deter such disruptions from occurring again (White House 2025b) while simultaneously expanding sourcing, both domestically and abroad, to reduce dependencies on any one source (White House 2025c, 2025d).

While events such as pandemics and export controls on critical inputs have historically been uncommon, they are not the only sources of supply chain risk. Even as "it is tempting to think of supply chain disruptions as rare events, . . . the large number of possible disruption causes, coupled with the vast scale of modern supply chains, makes the likelihood that some disruption will strike a given supply chain in a given year quite high" (Snyder et al. 2016, 89, cited by Elliott, Golub, and Leduc 2022). According to a McKinsey Global Institute survey of experts in the aerospace, automobile, computer and electronic, and pharmaceutical sectors, even before the COVID-19 pandemic, these industries experienced supply chain disruptions lasting 1–2 months once every 3.7 years on average, with longer disruptions taking place once every 4.9 years (Lund et al. 2020). Such disruptions can have material consequences for affected firms' balance sheets: Lund and colleagues (2020, 6) estimate that "adjusted for the probability and frequency of disruptions, companies can expect to lose more than 40 percent of a year's profits every decade on average . . . [and] a single severe event that disrupts production for 100 days—something that happens every five to seven years on average—could erase almost a year's earnings in some industries."

The interconnectedness of modern supply chains can lead to the broad propagation of shocks. For example, local economic disruptions after a major earthquake in Japan in 2011 led to persistent declines in production of affiliated U.S. companies, due to their reliance on imported inputs (Boehm, Flaaen, and Pandalai-Nayar 2019). When a supplier is hit by a natural disaster, both the supplier's customers and its customers' *other* suppliers face disruptions to production (Barrot and Sauvagnat 2016). Such cross-firm propagation of supply chain disruptions can also have substantive aggregate effects: national economic dynamics are weighed down by both domestic and international delays in production, as well as delays to shipping (Alessandria et al. 2023). Interconnectedness can be particularly disruptive in the United States, since certain domestic sectors have outsized importance as intermediate suppliers, contributing to the propagation of sector-specific shocks throughout the economy (Acemoglu et al. 2012).

Conversely, modern-day supply chains are not solely sources of downside risk. Baqaee and colleagues (2025) find that supply chain dynamics can be a key contributor to aggregate productivity growth. Supply chains can also *dampen* the propagation of certain shocks. For example, structural changes in economic networks may have contributed to the United States' Great Moderation, the period starting in the 1990s when macroeconomic volatility subsided (Acemoglu, Ozdaglar, and Tahbaz-Salehi 2017). Acemoglu and Tahbaz-Salehi (2025) find that greater fragmentation of supply chains can boost aggregate output in general, though it can also amplify aggregate vulnerability to tail risks. MacDuffie, Fujimoto, and Heller (2021) argue for a reframing of supply chain management strategies, shifting away from an efficiency-versus-resilience paradigm to one that seeks to ensure that supply chains are sufficiently agile and protected to promote both competitiveness in normal times and continuity in the face of disruptions.

Framing the Problem: Barriers to Resilient Supply Chains

Disruptions to supply chains can originate from many sources. Some of these are natural, such as fires, weather, and earthquakes. Other disruptions have human origins, some unintended, as with a foreign economic downturn, and others are deliberate, such as when governments weaponize key industries in pursuit of economic or noneconomic objectives. The sources of disruption complicate the problem for firms and governments managing supply chain risks.

This section describes various barriers firms face when trying to mitigate their supply chain risks. A key barrier is opportunity cost: many efforts to improve supply chain resilience require resources (e.g., financing and labor), and businesses face trade-offs in allocating scarce resources. Information gaps can play a critical role, too, particularly for processes relying on inputs that themselves depend on extensive supply chains and for those that rely on multiple inputs. Additionally, the interconnectedness of firms' supply chains generates externalities: private market forces on their own underprice the value of resilient supply chains, as individual firms do not account for the spillover benefits to their upstream sources and downstream customers. Amid all these forces arising in competitive markets, supply chain risks can also be amplified by noncompetitive practices that distort market signals and skew firms' incentives.

A Stylized Example

Consider a stylized example: an island with only one gas station. The gas station relies on a single ship to transport gasoline from the mainland. If that ship needs unexpected repairs for a prolonged period of time, the gas station's reserves will start running low, reducing the island's supply of gasoline. Market forces will start to push the price of gasoline higher in order to bring demand in line with supply. The higher gasoline price partially mitigates the lost volume of business to the gas station, but the customers are worse off, as they buy less gasoline at higher prices. Additionally, the disruption can propagate throughout the island economy if downstream sectors, such as transportation, have to curtail their activities, in turn affecting a broader range of firms further downstream.

Recognizing this risk, the gas station could take several preemptive actions to avoid such outcomes. For example, the station could hold larger inventories of gasoline or diversify its logistics network, either of which can incur costs during normal times. Yet market forces may not suffice to ensure that the station reduces its supply chain risk. Immediately after a disruption, its profits are partially insured by its ability to charge a higher sales price. And, as with any business, the station owner faces trade-offs in how to invest its resources. Diversifying its supply chain requires increased time devoted to logistics, and smaller orders split across multiple suppliers may reduce the station's market power, pushing up the price it has to pay.

The benefit to the firm of ensuring supply chain resilience only accrues in the event of a disruption; during normal times, resilience is costly. Firms that ignore supply chain risk can charge lower prices during normal times, allowing these firms' market share to grow, and forcing out more prudent enterprises. Investing more in supply chain resilience also means investing less in other areas, such as workforce development and research and development.

The example of the island gas station illustrates problems that must be overcome in a market economy. First, firms' decisions on supply chain resilience do not reflect all the benefits of their actions. These benefits are positive externalities and suggest that market forces will provide inadequate incentives for firms to optimally mitigate risk. Many mitigation strategies for supply chain resilience are like other forms of insurance, which are often underprovisioned (O'Hara and Shaw 1990, Kunreuther, Pauly, and McMorrow 2013). The positive externalities from addressing supply chain risk provide an opportunity for government intervention to lead to more socially optimal outcomes.

Second, information gaps (Allen 2014; Bernard, Moxnes, and Saito 2019) can be costly for firms to overcome, requiring time for firms to find new suppliers when supply chain disruptions occur. A recent survey of global supply chain leaders found that while 95 percent of businesses have visibility into supplier risks of at least the tier-one level; just 42 percent had such visibility into at least the tier-two level (Foster, Huy-Dat, and Trautwein 2025).[1] Even among the businesses with tier-two visibility, fewer than half have direct contact with them on a regular basis. Barriers to increased engagement include resource constraints and privacy concerns among some tier-one suppliers (Foster, Huy-Dat, and Trautwein 2025).

Government policy must also account for the third problem: resilience has an opportunity cost that must be paid by society, and whose benefits primarily accrue only in the case of a disruption. Together, these three problems call for careful policy responses that address market failures while also navigating the trade-offs between the benefits and costs of different strategies to address supply chain risk.

[1] Tiers" in supply chains refer to the number of degrees removed between a company and an intermediate supplier. A company directly purchases from tier-one suppliers, while a tier-two supplier sells to a tier-one supplier.

Opportunity Cost

It is rarely possible to fully eliminate risk from supply chains, and firms may optimally trade off higher risk exposure in exchange for benefits in other dimensions. For example, production often exhibits economies of scale, in which increasing the quantity of output reduces the per-unit cost of a good. All else remaining equal, in the presence of economies of scale, firms can increase their profits by concentrating production at one location.

Similarly, regions can exhibit agglomeration effects, in which local clusters of firms engaging in similar work benefit from their mutual proximity, such as through faster dissemination of best practices and increased access to skilled labor. Particularly when both economies of scale and agglomeration effects are present, classic economic theory posits that society is better off when production is concentrated in the localities with the comparative advantage (Ricardo 1817). Yet, as the island gas station example illustrates, such concentration can present risks, which may offset some of the benefits of solely relying on those locations with comparative advantage.

Numerous studies have highlighted the trade-offs that can arise between investments in resilience and efficiency (Ivanov, Sokolov, and Dolgui 2014; Katsaliaki, Galetsi, and Kumar 2021). For example, some firms may seek to reduce their reliance on single-sourcing by switching to generic parts (Sheffi 2005; Sáenz and Revilla 2014). However, using generic parts limits opportunities for the customization and innovation that can be achieved through collaboration and long-lasting relationships with suppliers (Fujimoto et al. 2019), and closely integrated relationships can also support faster recoveries to certain disruptions (Alfaro and Chen 2012). Additionally, some risks entail highly consequential but also highly unlikely outcomes; efforts to mitigate such tail risks might impede firms' ability to address course-of-business concerns, which can arise in all states of the world. MacDuffie, Fujimoto, and Heller (2021, 6) argue that "supply chains in competition-intensive industries should not take any anti-disaster measures that seriously sacrifice their competitiveness." As essential as functioning supply chains are for businesses, opportunity costs can reflect material deterrents for investments in resilience.

The Problem of Incomplete Information

The length and breadth of modern supply chains pose challenges for firms' ability to fully understand where their inputs come from. For example, in the aftermath of a major earthquake in Japan in 2011, the multinational automobile manufacturer Toyota embarked on an extensive review of its supply chain, including the sources for its suppliers (McLain 2021). Even after moving as many as 10 layers upstream and covering more than 400,000 items, the project was not completed (Elliott, Golub, and Leduc 2022). Incomplete information is also a problem for critical components. In a representative survey of U.S. suppliers and end users of legacy semiconductors in 2024, nearly half (44 percent) did not know whether their products contained chips manufactured in China (Bureau of Industry and Security 2024). Given geography's significant influence on exposure to certain types of supply chain risks, such as those related to physical shipment, such information gaps can undermine firms' assessments of their vulnerabilities and resilience.

Beyond the sheer complexity that can be involved in mapping out supply chains, firms face impediments from the competing incentives that upstream suppliers have for divulging information about their capacity and own supply chains. For example, the increased transparency of a supplier's inputs could enable its customer to better distinguish between that supplier's production costs and mark-up, enhancing the customer's bargaining power. Similarly, while excess capacity can help an upstream supplier mitigate disruptions to its plants or accommodate surges in demand, it can also indicate the upstream suppliers' dependency on the downstream customer for sales. The customer firm, in turn, could leverage its dependency to negotiate for more favorable contracts. Such downside risks to their bargaining power have led many upstream suppliers to treat their own supply chains as trade secrets; Toyota encountered similar dynamics when trying to map out its full supply chain (McLain 2021).

Externalities

Efforts to mitigate supply chain risks can yield considerable positive externalities. For example, when a firm diversifies its sourcing, its own business activities are less susceptible to idiosyncratic disruptions from any individual supplier.[2] The firm's customers, in turn, can benefit as well, as their access to the firm's product becomes more reliable. Moreover, the firms' other suppliers can also benefit from more sustained, predictable demand.

Even as the ramifications of supply chain vulnerabilities have become highly salient since the COVID-19 pandemic, the academic literature has relatively few studies on the externalities stemming from these vulnerabilities and how policy should address them (Antràs and Chor 2022; Grossman, Helpman, and Lhuillier 2023; Grossman, Helpman, and Sabal 2024). One recent exception is Grossman, Helpman, and Lhuillier (2023), who assess externalities stemming from the multinational nature of modern supply chains. Their theoretical framework comprises two tiers of production, in which a single input is used to generate differentiated consumable goods. Downstream producers choose whether to source the input domestically or from abroad (locality) and whether to rely on multiple sources (resilience), each presenting a trade-off between greater resilience and costly redundancy. Grossman, Helpman, and Lhuillier (2023)

[2] As with most other strategies, relying on multiple sources also entails trade-offs. E.g., the firm may need to spend more effort to ensure standardization across sources, or to coordinate transitions to newer designs or production practices.

find that separate policies are needed to address externalities stemming from resilience (i.e., the number of sources) and locality (i.e., the reliance on sources domestic or abroad), with locality policy varying with the relative cost and risk of domestic sources.

In complementary work, Grossman, Helpman, and Sabal (2024) study a multitier environment in which midstream firms rely on multiple inputs and multiple customers, and can manage risks to both their own productive capacity and to the reliability of their sourcing through investments. In this setting, government policy addresses externalities stemming from (1) variation in firms' bargaining power with their upstream and downstream counterparts, (2) spillover effects from investments in firms' own productive resilience, and (3) spillover effects from firms' investments in relationships with suppliers. When policy takes the form of investment subsidies for production resilience and network formation, subsidies vary with each firm's location in the supply chain: subsidies are larger for producers that are more upstream, as the benefits from their resilience endogenously propagate to downstream producers.

Noncompetitive Practices

Market-distorting practices by individual companies, oligopolies, or countries can lead to firms making second-best decisions that increase their supply chain risk by affecting the prices and varieties of available products. For example, firms that engage in dumping—flooding markets with below-cost sales to chase competitors out of the market and increase market share—distort activity both in their specific market and also in downstream ones. While downstream producers may benefit in the short run by the access to cheaper inputs, in the long run they face increased risks due to the limited choice in suppliers.

For example, if dumping firms are geographically concentrated, downstream businesses may find it optimal to increase their exposure to concentration risk because alternate sources are either relatively expensive or nonexistent. Particularly in low-margin industries, even downstream firms that are aware of the additional risks they are taking on may be constrained in their actions, as switching to higher-cost sources would erode their profits during normal times and undermine their ability to attract customers and continue to operate. The consequences of noncompetitive practices do not solely affect downstream firms; entry into markets by new or existing firms can also be discouraged by dumping. When dumping pushes down prices, otherwise profitable investments are no longer viable (OECD 2025). Such practices can deter the reshoring of particular industries, if not addressed.

A notable focus of the recent literature is on the ways in which major countries might leverage their economic influence to advance their foreign policy goals, also known as geoeconomics, which can deliberately target or indirectly influence multinational supply chains (Clayton, Maggiori, and Schreger 2024;

Liu and Yang 2025). Leaving aside broader considerations surrounding geoeconomics that fall outside the scope of this chapter, government actions that curb anticompetitive practices can improve both businesses' resource allocation and supply chain resilience.

The Solution: The Trump Administration's Actions to Strengthen Supply Chains

The previous section emphasized that opportunity costs, imperfect information, externalities, and noncompetitive practices prevent firms from internalizing the full economic cost of supply chain disruptions, unless these factors are addressed. Consistent with the findings of Grossman, Helpman, and Lhuillier (2023) and Grossman, Helpman, and Sabal (2024), public policy can intervene positively to boost critical supply chain resilience and should harness private incentives to act rather than risk duplicating or undermining them.

Public action should prioritize instances where the positive externalities to resilience are largest, which will typically arise when the good in question has limited substitutes. Limited substitutability may reflect key inputs into multiple supply chains (e.g., rare earth elements), or may be final products of critical importance (e.g., antibiotics). In certain cases, a broad group of goods may be critical collectively, while individual products within that group are substitutable. For example, adequate access to food is essential for life, but the criticality of any particular food product is attenuated by the presence of alternative sources (e.g., wheat and rice). Efforts to identify critical elements of supply chains without accounting for substitutes and other cross-product interactions risk succumbing to the "strategic materials fallacy:" overlooking economic dynamism can distort assessments of which supply chain vulnerabilities are the highest priority and, at times, whether perceived vulnerabilities actually pose material risks (Førland 1991).

The Trump Administration has begun addressing supply chain vulnerabilities using various policy tools. At the macroeconomic level, actions to reduce excessive regulation and accelerate permitting reform promote the more-efficient deployment of capital and can increase firms' ability to build new production capacity. These regulatory and permitting reforms complement fiscal policies in the OBBBA, which allow full, immediate expensing of manufacturing plants and similar properties, business equipment, and domestic research and experimental expenses (U.S. Congress 2025). As discussed in chapter 1 of this *Report*, the Council of Economic Advisers estimates that these policies will boost the level of real business investment in the United States by 6.7 to 9.7 percent over the four years after OBBA's passage, relative to a counterfactual in which OBBBA was not passed. The increased scale of domestic manufacturing capacity should support a broad-based improvement in supply chain resilience.

Moreover, increases in innovation spurred by the tax incentives for domestic research and experimental expenses should enhance product variation and reduce the criticality of any individual product in industrial supply chains. These policies are quite broad in scope, providing support for whichever industries happen to be growing the most in the coming years.

To complement its domestic actions, the Trump Administration has taken multiple steps to reduce distortions caused by policies abroad. For example, through September, the United States has initiated 47 antidumping investigations in 2025 (International Trade Administration n.d.) and 12 Section 232 investigations evaluating the effect of imports on national security (Bureau of Industry and Security n.d.). Additionally, the ongoing trade negotiations spurred by the Trump Administration's reciprocal tariffs are actively targeting nontariff barriers to trade, which often distort cross-border trade flows as well as firms' decisions on where to source and produce. Alleviating these barriers can spur exports, reduce the cost of forming new trade relationships, and increase access to input sources domestically, which all lead to more resilient supply chains. For example, the U.S.-European Union Framework Agreement calls for the removal of a range of nontariff barriers to industrial, agricultural, and digital exports from the United States, as well as a reduction in tariff and quota barriers, to expand market access for U.S. exporters (White House 2025b). In tandem with removing nontariff barriers to trade, efforts by the Administration to combat illegal goods transshipment, such as the additional 40 percent tariff under Executive Order 14326 (National Archives 2025b), support increased transparency in multinational supply chains, helping firms make better-informed decisions on their sourcing. Collectively, the Administration's domestic and international efforts to reduce economic distortions can further enable firms to take proactive steps to mitigate their own supply risks.

In addition, the Trump Administration recognizes that strategic government interventions are needed to address the negative externalities caused by supply chain vulnerabilities. In these cases, the Administration has deployed a range of tools to address specific issues, including public-private partnerships and executive actions.

Public-Private Partnerships

The Trump Administration has engaged in public-private partnerships to support supply chain diversity and resilience. Many of these engagements seek to expand the number of available sources and technologies available to producers. For example, in July 2025 the Department of War entered into a public-private partnership with MP Materials, a U.S. company involved in the mining, processing, and developing of rare earth minerals (MP Materials 2025). Through this partnership, the department is providing upfront capital as well as a long-lasting price floor on MP Materials' sales. This combination of funding and future stability will help MP Materials expand its capacity, including the construction of a new billion-dollar manufacturing facility for magnets. The new facility is slated to boost the company's total U.S. rare earth magnet manufacturing capacity to 10,000 metric tons upon completion, substantially expanding sourcing available from the United States for both commercial and defense customers. Through such capacity-expanding ventures, the Trump Administration is reducing supply chain vulnerabilities for critical inputs.

Another key way in which the U.S. government leverages public-private partnerships is through financial agreements to support the research, development, and deployment of novel technologies. For example, the Trump Administration has already taken actions in numerous industries, ranging from critical minerals to data center infrastructure and semiconductors to nuclear energy, to foster innovation and support efforts to scale production (U.S. Department of Energy 2025; National Archives 2025c, 2025d). Expansions in the range of technologies and producers in key sectors can help support supply chain resilience by offering downstream producers more flexibility in the event their primary sources are disrupted. The benefits of such diversity are particularly pronounced for bottleneck goods such as semiconductors and for goods like pharmaceuticals that are critical to well-being.

In tandem, the Trump Administration has expanded use of DPA authorities to invest in the maritime industrial base, partner with domestic nuclear energy companies, expand domestic critical mineral production capacity, and establish domestic sales requirements related to certain copper products (National Archives 2025a, 2025d, 2025e; White House 2025f). As discussed in chapter 8 of this *Report*, the DPA is an important vehicle through which the Department of War engages with and strengthens the defense industrial base. However, a broader range of Federal agencies have authority under the DPA to prioritize certain contracts or orders to promote national defense, expand productive capacity and supply, foster collaboration between industry and the government, and create executive reserves for use in times of national emergency. The DPA offers agencies critical means to engage with the business sector to support resilient supply chains for essential goods ranging from food to health resources to civil transportation (Russell 2025). By expanding the scope of these engagements to address additional vulnerabilities in U.S. supply chains, the Trump Administration is further leveraging the potential of partnerships between public and private stakeholders to ensure resilience.

Executive Actions

Similar to the decisive actions taken amid the COVID-19 pandemic, the Trump Administration has engaged in multiple all-of-government efforts to swiftly address shortfalls in America's critical supply chains. For example, through Executive Order 14213, President Trump established the National Energy

Dominance Council (NEDC), recognizing that "domestic energy production is vital both for mitigating price shocks to American families and de-risking the energy supply chain" (National Archives 2025f; White House 2025g). Consistent with its focus on the energy supply chain, Executive Order 14213 underscores the interconnectedness between energy resources and nonenergy natural resources, such as critical minerals, energy technologies, and energy infrastructure. The NEDC is called to "advise the President on improving the processes for permitting, production, generation, distribution, regulation, transportation, and export of all forms of American energy, including critical minerals" (National Archives 2025f, sec. 4(ii)). Such a holistic perspective is critical to effectively identify and mitigate supply chain vulnerabilities across key interconnected industries.

The Trump Administration has also worked to secure stockpiles of critical resources. For example, the OBBBA allocated about $400 million to maintain and replenish the Strategic Petroleum Reserve, alongside $2 billion to improve the stockpiling of critical minerals in the National Defense Stockpile Transaction Fund (U.S. Congress 2025). Additionally, through Executive Order 14336, President Trump called for the Department of Health and Human Services to obtain and maintain a six-month supply of active pharmaceutical ingredients (APIs) of drugs "that are especially critical to the health and security interests of the Nation" (National Archives 2025g, sec. 2(a)). As the President noted in Executive Order 14336, it is often more effective to stockpile APIs rather than finished drugs, as the former tend to be cheaper and last longer in storage.

Additionally, the Trump Administration has advanced targeted regulatory relief for industries critical to national security, strengthening domestic supply chains. For example, in April and July 2025, President Trump granted exemptions from certain environmental regulations for specific businesses in the chemical manufacturing, coal-fired electricity, iron ore processing, and medical device sterilization industries, due to national security interests (White House 2025h, 2025i, 2025j, 2025k, 2025l). The covered chemical manufacturing plants are inputs into manufacturing processes for semiconductors, advanced manufacturing, and national defense systems (White House 2025m). This targeted regulatory relief was motivated by the assessment that "these sectors are critical to maintaining national security and economic stability. Shutdowns could comprise our grid and lead to electricity shortages and reliance on foreign energy, increase our reliance on foreign supply chains for semiconductors, reduce our ability to provide sterile medical equipment for public health and military readiness, and reduce the supply of steel that we need to support critical infrastructure" (White House 2025m).

Complementing these targeted regulatory relief actions are broader reforms, such as efforts to streamline the Federal Acquisition Regulation in order to "remov[e] undue barriers, such as unnecessary regulations, while simultaneously allowing for the expansion of the national and defense industrial bases" (National Archives 2025h, 16447). Additionally, consolidating the Federal government's procurement will help improve coordination and the ability to leverage Made in America preferences to support domestic manufacturing (National Archives 2025i). Since the Federal government is the largest single purchaser of goods and services in the world, consolidating buying power across Federal agencies can be used to support critical American-made goods in existing industries vital to national security, and to provide the anchor demand required for industry to justify reshoring and expanding domestic production.

The Trump Administration also recognizes that in a dynamic, innovating economy, the industries of tomorrow may have different needs than those of today. Effective policy must therefore be forward-looking and flexible enough to ensure that efforts to support supply chain resilience do not inadvertently exacerbate supply chain ossification. To provide just one example, in July 2025, the Administration released America's AI Action Plan, a multipronged strategy to advance the United States' artificial intelligence (AI) industries and help achieve "a new golden age of human flourishing, economic competitiveness, and national security for the American people" (Kratsios, Sacks, and Rubio 2025, 1). One of the central pillars of this Action Plan focuses on building America's AI infrastructure, which covers everything from semiconductors to the energy grid to critical infrastructure cybersecurity—all essential elements of the supply chains necessary to support frontier industries that are likely to be key drivers of future economic growth. Through proactive strategies like America's AI Action Plan, the Trump Administration provides businesses the confidence that critical supply chains will remain reliable even as the economy undergoes transformative evolutions.

Conclusion

Well-functioning supply chains are critical for individual businesses' success and lay the foundation for economic and national security. The intricacy of modern industrial supply chains, which can interlink multiple specialized manufacturers, has been a key source of America's economic well-being and prosperity. At the same time, this intricacy can be a double-edged sword, increasing individual firms' and the broader economy's exposure to risk. Given competing demands on firms' resources, incomplete information, externalities, and noncompetitive practices, private markets cannot support socially optimal levels of supply chain resilience on their own; government intervention is essential to effectively mitigate key risks and sustain critical supply chains. The consequences of vulnerable supply chains have been repeatedly brought into focus in recent years, notably after disruptions during the COVID-19 pandemic and China's recent export controls on rare earth elements.

In its first year, the Trump Administration has taken multiple efforts to improve America's supply chain vulnerabilities through a combination of macroeconomic, diplomatic, and sector-specific policies. However, as the global economy and international trading patterns continue evolving, to mitigate emerging supply chain risks, government policy will need to adapt to changing circumstances.

Chapter 8

Strengthening the United States' Defense Industrial Base

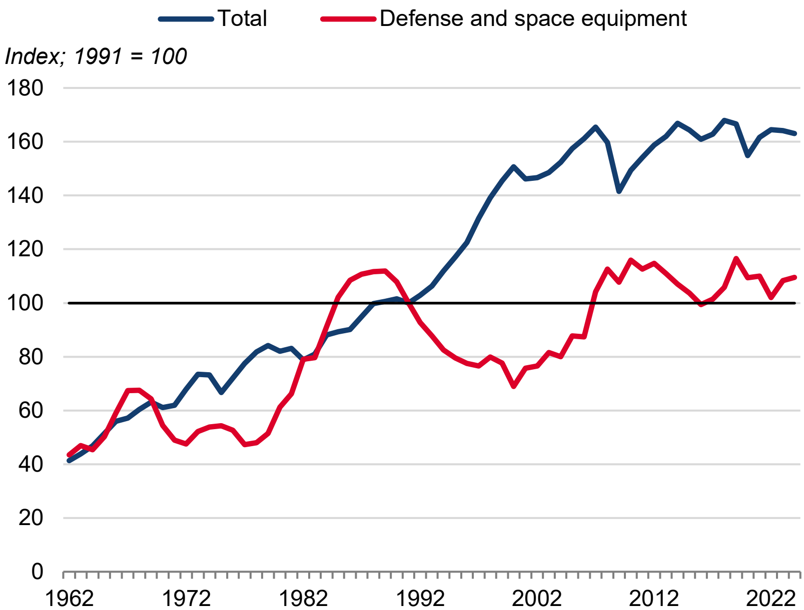
The United States' national security is strengthened by preeminent capabilities across multiple spheres. Not only does the United States have the world's most powerful and capable military, but it also possesses the most advanced and innovative technology sector, providing its armed forces with a qualitative edge in its competencies and capabilities (White House 2025a). At the same time, as Secretary of War Pete Hegseth (2025a, 8) testified before the House Armed Services Committee in June 2025, "while the [defense industrial base, DIB] remains technologically advanced and essential to our warfighting capabilities, decades of under-investment have left it strained, overly consolidated, and at risk of not keeping pace with modern and near-peer threats, especially in a protracted conflict." Moreover, recent advances in low-cost drones, missiles, and similar technologies could change how nation-states are involved in conflicts and how they defend and deter aggression (White House 2025a). Responding to the moment and further enhancing the U.S. military's dominance requires a revival of the United States' DIB.

Reviving the DIB requires increasing the United States' overall industrial capacity, which has grown at a slower rate than the rest of the economy in recent decades. Manufacturing accounted for just 10 percent of U.S. gross domestic product (GDP) in 2024, down from 16 percent in 1997 (the series starts in 1997; Bureau of Economic Analysis 2026). A considerable share of the United States' industrial decline has been concentrated in the defense sector; defense-related employment fell by 2.1 million between 1985 and 2021 (Nicastro 2024), equivalent to about 40 percent of total manufacturing job losses over that period. Since

1991, U.S. defense and space industrial production has grown only modestly, on net, even as economy-wide industrial production expanded 60 percent (figure 8-1). These trends, in part, reflect the substantial decline in Federal defense procurement and research spending since the end of the Cold War. In addition, the acceleration of overseas outsourcing during the 1990s further affected domestic industrial capacity and growth.

The DIB has also been hindered by structural factors, such as burdensome regulations and processes, that may deter business' participation and investments, as well as noncompetitive practices by adversarial state actors that discourage production in the United States (Department of War; DoW 2023a).[1] The erosion of domestic manufacturing capacity and overreliance on concentrated

Figure 8-1. U.S. Industrial Production: Total, Defense and Space



Sources: Federal Reserve Board of Governors; CEA calculations.

[1] In addition to the commercial DIB, the United States also has an Organic Industrial Base, comprising a core set of government-owned facilities that support manufacturing, logistics capabilities, and surge capabilities. While some of the issues facing the commercial DIB also apply to the Organic Industrial Base, this chapter predominately focuses on the economics affecting commercial participants.

foreign supply chains, particularly for critical materials and technologies, directly threaten the United States' security and ability to prevail in a potential high-intensity, long-term conflict (White House 2025a; Jones 2023). Strengthening the DIB is key to reversing these trends and fostering peace through strength. Moreover, expanding the DIB will help revitalize the United States' industrial sector and economic competitiveness, and spur innovation and growth.

This chapter starts with an overview of the current state of the U.S. DIB. Then it discusses benefits arising from a robust DIB and addresses demand- and supply-related barriers constraining the DIB.

The U.S. DIB in International Context

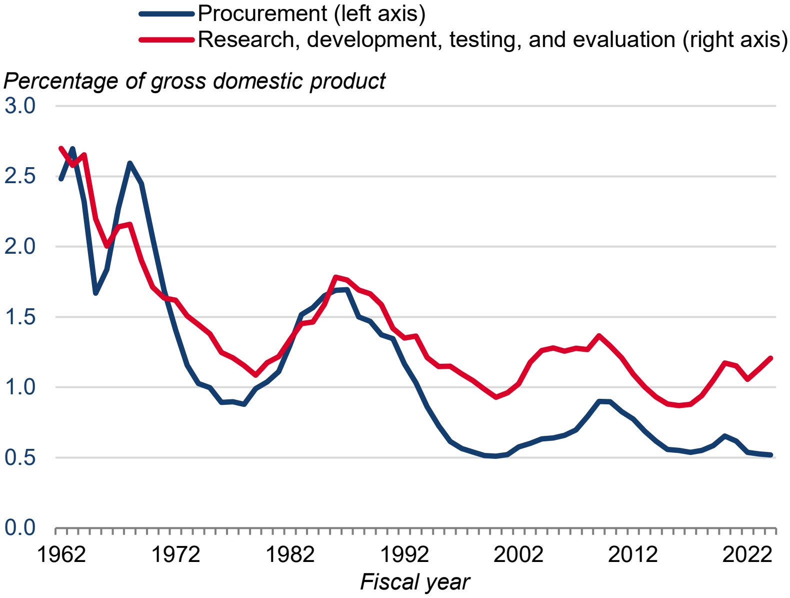
A common metric of a government's defense burden is the ratio of its total military expenditures to GDP. The ratio of defense spending to GDP is a critical target guideline for the North Atlantic Treaty Organization (NATO 2025a). Although the United States not only continues to meet its NATO obligations but also exceed the guideline (NATO 2025b), U.S. defense spending as a share of GDP has fallen by roughly half since the 1980s. Federal spending on the DIB has been particularly hard-hit, with funding for procurement and for research, development, testing, and evaluation (RDT&E) both being persistently low relative to Cold War levels (figure 8-2).

Procurement and RDT&E each play key roles for defense; procurement supports the military's current capacity, while RDT&E advances future defense capabilities. Shortfalls in these investments compound over time, diminishing the deployable stock of defense capital and undermining future readiness, and thus increasing risk to national security. Even as higher defense spending does little to mitigate conflict risk in the short term, some sustained investment can reduce the likelihood of conflict over longer horizons by raising the expected costs of aggression (Benmelech and Monteiro 2025).

Additional spending is especially critical now, as recent technological advances such as low-cost drones require a more expansive, innovative set of capabilities to secure the national defense (White House 2025a). Particularly as these capabilities differ substantively from those the U.S. military needed in the years immediately after the end of the Cold War, fulfilling them requires new investments in defense procurement and RDT&E.

International comparisons also help to contextualize the government's investments in the DIB (box 8-1). A particularly salient benchmark is China, the

Figure 8-2. Federal Spending on Defense Procurement and Research-Related Activity



Sources: Department of War; Office of Management and Budget; CEA calculations.

United States' pacing challenge militarily (Hegseth 2025a). Over the decade 2009–19, the United States' share of global defense spending fell about 9 percentage points to 38 percent, while China's share increased by about 6 percentage points to 14 percent, according to official data (DoW 2021). However, official measures from China may mislead; DoW (2024) estimates that China's true defense spending is 40–90 percent greater than its officially reported level.

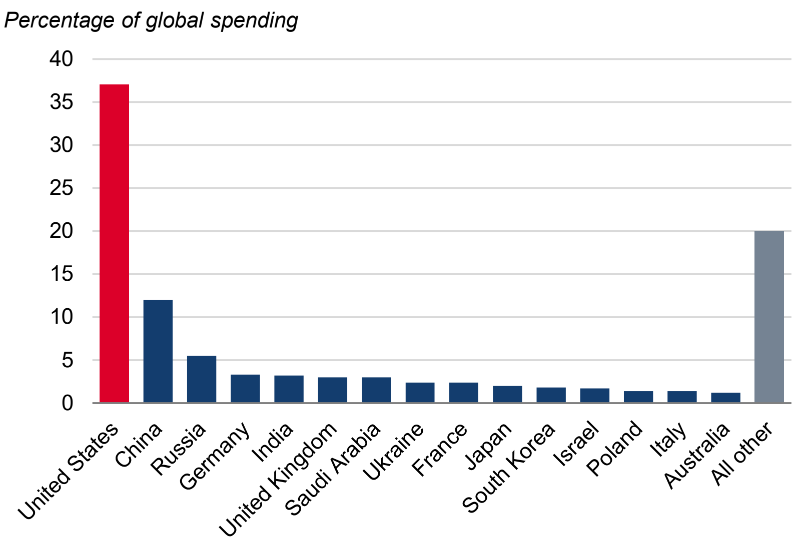
Moreover, lower prices for goods and labor in China mean that $1 of Chinese spending on its DIB has greater purchasing power than $1 of DoW spending on the U.S. DIB (Eaglen 2024). China's defense procurement system likely also has fewer acquisition limitations than the United States', which seeks to harness market forces. Eaglen (2024) estimates that such economic factors could boost China's effective defense procurement by about 60 percent. Other metrics also suggest closer parity between recent U.S. and Chinese investments and industrial capacity. Weinbaum and colleagues (2022) estimate that, on a quality-adjusted basis, the United States received fewer than 400 military patents in 2019, about 100 less than in 2015; in contrast, China received more than 500 patents in 2019, an increase of about 200 from 2015. In 2021, 7 of the 15 largest defense-related firms globally by revenue were Chinese state-owned enterprises, matching the number of private U.S.-based firms (RAND Corporation 2022). These trends underscore the need for the United States to

Box 8-1. Defense Spending by the United States and Its Allies

In 2024, the United States spent as much on defense as the next nine-biggest spenders combined, based on official data sources (Liang et al. 2025). Using the 90 percent upper bound of DoW's (2024) estimates of how much China's official defense data understate its true level of spending, the United States' defense spending is equivalent to 78 percent of the total spending across the next-nine largest spenders. Figure 8-i shows the distribution of defense spending by country in 2024, based on official data sources.

The United States' defense is also bolstered by the spending of its Allies and partners; Liang and colleagues (2025) estimate that the United States' NATO Allies collectively outspent China and Russia combined in 2024, based on official data sources. The United States' NATO Allies have considerably scaled up their defense spending in recent years, reaching an estimated 2.0 percent of their GDP in 2024, up from 1.4 percent in 2014. In real dollar terms, the United States' NATO Allies' spending grew 5.0 percent annually over the past decade, well above the United States' 0.4 percent growth rate. Nonetheless,

Figure 8-i. Distribution of Military Spending in 2024 by Country



Sources: Liang et al. (2025); CEA calculations.

the United States still spends considerably more than its NATO Allies both in dollars—1.7 times all its NATO Allies' spending in 2024—and as a share of GDP—3.2 percent versus 2.0 percent in 2024 (NATO 2025b).

Similarly, while the United States' NATO Allies' spending on equipment (inclusive of research and development, R&D) grew 10 percent annually over the past decade, in inflation-adjusted dollars, the United States still accounted for 64 percent of total NATO equipment spending in 2024 (NATO 2025b). In 2025, NATO members committed to further increase their defense spending so that, by 2035, it would reach at least 3.5 percent of GDP, with an additional 1.5 percent of GDP funding for critical infrastructure, the DIB, and related components, bringing total defense-related spending to 5 percent of GDP (NATO 2025c).

In addition to NATO, the United States has 19 other major Allies, including Australia, Israel, Japan, and South Korea (U.S. Department of State 2025). In 2024, these 4 particular U.S. Allies were each top-15 global spenders on defense, together accounting for 7 percent of global defense spending, and each has grown its spending at a faster rate than the United States over the past decade, in percentage terms (Liang et al. 2025). The United States and its Allies are also expanding cooperation to strengthen their DIBs through actions such as collaborative defense manufacturing (U.S. Army 2025), co-development and co-sustainment of critical supply chains (White House 2025b), ship maintenance partnerships (U.S. Navy 2025a), and security partnerships such as AUKUS (DoW n.d.).

As Secretary Hegseth has underscored, the multitude of threats around the world makes it critical for the United States and its Allies to all step up and contribute to their collective defense to credibly deter aggression (U.S. Mission to NATO 2025). To this end, the United States advocates that all its Allies and partners meet the global standards of spending 3.5 percent of GDP on core military purposes and another 1.5 percent on security-related objectives set forth in the Hague Commitment (DoW 2026). Recent actions taken by the United States and its Allies are key steps toward this goal.

expand and strengthen its DIB to ensure that it can continue to meet China's pacing challenge.

The Domestic Context of the U.S. DIB Since the Cold War

Another key feature of the U.S. defense sector is its consolidation since the end of the Cold War: it is currently both highly concentrated (Nicastro 2024) and economically isolated (Allen and Berenson 2024).

Concentration

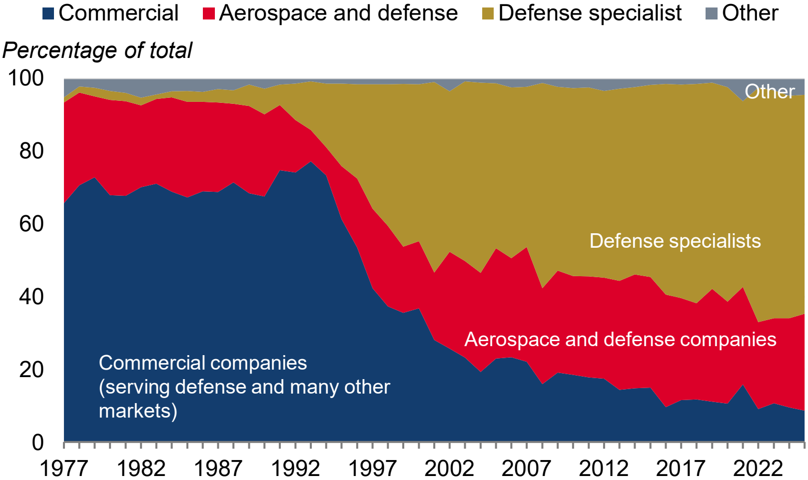
After the "Last Supper" in 1993, when the then–Deputy Secretary of Defense told executives of major DIB firms that he expected "half of the companies represented would not exist in five years" (Watts 2008, 31), the number of aerospace and defense prime contractors fell from more than 50 in the 1990s to 5 in the early 2000s, driven by consolidation (Commission on the Future of the United States Aerospace Industry 2002). A consolidated DIB had a certain logic after the collapse of the Soviet Union, when the United States faced no near-peer military adversary and domestic industry was robust enough to scale quickly to meet heightened defense needs during wartime (Council of Economic Advisers 1991).[2] Yet, after the terrorist attacks of September 11, 2001, when the United States launched Operation Enduring Freedom in Afghanistan (2001) and Operation Iraqi Freedom (2003), consolidation did not reverse; from the "Last Supper" through at least 2007, no major nondefense firm entered the DIB (Watts 2008).

Isolation

In addition to the defense sector being highly concentrated, its constituent firms are somewhat isolated, having relatively limited engagement with the rest of the economy (figure 8-3). Today, 60 percent of DoW's spending on major weapon systems goes to pure defense specialists and, when aerospace and defense companies are excluded, just 9 percent of its spending goes to commercial firms that do not specialize in defense (Allen and Berenson 2024). Before the "Last Supper," commercial firms that engaged in both defense and civilian production received roughly two-thirds of DoW's spending on major weapon systems, while pure defense specialists received about 5 percent (Allen and Berenson 2024).

[2] Even as the Council of Economic Advisers (1991) noted the economy's ability to readily adjust to meet defense needs in the past, it emphasized the importance of supporting the DIB in order to maintain production capacity for key equipment and sustaining investment in research in defense technologies.

Figure 8-3. Major Weapon Systems Acquisition Budget: Share by Industrial Base Category



Sources: Bollinger and Berenson, based on DoW's *Annual Report to Congress and Program Acquisition Cost by Weapon System*, fiscal years 1977 through 2025; CEA calculations.
Note: Figure 1 from Allen and Berenson (2024). Used by permission.

Reduced Competitiveness Resulting from DIB Consolidation and Isolation

Industry consolidation has presented the ultimate consumers—DoW, the U.S. government, and the American people, as well as U.S. Allies and partners—with potential economic benefits. However, the potential upsides are accompanied by significant downsides in the emerging strategic environment: decreasing competitiveness and the resulting increased costs of defense articles. When production exhibits economies of scale, concentrating activity across fewer firms can improve efficiency and lower unit costs. However, consolidation also increases the market power of the remaining established firms, inducing them to engage in oligopolistic tendencies, which may allow firms to increase their prices due to the lack of competition. Only half of DoW contract dollars are currently awarded in competitive bids (DoW 2022), and many open contracts have only one bidder (Carril and Duggan 2020). High fixed costs and cumbersome processes to engage with DoW create substantive barriers to entry (DoW 2023a). The dearth of viable competition reduces the market discipline imposed on established DIB firms, increasing the likelihood of elevated mark-ups in sales to DoW and impeding DoW's ability to prevent cost overruns and shipment delays. Additionally, competitive markets incentivize innovation and efficiency gains, and can also help facilitate knowledge transfer across businesses. Beyond the aforementioned horizontal integration after the "Last Supper," the DIB has more recently experienced an increase in vertical integration, which can limit downstream firms' access to key inputs and raise costs for competitors, thus increasing overall costs for final consumers (DoW 2022).

The consequences of the DIB's lack of competitiveness have been prominently illustrated by how DIB firms have allocated their earnings since 2000, increasingly to share buybacks and dividends instead of internal investments (i.e., R&D, for new products and/or production capacity; DoW 2023b). One explanation for why a firm engages in share buybacks is that it believes that it does not have opportunities for internal investment that would yield greater returns to shareholders. Between the 2000s and 2010s, the balance of DIB earnings allocations made a dramatic reversal: dividends and share buybacks, which rose from 3.7 to 6.4 percent of earnings, overtook internal investment, which fell from 6.2 to 5.9 percent of revenues (DoW 2023b). To help spur the revitalization of the DIB, Executive Order 14372 prohibits "major defense contractors ... [from] conduct[ing] stock buy-backs or issu[ing] dividends at the expense of accelerated procurement and increased production capacity" (National Archives 2026). The Executive Order's focus on major contractors aligns with evidence that the rising tendency to return funds to shareholders appears to be particularly pronounced across large defense prime contractors, with smaller DIB firms prioritizing growth (McGinn, Grinberg, and Everhart 2024). The diminished scope and competitiveness of the DIB means that strengthening it requires not just increased federal funding but also market reforms to encourage entry, growth, and competition.

Benefits of Enhancing the Defense Industrial Base

National defense is a fundamental example of a true public good (in the economic sense), due to its nonexcludable and nonrivalrous nature (Stiglitz 1999); each individual shares in the benefits of safety and security, from which it is impossible to exclude them. As an integral component to national defense, an innovative and robust DIB itself is a true public good. Beyond supporting national defense, a thriving DIB also yields substantial positive externalities for the United States by spurring domestic innovation and economic growth.

R&D Spillover from DIB Investment

Domestically, investments in the DIB can have pronounced positive externalities, as has been extensively documented for federal defense spending on RDT&E. Antolin-Diaz and Surico (2025) find that increases in the share of public spending in RDT&E can spur sustained increases in private investment and innovation over the medium term. Additionally, Moretti, Steinwender, and Van Reenen (2025) find that government-led, defense-related R&D can increase both domestic and international private R&D. Given that private R&D itself yields positive externalities by generating technology spillovers (Bloom, Schankerman, and Van Reenen 2013), defense R&D spending can yield sustained returns by boosting long-run productivity and GDP. For example, Federal investments in applied R&D during World War II boosted employment and high-technology entrepreneurship for decades (Gross and Sampat 2023).

Many of the positive externalities from defense R&D stem from dual-use technologies, which have commercial as well as military applications. Perhaps the most prominent example of a dual-use technology affecting modern life is the Internet, originally developed by DoW's Defense Advanced Research Projects Agency (DARPA). DARPA-funded technologies abound in everyday life, ranging from advanced metals to satellites and the Global Positioning System (GPS) to high-definition televisions (HD TVs) (DARPA n.d.). DoW also facilitates cutting-edge technologies' progression from the prototype to mass-production stages; its price-inelastic demand for transistors and integrated circuits in the 1950s and 1960s, for example, helped manufacturers improve production methods and scale up to efficient levels of output (Howell et al. 2025, citing Mowery 2012). Although the complementarities between military and civilian uses are sometimes self-evident in advance, this is not always the case. The Manhattan Project's focus on nuclear weapons, for example, paved the way for civilian nuclear energy. The fact that subsequent applications cannot always be anticipated supports a broad-based increase in R&D funding for the DIB. DoW has historically played an outsized role in funding risky, capital-intensive ventures with potential military uses (Howell et al. 2025), and the nexus of digitization, artificial intelligence, and novel manufacturing processes offers numerous opportunities for DoW to further advance U.S. technological innovation.

Addressing Demand-Side Barriers to DIB Enhancement

The DIB faces unique economic challenges, because it effectively has a single source of demand, by which it is highly regulated (Rogerson 1994).[3] DIB regulation is critical to maintain national security. In practice, regulatory actions that enhance security can also generate economic frictions and barriers to entry that curtail DIB supply. For example, requiring key workers to hold security clearances improves operational security, yet constrains DIB participants' available labor market. While national security imperatives mean that the most economically efficient outcome is not necessarily socially optimal, opportunities still exist to improve economic conditions for the DIB in ways that can also enhance

[3] While the DIB can also sell abroad, those sales are regulated by the Federal government (Defense Security Cooperation Agency n.d.). Such regulations mean that, in practice, the Federal government is effectively the DIB's sole source of demand.

national security. The next section focuses on demand-side considerations; supply-side ones are addressed in the subsequent section.

Demand-Side Barriers: Internal and External Uncertainty

Uncertainty is an inherent characteristic of the DIB, as has been recognized since at least the 1960s; the DIB is subject to both internal uncertainty due to risks in developing and producing new technologies, and to external uncertainty from changes in the need or funding available for those technologies (Rogerson 1994, citing Peck and Scherer 1962 and Scherer 1964). Although both types of uncertainty can also affect commercial industries, the DIB is more exposed for several reasons, which largely stem from the Federal government's monopsony—its role as single largest buyer and end consumer—over the defense sector. Internal uncertainty is heightened because R&D efforts, even if successful, may not yield sales. Some defense orders are so small or complicated to produce that single-sourcing is the most economically effective means of procurement (Rogerson 1994). It is also often the case that defense products do not have commercial applications and therefore lack a viable market, even if they are high-quality.

The DIB's external uncertainty is also increased because, in contrast to many commercial customers, demand is largely determined by the annual appropriations process, and DoW has historically only had a limited ability to engage in multiyear procurement (O'Rourke 2025), leaving many DIB markets without a reliable signal of future demand. DoW's demand signal has been particularly noisy since the 2008 global financial crisis, stemming from fluctuations in DoW's budget and the increasing reliance of Congress on continuing resolutions rather than new appropriations legislation to fund DoW (2018). Additionally, in many instances, DIB goods are also exchanged under single-source, single-customer transactions that have no meaningful market price (Rogerson 1994), limiting DIB suppliers' ability to make adjustments to stabilize market activity. In markets with multiple customers, aggregate demand tends to be more stable than individual demand, as other customers' purchases can intertemporally smooth out volatility from those of any given customer.

External uncertainty has material implications for the DIB by influencing participants' incentive structures. For example, in recent decades, DoW's spending has shifted toward maintaining current systems and incrementally modifying legacy designs, rather than developing new projects, a trend that was at least in part spurred by budget uncertainties (DoW 2018). Maintenance and incremental modifications can help forestall the high costs of new programs and have shorter schedules, yielding more reliable and nearer-term revenue streams for firms. However, an overreliance on legacy projects can erode future capacity. Uncertainty about future demand reduces DIB firms' incentives to engage in their own R&D and introduce new products. Declines in the relative frequency of forward patent citations suggest a decline in the influence and effectiveness of DIB R&D.[4] Prime defense contractors' patents are now less influential than those of other firms—as reflected in their tendency to be cited in subsequent patents—whereas, in the Cold War era, their patents were more influential. Across forward citations by firms other than prime contractors, the relative influence of prime contractors' patents is now roughly half its level at the "Last Supper" (Howell et al. 2025). The prolonged reduction in new DoW-funded projects has also left the current generation of DIB employees without adequate experience in bringing novel technologies through the full life cycle from conception to full-scale production (DoW 2018).[5] The DIB's increased isolation (Allen and Berenson 2024) means that DIB employees also have fewer opportunities to gain such experience from commercial ventures.

Solution to Demand-Side Barriers

Increasing the domestic demand signal. The Federal government has taken steps to address issues stemming from uncertainty about the level and predictability of DIB demand. In recent years, Congress has expanded DoW's ability to use multiyear procurement contracts, including in 2025 (U.S. Congress 2023, 2025), enabling DoW to provide more stable demand signals to DIB contractors. DoW is currently working on strengthening demand signals for munitions programs, which historically have been particularly vulnerable to funding disruptions, and plans to build on its success across a broader range of programs (DoW 2025a). Additionally, the Trump Administration has made rebuilding America's military and revitalizing the DIB one of its top fiscal priorities (Office of Management and Budget 2025); between the One Big Beautiful Bill Act (OBBBA) and the Fiscal Year 2026 National Defense Authorization Act (NDAA), spending for procurement, RDT&E, and DIB expansion is up more than a third from the Fiscal Year 2025 NDAA.

Increasing the demand signal from Allies and partners. Although the U.S. DIB predominately serves DoW, it is also a critical enabler for Allies and partners. Foreign demand for DIB products has been a focal point of President Trump's reciprocal trade agreements, which have secured guarantees on substantial increases in orders from partners such as the European Union and Japan (White House 2025c, 2025d). Additionally, as NATO Secretary General Mark Rutte noted, President Trump's efforts were pivotal to securing NATO members' agreement to increase defense-related spending to 5 percent of GDP by

---

[4] A decline in R&D effectiveness could stem from either a fall in the level of activity funded by firms or a decline in the success rate of R&D projects. Particularly in concert with the decline in Federal funding for defense R&D (figure 8-2), the end result of less influential and innovative technologies poses risks to future military capacity.

[5] In tandem with the business-oriented actions discussed subsequently in this chapter, chapter 9 of this *Report* discusses initiatives taken by the Trump Administration and proposes additional solutions to ensure that American workers have the skills they need to help advance and expand the DIB

2035 (NATO 2025a). The Trump Administration is also working on cutting red tape to further enable foreign military sales.[6] Executive Order 14268 recognizes the role of these sales to "simultaneously strengthen the security capabilities of our allies and invigorate our own defense industrial base" and calls for the Federal government to take multiple actions to streamline and facilitate foreign military sales (National Archives 2025a, 15631). Allies and partners can complement DoW as a customer, creating a more robust market with higher, more sustained demand for the DIB.

Addressing Supply-Side Barriers to DIB Enhancement

Primarily as the dominant market custodian and market regulator, the Federal government can substantially influence DIB supply by managing barriers to entry and market frictions that influence firms' ability and willingness to participate. The United States benefits from having a DIB founded in private enterprise, rather than state-owned firms, such as through increased competition and expanded access to the innovations generated in commercial, free markets relative to what would be possible in a command-and-control system. In contrast, state-dominated DIBs can be beset by issues such as corruption and the absence of market discipline, which can exacerbate cost and time overruns and quality deficiencies (Weinbaum et al. 2022).

Supply-Side Barriers

Monopsony, incentives, and the hold-up problem. However, because the U.S. DIB consists primarily of private businesses, it faces principal–agent problems that arise when the incentives of the principal (e.g., DoW as the single largest customer, regulator, and contract-enforcer) do not align with those of the agent (e.g., a firm as a supplier). Principal–agent problems are prevalent across economies but are further compounded in the DIB by the Federal government's monopsony. For example, many defense contracts take time to fulfill, incur substantial fixed and opportunity costs, and are for products with few, if any, alternate customers to DoW (Rogerson 1994). These factors exacerbate time-inconsistency problems, as bargaining power changes over the duration of the contract; once the contractor has invested resources, DoW could potentially seek to renegotiate contract terms (e.g., a lower sales price) or threaten to walk away from the contract altogether if the contractor does not acquiesce, which could leave the contractor without any revenue from the venture. The risk of future renegotiations can deter firms from initially investing resources or

[6] Foreign military sales are purchases in which DoW provides administrative services and can coordinate across partners' orders; partners can also contract directly with DIB firms for certain goods and services (Defense Security Cooperation Agency n.d.).

participating in the market, creating a “hold-up problem” for both DoW and its prospective suppliers (Rogerson 1994, citing Williamson 1985).

Information asymmetries. The DIB’s hold-up problem is further compounded by information asymmetries; particularly for high-risk and complicated projects, it can be challenging for DoW to know whether a failure stemmed from bad luck or shirking (e.g., an underinvestment of effort or resources by a contractor). Such information asymmetries make it challenging to fully incentivize investments, leading to suboptimal outcomes (Tirole 1986). Many of the actions DoW takes, from funding RDT&E to utilizing cost-based contracts, seek to bolster its reputation for reliability and mitigate principal–agent problems of regulation to align incentives (Rogerson 1994).

Even with DoW’s efforts to overcome the hold-up problem, the defense procurement process generates frictions that deter supplier entry. DoW (2023a, 11) assesses that “[DoW’s] low volume buying patterns, lengthy periods between modernization, and often unnecessarily over-customized design specifications have combined to make [DoW] an unattractive customer, especially for smaller businesses.” By deterring new entrants, these frictions can impede the DIB’s potential; new entrants can bring in new capabilities, ensuring that the DIB can harness a variety of technologies to support DoW (2025a). Issues and risks can be exacerbated by lengthy project timelines. For example, major defense acquisition programs, such as the Columbia Class ballistic missile submarine, are now expected to average about 12 years from program start to initial capability, and in 2024 roughly 1 in 10 major defense acquisition programs experienced a delay of about 12 months or longer, due to problems such as design issues, testing delays, and delayed access to funding (U.S. Government Accountability Office 2025). “Scope creep” and continual design iterations during the production process, without consideration for their downstream implications, can also prolong project length; changes to capability requirements require DIB suppliers to expend additional time and resources to adjust their designs and manufacturing processes (DoW 2023a). Particularly for long-lasting contracts, scope creep heightens suppliers’ uncertainty about their future resource needs and obligations, which can deter participation. For example, in 2025 the Department of the Navy cancelled all unstarted orders of Constellation Class frigates following a three-year delay in initial delivery amid a “persistent lack of design stability [that] stalled construction” (U.S. Navy 2025b; U.S. Government Accountability Office 2025, 130).

Solutions to Supply-Side Barriers

Increasing reliability and predictability. Recent executive actions aim to remove such frictions from procurement processes. Executive Order 14265 calls for a reformation of the defense acquisition process to emphasize “speed, flexibility, and execution” (National Archives 2025b, 15621), and Executive

Order 14275 establishes that "it is the policy of the United States to create the most agile, effective, and efficient procurement system possible" by reforming the Federal Acquisition Regulation, because "the expansion of the national and defense industrial bases is paramount" (National Archives 2025c, 16447). Pursuant to Executive Order 14265, DoW developed its Acquisition Transformation Strategy, which calls for "an aggressive systemic overhaul" to "rapidly deliver relevant and effective solutions at scale to address warfighting needs" (DoW 2025a, 1).

Subtier DIB participants are a particular concern for DoW, as they tend to have less favorable payment terms and cash flow than prime contractors (DoW 2023b). DoW (2023a, 15) assesses that "unreliable cash flow to small businesses makes the DIB more fragile and less secure, and this is driven by a range of issues from appropriation delays to commonly used contracting practices." To improve its insight on DIB supply chains and strengthen its relations with subtier DIB participants, DoW is expanding its use of direct-to-supplier relationships through its procurement systems (DoW 2025a). And new programs, such as the Small Business Investment Company Critical Technologies (SBICCT) Initiative—a joint effort between DoW and the Small Business Administration (SBA)—provide both capital and technical guidance to increase DIB participation and spur investments in critical technology areas, supply chains, and production processes. The SBICCT Initiative provides forward-looking signals about DoW's technological priorities, giving prospective DIB suppliers greater clarity on how they can participate (SBA and DoW 2025).

In addition, DoW's engagements with the financial industry and the Department's credit programs can help "crowd" private capital into the DIB, better aligning market incentives with social benefits. Government programs aimed at broadening participation and reducing transaction costs can increase the number of first-time entrants and venture-backed firms in the DIB (Howell et al. 2025). The first direct loan from DoW's Office of Strategic Capital to a DIB participant, MP Materials, helped the company secure $1 billion in private sector financing to scale up its domestic production (MP Materials 2025).[7] The OBBBA expanded the Office of Strategic Capital's funding by enough to support up to $100 billion in loanable funds (DoW 2025b). The public-private partnerships DoW fosters through such programs simultaneously reduce hold-up problem frictions by better aligning DoW's and DIB firms' incentives and ensure sustained market discipline.

The Administration has also used the authorities of the Defense Production Act (DPA) to strengthen and support the DIB. DoW, for example, has made a

[7] In addition to the $150 million loan from the Office of Strategic Capital, DoW provided $400 million in exchange for a preferred equity stake without voting rights alongside purchase commitments for MP Materials' output (MP Materials 2025). MP Materials will use this additional capital "to expand its existing rare earths separation and processing capabilities, as well as its magnet production capacity" (MP Materials 2025).

series of investments this year in critical mineral production capacity using the DPA, part of a broader effort to secure critical mineral supply chains (e.g., DoW 2025c, 2025d). These investments have been made in part using DPA Title III authorities, which allow the U.S. government to use various forms of finance to support industrial capabilities that support U.S. national defense.

Leveraging technological advances. Recent technological advances also create opportunities to expand and enhance the DIB, while standing up new firms with novel capabilities that could potentially improve competition and reduce concentration through creative disruption. Acquisition process reform is a top priority for DoW, with a focus on shifting from a hardware-centric to a software-centric approach (Hegseth 2025b). Advanced manufacturing automation can streamline development and production processes, improving performance (DoW 2023a). DoW's Manufacturing Technology program identifies ways to use advanced technologies to address current and future gaps in DIB capacity (Department of Defense Manufacturing Technology Program n.d.), while Additive Manufacturing Forward—a consortium of major private contractors—leverages funding from the SBICCT Initiative to spur small U.S. companies' adoption of additive manufacturing (ASTRO America n.d.). Additionally, synergies between hardware and software, such as digital "clones," can accelerate prototyping, streamline maintenance, and enable upgrades through software updates rather than the production of new physical devices. In an illustration of how pivotal recent technological advances can be for the DIB, in 2025 a defense technology firm topped CNBC's Disruptor 50 list—the first time one has done so in the list's 13 years of existence—and, overall, four DIB firms made the list (Boorstin 2025). To further harness the potential of novel commercial technologies, in 2025 DoW's Defense Innovation Unit launched the Blue Manufacturing Initiative to facilitate engagement between cutting-edge advanced manufacturers in the commercial space and conventional DIB participants and DoW, which will help to bring the DIB closer to the technological frontier (Beck 2025).

Through regulatory and process reform, new programs to expand financing and crowd in private capital, and leveraging technological breakthroughs, the Trump Administration is removing barriers to entry and supporting businesses' ability to participate in the DIB, expanding the market's supply and advancing it toward the economic frontier.

Conclusion

The United States' defense industrial base is an invaluable pillar of its national security, supporting the country's geoeconomics status and domestic economic growth. A generation of government underinvestment in the DIB has increased the burden on the industry and stands in stark contrast to China's and Russia's substantial military and industrial build-up. Fundamental economic constraints confront the DIB, given the Federal government's unusual status as monopsonist and market regulator. Yet an economic lens can also identify opportunities to both improve the vitality of the DIB and strengthen national security. By expanding and reforming its spending, removing barriers to entry, and thus incentivizing the crowding in of private capital, the Federal government has made considerable progress in recent years to bolster both demand and supply in the DIB. Recent actions by the Trump Administration should further strengthen the DIB in the years to come, helping to sustain U.S. economic growth and secure peace through strength.

★★★★★★

Chapter 9

Work Means More Than Making a Living: Labor, Challenges, and Opportunity

Every month, millions of Americans remain disconnected from the workforce. The economic costs are measurable in gross domestic product and tax revenue. But the human costs—measured in years of life lost, relationships severed, and skills atrophied—reveal that the role of work is far more fundamental than economic exchange. Just as the United States has historically invested in physical capital, it now needs to invest in human capital with the same attention and focus.

The Value of Work

Policy discussions often treat work either as just a means to an end—a paycheck—or as a terrible monster to be vanquished. The dominant cultural narrative celebrates retirement as liberation and views unemployment through a narrow, materialist lens—that the only real issue in joblessness is a lack of money. But what if this framework fundamentally misapprehends the role work plays in human flourishing?

The act of working seems to shape well-being at least as powerfully as income itself (Winkelmann and Winkelmann 2003). Work is a center of meaning, a means of identity and purpose, and a powerful node of human relationship and connection (Durkheim 1897; Jahoda 1982). Understanding these "latent" benefits of work is essential for crafting policies that truly support human welfare.

Moreover, the case for employment extends beyond individual well-being to broader social value. Employment generates substantial positive externalities for the community: workers contribute tax revenues that fund public goods, create value captured by firms and other stakeholders, and generate a consumer surplus through increased production. These social returns mean that policies affecting employment have consequences extending well beyond the individuals directly involved.

This chapter synthesizes the best available evidence showing the benefits that work provides beyond income—benefits with critical implications for living well. Using longitudinal data from RAND's Health and Retirement Study (1992–2022), along with findings from the broader economic literature, four striking facts are documented: work improves health and extends life by years; work increases happiness and reduces depression; work helps to develop the knowledge and skill of individuals; and work provides a webbing of social connection and community.

Data Description and Methodology

To isolate the effects of work beyond income, this chapter uses longitudinal data from RAND's Health and Retirement Study (HRS) spanning the years 1999–2022. Every two years, HRS surveys about 20,000 Americans on their employment status, emotions, cognition, health outcomes, and social connections (RAND 2023).

This chapter uses an event-study design that examines how workers' well-being changes vis-à-vis two distinct types of job separations: unemployment and retirement. These separations offer complementary insights—unemployment is typically involuntary and temporary, while retirement is usually planned and permanent. This allows researchers to disentangle the effects of unexpected job losses from those of anticipated workforce exits, providing a more nuanced understanding of how work shapes human welfare.

Specifically, the chapter tracks two key outcomes that capture some of the latent benefits of work discussed above: depression (measured on a validated eight-point CES-D scale) and self-reported loneliness (0–1 scale).[1] The original analysis here is complemented by findings from the broader economics literature, particularly studies that leverage natural experiments to identify causal effects.

Work Extends Life and Improves Health

Perhaps no finding challenges economists' assumptions about work's value more starkly than its effect on mortality. If work were merely a source of stress to be escaped, one would expect job separation to improve health outcomes and reduce mortality. The evidence shows precisely the opposite.

Workers displaced through mass layoffs experience 50–100 percent higher mortality rates in subsequent years, shortening life expectancy by 1 to 1.5 years on average (Sullivan and von Wachter 2009). Given standard estimates of the value of a statistical life from the U.S. Department of Health and Human Services (DHS 2025), the reduction in life expectancy costs about

[1] CES-D stands for the Center for Epidemiologic Studies Depression Scale, which is one of the most common self-reported measures of depressive symptoms used in the general population.

$300,000–$500,000.[2] These are not workers who lost jobs due to poor health or performance; they were displaced through plant closures and downsizing that had nothing to do with individual circumstances. The excess deaths span multiple causes—strokes, heart attacks, accidents, suicide, and complications from substance abuse—suggesting that job loss triggers a cascade of physical and mental health deterioration (Eliason and Storrie 2009; Browning and Heinesen 2012). These studies, which are from Sweden and Denmark—countries with government healthcare—demonstrate that the health consequences of job loss operate through psychological and social pathways rather than simply through the loss of medical access.

The most compelling evidence that these effects transcend income loss comes from retirement. Fitzpatrick and Moore (2018) exploit the sharp discontinuity in retirement timing at age 62, when Social Security eligibility begins. Roughly one-third of Americans retire precisely at this threshold. This age-based threshold creates a natural experiment, since retirement timing is driven by policy rather than individual health status. Despite having their income partially replaced through Social Security, these new retirees experience an immediate 2 percent increase in mortality risk—implying that retirement itself increases mortality risk by about 6 percent for those who choose it. The effect is particularly pronounced for men, who may especially derive their identity from work.

These mortality costs are so substantial that Blanchflower and Oswald (2004) calculate that displaced workers would need compensation equal to two full years of income to offset just the mortality risk of unemployment—before accounting for any other welfare losses. Quantitatively, this aligns with the evidence from Sullivan and von Wachter (2009).

The health consequences of job separation extend beyond mortality to physical health more broadly. While many facets of health are hard to measure, studies have shown that work causally reduces obesity risk, which affects future work prospects. Using retirement age thresholds as a natural experiment, researchers found that early retirement increased the probability of becoming obese by 12 percentage points among men within two to four years (Godard 2016). This weight gain then creates a vicious cycle, since a higher Body Mass Index increases the odds of nonemployment arising from poor health (Campbell et al. 2021). Thus, employment today supports the health that allows employment tomorrow. Finally, the poor health brought on by unemployment increases future medical expenses. The magnitude of these medical expenses is substantial: the obese incur medical expenses exactly twice those of the nonobese—an additional $2,505 per person annually (Cawley et al. 2021). Thus, employment that prevents obesity generates significant downstream work capacity and

[2] HHS (2025) estimates that the value per statistical life is $13.6 million. Assuming there are 40 years remaining at layoff, a reduction in life expectancy of 1–1.5 years corresponds to a cost of about $300,000–$500,000.

healthcare savings, whether borne privately or by the taxpayer through public insurance programs.

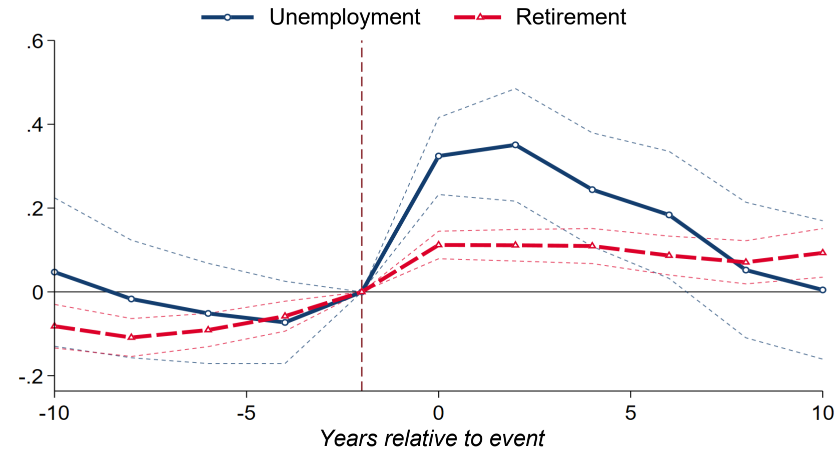
Work Makes People Happy

Beyond its effects on physical health, work shapes human emotional well-being in ways that contradict people's stated preferences. People tell themselves that they work for the weekend, yet the evidence suggests that they find more fulfillment in Monday morning than Saturday afternoon.

Csikszentmihalyi and LeFevre's (1989) pioneering study revealed this paradox elegantly. Using experience sampling methodology—giving subjects beepers that prompted them to record their activities and feelings at random moments—they found that people reported higher levels of happiness, engagement, and energy while working than during their leisure time. This finding challenges classical economic theory, which treats labor as "disutility"—a cost paid in lost leisure to obtain income. Despite the common cultural narrative that frames work as drudgery, people appear to derive deep satisfaction from productive effort and the structure it provides.

The CEA's analysis of HRS data confirms that job separation diminishes emotional well-being. Figure 9-1 tracks depression scores (measured on an eight-point CES-D scale) before and after job transitions. The figure compares the dynamics of the depression index for those leaving employment with that of workers who remained employed, so positive numbers represent depression arising from nonemployment. The patterns are striking: unemployment

Figure 9-1. Index of Depression Scores (on an Eight-Point CES-D Scale) Before and After Job Transitions



Sources: RAND (2023); CEA calculations.
Note: The solid red line plots the outcome dynamics for unemployment events; the dashed black line plots the dynamics for retirement events. Higher scores on the CES-D scale suggest more depressive symptoms.

triggers an immediate increase in depression that persists for at least six years. Retirement follows a different trajectory—depression increases gradually but steadily, suggesting a slow erosion of well-being rather than acute distress. Most tellingly, depression begins rising even before retirement occurs, indicating that workers may intuitively understand they will miss something important about work, even as they anticipate freedom from its demands.

The effect of job separation on depression translates into significant welfare costs. The CEA estimates these costs using the compensating variation method from Buason and colleagues (2021), which represents how much money the average person would need to fully offset the depression they would experience after retirement or unemployment. Bauson and colleagues find that diagnosed depression and anxiety costs about $60,300 a year in lost welfare. The analysis here maps the continuous 0–8 depression scale to their binary indicator by assuming that diagnosed depression corresponds to the clinical threshold of 4, which is 2.5 points above the sample mean of 1.5. Each point therefore costs about $24,500 in welfare a year, so unemployment's peak effect of 0.35 point costs about $8,500 a year. Using a discount rate of 3 percent, the present value cost of nonemployment is roughly $51,000. By contrast, the more persistent and stable effect of retirement on depression has a present value cost of about $23,000.

Research on unemployment duration reinforces the pattern of divergent trajectories and costs between unemployment and retirement. Research on unemployment duration reinforces this pattern. Bayer and Juessen (2015) demonstrate that short unemployment spells have minimal effects on well-being, while persistent joblessness drives significant unhappiness. This suggests that the psychological benefits of work operate through multiple channels—not just the act of working, but also the security of knowing you will have work. Krueger and Mueller (2012) reinforce this interpretation, documenting how laid-off workers experience not just depression but also an explicit sense of meaninglessness.

The implication for policy is clear: rapid reemployment, made possible by flexible labor markets that allow quick matching between workers and jobs, should be a priority. Studies show that by reducing institutional rigidities that act as a tax and deterrent on hiring, more flexible labor markets shorten the duration of unemployment spells (Lazear 1990; Nickell 1997; Autor, Kerr, and Kugler 2007; Price 2025). This is essential not just for economic reasons but also because extended separation from work corrodes psychological well-being in ways that income support alone cannot address.

Work Builds Skill and Preserves Cognitive Function

The sense of purpose and engagement that work provides is deeply connected to its role as a continuous engine of personal development. The modern workplace demands constant adaptation—new software, evolving best practices, shifting market demands. Workers meet these challenges not usually through formal training but by daily problem-solving alongside colleagues. This learning-by-doing, which is nearly invisible when it occurs, becomes painfully apparent only in its absence (Arrow 1962).

Bessen (2016) documents how workers master new technologies, primarily through on-the-job experimentation rather than formal education. Similarly, Jarosch, Oberfield, and Rossi-Hansberg (2021) show that workers learn substantially from their peers, with an increase in coworker quality raising own wages by 2 to 3 percent permanently of 1 standard deviation. These knowledge spillovers happen through informal channels—watching a colleague handle a difficult client, debugging code together, sharing Excel shortcuts across workstations. The cumulative returns from this workplace learning are substantial and persistent. Consider a young worker in his 20s considering whether to take a gap year after completing his training. One additional year of work experience increases his annual earnings by 3.0 to 3.6 percent throughout the rest of his career (Altonji and Williams 1992). For an average worker earning $60,000 at age 25, this translates into about $86,400 in additional lifetime earnings before retirement—all from a single additional year of early career experience. The workplace functions as an unstructured but irreplaceable quasi-university where learning happens through osmosis and the mother of all: necessity.

When workers are separated from employment, this skill development does not just pause—it reverses. The losses extend beyond technical skills to the core cognitive function itself. A compelling body of research shows that retirement causally accelerates cognitive decline (Rohwedder and Willis 2010). Exploiting sharp differences in country-specific retirement ages, researchers have found that leaving the workforce hastens the decline in memory and verbal fluency (Mazzonna and Peracchi 2012; Bonsang, Adam, and Perelman 2012). One longitudinal study of British civil servants found that verbal memory declined about 38 percent faster after retirement than before it (Xue et al. 2017). This erosion of human capital—both in specific skills and general cognitive function—has lasting financial consequences. Some displaced workers experience lasting wage penalties of 15 to 20 percent even after reemployment (Davis and von Wachter 2011), suggesting that time away from work's learning environment carries permanent costs.

Work, then, provides a form of human capital insurance—not just maintaining existing skills but also continuously building new ones and preserving the core cognitive function through exposure to challenges, technologies, and colleagues. The policy implications of this reality remain consistent: facilitating rapid reemployment preserves not just well-being but also the dynamic skill development and cognitive health that keep workers productive and adaptable.

Work Provides a Webbing of Vital Social Connections

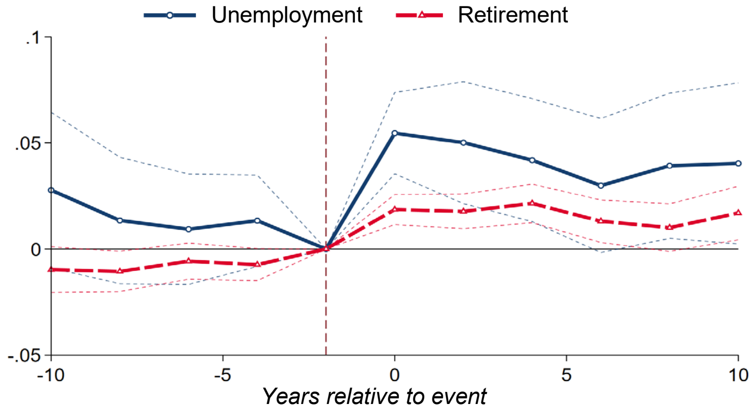
Finally, the benefits of work extend beyond the individual psyche and skill set to the social fabric that binds people together. Work is where people form friendships, find mentors, and build the weak ties that sociologists have long recognized as essential for opportunity and belonging. When work disappears, so does this essential social infrastructure.

The HRS analysis reveals that job separation triggers sustained social isolation. Figure 9-2 tracks self-reported loneliness before and after employment transitions. Unlike depression, which spikes immediately after a job loss, loneliness emerges gradually and persists. Ten years after separation from work, both unemployed and retired workers report significantly higher loneliness than when they were working. The absence of anticipatory effects suggests that workers underestimate how much they will miss the daily interactions, shared purposes, and casual friendships that work provides.

These individual costs ripple outward through communities. When unemployment rises locally, even those who keep their jobs experience decreased well-being—Helliwell and Huang (2014) find the effects equivalent to a 4 percent decline in household income. This spillover reflects the breakdown of social networks: when your colleague loses their job, you lose a colleague. When enough people lose work, the entire community fabric begins to fray.

The social consequences of joblessness extend into people's most intimate relationships. Work shapes not just friendships but also family formation itself. Autor, Dorn, and Hanson (2019) demonstrate that regions hit by

Figure 9-2. Loneliness Before and After Employment Transitions (on a 0–1 Scale)



Sources: RAND (2023); CEA calculations.
Note: The solid red line plots the outcome dynamics for unemployment events; the dashed black line plots the dynamics for retirement events. Loneliness is measured on the De Jong-Gierveld Loneliness Scale normalized to a range of 0 to 1, where a higher score denotes a higher degree of loneliness.

trade-induced job losses experience collapsing marriage markets, particularly for noncollege men whose diminished employment prospects make them less attractive as partners. The results are fewer marriages, more single-parent households, and declining fertility—a cascade of social disconnections that begin with economic displacement.

Taken together, this evidence reveals work as a fundamental organizing principle of social life. The workplace is not just where people earn money but also where they form the relationships that define their communities and families. Policies that treat unemployment as merely an income problem miss this deeper social architecture that work provides.

The Positive Externalities of Employment

The case for employment extends even beyond the well-being of the employed to improve broader social welfare. When workers are employed, they generate benefits for others—improving the well-being of consumers, savers, fellow workers, and the broader public. These positive externalities mean that the social value of employment substantially exceeds the private returns to the worker, making policies that affect employment decisions matters of public as well as private concern.

Employment generates positive externalities for society through four key channels. First, when someone chooses to work, they increase total output in the economy. The goods and services they produce generate a consumer surplus—the difference between what consumers would be willing to pay and what they actually pay. This surplus represents a pure gain for society: consumers enjoy products and services at prices below their maximum willingness to pay, increasing community well-being beyond workers' own earnings.

Second, employed workers contribute tax revenues that fund public goods benefiting society broadly: in infrastructure, law and order, national defense, education, scientific research, and support for the poor. When someone works, rather than collecting disability or unemployment benefits, they shift from being a net recipient of transfers to a net contributor to public goods.

Third, workers create firm value beyond what they capture in wages. Due to labor market frictions such as search costs and monopsony power, workers are typically paid less than their marginal revenue product. Research shows that the gap between worker productivity and compensation represents a surplus that flows to other stakeholders—to retirement savers through equity returns, to coworkers through higher wages, and to customers through improved products (Yeh, Macaluso, and Hershbein 2022; Jäger and Heining 2022).

Fourth, workers make each other more productive through agglomeration effects. Their skills complement one another's—a more experienced colleague helps others solve problems faster, shares institutional knowledge, and sparks innovation through collaboration (Jarosch, Oberfield, and Rossi-Hansberg

2021). Greater labor force participation thus amplifies the productivity of all workers, not just those who are newly employed.

Labor Market Challenges

While the evidence is clear that work is a cornerstone of a flourishing life, several powerful headwinds in the modern economy are making it harder for individuals to find and maintain meaningful employment. The American labor market is beset by a series of interconnected problems: declining labor force participation, demographic stagnation, critical skill shortages, and a struggling human capital pipeline. These challenges not only depress economic output but also prevent millions from realizing the profound nonmonetary benefits of work.

The Participation Problem: Mismatch and Disincentives

A primary concern is the stubbornly low rate of labor force participation, particularly among prime-age men (Krueger 2017; Abraham and Kearney 2020). While participation has recovered somewhat from its post–financial crisis lows, the rate for men age 25 to 54 years remains below its historical peaks. This trend is driven by two primary factors: a growing mismatch between workers' skills and employer needs, and powerful financial disincentives to work embedded in the social safety net (Acemoglu and Autor 2011; Mulligan 2012).

The skills mismatch is a well-documented phenomenon where the abilities of the available workforce do not align with the technical demands of open jobs (Autor et al. 2003; Acemoglu and Autor 2011). As the economy has shifted away from manual labor and toward more cognitive and technical roles, many workers have been left behind. The skills mismatch is not about undereducation or too few college graduates (Cappelli 2014; Beaudry, Green, and Sand 2016). The problem is more subtle—it is which specific skills workers possess that determine their economic value, not their years of schooling. The decline of vocational education and organic apprenticeships has left a void, creating shortages in skilled trades like welding and electrical work even amid broader unemployment, including among young college graduates (Symonds, Schwartz, and Ferguson 2011).

Compounding the skills gap are the severe disincentives created by the welfare system (Moffitt 1992). For decades, welfare has been consistently expanded to a larger class of able-bodied adults, particularly with the passage of the Affordable Care Act, which added tens of millions of able-bodied adults to the free, government-funded health program. This, together with efforts to target aid to the poor, effectively punish them for increasing their earnings with lost benefits (Richardson and Blizard 2022). This can lead to effective marginal tax rates exceeding 100 percent, meaning that a worker can be made worse off by accepting a raise or working more hours (Congressional Budget Office 2015;

llin and Sanchez 2023). This works as a barrier trapping the poor, effectively creating an incentive for them to remain underemployed and disconnected from the ladder of opportunity (Altig et al. 2020).

Beyond these marginal disincentives, a more permanent exit ramp from the labor force has been abuse of the disability program. The number of working-age adults receiving disability benefits has grown dramatically since the 1980s, and this expansion correlates strongly with the decline in prime-age male labor force participation (Autor and Duggan 2003). The lion's share of this growth has been driven by an increase in awards for conditions that are subjective and impossible to verify, such as musculoskeletal disorders (including muscle fatigue, tingling sensations, and muscle tension) and mental health conditions (including being easily fatigued, restless, and difficulty concentrating, along with irritability—criteria many people could meet at the end of any workday) (Morton 2018; Social Security Administration 2023).

Disability benefits can become an attractive alternative to work, especially for those facing poor job prospects or declining wages. But this creates a one-way door: each year, fewer than 1 percent of disability beneficiaries return to employment (Ben-Shalom and Mamun 2015). Beyond the economic loss, this permanently severs people from the social connections, sense of purpose, and psychological benefits that work provides—an isolation that often worsens the very conditions that qualified them for disability in the first place (Fiorillo and Sabatini 2015).

Demographic Decline and the Shrinking Workforce

Looming over these immediate labor market challenges is the country's longer-term demographic crisis. The United States, like most industrial nations, is experiencing a sustained decline in its birthrate, which has fallen well below the replacement level of 2.1 children per woman, at 1.665 (Hamilton, Martin, and Osterman 2023). What this means is that for every 100 Americans there will be 63 grandchildren, creating an inverted demographic pyramid where fewer working age people must support a growing population of retirees, undermining programs like Social Security and creating a self-reinforcing economic decline through low innovation, low production, and high tax burdens. In the absence of increased fertility or a new population of very productive robots, the consequences for the labor market will be serious: severe labor shortages will constrain production and drive up costs across every sector (Bloom, Canning, and Fink 2010; Maestas, Mullen, and Powell 2016).

This trend is driven not only by broad cultural shifts but also by the unintended consequences of well-meaning public policy. For instance, recent research shows that laws mandating the use of child car seats for older children significantly reduce the birthrate for third children, as many standard vehicles cannot safely accommodate three car seats. One study estimated that these laws prevent thousands of births each year—a stark example of how seemingly unrelated regulations can affect family size (Nickerson and Solomon 2024).

Demographic shifts present fiscal challenges as fewer workers pay into Social Security and Medicare, creating sustainability concerns for these programs (Social Security Board of Trustees 2024). The Trump Administration's One Big Beautiful Bill Act (OBBBA) and deregulation efforts target higher gross domestic product growth to help address these pressures, though innovation could still face headwinds as younger workers become a smaller share of the overall workforce (Jones 2010; Acemoglu, Akcigit, and Celik 2014). Without sustained pro-growth policies, these trends could create fiscal strain as slower economic growth makes existing debt more challenging to manage while age-related spending rises (Gordon 2017).

Critical Shortages and the Faltering Education System

The general problem of the skills mismatch is acutely felt in sectors vital to national security and economic competitiveness. The United States faces severe labor shortages in heavy industry—it lacks a sufficient number of welders and metallurgists for shipbuilding, aerospace engineers for defense programs, and skilled technicians for semiconductor fabrication and pharmaceutical plants (NAM 2021; SIA 2023).

America's dependence on foreign sources is particularly acute in rare earth processing and nuclear engineering, where China dominates global expertise (DOE 2021). Meanwhile, the artificial intelligence and cybersecurity sectors compete globally for a tiny pool of talented specialists, with American universities producing a fraction of the talent needed (NSCAI 2021). Energy infrastructure—from power plant operators to grid engineers—faces a wave of retirements with few trained replacements (CEWD 2022). These are not just employment gaps; they are strategic vulnerabilities whereby workforce shortages translate directly into dependence on adversarial nations for critical capabilities.

These shortages point to a deeper failure in the U.S. systems of education and training. For decades, policy has explicitly and implicitly prioritized four-year university degrees as the sole pathway to success, while devaluing and defunding vocational and technical education (Symonds, Schwartz, and Ferguson 2011). The result is an education system that produces surplus graduates with degrees misaligned from economic needs while failing to train the welders, machinists, and technicians who could actually build semiconductor fabrication plants or maintain nuclear plants. Meanwhile, evidence suggests that K-12 education quality is deteriorating, with stagnant or declining scores in basic literacy and numeracy (NAEP 2022). America is failing to equip the next generation with both the foundational knowledge and the specific skills required for a modern economy, creating a weak human capital pipeline that is both inefficient and inadequate.

Taken together, these forces create a vicious cycle. A poorly educated workforce exacerbates the skills mismatch, which discourages labor force participation. High effective tax rates for poor people trap them outside the formal labor market, preventing skill accumulation. And the shrinking population ensures that these labor shortages will only intensify over time, threatening the long-term prosperity and social cohesion that would be provided by a healthy labor market.

Labor Market Solutions That Put America First

The interconnected challenges facing the American labor market are complex but not insurmountable. The pragmatic policy agenda of the Trump Administration—focused on removing barriers to work, lowering costs for working families, and strategically investing in human capital—can revitalize the labor market and reconnect more Americans to the profound benefits of work. This section outlines three targeted solutions: strengthening work requirements, deregulating childcare to lower costs, and pioneering return-value funding models for critical fields.

Reestablishing Work as the Center of Social Policy

A foundational step toward addressing low labor force participation is to recenter the social safety net on the principle of work. While providing support for those who truly cannot work remains essential, the current system often traps able-bodied individuals in dependency rather than encouraging employment, contribution, and independence.

Strengthening work requirements to qualify for government assistance has proven effective at moving people into jobs—studies show that work requirements increase both employment rates and long-term earnings while at the same time reducing welfare rolls (Grogger and Karoly 2005; Moffitt 2008). The goal is not to punish but to prevent the safety net from becoming a hammock, ensuring that temporary assistance serves as a bridge back to self-sufficiency rather than a permanent alternative to work, financed by the community of workers.

The economic logic here is straightforward: means-tested benefits inherently discourage work because they provide free benefits that are typically derived from paid work and because each additional dollar earned reduces benefits, sometimes creating effective marginal tax rates exceeding 100 percent (Ilin and Sanchez 2023; Altig et al. 2020). Traditional work requirements address this perverse incentive by making benefits contingent on employment rather than solely on income, transforming the welfare system from a trap into a springboard (Grogger and Karoly 2005).

The OBBBA has operationalized this principle at scale (U.S. Congress 2025). By establishing 80-hour monthly work requirements for able-bodied Medicaid expansion enrollees and strengthening SNAP work requirements to include adults up to age 64, the legislation affects millions of potential workers. Critically, because SNAP eligibility often serves as the gateway to other programs—automatically qualifying recipients for reduced utility rates, free school lunches, and streamlined Medicaid enrollment—these work requirements create a cascading effect across the entire welfare system. One policy lever moves multiple programs toward encouraging rather than discouraging work.

The most compelling evidence comes from the welfare reforms of the 1990s, which successfully moved millions of Americans from welfare to work by combining time limits with mandatory work, training, or job search activities (Blank 2002). These reforms led to significant increases in employment and, since people gain skills as they work, a rise in their wages over time (Groggins 2003, 2009; Haskins 2007). Applying this principle more broadly—and building on the important work the OBBBA has begun—can nudge individuals back into the labor force and encourage them to continue building skills and climbing the economic ladder. Traditional work requirements effectively draw people back into the labor force and help them progress to self-sufficiency. These successes should be expanded to other welfare programs. For example, expanding the OBBBA's Medicaid work requirements to all able-bodied adults enrolled in Medicaid—not just those enrolled in Medicaid expansion—would help lift those in the parent/caretaker category move out of generational dependency. Additionally, public housing, homelessness assistance, and energy and heating assistance programs do not feature any meaningful community engagement requirements. These are missed opportunities.

A Pro-Family Agenda for a Stronger Workforce

Addressing the high cost and low availability of childcare is a powerful policy lever that can simultaneously address two of the labor market's most pressing challenges: low participation and demographic decline and its cascading effects on social insurance, innovation, and economic growth (Del Boca 2002). For many families, the high cost is a prohibitive barrier to work, particularly for second earners; the average cost of center-based infant care now exceeds in-State college tuition in many States, often consuming 20 to 30 percent of median household income (DOL 2024). These costs simultaneously suppress fertility, with a recent review of pro-natal policies finding that increased childcare availability has "the clearest positive effects on fertility" (Bergsvik, Fauske, and Hart 2020). Studies confirm that expanding childcare access addresses both challenges, increasing labor force participation alongside fertility (Baker, Gruber, and Milligan 2008; Bauernschuster, Hener, and Rainer 2016). Yet a primary driver of these prohibitive costs is a morass of burdensome and often counterproductive regulations.

Staff-to-child ratios that require one caregiver for each group of 3 children in home-based settings—while allowing commercial centers to operate at 1-to-10 or 1-to-12 ratios—dramatically increase costs without evidence that home-based care is inherently less safe (Gorry and Thomas 2017; Herbst 2023). Similarly, excessive credentialing requirements for providers can limit the supply of caregivers (Hotz and Xiao 2011), driving up prices without necessarily enhancing the quality of care (Gorry and Thomas 2017). By reforming these regulations—such as by allowing more flexible staff ratios, recognizing alternative credentialing pathways, removing zoning rules that prohibit home-based daycare, and removing needless requirements that staff members must have a college degree—States can significantly increase the supply of affordable childcare options. This is not a call for a regulatory race to the bottom but for a smarter regulatory framework that prioritizes safety and affordability, thereby freeing up parents to have children safely cared for while they participate fully in the workforce if they wish.

Beyond childcare, other promising policy levers show significant potential for reversing demographic decline. As examples from research, when housing is made affordable to young people, fertility rises by an extraordinary 33 percent (Fazio et al. 2025)—suggesting that addressing the housing affordability crisis will have profound demographic effects. Similarly, research shows that extending maternity leave increases fertility by 14 to 21 percent (Lalive and Zweimuller 2009; Thomas et al. 2022), indicating that employers can provide support for new parents and encourage family formation. Together with childcare reform, these interventions represent a comprehensive approach to addressing both immediate labor force challenges and the long-term demographic crisis that threatens the American way of life.

Investing in People and Building Capacity in Critical Industries

To address persistent shortages in critical fields—from semiconductor manufacturing to shipbuilding, from rare earth processing to nuclear engineering—the United States needs to invest in human capital with the same strategic focus historically applied to physical capital. The challenge is structural: employers hesitate to fund costly, transferable skills training due to the "hold-up problem"—competitors could simply poach their newly trained workers at a fraction of the cost of traning (Acemoglu and Pischke 1999). Meanwhile, government-funded training programs often lack both the industry connections and market incentives to teach the specific skills employers actually need. The result is a standoff where critical sectors remain understaffed while millions of workers lack pathways to well-paying careers. A successful strategy must bridge this gap by directing public funds toward proven outcomes while aligning the incentives of students, schools, and industry.

Mandate outcome reporting for training programs. A foundational step is to empower students and workers with clear, comprehensive data on training program outcomes. Today, a young high school graduate trying to decide on a career path navigates largely in the dark. The quality and financial return of similarly named programs vary enormously—median earnings for a "business administration" credential range from $20,900 at one institution to over $100,500 at another (Center on Education and the Workforce 2020).

Yet this critical information remains hidden from the very people who need it most. When students are provided with clear data on graduate outcomes, they consistently choose higher-quality programs, driving improvement across institutions and delivering better returns for students setting the foundations of their working lives (Wiswall and Zafar 2015; Baker et al. 2018; Hurwitz and Smith 2018).

While college-bound students have some access to earnings data through tools like the College Scorecard, those pursuing technical trades and workforce certificates essential to critical industries navigate with far less information. The Trump Administration's TrainingProviderResults.gov was a meaningful step, but its voluntary nature has left it largely empty (DOL 2020). Over 75 percent of eligible programs fail to provide complete records, with 95 percent missing the median earnings data that job seekers need most (Deming et al. 2023). Additionally, this program is limited in nature, as it only covers results for programs funded under the Workforce Innovation and Opportunity Act.

To provide young apprentices with essential information, the CEA suggests making comprehensive data reporting mandatory for all training programs that accept any form of Federal funding. This requirement would be enforced by making eligibility for Federal grants—including funding by the Workforce Innovation and Opportunity Act and Pell Grants—contingent on reporting these core metrics:

- Program completion rates
- Employment rates within 6 months of graduation
- Median earnings at placement and 2 years postcompletion
- Industry placement breakdown (essential for building critical industries)
- Total program cost and average debt incurred

The Department of Labor would establish uniform data definitions and require States to use unemployment insurance wage records for verification, ensuring accuracy and consistency. This mandatory framework would transform portals like TrainingProviderResults.gov into the robust decision-support tools American workers deserve, while directing public funds and human talent toward programs with proven track records of success. Beyond empowering individual choice, this data infrastructure becomes a "master gear" policy—enabling governments to identify successful programs for retraining the unemployed and displaced, and providing a foundation for other essential improvements.

Support for critical "SHIELD" academic majors. Mandatory reporting provides the data to identify effective programs, but data alone will not solve talent shortages in critical fields. To address this, the CEA proposes a new Strategic Higher Education Investment for Essential Labor Development (SHIELD) program that directly supports students pursuing careers in sectors vital to national security and economic competitiveness. This program builds on the successful SMART grants of the 2000s, which provided stipends to low-income, high-achieving STEM students and increased enrollment in those fields by 17 percent (Denning and Turley 2017). With the United States facing a projected deficit of 2.1 million workers in critical fields by 2030, a more targeted and ambitious intervention is urgently needed (NAM 2021).

The SHIELD grant would provide financial support to high-achieving students (GPA of 3.0 or above) from lower- and middle-income backgrounds who enroll in programs with proven placement rates in critical industries. To ensure accountability, the program could include two key mechanisms:

- *Service commitment:* Recipients who fail to work in a critical industry for at least three years within five years of graduation must repay the grant with interest. This ensures that students will pursue these careers, not just subsidized degrees.
- *Performance-based eligibility:* Grants would only flow to programs at institutions demonstrating high placement rates in critical industries, concentrating resources in the most effective training pipelines.

Using American Community Survey data, this chapter identifies the degree programs that feed the nation's most critical industries—from petroleum and electrical engineering to computer science and materials science. Expanding this analysis to technical and vocational programs requires cross-agency data linking that current systems lack, highlighting another benefit of mandatory outcome reporting. By subsidizing these specific pathways, the SHIELD program would directly address the human capital shortages threatening U.S. economic resilience and national security.

Elevating the treatment of human capital investments in the tax code. A staple of the U.S. Federal tax for decades has been the favorable treatment of capital income in the form of generous deductibility at the front end when an investment is made and lower rates applied at the back end to the income that is eventually generated from such investment. For example, the OBBBA permanently instituted full immediate expensing for equipment and research-and-development investments along with temporary full immediate expensing for the construction of new factories. The economic rationale for this favorable tax treatment is well-established theoretically and empirically: reducing the tax burden on investment leads to greater capital accumulation, which raises economic growth and wages.

Expensing provisions at the front end and preferential tax rates at the back end are a boon for business investment in physical capital, but of equal or greater importance are investments in human capital, and there are compelling ways to modernize the tax code to treat human capital investment with the same degree of generosity as physical capital investment. While the tax code currently offers credits and deductions for education investments, the size of the credits and deductions can be quite modest and the criteria can be overly restrictive—for example, by only allowing individuals to deduct expenses made to eligible educational institutions. This limitation confers substantial power on accrediting bodies and omits the many forms of valuable human capital investment that are made outside formal higher education institutions. The OBBBA recognized the flaws of this approach when it instituted the new Workforce Pell Grant program, and this same approach could be extended to allow workers to fully expense a broad array of human capital investments in the same way that businesses can fully expense investments in new equipment or research and development. To complement this front-end-favorable treatment of human capital investment, the tax code could also apply a lower tax rate to income gains in the initial year that a worker obtains a higher-paying job or receives a promotion, thereby reducing the penalty on workers who successfully move up to the next rung of the economic ladder.

Conclusion: Reconnecting America with Work

As this chapter has shown, the challenges facing American workers are deeper than mere economic statistics. The nation's workers face a human crisis: millions of citizens are disconnected not just from paychecks but also from the purpose, community, and personal growth that work provides.

Workforce investment is about managing the nation's most important resource: human talent and potential. When the country fails at this task, the costs compound across generations. Today's nonworkers become tomorrow's missing parents, unable to model the dignity of work for their children. They become missing innovators, their talents never developed or applied. They become missing citizens, disconnected from the shared project of building prosperity.

The United States stands at a unique moment of opportunity. The One Big Beautiful Bill Act has established work requirements at scale and created momentum for broader reform. But the window for action is narrowing. The U.S. demographic crisis and its effects become less manageable with each passing year. The evidence presented at the opening of this chapter bears repeating:

work extends life, enhances happiness, builds skills, and weaves the social fabric that binds communities together.

The Trump Administration seeks a vision of America where any person willing to work can find employment that builds their skills, supports their family, and strengthens their community. It is a vision where young people can see clear pathways from education to careers and parents can afford to invest in the next generation. And it is a vision where work gives them the means to live and flourish.

★★★★★★

Chapter 10

The Economic Consequences of DEI

Gary Becker's (1957) seminal *The Economics of Discrimination* established the theory that labor market discrimination reduces aggregate output by distorting the allocation of talent. When employer prejudice prevents optimal worker-job matching, the economy fails to fully realize its potential by placing people in jobs they are not well suited to, resulting in productivity losses. Researchers have found evidence that this theory holds up in practice, with one recent study finding that the removal of discriminatory barriers after the passage of the Civil Rights Act of 1964 improved worker-job matching and generated substantial productivity gains as talented black workers were able to contribute their talents to their greatest economic use.

Beginning in the mid-2010s, American corporations substantially expanded their diversity, equity, and inclusion (DEI) initiatives in hiring and promotion. Whereas the Civil Rights Act prohibited hiring based on race, DEI actively encouraged it. Influenced by consulting analyses—particularly McKinsey & Company's reports linking managerial diversity to productivity and financial success—major employers adopted targets for increasing minority shares in management. Between 2016 and 2023, the share of minorities in management positions grew at more than four times the rate observed in the prior decade, representing a marked departure from historical trends.

This acceleration in DEI hiring and promotion raises an important question: Did DEI's implementation reflect the removal of discriminatory barriers—allowing previously excluded talent to realize positions matching their abilities—or did it represent a new form of discrimination in labor market matching? The elimination of bias against qualified minorities should enhance economic efficiency by improving worker-job matches, while identity-based promotion that prioritizes race over productivity-relevant qualifications would introduce the same distortions Becker identified, ultimately reducing aggregate output.

This chapter examines this question by measuring the relationship between DEI-based hiring and promotion practices on one hand and sectoral productivity on the other. Directly measuring the extent of DEI practices by a specific industry in a specific State is elusive, so the analysis here uses a proxy: the unexplained minority manager share after controlling for State, industry, and year fixed effects. What this means is that if a certain industry in a certain State undergoes a faster increase in the minority manager share than implied by aggregate trends, this suggests the practice of DEI. The expectation is that the DEI proxy had no effect before the mid-2010s because the extent of DEI practices was quite limited before that time.

Indeed, statistical analysis reveals that throughout the 2000s and early 2010s, there was no relationship between this proxy and productivity, suggesting statistically low levels of racial discrimination in promotion and hiring. After 2016, however, DEI practices are associated with significantly lower productivity. By 2023, industries that heavily pursued DEI were approximately 2.7 percent less productive than those that did not. The fact that this negative relationship only appears after 2016, when DEI pressures intensified, suggests that this finding has nothing to do with changes in the demographic composition of managers directly but rather with the DEI-based promotion practices that prioritize race over qualifications and contribution. It does not speak to the capabilities of any demographic group; an opposing discrimination against minorities would likely have caused a similar productivity decline.

These results imply that DEI practices lead to inefficient management, which raises the cost of doing business. These costs get passed down to consumers in the form of higher prices or worse quality. They also have an impact on the companies themselves, which end up hiring fewer people and paying their workers less. In the aggregate, the cost of mismanagement was roughly $94 billion annually by 2023, or 0.34 percent of U.S. GDP. This is an average cost of about $1,160 annually for a family with two working adults. This calculation only captures the effects of identity-based promotion into management; it does not include the costs of stigmatization, in which highly qualified minorities face perceptions of unfair gain (Coate and Loury 1993).

These findings complement the findings of Hsieh and colleagues (2019) that removing discriminatory barriers under the Civil Rights Act improved worker-job matching and generated substantial productivity gains, accounting for 20–40 percent of per capita income growth between 1960 and 2010. While this research documents gains from expanding talent pools, the analysis in this chapter identifies losses resulting from policies that effectively narrow talent pools. Both results confirm that deviations from meritocracy carry significant macroeconomic costs.

In support of equal opportunity for all Americans, the Trump Administration has undertaken substantial policy reforms to end discrimination of all kinds. Executive Orders issued in early 2025 eliminated DEI-based hiring and promotion requirements across Federal agencies, reversing harmful policies implemented by the past Administration. The Trump Administration has also discouraged similarly harmful practices in the broader labor market via regulatory and enforcement mechanisms among Federal contractors and educational institutions receiving Federal funds. Data from 2025 show a decline of DEI practices in the corporate world, marking a return to equal opportunity.

The Rise of DEI

DEI initiatives as we know them today were not widely practiced in the American private sector before a sea change began in the 2010s. Research by Rozado (2020)—and later by Rozado, Al-Gharbi, and Halberstadt (2023)—documents a substantial shift in the language used by elite media and education institutions starting in about 2013–15. Much greater social emphasis was suddenly placed on terms related to identity-based concerns (e.g., racism, sexism, and gender discrimination).

The flagship consulting company McKinsey & Company gave its imprimatur to this rising trend. McKinsey published reports in 2015 claiming that "when companies commit themselves to diverse leadership, they are more successful" (McKinsey 2015). In 2018 and 2020, McKinsey released new reports reaffirming its argument that diversity was a critical resource that could be unlocked by contracting the services of McKinsey (2018, 2020).

In 2021, the Biden Administration issued Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities through the Federal Government"; and Executive Order 14035, "Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce." These orders directed Federal government agencies to take various measures to "enhance diversity, equity, inclusion, and accessibility within the agency, . . . seek opportunities to establish a position of chief diversity officer or diversity and inclusion officer, . . . ensure that all Federal employees have their respective gender identities accurately reflected and identified in the workplace . . . [and expand] employment opportunities for formerly incarcerated individuals."

The Department of the Treasury provides an example of how these orders were implemented. Treasury Secretary Janet Yellen issued a statement that "commitment to the values of diversity, equity, and inclusion is expected of every employee." Per reporting by Rufo (2024), in response to this directive, Treasury promptly established its official Equity Hub and its Advisory Committee on Racial Equality; it added a Counselor for Racial Equity to its payroll and spent millions of dollars on DEI consulting services. As a result of all this, Treasury undertook efforts to redirect billions of dollars in funding toward programs designed to benefit specific racial groups. Furthermore, it demonstrated its intensified commitment to favoring minority-owned businesses when awarding Federal contracts. These actions further entrenched DEI practices in American economic life, elevating them to a role never before seen in American government.

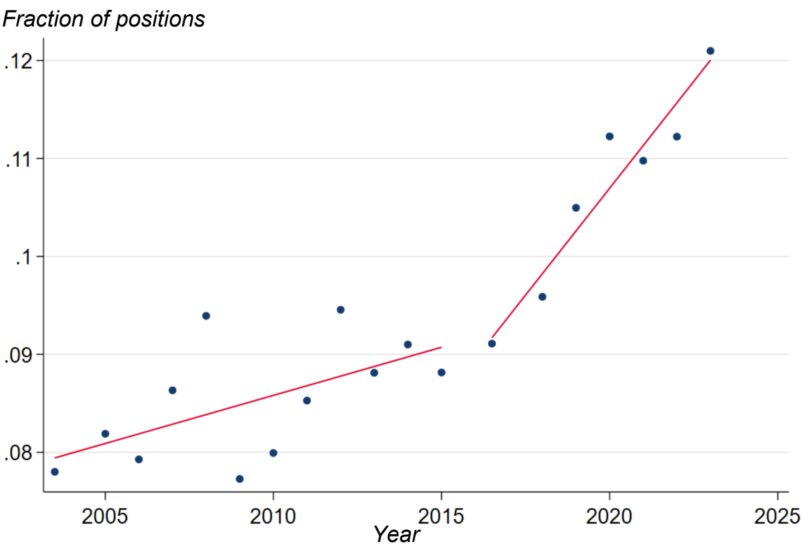
During the early 2020s, corporations ramped up DEI efforts. References to DEI became ubiquitous in American industry as firms spent billions of dollars constructing DEI programs and hiring DEI officers and consultants. As reported by Kessler (2024) and Lau and Telford (2025), virtually every major company began discussing DEI in its annual financial filings and earnings calls—places where discussions of race and group identity would have previously seemed strange and out of place. As detailed by Goldstein and others (2022), the number of jobs explicitly related to DEI *quadrupled* in only five years, from 2017 to 2022. The Chief Diversity Officer position, previously virtually unknown, became the fastest-growing C-suite executive position in the early 2020s. Business publications regularly suggested that DEI could be used to improve workplace productivity, such as in articles by Heisler (2020), S&P Global (2022), and Wenner (2025).

Research has found that the forecasted economic benefits of DEI efforts did not materialize. Research by Green and Hand (2024) illustrated that the McKinsey studies were purely correlational, making no attempt to rule out reverse causality (the idea that successful firms could afford elaborate DEI programs, rather than DEI programs making firms successful). Furthermore, the sample appeared cherry-picked, comparing only top and bottom quartiles of executive diversity while excluding the middle 50 percent of companies for no methodological reason. When Green and Hand attempted to replicate the results, they found no statistically significant relationship between demographic diversity measures and firm performance metrics—including the margin of earnings before interest and taxes, return on assets, return on equity, and total shareholder return. Research by Johnston and Wheaton (2026) goes further, finding that DEI hiring efforts had negative effects on aggregate productivity. This chapter explores these findings and their implications.

The Results of DEI: Effects on Productivity

A key focus of DEI programs is to increase the share of certain minority groups (black, Hispanic, and Native American) in management roles, sometimes entailing new positions—such as Diversity Officers—to further this goal. The share of minority managers increased rapidly after the cultural ramp-up in DEI. Data from the American Community Survey show that the share of management

Figure 10-1. The Share of Minorities in Management Positions as a Fraction of All Management Positions



Sources: American Community Survey; Bureau of Economic Analysis; CEA calculations.

positions held by minorities increased gradually by less than 1 percentage point in the decade between 2005 and 2015, and it then increased by nearly four times that amount in the eight years between 2015 and 2023—a substantial and statistically significant acceleration. This trend is shown in figure 10-1.

What are the consequences for the productivity of the firms undertaking this deliberate expansion? To test for a systematic relationship between DEI practices and industry performance, a thorough analysis is needed. Most important, because a firm's motivations are not directly observable, there needs to be a proxy for DEI practices. Absent DEI motivations, minority hiring should not meaningfully vary after controlling for industry, year, and State. Thus, the empirical specification includes industry-by-State fixed effects, industry-by-year fixed effects, and State-by-year fixed effects to capture any minority hiring for non-DEI reasons. With non-DEI-motivated hiring captured by these fixed effects, any explicit increase in the minority hiring share above and beyond the level predicted by fixed effects serves as a useful proxy for DEI practices. These features are all incorporated in a regression model of this form:

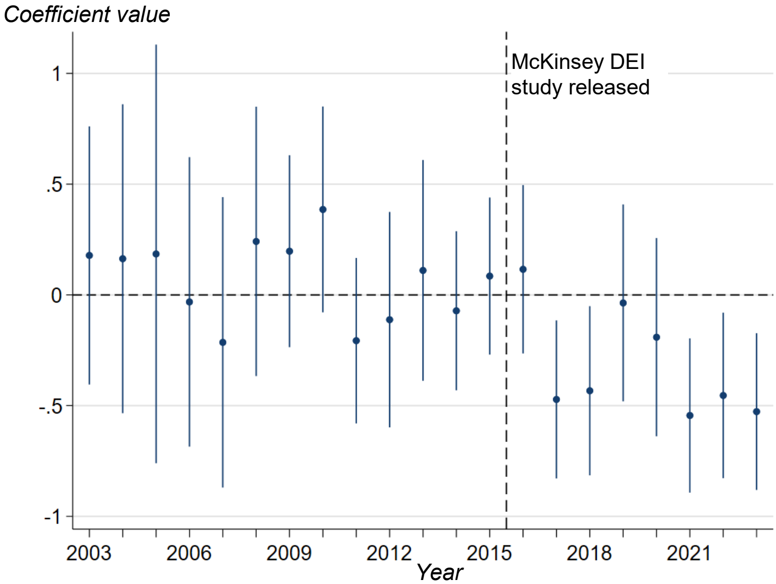
$$Y_{i,s,t} = \alpha + \beta_t UnexplainedMinorityManagerShare_{i,s,t}$$
$$+ Y_t UnexplainedMinorityNonmanagerShare_{i,s,t}$$
$$+ \rho_t UnexplainedManagerShare_{i,s,t} + W_{i,s,t} + \eta_{i,s} + \sigma_{i,t} + \kappa_{,s,t} + \epsilon_{i,s,t}$$

Here,

- $Y_{i,s,t}$ denotes productivity (i.e., log output per hour) in industry i of State s during year t,
- $UnexplainedMinorityManagerShare_{i,s,t}$ denotes the residual of the share of minority managers as a fraction of all employees in industry i of State s during year t after controlling for fixed effects (with $UnexplainedMinorityNonmanagerShare_{i,s,t}$ and $UnexplainedManagerShare_{i,s,t}$ defined analogously),
- $W_{i,s,t}$ denotes a control for compensation (i.e., log wage) in industry i of State s during year t,
- $\eta_{i,s,}$ denotes an industry-by-State fixed effect,
- $\sigma_{i,t}$ denotes an industry-by-year fixed effect,
- $\kappa_{,s,t}$ denotes a State-by-year fixed effect, and
- $\epsilon_{i,s,t}$ denotes an error term.

The β_ts represent the effect of an increase in the share of minority managers above and beyond the norm for that industry, State, and year on productivity. To reiterate, the rich set of fixed effects ensures that the results cannot be driven by the fact that certain industries in certain States simply have a higher share of minority managers for unobserved reasons that happen to be correlated with lower productivity. Nor can they be driven by an increase in the overall (minority plus nonminority) manager share of employees, since that is explicitly controlled for. Identification relies on comparing productivity and the unexplained share of minority managers across different industries within the

Figure 10-2. Noticeable Effect of DEI Practices on Productivity (Log Output per Hour)



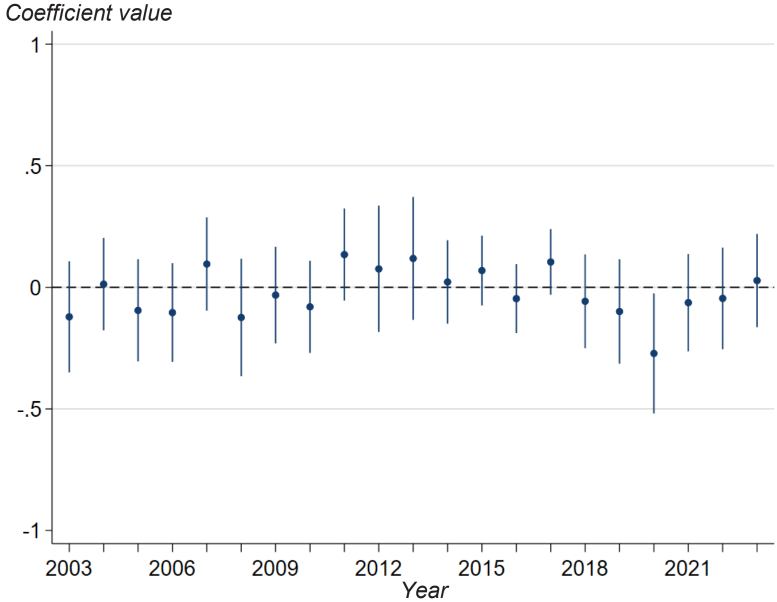
Sources: American Community Survey; Bureau of Economic Analysis; CEA calculations.
Note: ESG = environmental, social, and governance.

same State and year, different States within the same industry and year, and over time within the same State and industry.

The resulting regression coefficients (the β_ts and the γ_ts) are plotted in figures 10-2 and 10-3, along with 95 percent confidence intervals for each. As seen in figure 10-2, the effect of the unexplained minority manager share on productivity is flat and statistically no different from zero throughout the 2000s and the first half of the 2010s—there is no relationship between having more minority managers and productivity. This changes in the middle to late 2010s, after which the relationship is negative and statistically significant in most years. Having a higher unexplained share of minority managers now results in reduced productivity, notably coinciding with the timing of the rapid DEI increase in minority management. These results imply that, as of 2023, industries that pursued DEI heavily (those 1 standard deviation above the average) were about 2.7 percent less productive than those which did noy (1 standard deviation below).

Meanwhile, the effect on productivity of the unexplained share of minority nonmanagers is not significantly different from zero throughout the entirety of the period examined, as seen in figure 10-3. A natural takeaway from these two figures is that there is nothing inherently less productive about minority workers or minority managers. The issue is rapidly promoting unqualified workers in order to meet racial quotas set forth by DEI. There are clearly many qualified minority managers; the nonnegative effect of the minority manager share on

Figure 10-3. No Effect of Minority Nonmanager Share on Productivity (Log Output per Hour)



Sources: American Community Survey; Bureau of Economic Analysis; CEA calculations.

productivity before 2017 attests to this. It is worth observing that DEI actually does a disservice to these qualified minority managers, as they may experience a stigma if they are viewed as being DEI hires, a phenomenon studied by Coate and Loury (1993).

The Results of DEI: Overall Effects on GDP

These estimates imply that DEI promotion has led to inefficient management, raising the cost of doing business. These costs lead the companies practicing DEI to hire fewer people and pay their workers less. In the aggregate, this implies meaningfully reduced gross domestic product (GDP) in recent years, because a reduction in output per hour implies a reduction in aggregate output. Since 2017, the DEI proxy has rapidly grown at the same time as its measured effect on productivity has become significantly negative. It is possible to obtain an estimate of the aggregate impact on GDP in a given year resulting from this misallocation. This can be done by multiplying the coefficient value in that year by the gap between the DEI proxy in that year and what the DEI proxy would have been if it continued to grow according to the trend before 2017, when DEI efforts intensified and the coefficients became negative and statistically significant. For example, the coefficient value for 2023 is −0.527 and the cumulative increase in the DEI proxy relative to pre-DEI trend is 0.65 percentage point (0.90 minus

0.25). This implies a 0.34 percent decline in 2023 GDP relative to a no-DEI counterfactual. Alternatively stated, promotion into management on the basis of race—a key consequence of DEI initiatives—cost the U.S. economy roughly $94 billion in 2023 alone. This works out to an average cost of about $1,160 in 2023 alone for a family with two working adults. This number grew rapidly in the late 2010s and early 2020s.

These findings mirror insights from Hsieh and others (2019), who show that the reduction in labor market discrimination under the Civil Rights Act significantly enhanced productivity and GDP by improving the matching of workers to jobs best suited to their abilities. In this way, reductions in discrimination served as a boon to the U.S. economy. Unfortunately, the reimposition of discriminatory practices through DEI initiatives reversed some of these gains.

The Restoration of Equal Treatment Under the Law

From the moment President Trump entered office in January 2025, the Trump Administration began taking action to combat DEI. Executive Order 14151, issued on Inauguration Day, required all Federal departments to terminate all DEI-related activities. Executive Order 14173, issued one day later, repealed Executive Order 11246, the order that served as the grandfather of DEI programs; it was the original source of requirements that Federal contractors must meet government-set thresholds in hiring minority workers or would be denied future contracts. In August 2025, President Trump issued Executive Order 14332, banning grants by the Federal government that promote DEI. Also that month, the President issued a Presidential Memorandum targeting the use of diversity statements and other racial proxies in college admissions to help ensure that universities receiving Federal aid do not discriminate on the basis of race in pursuit of DEI. This helps shut down the pipeline for future attempts at reinstituting DEI policies.

The effects of the Trump Administration's efforts have not been limited to the realms of government and education. As documented in *Forbes* by Murray and Bohannon (2025) and on Fox News by Singman (2025), a lengthy list of American corporations has rescinded their DEI requirements. As noted in the *Washington Post* by Lau and Telford (2025); in the *New York Times* by Goldberg, Krolik, and Boyce (2025); and in *Forbes* by Murray (2025), references to DEI in corporate filings, proxy statements, and earnings calls have dropped substantially—down by 72 percent in 2025. Some companies have acknowledged that DEI practices increase litigation risk, including the risk of challenges from civil rights advocacy groups like America First Legal, leading some to reverse or revise their policies. In sum, American corporations have increasingly begun to roll back their DEI programs in response to the revival of American meritocracy under the leadership of the Trump Administration, curtailing DEI and the economic losses that came with it.

★★★★★★

Chapter 11

Making America Healthy by Unleashing Competition in Physicians' Markets

Healthcare reforms in 2025 have confronted one of the most damaging myths in U.S. health policy—"healthcare exceptionalism," the notion that competition between healthcare providers undermines quality and drives waste. Decades of evidence demonstrate the opposite: competition lowers prices, improves access, and enhances quality. Yet misguided regulations and flawed payment systems have distorted physicians' markets in ways that have disfavored rural Americans and independent physicians.

This chapter details how the Trump Administration is dismantling these distortions through the One Big Beautiful Bill Act (OBBBA), Medicare and Medicaid payment reforms, deregulatory initiatives, and enforcement of transparency rules.[1] It highlights how eliminating existing biases will rebalance physician supply between urban and rural areas; how site-neutral payments, reduced prior authorization, and streamlined reporting will empower independent practices; and how prevention-focused initiatives, telehealth expansion, and artificial intelligence are tackling the chronic disease burden that drives demand. Together, these reforms will enable faster, more affordable, and higher-quality physician services for Americans.

Like many sectors of the U.S. economy, special interest groups in healthcare aim to shape legislation and regulations in the service of their own financial gains. This dysfunction has been justified by the persistent idea that somehow healthcare is "different" from other industries in ways that make competition potentially harmful. A particular concern is labeled "supplier-induced demand," an application of Say's law, which holds that greater

[1] Information in this chapter is up to date as of November 20, 2025.

competition among hospitals or physicians will promote greater provision of low-value, low-quality care. These concerns have provided some of the justification for decades of piecemeal industrial-planning interventions by Federal and State governments alike.

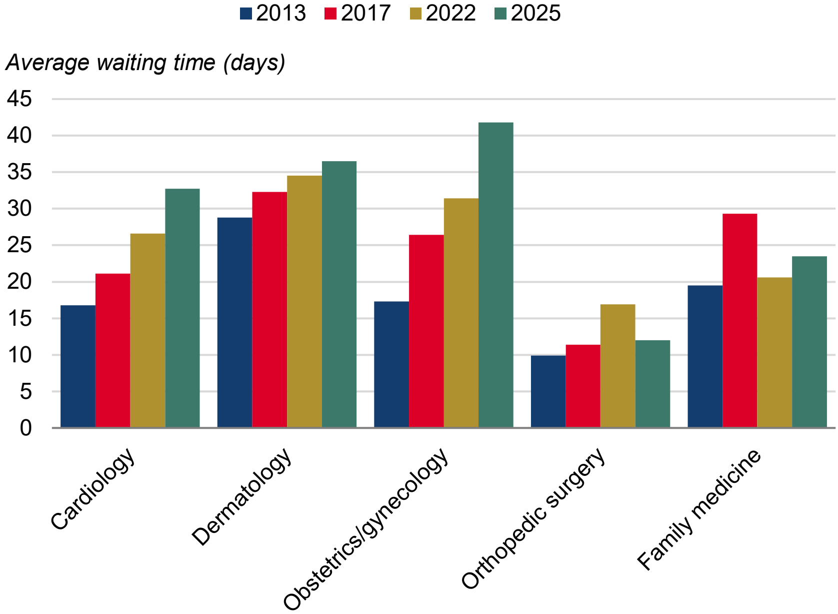
However, decades of empirical research belie the falsehood of this justification. In insurance markets, competition lowers premiums and promotes diverse plan designs in ways that increase enrollment (Dunn 2009). For hospitals, research finds that patients are disproportionately drawn to higher-quality hospitals, and that differences between hospitals in productivity measures are at least as small as differences between manufacturing firms (Chandra et al. 2016a, 2016b). These findings that quality is rewarded in hospital markets led the authors to conclude, "contrary to the long tradition of 'healthcare exceptionalism' in health economics, the healthcare sector may have more in common with 'traditional' sectors subject to standard market forces than is often assumed" (p. 102). Research has also found lower prices from competition between pharmaceuticals and durable medical equipment, particularly when competition is not hindered by regulations (Danzon and Chao 2000; Ding, Duggan, and Starc 2025).

Likewise, competition between physicians has benefited Americans. Studies report 20 percent lower prices paid by commercially insured patients in the least concentrated markets compared with the most, with a 10 percent decrease in physicians' market concentration decreasing prices by 0.5-1 percent (Clemens and Gottlieb 2017; Dunn and Shapiro 2014). The benefits of competition are particularly evident among services where third-party payment is relatively rare or when patients are responsible for the differences in cost between providers (Perry 2022; Robinson and Brown 2013). Entry of competing physicians has been shown to improve access and quality as well. Specifically, research on the expansion of residency training programs in obstetrics and emergency medicine found that they led to improved access to care overall and to higher-quality care specifically, without increasing the use of more costly, intensive treatments (Rabideau, Richards, and Whaley 2024).

These findings of greater competition promoting access and quality provides additional evidence against the view that an increased supply of physicians' services promotes supplier-induced demand. This builds on decades-old research showing that the methodology used in the original studies supporting the "supplier-induced demand" hypothesis also leads to the implausible conclusion that more obstetricians in a market cause more babies to be born (Dranove and Wehner 1994). Despite this evidence, the false but persistent view of healthcare exceptionalism has been used to justify policies that have harmed Americans by hindering competition among physicians. The policies include regulations and payment programs that have created barriers to entry and incentives for vertical and horizontal consolidation among physicians.

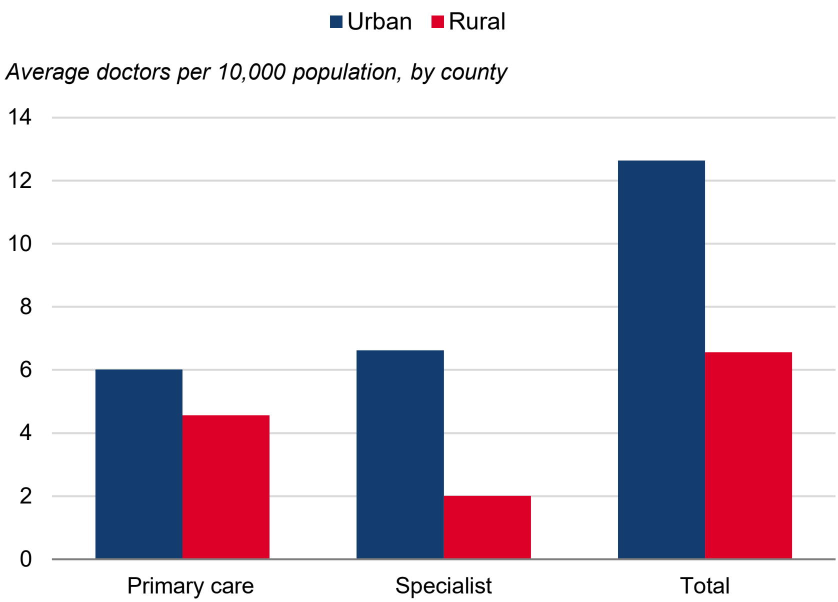
The U.S. healthcare system presents evidence of the problem, including:

Figure 11-1. Average Waiting Time for a New Patient Visit, by Specialty and Year



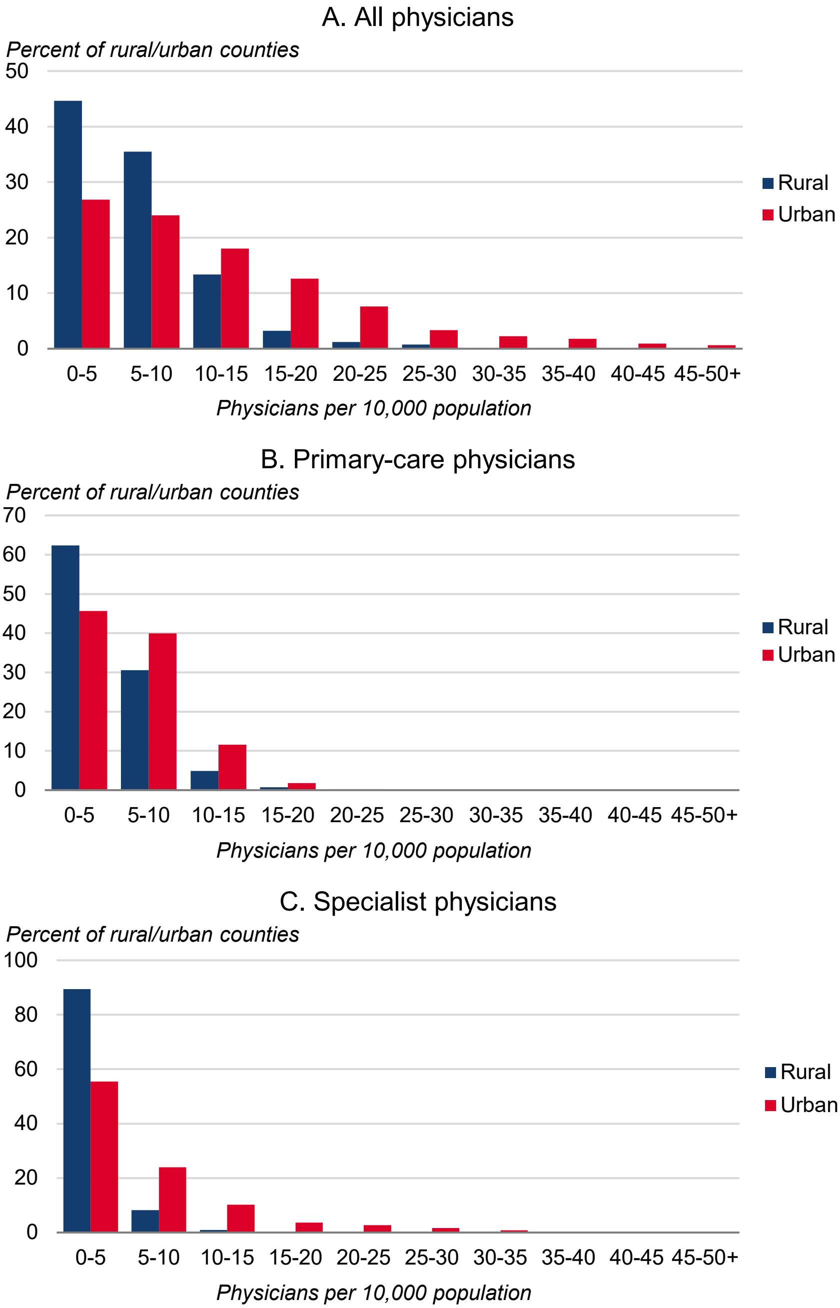
Sources: AMN Healthcare (2025); CEA calculations.

Figure 11-2. Average Number of Physicians per 10,000 Population by Type and Location



Sources: HRSA (2022); CEA calculations.

Figure 11-3. County-Level Distribution of the Number of Physicians per 10,000 Population by Type and Location



Source: AMN Healthcare Survey (2025); CEA calculations.

- Long waiting times for visits, with a 2025 survey reporting an average of 31 days for new patient appointments across 15 major U.S. cities, up 19 percent from 2022 and 48 percent from 2004 (AMN Healthcare 2025) (figure 11-1).
- High internal rates of return to medical specialization that have persisted for decades, partly due to limited residency spots controlled by specialties themselves (Nicholson 2003; Bhattacharya 2005).
- Rapid growth of other suppliers seeking to address the unmet demand. This includes entry of retail clinics and urgent care centers and growth of physician extenders that is forecasted to continue (RAND 2016; Fortune Business Insights 2025; Bureau of Labor Statistics 2025).
- Fewer physicians per capita, an often-used proxy measure for undersupply. As shown in figures 11-2 and 11-3, these differences are systematic, and larger for specialist physicians. For example, nearly half (48.6 percent) of urban counties have 10 or more physicians per 10,000 population, versus 19 percent of rural counties. For specialists, 20 percent of urban counties have 10 or more per 10,000 population, while this is true for only 1.5 percent of rural counties.

This chapter discusses steps that the Trump Administration has already taken to correct specific government-driven supply-side distortions away from efficient, market-driven outcomes and to alleviate demand by reducing the burden of chronic illness and leveraging new technology.

Addressing Biases Against Rural Americans

Historically, Federal programs have exacerbated the misallocation of existing physician supply between geographic areas in ways that have disfavored rural areas. In response, the One Big Beautiful Bill Act established the Rural Health Transformation Program, which provides $50 billion over five years (2026–30) to States via the Centers for Medicare & Medicaid Services (CMS) for rural health improvements (H.R. 1833; see U.S. Congress 2025). This includes grants and technical assistance to rural healthcare providers, including funding for telehealth infrastructure and workforce development. Notably, two of the stated aims of the program are to attract and retain a highly skilled healthcare workforce by strengthening recruitment and retention of healthcare providers in rural communities (CMS 2025g). To reward and promote competition in physician markets specifically, the grant applications are scored based on whether State-level policies minimize Certificate-of-Need laws that prohibit entry by healthcare providers; broaden scope-of-practice rules for providers of primary care, and recognize medical and nursing licenses granted by other States (CMS 2025g).

Additional long-standing biases against rural areas are being addressed through ongoing reforms to the Health Professional Shortage Areas (HPSAs) defined by the Health Resources and Services Administration (HRSA 2025). The reforms are updating HPSA definitions to replace decades-old definitions that fail to incorporate current supply of primary care in ways that bias against rural areas (Paragon Health Institute 2024). As a result, many areas with an HPSA status have greater availability of physicians than do areas without an HPSA designation. HRSA is using updated methodology and data to improve the accuracy of the HPSA designation and government resources along with it. These reforms will correct existing government-created problems with the allocation of physicians because over 30 Federal programs are tied to HPSA designation: it determines eligibility for incentives such as Medicare's 10 percent bonus payments for physicians serving in HPSAs, J-1 visa waivers for international medical graduates to practice in the United States without returning home for two years, and enhanced reimbursement rates under Medicaid or the Federally Qualified Health Center program (Government of the District of Columbia, Department of Health, n,d.).

Critically, HPSA scores prioritize funding and placements in the National Health Service Corps (NHSC) Loan Repayment Program (LRP) (NHSC n.d.). This program ties loan forgiveness for primary care physicians and nurse practitioners to serving in locations that receive high scores in the HPSA identification methodology. A 2021 GAO report found that flawed designations have given financial rewards to physicians for locating in relatively well-supplied metropolitan areas, diverting physicians from truly rural or isolated spots where shortages are acute.

Furthermore, the program's funding priorities, which favor high-score HPSAs for awards up to $100,000 over three years, have been overallocated to States that spend large amounts to game the system (e.g., Northeastern urban areas), disadvantaging rural areas relative to the allocation that would result from greater market signals without these government-designed distortions (NHSC 2021). By fixing the HPSA designations, the reforms ensure that resources go where they are needed most, improving rural access, reducing costs through efficient allocation, and enhancing quality by attracting dedicated providers.

Addressing Distortions Caused by Regulations and Flawed Payment Programs

Nearly 80 percent of physicians are employed by hospitals, health systems, or corporations in 2024 (Condon 2024). This is at an all-time high, after years of a shift away from independent practices, which was driven in part by rising regulatory and administrative burdens and government-designed financial incentives.

Addressing the Regulatory and Administrative Burden

Regulations create high fixed costs through compliance requirements, reporting, and administrative burdens that disfavor smaller firms, such as independent physicians' practices and practices located in rural markets. High fixed costs promote consolidation (horizontal mergers among practices) and vertical integration (e.g., physicians joining larger health systems or hospitals). In fact, between 2012 and 2022, the share of physicians in practices with 50 or more doctors rose from 12.2 to 18.3 percent (Kane 2023). Vertical integration has also surged, with hospital-employed physicians increasing from 23.4 percent in 2012 to 34.5 percent by 2024 (Advisory Board 2025).

These trends are largely attributed to rising regulatory burdens and increased administrative costs (American Hospital Association 2025). A 2016 study estimated that physicians spend about 15.1 hours a week on paperwork for quality reporting alone, costing roughly $40,000 per physician annually in lost productivity (Casalino et al. 2016). These costs disproportionately burden small practices. A Federal Trade Commission (FTC) workshop in 2018 highlighted how regulatory complexity drives physicians to affiliate with hospitals, as larger entities can better absorb fixed costs for information technology infrastructure and legal expertise (Kane 2023). This consolidation led to higher prices paid by Americans for the same services, and increased spending by Medicare (Capps, Dranove, and Ody 2018; Cooper et al. 2025; U.S. Government Accountability Office 2025).

The Trump Administration is actively working to reduce administrative burdens, for example, through Executive Order 14192 (*Federal Register* 2025c). Within healthcare specifically, the Department of Health and Human Services (HHS) has secured a commitment from private insurers to reduce unnecessarily burdensome prior authorizations that create compliance costs for physicians (U.S. Department of Health and Human Services 2025). The Department of Justice issued a Request for Information (RFI) with an emphasis on physicians specifically as part of efforts guided by its anticompetitive regulations task force (Antitrust Division 2025). CMS also issued a Medicare Regulatory Relief RFI in July 2025 to solicit public feedback on ways to "streamline regulations and reduce administrative burdens on providers" based on the recognition that "healthcare providers serving Medicare beneficiaries face numerous regulatory requirements" (CMS 2025f). Finally, the FTC issued warning letters to large healthcare employers indicating that their noncompete clauses and other restrictive covenants with employed physicians would be scrutinized, particularly in rural areas (McDermott Will & Schulte 2025).

Addressing Distortions Caused by Physicians' Payment Methods

Consolidation has also been fueled by distortions in policies that guide how Federal programs pay for physicians' services. The Trump Administration is actively working to correct prior distortions and improve efficiency through three channels.

The first channel is Medicaid reform in the OBBBA. Before the OBBBA, State-directed payments (SDPs) in Medicaid managed care allowed States to direct the amounts health plans pay providers, which in some cases disfavored independent physicians' practices. Specifically, States used SDPs to increase Medicaid payments to hospitals above what their Medicaid programs would have paid otherwise, and these adjustments exceeded those that States implemented for physicians.

In 2024, SDP spending was about $110 billion across 302 arrangements in 40 States, nearly 60 percent above the amount approved just the year before. This is partly driven by the fact that rules allowed States to leverage SDPs to pay hospitals at rates up to the levels paid by commercial insurers, which far exceed rates paid by Medicaid and even Medicare (*Federal Register* 2024; Congressional Budget Office 2022). In addition to exacerbating a rapid rise in projected Medicaid spending, SDPs are disproportionately concentrated on hospitals (Congressional Budget Office 2024). Of the programs in 2024, 53 percent were directed to hospitals versus just 11 percent to physicians, with the remainder going to other facilities such as nursing homes. Among the 29 arrangements with additional spending estimated to be above $1 billion per year, 24 were targeted to hospitals (MACPAC 2024). In California, for example, independent physicians are not eligible for the six hospital SDP programs that allocate about $12 billion annually in additional payments through MediCal (California Department of Finance). These adjustments boosted MediCal payments to hospitals. In contrast, in 2024 California did not have any SDPs designed to increase payments to independent physicians' practices above the State's Medicaid payment levels.

The OBBBA addresses these imbalances by capping SDPs at 100 percent of Medicare rates for Medicaid expansion States (110 percent for nonexpansion States), phasing down higher existing payments by 10 percentage points annually starting in 2027. This corrects the long-standing practice of States directing disproportionate shares of additional Medicaid spending through SDPs to hospitals rather than physicians' practices.

The second channel is payment rules in traditional Medicare. The Administration has taken a number of steps in 2025 to correct distortions created by Medicare payment rules.

In July 2025, CMS released the Calendar Year (CY) 2026 Hospital Outpatient Prospective Payment System (OPPS) and Ambulatory Surgical Center (ASC) proposed rule, which expands site-neutral payment policies to include drug administration services (e.g., infusions and injections) furnished at all off-campus provider-based departments of hospitals (excluding rural sole community hospitals). Under this proposal, these services would be reimbursed at the lower Physician Fee Schedule (PFS) rate rather than the higher OPPS rate. By removing the increase in Medicare payment for administering these services at hospital-owned physicians' practices, this rule will reduce the financial incentives for hospitals to acquire independent practices.

The rule also proposes repealing the Inpatient-Only list over three years and expanding the ASC Covered Procedures List, allowing more procedures to shift to lower-cost outpatient or ASC settings. This further promotes site neutrality and levels the playing field between independent physicians' practices and those controlled by hospital systems (CMS 2025b).

The CY 2026 PFS Proposed Rule, also released in July 2025, complements this by updating practice expense calculations by site-of-service to better recognize costs for independent physicians compared with hospital-employed ones, moving toward greater payment equity and reducing market distortions that fuel consolidation (CMS n.d., b; 2025c).

The third channel includes innovative methods and flexibility through the Center for Medicare & Medicaid Innovation (CMMI). CMMI, which was created to test innovative payment and delivery models, has proposed in 2025 the Ambulatory Specialty Model (ASM). ASM mandates participation for specialists in 240 areas treating conditions like heart failure and low back pain, applying payment adjustments (plus or minus 9-12 percent by 2033) based on cost and quality performance across all services. The model supports independent physicians' efforts to provide value-based arrangements without requiring hospital integration (CMS 2025a).

Meeting America's Needs with Transparency, Technology, and Scientific Transformation

In 2025, Federal price transparency requirements under the Transparency in Coverage (TiC) and Hospital Price Transparency rules were enhanced after the issuing of Executive Order 14221, which emphasized accurate pricing data (*Federal Register* 2025a). For TiC, the Administration updated technical specifications for greater usability to be implemented by February 2026 (U.S. Department of Labor 2025). The Hospital Price Transparency rule revisions in 2025 now mandate hospitals to report payer-specific negotiated rates as actual dollar amounts, replacing ambiguity and a lack of standardization (CMS 2025d).

By making prices visible, these rules empower patients to choose lower-cost providers, fostering competition that drives down costs and improves access to affordable options. In addition to driving price competition directly, it can also improve the allocation of physicians across geographical areas and service types by indicating where undersupply is exacerbating high prices. Finally, transparency discourages consolidation of physicians' practices and vertical integration with hospitals by empowering patients and payers to seek lower-cost independent providers.

The Trump Administration has also taken steps to improve access and lower costs for fertility care, specifically in three areas. First, the Administration has proposed requirements for providers to report more transparent, uniform information about their prices and clinical outcomes to facilitate comparisons and consumer decision-making. Second, efforts are being made to expand access to physicians who are willing and able to provide fertility services, including for in vitro fertilization, for example, by removing some of the barriers created by accrediting bodies. Third is the recognition of fertility services as an "excepted benefit," allowing stand-alone insurance plans that can help people to navigate their care. Collectively, these efforts equip Americans with better information, better access, and navigation support to overcome the challenges created by the relatively small set of clinics and subspecialists and limited entry of new providers under the status quo (Centers for Disease Control and Prevention 2024; National Resident Matching Program 2025).

In June 2025, HHS and CMS also struck a voluntary agreement to reduce and streamline prior authorizations involving major health insurers (e.g., UnitedHealth, CVS Health / Aetna, Humana). Commitments include reducing the number of claims requiring prior authorizations, implementing standardized electronic processes of requests, and expanding real time responses for requests (United States Department of Health and Human Services 2025). This will cut the administrative burdens faced by physicians and aligns with CMS's goals to improve efficiency and patient access (U.S. Department of Health and Human Services 2025; AHIP 2025). For Americans, this means faster approvals for needed care, reducing delays in access, lowering administrative costs passed to patients, and allowing physicians to focus on high-quality treatment efforts to prevent chronic diseases, particularly among children, by developing prevention-focused systems (White House 2025b). By tackling the root causes of chronic illnesses, MAHA efforts will reduce demand for physicians' services, easing shortages, lowering overall healthcare costs, and improving population health.

The proposed change to the 2026 Medicare physician fee schedule also prioritizes disease prevention, including with digital health technology (i.e., telehealth). The CY 2026 PFS expands telehealth flexibilities, such as lifting frequency limits and adding new codes for virtual care, enhancing access to preventive services, particularly in rural areas (*Federal Register* 2025b). The Medicare Diabetes Prevention Program revisions to 2025 allow fully online care now through December 2029, expanding virtual delivery without in-person requirements to broaden access and manage and prevent chronic conditions (CMS 2025e). These changes improve access via remote options, reduce costs by preventing expensive treatments, and enhance quality through early intervention.

The Trump Administration has positioned the United States to lead on the use of digital tools to meet Americans' needs for care, including artificial intelligence specifically (CMS 2025h; White House 2025a). These tools will be both physician-facing—such as diagnostic aids to promote individualized, evidence-based care—and patient-facing, such as those that can help manage chronic conditions and leverage price transparency data. These steps have paved the way for innovators to meet Americans' needs for faster diagnoses, more efficient resource use, and tailored treatments.

Conclusion

"Healthcare exceptionalism"—the idea that competition in healthcare is harmful—has been one of the most persistent and pernicious ideas in the U.S. healthcare system. As a result of this view, and the policies that it has propped up over decades, one way that healthcare has been "exceptional" is in the degree to which government has hindered competition and caused distortions, moving the industry away from efficient, market-based outcomes. The Trump Administration has already taken a number of steps to correct the distortions caused by prior government policies that have disfavored rural Americans and independent physicians. By addressing both supply-side and demand-side causes of past challenges, the Administration is proactively working to equip the U.S. healthcare system to meet the Nation's needs, lower prices, and improve access and quality.

★★★★★★

Chapter 12

Unlocking Retail Access to Private Equity Investments through Defined Contribution Plans

Over the past few decades, U.S. capital markets have witnessed significant growth in private markets relative to public ones. Along with this shift, the U.S. retirement system has witnessed the emergence of defined contribution (DC) plans as the dominant retirement vehicle for millions of Americans. The U.S. Securities and Exchange Commission's (SEC) accredited investor definition and the U.S. Department of Labor's (DOL) Employee Retirement Income Security Act (ERISA) fiduciary rules have long impeded retail investors' access to private market investments. With the structural shift in U.S. capital markets toward private markets and the changing composition of the U.S. retirement system toward DC plans, retail investors' access to invest in private markets through their DC plans has become ever more pertinent.

For DC plans, including 401(k)s, the litigation risk and lack of clear guidance under DOL's ERISA fiduciary rules have long deterred these plans from offering their plan participants investment options with exposure to private market investments, though no legal prohibition exists. As a result, millions of Americans have been deprived of the growth opportunities and diversification benefits of private markets through their DC retirement plans. On August 7, 2025, President Trump issued the Executive Order "Democratizing Access to Alternative Investments for 401(k) Investors," which encourages DC plan sponsors to provide plan participants with access to funds that include allocations to alternative (including private market) investments (White House 2025).[1] In response, DOL rescinded guidance issued in 2021 that discouraged DC plans from investing in private market assets (DOL 2025), marking a significant step toward unlocking private market access for millions of Americans.

In this chapter, the CEA quantifies the economic benefits of expanding retail access to private equity investments through their DC retirement plans. It shows that these benefits extend not just to retail investors but also to private fund managers, private companies, financial markets, and the real economy.

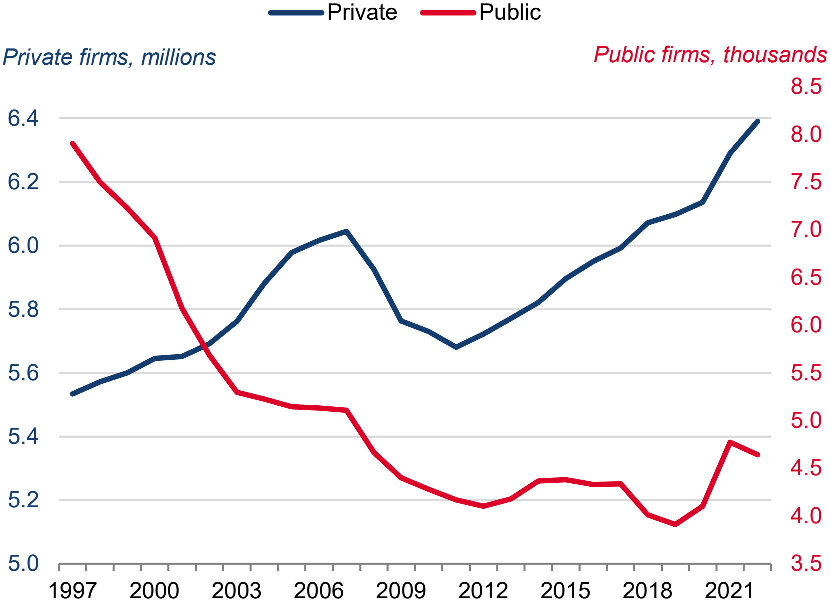
The Evolving U.S. Capital Market and Retirement System

Since the late 1990s, the shrinking public market and rise of private markets have shaped the structure of U.S. capital markets. From 1997 to 2024, the number of public companies dropped by more than half, from 8,800 firms to 4,000 firms, while the number of private companies increased by about two-thirds, from 20 million to 35 million (Wharton 2012; Weitzman 2023; U.S. Census Bureau 2001, table 1). Figure 12-1 illustrates this trend, showing the number of U.S. public firms and private firms, excluding nonemployer firms. In terms of gross assets, U.S. private funds with investment advisers registered by the SEC or who are exempt have more than tripled, from $9.5 trillion in 2012 to $30.9 trillion in 2024 (SEC 2024).

The commonly cited reasons for this structural change are the increasing regulatory burdens in public markets, such as the Sarbanes-Oxley Act of 2002 (Doidge, Karolyi, and Stulz 2017; Gao, Ritter, and Zhu 2013), deregulatory changes that increased private fundraising limits (Ewens and Farre-Mensa 2020), and increased demand from institutional investors (Lerner, Schoar, and Wongsunwai 2007; Kaplan and Strömberg 2009). Academic research points to additional reasons, like short-term pressure in public markets; tax reforms that

[1] Alternative investments generally encompass a broad range of asset classes that do not fall within the conventional asset classes of stocks, bonds, or cash. Private market investments, the focus of this chapter, constitute one category of alternative investments. Private market investments refer to direct and indirect interests in equity, debt, or other financial instruments that are not traded on public exchanges, including non-publicly traded vehicles such as private funds. Private funds, such as private equity funds (PE), venture capital funds (VC), or hedge funds, are pooled investment funds that must comply with the terms of an appropriate exemption or exclusion from the registration requirements in the federal securities laws.

Figure 12-1. Number of U.S. Private and Public Firms, 1997–2022



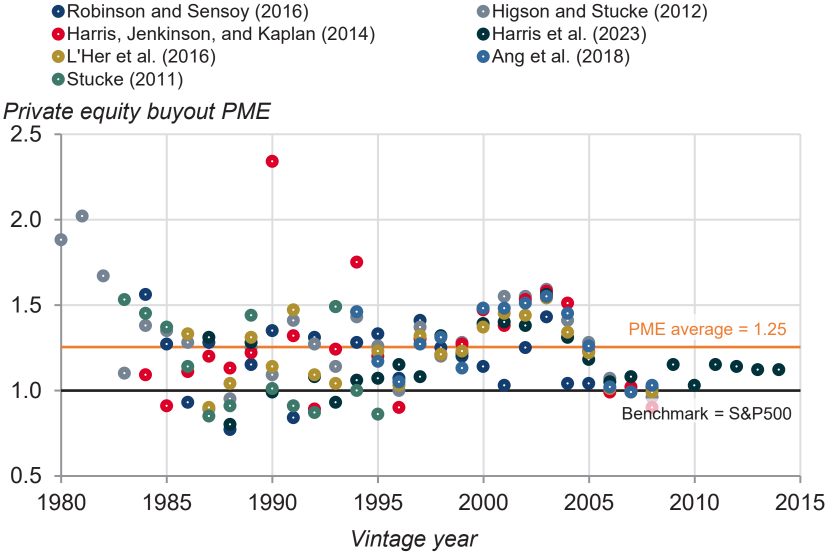
Sources: U.S. Census Bureau (2025); Statistics of U.S. Businesses; CEA calculations.
Note: Excludes nonemployer firms.

reduced advantages for public companies, such as the Tax Reform Act of 1986 (Carroll and Joulfaian 1997; Dyrda and Pugsley 2025); and the rise of intangible-intensive companies that are typically undervalued by public markets (Doidge et al. 2018).

With the rise in private markets and the fact that most companies do not make initial public offerings (IPOs) until they are past their peak-growth phase (Nain and Ying 2018), if at all, retail investors are faced with a smaller opportunity set that may limit diversification benefits and exclude high-growth investments. A key distinction between private and public markets is the higher growth potential of private companies (Asker, Farre-Mensa, and Ljungqvist 2011). Among the small subset of private companies that choose to pursue an IPO, their choice to do so at a late stage of their lifecycle means that public companies have generally become much larger and older relative to private companies (Kahle and Stulz 2017). As a result, many companies are already past their high-growth phase by the time they issue an IPO, limiting the investment opportunities available to retail investors (Finley 2019).

The recent academic literature finds that private equity (PE) buyout funds have consistently outperformed the Standard & Poor's (S&P) 500 by 20 to 27 percent over the fund's life and more than 3 percent annually (e.g., Harris, Jenkinson, and Kaplan 2014; Robinson and Sensoy 2016; Ang et al. 2018; and Harris et al. 2023). The three commonly used performance measures of private

Figure 12-2. Private Equity Performance–Public Market Equivalent (PME) by Vintage Year

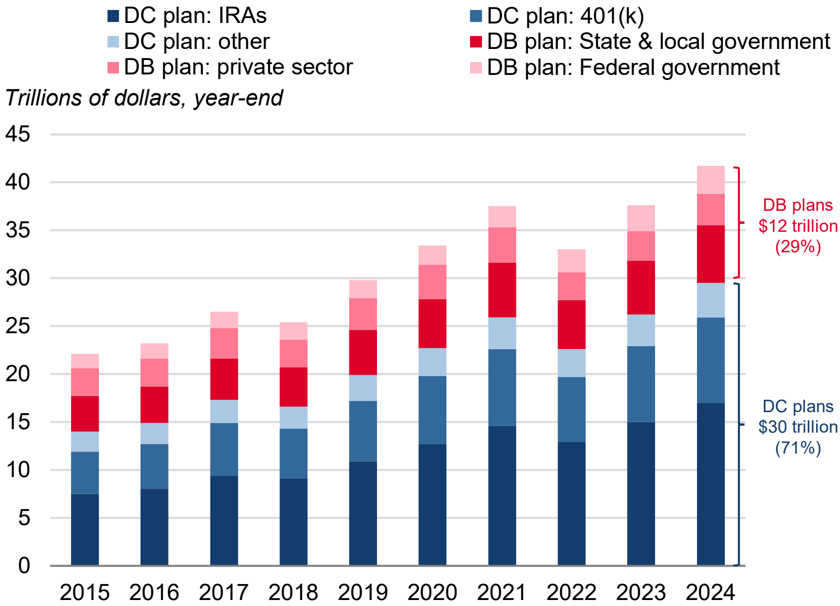


Sources: CEA calculations; literature estimates.
Note: PME estimates are for private equity (buyout) funds using the S&P 500 as the public market benchmark, calculated using the methodology of Kaplan and Schoar (2005).

fund returns are the internal rate of return (IRR), the public market equivalent (PME), and the ratio of total value to paid-in capital (TVPI) (INSEAD 2019). While the IRR and TVPI are absolute measures of performance, the PME is a relative measure that captures the net-of-fee performance of a PE fund relative to the hypothetical performance of a public market index using the fund's actual cash flows. Figure 12-2 shows the PME estimates for U.S. private equity (buyout) funds with vintage years 1980–2014. Most PME estimates are above 1, which is consistent with the outperformance of PE relative to public markets. This finding is robust when one excludes PE funds that are not fully liquidated (i.e., with majority realized investments). To address the fact that literature-estimated PMEs are not risk-adjusted and do not reflect the potential performance of a diversified portfolio that contains PE, as would be the case for defined contribution (DC) plans, this chapter simulates, in a subsection below, portfolios with and without a PE component and computes a risk-adjusted return to illustrate the potential benefit from including PE within a portfolio of traditional assets.

Alongside the growth of private markets, the U.S. retirement system has witnessed the emergence of DC plans, such as IRAs and 401(k)s, as the dominant investment vehicle for millions of Americans (DOL 2019). By shifting the investment risk and retirement funding responsibility from the employer to the employee, DC plans have emerged as a scalable, portable, and cost-efficient alternative to defined benefit (DB) plans—including Federal, State, local, and

Figure 12-3. U.S. Defined Benefit (DB) versus Defined Contribution (DC) Plan Assets, 2015–24



Sources: Investment Company Institute (ICI 2022, 2025) factbooks; CEA calculations.

some corporate pension plans (e.g., California Public Employees' Retirement System (CalPERS) and Federal Employees Retirement System (FERS)). As a result, the percentage of full-time private sector employees participating in DB plans has significantly dropped from 80 percent in 1985 to only 11 percent in 2023 (BLS 2004, 2024). As of year-end 2024, DB plan assets were $12 trillion, whereas defined contribution plan assets were $30 trillion (ICI 2025), about 70 percent of all U.S. retirement assets (see figure 12-3).

Because of the SEC's accredited investor regulation and litigation risk under ERISA's fiduciary rules, defined contribution plans' allocation to private markets, as of 2024, has been negligible, with 30 percent allocation by DB plans relative to only 0.1 percent allocation by defined contribution plans (Ghosh 2024; Hall 2025). The scale of U.S. retirement assets held by DC plans suggests a substantial cost for retail investors who miss out on the high-growth opportunities and diversification benefits of private markets.

Retail Access to Investments in Private Markets: An Overview of Regulatory Barriers

The U.S. SEC's accredited investor definition that sets forth minimum income and net worth requirements has restricted direct retail access to private market investments since 1982.[2] The SEC defines accredited investors as individuals who exceed income or net worth thresholds, have professional certifications, are "knowledgeable employees" of private funds, or are a "family client" of a family office (SEC 2025). In principle, these criteria are supposed to serve as proxies for an investor's level of financial sophistication and tolerance for risk. In practice, the criteria have proven to be an insufficient proxy and highly restrictive—only 18.5 percent of U.S. households meet the definition (SEC 2023). With the accredited investor definition prohibiting direct retail access to private markets, retail investors must rely on retirement plans pooling capital and investing in private funds as a single institutional accredited investor or qualified purchaser to give retail nonaccredited investors access to private markets (Poterba, Venti, and Wise 2009).[3]

Relative to DB plans, DC plans face higher litigation risk under DOL's ERISA fiduciary rules, for two reasons.[4] First, responsibility for investment risk and allocation decisions falls on the employer under DB plans compared with the employee under DC plans (Broadbent, Palumbo, and Woodman 2006). DC plans are, therefore, easier to sue, since the responsibility for funding the promised benefit does not fall on the employer, as in DB plans (Katz 2021). In *Thole v. U.S. Bank N.A.* (2020), the Supreme Court held that DB plan participants lack constitutional standing to sue plan fiduciaries for breach of fiduciary duty. Second, liability under ERISA is tied to the prudence, low-cost, and adequate disclosure for each investment within the portfolio under DC plans compared with the overall portfolio under DB plans (Stoel Rives LLP 2022).

The key reason for the limited adoption among DC plans is that DOL has issued limited and mixed guidance regarding private market investments. In 2020, DOL issued guidance stating that offering PE within a multi-asset, professionally managed fund does not violate ERISA, subject to certain provisions (DOL 2020). In 2021, DOL issued supplemental guidance warning that small DC plans do not have the expertise to manage PE investments due to their illiquid and complex nature (DOL 2021). The supplemental guidance essentially added

[2] The accredited investor definition was formalized in 1982 with the SEC's adoption of Regulation D. This definition was further amended by the 2010 Dodd-Frank Act and the 2012 JOBS Act. In 2020, the SEC expanded the accredited investor definition to add licensed professionals but maintained the income and net worth criteria, among others. Under these criteria, retail investors are only able to directly invest in offerings registered with the SEC, such as public company offerings and offerings of registered investment companies.

[3] Retail nonaccredited investors can obtain indirect exposure to private market investments through pooled investment vehicles, currently limited to registered investment companies, business development companies, and real estate investment trusts. Certain registered fund structures, such as interval funds and business development companies, provide a certain amount of guaranteed periodic liquidity while enabling the flexibility to hold illiquid securities obtained in exempt offerings (i.e., private market investments).

[4] The litigation risk for DC plan managers when including private market investments stem from participants filing class action lawsuits for breaches of fiduciary duty such as through excessive fees, inadequate due diligence, and imprudent investment selection processes.

caution and limited the potential for offering PE investments only to large and well-established DC plans. In 2025, DOL rescinded the 2021 supplemental guidance in response to President Trump's Executive Order encouraging retail access to alternative assets (DOL 2025; White House 2025). By rescinding the 2021 guidance, DOL has taken an important step in unlocking private market investments for millions of Americans through their DC plans.

The Quantitative Benefits of Expanding Retail Access to Private Equity Investments through Defined Contribution Plans

This section describes the quantitative benefits of expanding retail access to private markets through DC plans. The analysis here focuses on one class of private market investments—private equity—and notes that there may be an additional benefit from DC plan investment in other classes of alternative investments.

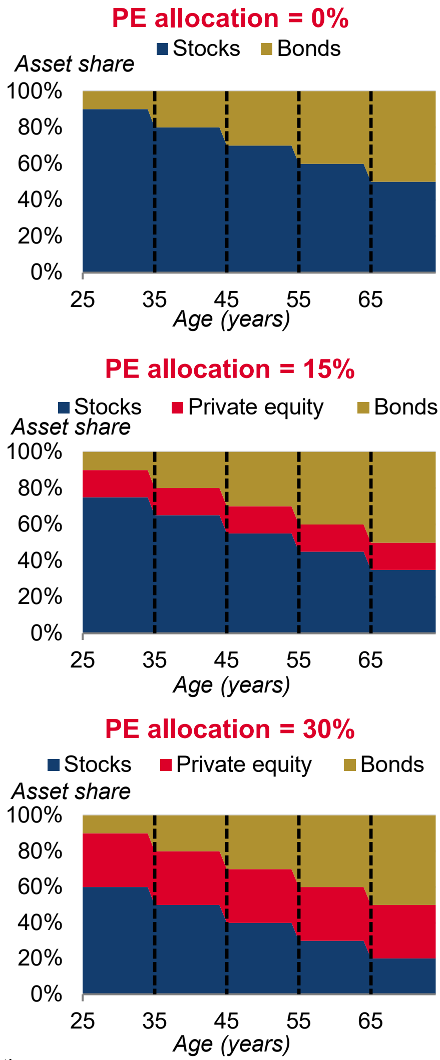
Diversification and Higher Risk-Adjusted Returns for Retail Investors

In addition to outperformance relative to public equity, the inclusion of private market investments within a diversified portfolio may enhance risk-adjusted returns. The imperfect correlation of private market investments with traditional assets such as stocks and bonds may allow private market investments to function as a diversifying asset class within a broader investment portfolio. In particular, the addition of PE to a traditional portfolio of stocks and bonds enables investors to achieve a higher level of excess return per unit of risk (risk-adjusted return) than would otherwise be possible. The analysis here uses mean variance analysis to demonstrate the potential diversification benefit of including PE in a portfolio of traditional assets.

Portfolio weights. To mimic portfolios for various age groups, the analysis here constructs portfolios with a fixed allocation to bonds that increases with age. It particularly relies on the typical glide path used in retirement portfolios that shifts the portfolio's allocation from high-risk assets to low-risk assets as an investor approaches retirement (Vanguard 2020). For each set of portfolios, the fixed allocation to bonds is varied from 10 percent (young) to 50 percent (old) to reflect the shift to less risky assets with age. Figure 12-4 shows illustrative weights by age cohort under different PE allocations. Thus, a bond allocation of 10, 20, 30, 40, and 50 percent would correspond to the typical allocation observed for, respectively, a 25-, 35-, 45-, 55-, and 65-year-old.

Two sets of portfolios are constructed: (1) traditional portfolios with stocks and bonds ("non-PE portfolios") and (2) alternative portfolios with stocks, bonds, and private equity ("PE portfolios"). For non-PE portfolios, the allocation

Figure 12-4. Illustrative Private Equity (PE) Allocations (Weights) by Age Cohort



Source: CEA calculations.

to stocks is defined residually as the difference between 100 percent and the fixed allocation to bonds. For PE portfolios, the allocation to PE is varied from 5 to 30 percent, and for stocks, residually, as the difference between 100 percent and the sum of the fixed bond and PE allocations. Overall, there are five non-PE portfolios and thirty PE portfolios (for the implied weights, see figure 12-5).

Portfolio mean-variance. For each of the 35 simulated portfolios shown in figure 12-5, the portfolio mean, variance, and Sharpe ratio are estimated using equations 1 through 3 and inputs from table 12-1. For portfolio p, the portfolio mean return (r_p) is the weighted average of the expected returns of each asset in

Figure 12-5. Portfolio Allocations (Weights) in Simulated Private Equity (PE) versus non-PE Portfolios

		PE allocation						
		0%	5%	10%	15%	20%	25%	30%
	Bonds allocation	**Implied stocks allocation = (100% – bonds allocation – PE allocation)**						
		Non-PE portfolio	*PE portfolios*					
Young	10%	90%	85%	80%	75%	70%	65%	60%
	20%	80%	75%	70%	65%	60%	55%	50%
	30%	70%	65%	60%	55%	50%	45%	40%
	40%	60%	55%	50%	45%	40%	35%	30%
Old	50%	50%	45%	40%	35%	30%	25%	20%

Source: CEA calculations.
Note: Green indicates allocation to safe assets such as bonds and red indicates allocation to riskier assets such as stocks and private equity.

the portfolio. The portfolio variance (σ_p^2) measures the return variance of each asset as well as the covariance between asset returns to capture diversification benefits. The portfolio Sharpe ratio $(Sharpe_p)$ captures the excess return an investor earns per unit of risk and reflects a risk-adjusted return.

$$r_p = w_{p,PE}r_{PE} + w_{p,PU}r_{PU} + w_{p,B}r_B \tag{1}$$

$$\sigma_p^2 = w_{p,PE}^2\sigma_{PE}^2 + w_{p,PU}^2\sigma_{PU}^2 + w_{p,B}^2\sigma_B^2 + 2w_{p,PE}w_{p,PU}\sigma_{PE,PU} + 2w_{p,PE}w_{p,B}\sigma_{PE,B} + 2w_{p,PU}w_{p,B}\sigma_{PU,B} \tag{2}$$

$$Sharpe_p = \frac{r_p - r_f}{\sigma_p} \tag{3}$$

where:

- $r_p, r_{PE}, r_{PU}, r_B, r_f$: returns for portfolio (p), private equity (PE), public equity (PU), bonds (B), and a short-term risk-free asset (f).
- $w_{p,PE}, w_{p,PU}, w_{p,B}$: portfolio weights for private equity, public equity, and bonds.
- $\sigma_p^2, \sigma_{PE}^2, \sigma_{PU}^2, \sigma_B^2$: variances for portfolio, private equity, public equity, and bonds.
- $\sigma_{PE,PU}, \sigma_{PE,B}, \sigma_{PU,B}$: covariances between private equity and public equity, private equity and bonds, public equity and bonds.
- σ_p: standard deviation of the portfolio.

The inputs to the portfolio mean-variance analysis use annualized estimates over the period 1998–2020 from Korteweg and Westerfield (2022). For stocks and bonds, the estimates are based, respectively, on the Vanguard Total Stock Market Index (VITSX) and the Vanguard Total Bond Market Index Fund (VBTIX). For PE, the estimates are based on Cambridge Associates' U.S. Private

Table 12-1. Inputs for Portfolio Mean-Variance Analysis

	Stocks	Bonds	Private equity
Mean	7.58	4.89	10.04
Standard Deviation	17.67	3.41	25.91
Sharpe Ratio	0.32	0.90	0.31
Correlations			
Stocks	1	–0.39	0.82
Bonds		1	–0.39
Private equity			1

Source: Korteweg and Westerfield 2022.
Note: We use the unsmoothed estimates for private equity buyout funds to address the net asset value–staleness problem.

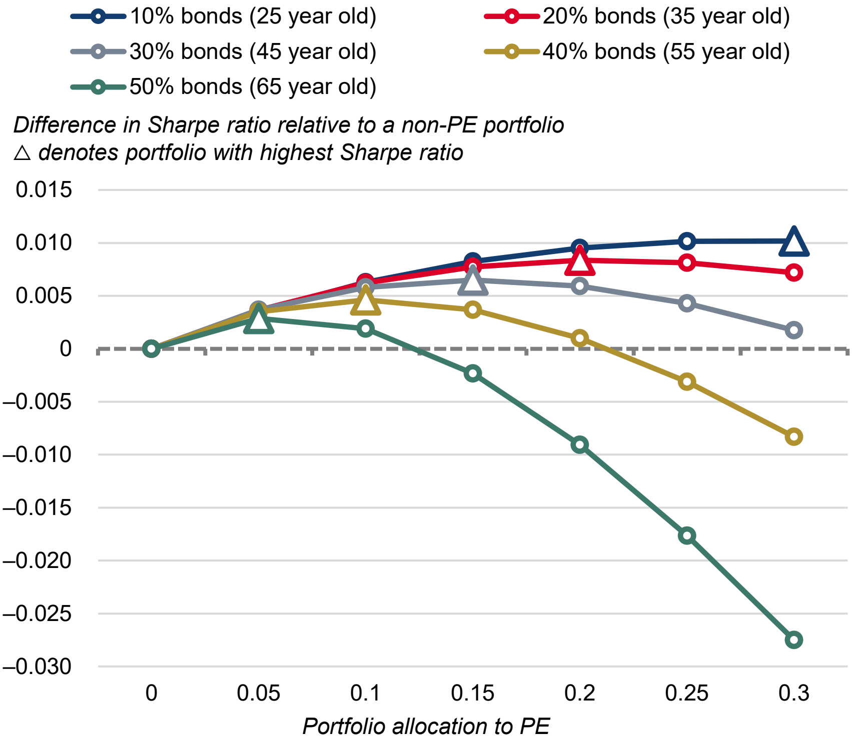
Equity Benchmark Index, which tracks the performance of a portfolio of PE funds on a net-of-fee basis. To overcome the problem of the staleness in net asset values ("NAV-staleness") observed in private markets due to less frequent valuations and reporting delays by private fund managers, the analysis here relies on the unsmoothed estimates for PE (buyout) calculated by the authors. Table 12-1 reports the mean, standard deviation, and Sharpe ratio for each of the three assets as well as the correlations between assets.[5] Note that bonds have the highest Sharpe ratio, followed by stocks and PE.

Portfolio Sharpe ratio. For each of the 35 simulated portfolios, a risk-adjusted return (Sharpe ratio) is calculated from equation 3 to assess the diversification benefit from adding PE to a traditional portfolio of stocks and bonds. For each age cohort, the PE and non-PE portfolios are compared to identify who benefits most from adding PE, and at which allocation of PE. A higher Sharpe ratio for a portfolio with PE relative to one without PE is consistent with a diversification benefit. Figure 12-6 shows the difference in Sharpe ratios between PE and non-PE portfolios for each age cohort (based on the relative allocation to bonds with age).

Mean-variance findings. The mean-variance analysis (see figure 12-6) points to three key findings. First, all age cohorts benefit from higher risk-adjusted returns (Sharpe ratio) by adding a 5–10 percent PE allocation to a traditional portfolio of stocks and bonds. Second, the younger age cohorts benefit more from an allocation to PE relative to older age cohorts. Younger age cohorts realize a higher risk-adjusted return from an allocation to PE over the entire range of 5–30 percent, whereas older age cohorts realize lower risk-adjusted returns from an allocation to PE that exceeds 5–10 percent. For older cohorts, the higher PE allocations result in lower Sharpe ratios because they

[5] The covariances for equation 2 are computed by scaling up the correlations (from table 12-1) by the product of the standard deviations of the two assets (e.g., $\sigma_{PE,PU} = \rho_{PE,PU} \times \sigma_{PE} \times \sigma_{PU}$).

Figure 12-6. Difference in Sharpe Ratios Between Private Equity (PE) and non-PE Portfolios by Age Cohort



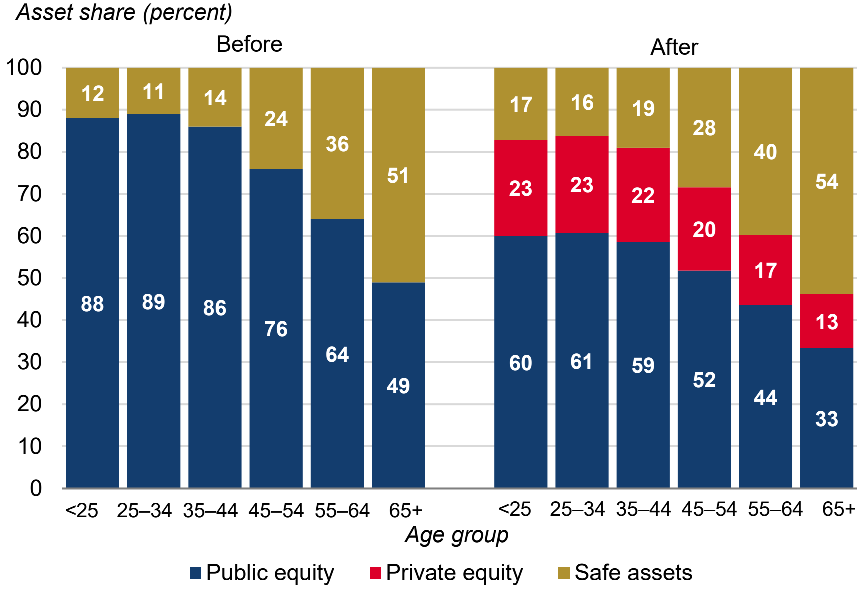
Source: CEA calculations.
Note: Each dot/triangle represents the difference in Sharpe ratio of a PE portfolio relative to a non-PE portfolio, where allocations to PE vary from 5-30 percent, allocation to bonds are fixed based on age cohort, and the residual allocation to stocks is such that weights sum to 100 percent.

already hold a high allocation of bonds that have a higher Sharpe ratio relative to stocks or PE (see table 12-1). Third, the portfolio with the highest Sharpe ratio corresponds to higher allocations to PE as age decreases. Overall, the analysis here is consistent with a diversification benefit (higher risk-adjusted return) from adding PE to a traditional portfolio comprising stocks and bonds, and that younger cohorts benefit the most.

Household Retirement Saving and Output Gains for the Real Economy

To estimate household retirement savings and output gains from expanding retail access to PE investments through their DC retirement plans, the analysis proceeds in two steps. First, mean-variance analysis finds the optimal household portfolio allocation to PE, given their risk aversion. Second, a Harberger (1962) two-sector equilibrium model estimates output gains from household allocation to PE. By integrating a household-level portfolio allocation with a

Figure 12-7. Portfolio Allocations Before and After Eliminating Private Equity Restrictions



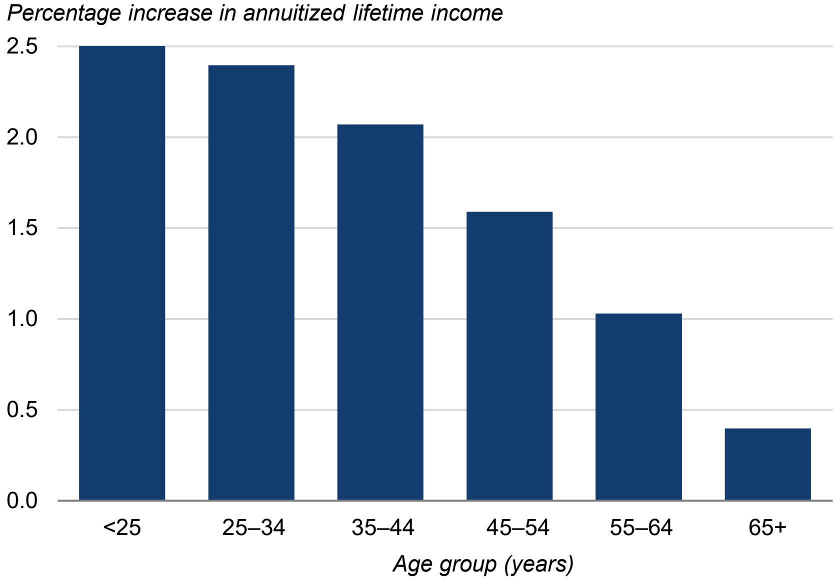
Source: CEA calculations.
Note: For calculation details, see the appendix to this chapter.

two-sector model, the analysis demonstrates that easing restrictions on DC plans to allow for more PE investments increases lifetime income for households and aggregate income for the United States.

Household allocation to private equity given risk aversion. To determine optimal household allocations to private equity, the analysis proceeds as follows (see the appendix for the calculation of figure 12-7). First, data from the Federal Reserve's Survey of Consumer Finances (Aladangady et al. 2023) on holdings in retirement accounts by age cohort are combined with data from Vanguard (2025, 57) on PE share by age cohort (see figure 12-7, left panel). Second, it is assumed that the observed holdings in PE are optimal and implied risk aversion is estimated by age cohort. Third, the implied risk aversion is used to find the optimal allocation between PE, public equity, and safe assets (see figure 12-7, right panel). Across all age cohorts, the analysis here finds that households would reallocate their holdings in public equity toward PE and safe assets. Overall, the weighted-average PE allocation is about 20 percent, corresponding to the allocation observed for DB plans (CalPERS 2024; BlackRock 2025).

Annuitized increase in lifetime income. Given optimal household portfolio allocations, the analysis quantifies the additional lifetime income that households gain from indirect exposure to PE through their retirement plans. For each age cohort, the analysis projects the stream of returns from today

Figure 12-8. Annualized Increase in Lifetime Income by Age Group



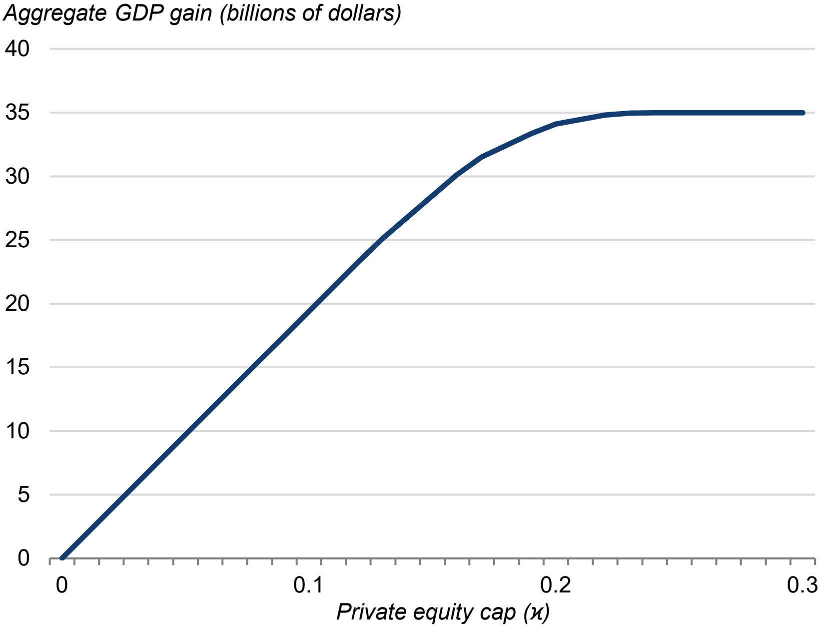
Source: CEA calculations.
Note: For calculation details, see the appendix to this chapter.

through the end of the cohort's life and converts it into a constant annuity payment discounted at the portfolio return. To compute the annuitized increase in lifetime income, the analysis repeats this calculation for household portfolio allocations with and without PE and finds the increase in household retirement investment portfolio income from an allocation to PE. Effectively, this metric captures the percentage increase in lifetime income for a participant with a PE portfolio allocation relative to a portfolio without a PE allocation, assuming the participant smoothed all future retirement income into a constant payout from today through the end of the participant's life (Boyle and Hardy 2003).

Figure 12-8 plots the annuitized increase in lifetime income by age cohort due to an allocation to PE by DC plans (see the appendix). The analysis finds that the youngest cohorts benefit the most, with a 2.5 percent increase in annuitized income relative to a 0.5–1.0 percent increase for the older cohorts. To calculate the overall increase in annuitized lifetime income, a weighted average of the annuitized percent increase is computed, with weights derived from cohort share of retirement wealth—an aggregate increase of 1.3 percent.

Output gains. The analysis here utilized a stylized, static model with two types of firms, public and private, that produce, using a Cobb-Douglas production function with capital and labor as inputs. The two sectors differ initially in their capital, labor, and productivity. Public and private capital stocks are inferred from observed U.S. stock market capitalization and gross assets held by

Figure 12-9. Output Gain as a Function of the Private Equity Cap



Source: CEA calculations.
Note: For calculation details, see the appendix to this chapter.

PE funds, respectively. To recover productivity and labor for each sector, the analysis relies on observed estimates of each sector's value added to gross domestic product (GDP) and require that wages are equalized across sectors. It is assumed that capital markets are segmented such that returns are not equalized between the two sectors. With initial conditions set, the analysis calculates the change in capital and labor allocations if DC retirement financial capital flows freely into the PE sector and the resulting gain in aggregate output, while holding the rest of the economy fixed.

Figure 12-9 plots the gain in GDP as a function of the PE cap (see the appendix). Because PE-backed firms are more productive than publicly listed firms (e.g., Asker, Farre-Mensa, and Ljungqvist 2011; and Davis et al. 2014), as restrictions on investing in PE are relaxed, more capital and labor are reallocated from the lower-productivity public sector to the higher-productivity PE sector. The analysis estimates that a full loosening of these restrictions would lead DC retirement plans to allocate about 20 percent of their portfolio to PE, which translates into an extra $35 billion in aggregate output, or about 0.12 percent of GDP.

This estimate of the increase in aggregate output could be understated, for several reasons: (1) There may be additional benefit from including private market investments other than PE such as venture capital or hedge funds. (2)

Assuming that nonequity portfolio allocations are risk-free overstates risk aversion and understates the propensity of households to shift to PE. And (3) if the model had captured dynamics, there could be an additional gain from the reallocation to the more productive PE sector in the form of higher aggregate capital.[6] At the same time, general equilibrium factors and relaxing the segmented capital markets assumption could dampen the estimated aggregate gains.

Access to a Large, Diversified, and Stickier Capital Base for Fund Managers and Private Companies

Private fund managers and fund portfolio (private) companies can significantly benefit from defined contribution plan investments due to their scale, diversification, and the long-term (stickier) nature of their capital. With respect to scale, if DC plans allocate 5–30 percent of their assets to private market investments, that would translate into $1.5–8.7 trillion in new capital for private fund managers and private companies, based on plan assets as of 2024. Because DC plan assets are growing faster relative to defined benefit plan assets, the new capital flowing to private fund managers / private companies is likely to also scale up with the growth in DC plan assets. From 2019 to 2024, DC plan assets witnessed an increase of 50 percent relative to only 20 percent for DB plan assets over the same period (ICI 2020, 2025).

With respect to diversification, private fund managers (general partners) are likely to benefit from diversifying their capital base because they typically rely on a concentrated base of limited partners (investors) to fund their portfolio companies. This diversification benefit can be especially pronounced during cyclical slowdowns, insulating private fund managers and portfolio companies from liquidity shocks that can slow down capital deployment and exits. With respect to its long-term (stickier) nature, DC plan assets are typically invested until retirement (for 30+ years) and face significant penalties for early withdrawals, providing fund managers with a largely stable capital base. An additional benefit of DC plan assets for fund managers is their predictability, since allocations to DC retirement accounts typically stem from payroll contributions and automatic enrollment/deferrals, and follow systematic glide paths. The predictability of the income stream can help fund managers with investment sequencing and exit timing as well as fundraising to raise new private funds.

[6] Since the model is static, the increased capital and output almost entirely results from reallocation of capital from the less-productive public sector to the more-productive private sector. The CEA allows the extra income from higher returns to translate into slightly more savings and capital, but that effect is minuscule. If the CEA had modeled dynamics explicitly, the increased productivity of capital could generate higher aggregate capital through more investment, translating into additional gains not captured by the model's estimates. See the appendix for more details.

Liquidity and Price Discovery for Financial Markets

An important distinction between private and public capital markets is their degree of liquidity and price discovery. Public markets are characterized by high liquidity, transparency, and efficient price discovery, facilitated by regulated exchanges and broad investor participation. In contrast, private capital markets exhibit lower liquidity and transparency, with valuations determined through negotiated transactions rather than continuous market pricing. As a result, the NAV-staleness problem arises in private markets due to less frequent valuations and reporting delays (Easton et al. 2023).[7]

ERISA fiduciary rules governing DC plan investments require "fair" valuations at regular intervals. Therefore, private fund managers who choose to accept capital from DC plans may be encouraged to produce more frequent and audited valuations. As DC plans establish a significant footprint in private markets, an important implication is that price discovery and liquidity for private markets as a whole may witness a notable improvement.

Conclusion

U.S. regulatory restrictions—such as the SEC's accredited investor definition and DOL's lack of guidance under ERISA's fiduciary rules—have long restricted retail access to private market investments through their DC retirement plans. With the rise of private markets and the dominance of DC plans in the U.S. retirement system, the restrictions on retail access to private market investments impose a significant cost, not just to retail investors, but also to fund managers, private companies, financial markets, and the real economy. This chapter has demonstrated that retail access to private market investments has the potential to unlock several important benefits: (1) retail investors benefit from diversification and higher retirement income; (2) private fund managers and private companies benefit from access to a large, diversified, and stickier capital base; (3) financial markets benefit from improved liquidity and price discovery; and, (4) the real economy benefits from higher GDP.

The second Trump Administration has already taken an important step toward realizing these benefits by issuing an Executive Order that directs Federal regulators to revise guidance and rules, enabling defined contribution plans to offer retail investors access to private market investments when reasonably prudent (White House 2025).

[7] The NAV staleness problem arises when the fund's net asset value does not accurately reflect the current market value of the fund's underlying assets, due to the less frequent pricing of illiquid assets.

Appendix: Quantifying the Macro and Micro Effects of Portfolio Allocation to Private Equity Through Defined Contribution Plans

This appendix describes a tractable and static model used to quantify the macroeconomic effects of relaxing portfolio allocation caps for PE investments within DC retirement accounts. The model builds a micro-level household portfolio optimization and aggregates for macro effects. In the micro block, households solve a static portfolio problem under constant relative risk aversion (CRRA) preferences and constrained access to PE. When policy loosens constraints through expanding DC plans' access to PE, financial capital flows out of public equity and into PE. In the macro block, the extra capital allocated to PE induces a reallocation of labor between private and public markets.

Micro Effect: Portfolio Choice Problem

In the micro problem, a household chooses portfolio weights for PE, public equity, and a safe asset. A static economy in which there are three assets is considered here. A household can allocate its portfolio toward a risk-free asset (with portfolio weight ω^f), public equity (ω^{PUB}), or private equity (ω^{PE}). The portfolio is constrained by:

$$\omega^f = 1 - \omega^{PUB} - \omega^{PE}, \qquad 0 \leq \omega^{PUB}, \ \ \omega^{PE} \leq 1, \qquad 0 \leq \omega^{PUB} + \omega^{PE} \leq 1.$$

The vector of risky allocations is $\omega = (\omega^{PUB}, \omega^{PE})^T$. Each asset has respective returns R^f, R^{PUB}, and R^{PE}. The associated vector of excess returns, expected excess returns, and the covariance matrix is given by:

$$R^e = (R^{PUB} - R^f, R^{PE} - R^f)^T, \quad \mu = E[R^e], \quad \Sigma = \text{Var}(R^e).$$

To account for investors' desire to hedge against nonasset income risk (e.g., labor income or background consumption shocks), the analysis here introduces an additive hedging vector h. One can think of the household as solving a mean-variance problem derived from an approximation to a constant relative risk aversion utility parameterized by γ. The analysis compares the solution of the unconstrained problem to the solution with an additional constraint $\omega^{PE} \leq \overline{\omega}^{PE}$.

Unconstrained problem. In the unconstrained problem, there is no restriction on PE holdings except that they must be less than 1. This is just the standard mean-variance ("M-V") problem:

$$\max_{\omega^{PUB}, \omega^{PE}} \boldsymbol{\omega}^T (\mu + \text{h}) - \frac{\gamma}{2} \boldsymbol{\omega}^T \Sigma \boldsymbol{\omega}$$

Essentially, households are choosing portfolio allocations to maximize returns and minimize variance. The more risk-averse that households are, which is captured by a higher γ, the more they penalize the variance term. The resulting optimal portfolio weights are given by:

$$\Sigma\,\omega^* = \frac{1}{\gamma}\,(\mu + h) \quad \Longrightarrow \quad \omega^* = \frac{1}{\gamma}\,\Sigma^{-1}(\mu + h),$$

which is the standard M-V solution together with a hedging term, h.

Constrained problem. Up to now, it has been assumed that the households can freely choose allocations to PE. Instead, suppose there is a binding PE cap $\omega^{PE} \leq \bar{\omega}^{PE}$. This is shorthand for implicit limits on DC plans to hold PE. In the case where the cap binds, the household solves the one-dimensional problem:

$$\max_{0 \leq \omega^{PUB} \leq 1 - \bar{\omega}^{PE}} \left\{ \omega^{PUB}(\mu^{PUB} + h^{PUB}) - \frac{\gamma}{2}[\sigma_{11}(\omega^{PUB})^2 + 2\,\sigma_{12}\,\omega^{PUB}\,\bar{\omega}^{PE} + \sigma_{22}(\bar{\omega}^{PE})^2] \right\}.$$

This has the solution:

$$\omega^{PUB} = \frac{(\mu^{PUB} + h^{PUB}) - \gamma\,\sigma_{12}\,\bar{\omega}^{PE}}{\gamma\,\sigma_{11}}.$$

To ensure that the household obeys feasibility constraints, the optimal public equity allocation is:

$$\omega^{PUB} = \min\left\{ \max\left\{ 0, \frac{(\mu^{PUB} + h^{PUB}) - \gamma\,\sigma_{12}\,\bar{\omega}^{PE}}{\gamma\,\sigma_{11}} \right\}, 1 - \bar{\omega}^{PE} \right\}.$$

Private equity allocations without constraints. Now, it is asked how high the PE allocation would be as the constraint is relaxed for different age groups. This requires one to first calibrate parameters. The first set of parameters are common to all household types. It is assumed that the baseline return on the safe asset is the risk-free rate, r_f = 0.03 (3 percent annually). This serves as the benchmark for computing excess returns on risky assets. Thus, the expected excess return vector is specified as:

$$\mu = [\mu^{PUB} - r_f, \mu^{PE} - r_f]^{\mathrm{T}} = [0.08 - r_f, 0.10 - r_f]^{\mathrm{T}} = [0.05, 0.07]^{\mathrm{T}}$$

The variance-covariance structure of asset returns is defined from Korteweg and Westerfield (2022) as:

$$\Sigma = \begin{bmatrix} Var(PUB) & COV(PUB, PE) \\ COV(PE, PUB) & Var(PE) \end{bmatrix} = \begin{bmatrix} 0.031 & 0.038 \\ 0.038 & 0.067 \end{bmatrix}$$

These values approximate real-world observed volatilities and co-movements between public and private equity. To account for investors' desire to hedge against nonasset income risk (e.g., labor income or background consumption shocks), an additive hedging vector: h = [0.0004, 0.0004]^T is introduced (see Duffee 2005). This term enters the first-order condition identically across age and asset classes, reflecting uniform marginal hedging benefits of risky assets.

The analysis distinguishes between age groups by variation in risk aversion. Vanguard (2025, figure 60) household financial survey data show asset allocations by age group. With return and volatility calibrations, the first-order condition from the mean-variance problem is used when $\omega^{PE} = 0$, and the equation is inverted to solve for γ given each age group's observed allocation to ω^{PUB}. The resulting values represent cohort-specific degrees of risk aversion that rationalize their baseline asset allocation under the assumed M-V framework with hedging preferences.

Given parameters, the allocations are recomputed as a function of the constraint cap for each age group. Figure 12-7 shows the optimal allocations by age group when there is no cap.

Quantifying the gain in annuitized lifetime income. To assess the long-term welfare implications of PE reform, cohort-specific portfolio returns are translated into gains in annuitized lifetime income. For any cohort with T remaining years and return paths r_t^0 (pre-reform) and r_t^1 (post-reform), define the discount factor (d) and corresponding annuity factors (AF) as:

$$d_t^i = \prod_{\{s=0\}}^{t} \frac{1}{1+r_s^i} \qquad AF_i = \left(\sum_{t=0}^{T} d_t^i\right)^{-1}, \ \ i = 0{,}1.$$

The counterfactual no-cap return path r_t^1 is cohort-specific and age-dependent. For each cohort, future ages are mapped into the corresponding age-bin risk aversion and optimal portfolio weights are recomputed for each year. The starting point is the median age within each age group. When cohorts transition into the next age group, their risk aversion changes as well. Under these definitions, the percentage increase in annuitized lifetime income is:

$$\%Gain_i = 100 \cdot \frac{AF_1 - AF_0}{AF_0}.$$

For each cohort, the calculation gives the percentage increase in the size of the flat annual check (annuity) that could be drawn every year from today until death at 78 (life expectancy for the U.S. population) after accounting for transitions in age and reform to allow PE allocations in DC plans. The gain comes from the extra wealth due to higher returns from retirement portfolios. Because the annuity factor discounts later years more heavily, early-life return changes drive most of the gain. Consequently, younger cohorts experience larger gains from relaxing the cap on PE DC allocations. Figure 12-8 shows the annuitized increase in lifetime income by age cohort.

Inputs from the micro block are now used to compute aggregate effects from lifting implicit caps on PE allocations in DC retirement portfolios. The analysis here is of a static, two-sector Cobb–Douglas production economy, showing how lifting the PE cap leads to labor and capital reallocation across sectors, and it quantifies the resulting change in aggregate output.

Environment. The analysis looks at a small open economy with two sectors. Each sector $j \in \{PE, PUB\}$ produces with a Cobb-Douglas production function, given by:

$$Y_j = A_j K_j^{\alpha} L_j^{1-\alpha}.$$

It is assumed that labor is mobile across sectors, but that capital in each sector is pinned down by the household sector's portfolio choice. This assumption requires segmented capital markets. There is one unit of labor divided between sectors. The first-order condition for labor requires that, in each sector:

$$\mathrm{MPL}_j(L_j) = (1-\alpha) \cdot \frac{Y_j}{L_j}.$$

Let $L_{PE} \in (0,1)$ denote the fraction of total labor allocated to the PE sector. Then, the public equity sector receives $L_{PUB} = 1 - L_{PE}$, and equilibrium requires:

$$\frac{Y_{PUB}}{1 - L_{\mathrm{PE}}} = \frac{Y_{\mathrm{PE}}}{L_{\mathrm{PE}}}$$

The solution to the nonlinear equation given above yields the equilibrium labor allocation between sectors. Given initial value added by sector, how labor gets reallocated by sector, given a change in the capital stock, can be calculated.

Calibration. As a first step, the change in financial capital from the household block needs to be mapped onto a change in productive, physical capital in the real economy. To that end, an estimate of Tobin's q, which is the ratio of market to book capital, is used. Initial (pre-reform) capital stocks are computed in each sector by dividing financial capital[8] in each sector by an economy-wide estimate of q:[9]

$$K_{0,\,\mathrm{pub}} = \frac{V_{\mathrm{fin,\,pub}}}{q_{\mathrm{pub}}} = \frac{48}{1.75},\ K_{0,\,\mathrm{pe}} = \frac{V_{\mathrm{fin,\,pe}}}{q_{\mathrm{pub}}} = \frac{10}{1.75}$$

[8] The CEA gets the value of financial public capital from SIFMA (2024) and the value of private equity from SEC (2024, table 5.1).

[9] An aggregate proxy is used from the Federal Reserve's Flow of Funds Table B.103, lines 39 and 42 (Federal Reserve Bank of Saint Louis 2025). In particular, the market value of equities (line 42) is divided by net worth (line 39), which yields a figure of 1.75. This is assumed to be the same q for private and public firms.

Assuming the same q for private and public markets likely understates the PE capital stock, thus dampening any output gains. Because PE has an illiquidity premium, it would trade at a discount relative to public equity. The PE illiquidity premium implies that the current market price must be lower for the same capital stock.

Next, output is estimated for each sector Y_j. From Schlingemann and Stulz (2022), 25 percent of GDP is from public equity, while Ernst & Young (2024) estimates that 7 percent of GDP is produced by PE-backed firms. That implies a value added of $7.5 trillion and $2.1 trillion, respectively.[10] It is assumed that the capital share takes a standard value of 0.35, and is identical across sectors. Finally, sector-specific total factor productivity is calculated by solving for productivity for each sector A_j, given observed value added, capital, and labor:

$$A_j = \frac{Y_j}{K_{0,j}^{\alpha} \cdot L_{0,j}^{1-\alpha}}, \quad \text{for } j \in \{\text{pub}, \text{pe}\}$$

This ensures that the pre-reform economy exactly reproduces the observed value added of each sector.

Effect of private equity reform on aggregate outcomes. The analysis now considers how unrestricted PE allocations would affect aggregate outcomes. This is a function of two sources: reallocation to a higher productivity sector and a restrictive notion of capital deepening. After the policy reform, DC plan investors reallocate a share of their portfolios to PE. This triggers new financial flows into each sector:

$$\Delta F_j = K_{\text{DC}} \cdot \left(s_{1,j} - s_{0,j}\right),$$

where ΔF_j is the change in financial flows into each sector given the reform and $s_{1,j}$ is the post-reform PE allocation share. These flows translate into real capital increases, via Tobin's q:

$$\Delta K_j = \frac{\Delta F_j}{q_j}, \quad K_1^j = K_0^j + \Delta K_j$$

The analysis then solves for post-reform labor shares by reimposing equality of marginal products of labor:

$$(1-\alpha_{\text{pub}})A_{\text{pub}}\left(\frac{K_{1,pub}}{1-L_{\text{pe}}}\right)^{\alpha} = (1-\alpha_{\text{pe}})A_{\text{pe}}\left(\frac{K_{1,pe}}{L_{\text{pe}}}\right)^{\alpha}$$

[10] This relies on a nominal GDP of $30 trillion, which the CEA takes from BEA (2025, table 1.1.5, line 1) for 2025:Q1.

Post-reform sectoral output and the percent change are:

$$Y_{1,j} = A_j \cdot \left(K_{1,j}\right)^{\alpha} \cdot \left(L_{1,j}\right)^{1-\alpha}, \qquad \Delta Y_j(\%) = \left(\frac{Y_{1,j}}{Y_{0,j}} - 1\right) \cdot 100$$

This formula yields the percentage change in sectoral output from reallocation. Additional change comes from capital deepening. Because household returns go up, they save a little bit more because the marginal propensity to save (MPS) is positive. We use Sokolova (2023) to compute the MPS as approximately 0.18. As a result, the extra retirement capital is:

$$K_{\mathrm{DC}} = 30 \cdot \left(1 + \frac{\text{Aggregate Gain}}{100} \cdot \mathrm{MPS}\right)$$

Where the aggregate gain is the weighted increase in annuitized income. Finally, the GDP gain is computed as:

$$\Delta GDP(\%) = 0.25 \cdot \Delta Y_{\mathrm{pub}} + 0.07 \cdot \Delta Y_{\mathrm{pe}}.$$

Figure 12-9 shows the gain in GDP as a function of the PE cap.

★★★★★★

Chapter 13

The Cost of Capital Misallocation to ESG Investments with an Environmental Focus

A large body of finance literature establishes that corporations exist to maximize shareholder value (e.g., Modigliani and Miller 1958; Friedman 1970; Meckling and Jensen 1976; Fama and Jensen 1983; Shleifer and Vishny 1997). Under U.S. State and Federal laws, fiduciary duty—encompassing care (including prudence) and loyalty—requires corporate directors and asset managers (fiduciaries) to maximize risk-adjusted returns for their shareholders and investors, respectively. Corporate directors are obliged by State corporate laws (primarily those of Delaware) and Federal laws for public companies, including the Securities Act of 1933 and the Securities Exchange Act of 1934; asset managers are obliged by Federal law, including the Investment Advisers Act of 1940 and the Employee Retirement Income Security Act of 1974. In *Fifth Third Bancorp v. Dudenhoeffer* (2014), the U.S. Supreme Court held that fiduciary investment decisions must be made for the sole purpose of maximizing risk-adjusted returns.

The rise in environmental, social, and governance (ESG) investing over the past decade has sparked a controversy over whether corporate directors and asset managers are in breach of their fiduciary duty when nonpecuniary ESG factors influence investment decisions. An important economic implication is that capital misallocation to ESG investments reduces investment efficiency and constrains aggregate economic growth.

In this chapter, the CEA quantifies the extent of capital misallocation to environmentally-focused ESG investments and the corresponding loss of gross domestic product (GDP). The CEA's estimates show that, between 2016 and 2023, the systemic misallocation of financial capital to environmentally-focused (or "green") investments reduced U.S. GDP by $98 billion to $196 billion, or an average of about 0.07 percent of GDP per year. Of total output losses that can be attributed to capital misallocation in the United States over the period 2016–23, environmentally-focused ESG investments account for about 10 percent. The CEA's findings point to a significant cost to investors and the broader economy from ESG investments. Consistent with these findings, it is expected that the Trump Administration's steps to eliminate nonpecuniary ESG factors from investment decisions has the potential to raise U.S. GDP and benefit all Americans.

The Rise of ESG Investing and Resulting Capital Misallocation

Over the past decade, ESG investing has expanded rapidly, driven by fiduciary-imposed ESG constraints to prioritize nonpecuniary environmental, social, and governance factors. Among the key reasons for this shift is the Paris Agreement (United Nations 2015), which the United States and 194 other parties adopted on December 12, 2015, pledging to reduce greenhouse gas emissions and limit global warming.[1]

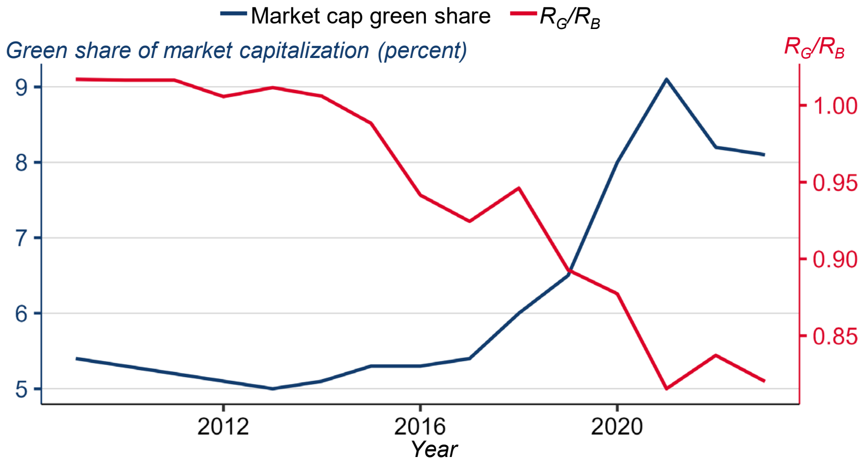
ESG encompasses environmental (E) factors, such as emissions and natural resource use; social (S) factors, such as labor standards and diversity, equity, and inclusion (DEI); and governance (G) factors, such as the independence of boards of directors and shareholders' rights. While governance factors have long played an important role in investment decisions in the United States, the sharp increase in environmental activism has been rather recent (Agoraki et al. 2025). This chapter focuses on the environmental factor of ESG investing, since it is more accurately measured relative to the social or governance factors and has been the focus of most of the academic literature on ESG.[2]

Around 2016, a significant segment of institutional investors—including sovereign wealth funds, pension funds, and ESG-dedicated asset managers—became willing to accept lower expected returns in exchange for ESG exposure,

[1] Under both Trump Administrations, the United States formally withdrew from the Paris Agreement—initially in November 2020 after the 2017 announcement under the first Trump Administration, and subsequently in January 2025 under the second Trump Administration—reversing the U.S. engagement in international climate commitments and signaling a retreat from multilateral climate governance.

[2] For example, carbon emissions and energy use under the environmental factor are easier to measure relative to employee well-being under the social factor or board independence under the governance factor.

Figure 13-1. Green Share of Market Capitalization and Green-to-Brown Return Ratio, 2009–23



Sources: LSEG 2025; Gormsen, Huber, and Oh 2025; CEA calculations.
Note: R_G/R_B = the cost of "green" capital (R_G) relative to the cost of "brown" capital (R_B). The green share of market cap is from LSEG (2025) and the ratio of green to brown costs of capital is from Gormsen, Huber, and Oh (2025).

thereby bidding up ESG valuations above fundamentals (Barber, Morse, and Yasuda 2021; Geczy, Stambaugh, and Levin 2021). A key driver of institutional flows into ESG has been guidance from the U.S. Department of Labor (DOL 2015), issued on October 26, 2015, suggesting that consideration of ESG factors in investment decisions is not incompatible with fiduciary duties under the Employee Retirement Income Security Act of 1974.

Figure 13-1 shows that, since 2016, the cost of "green" capital (R_G) has declined relative to the cost of "brown" capital (R_B), while the green share of the global stock market has significantly increased. In theory, pricing distortions would not persist in an efficient and competitive market because arbitrageurs who do not face ESG pressure would offset higher green valuations by shorting green assets and overweighting brown assets until green and brown returns converged.

In practice, however, several frictions constrain these arbitrage forces and allow ESG distortions to persist. First, institutional investors face mandates, benchmarking constraints, and reputational concerns that place limits on their brown exposure (Pástor and Vorsatz 2020). Second, information and measurement frictions lead ESG ratings to diverge sharply across providers. This divergence introduces uncertainty about what is truly "green" or "brown" and increases the cost of arbitrage (Berg, Kolbel, and Rigobon 2022). Third, ESG flows are slow-moving—private funds respond slowly to price changes—due to regulatory and liquidity constraints (Pástor, Stambaugh, and Taylor 2022). Fourth, persistent transition risks, such as uncertain climate policies and technological disruption, sustain a carbon premium on brown firms (Bolton and Kacperczyk 2021), reinforcing return differentials. As a result, even if an arbitrage opportunity exists in the short run, firms may choose not to act on the opportunity due to long-run policy uncertainties.

Because ESG-driven demand introduces a structural distortion in asset prices that is not easily undone by arbitrage, nonpecuniary demand for ESG assets distorts the allocation of capital. As investors pay more for ESG assets, despite receiving equivalent cash flows from brown assets, ESG asset prices rise above fundamentals, lowering expected returns and financing costs. As a result, firms with higher ESG scores benefit from a lower cost of capital relative to non-ESG or carbon-intensive firms. An ESG premium (or "greenium") arises from the systematic difference in expected returns and financing costs between green and brown assets. By reducing the financing costs of ESG firms, the premium directs capital toward ESG or environmentally-aligned activities, regardless of their relative productivity. Meanwhile, highly productive brown firms face higher financing costs, which constrains investment and dampens overall efficiency. This wedge between financial valuations and productive efficiency results in the misallocation of capital and, over time, reduces long-run GDP.

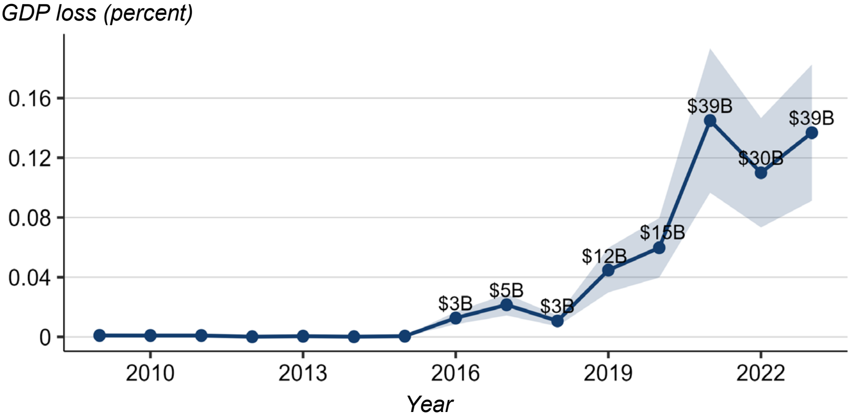
Estimating Output Losses and the Share of U.S. Capital Misallocation from Environmentally-Focused ESG Investments

In this section, the CEA estimates output costs from capital misallocation to environmentally-focused ESG investments and quantifies their share of total capital misallocation for the U.S. economy.

Output Losses

The calculations here utilize a static model with two sectors: a real sector and a financial sector. The real sector produces output using labor that is inelastically supplied from households and two types of capital: green and brown. These two types of capital are imperfect substitutes, differing only in their relative importance for producing capital. The financial sector represents large financial institutions and allocates a unit supply of capital between green and brown capital. The real sector interacts with the financial sector such that the real sector's demand for capital depends on the financial sector's pricing of each capital type. An important feature of the model is that the financial sector's demand for green assets drives a wedge in green-brown financing costs that is independent of productivity. In particular, the financial sector's demand for green assets drives a higher price and, in turn, a lower financing cost for green capital. As green capital becomes cheaper to finance relative to brown capital,

Figure 13-2. Estimated Output Losses from Capital Misallocation to Environmentally–Focused ESG Investments



Source: CEA calculations.
Note: B = billions. For calculation details, see the appendix to this chapter. Data labels are GDP losses reported in billions of 2024 dollars. The range of shaded values is for the elasticity of substitution between green and brown capital, σ = [2,4].

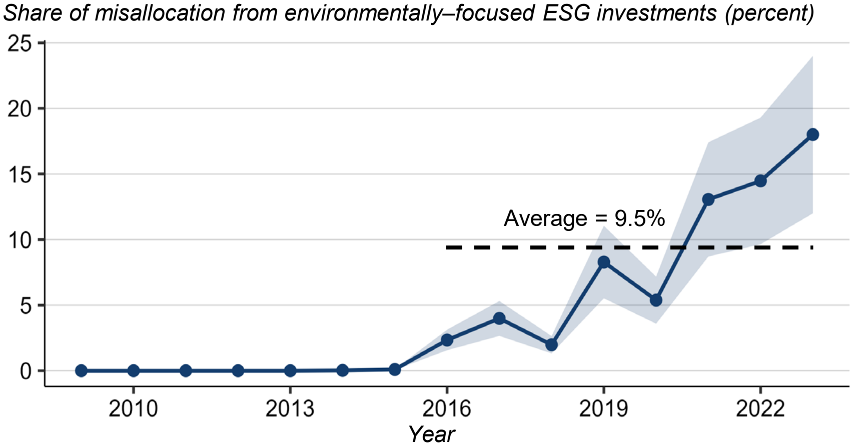
firms use more green capital, which distorts the overall allocation of capital in the economy. The disconnect between financial valuations and productive efficiency due to the financial sector's demand for green assets results in capital misallocation that generates output losses.

Figure 13-2 shows CEA-estimated output losses from capital misallocation to environmentally-focused ESG investments. From 2016 to 2023, it is estimated that capital misallocation to environmentally-focused ESG investments generated output losses of $146 billion, about 0.5 percent of U.S. GDP in 2024. Using a range for the elasticity of substitution between green and brown capital, the implied range of output costs is $98 billion to $196 billion or about 0.07 percent of GDP per year on average. (See the appendix to this chapter for a full description of the model environment, equilibrium conditions, and parameter calibration that underpin figure 13-2's estimates.)

Share of Total U.S. Capital Misallocation

In the canonical misallocation literature, capital misallocation arises when dispersion in firms' effective costs of capital prevents the equalization of the marginal products of capital across firms. When the effective cost of capital varies across firms for nonproductivity reasons, capital flows toward lower-cost rather than higher-productivity uses, leading to lower aggregate productivity and total output (Hsieh and Klenow 2009; Restuccia and Rogerson 2017). Building on this framework, Faria-e-Castro, Kozlowski, and Majerovitz (2025) estimate the extent of capital misallocation in the United States by calculating a firm-level social cost of capital—the opportunity cost to society of deploying an additional

Figure 13-3. Estimated Share of Total U.S. Capital Misallocation from Environmentally–Focused ESG Investments



Source: CEA calculations. The denominator comes from Faria-e-Castro, Kozlowski, and Majerovitz (2025, figure 4).
Note: For calculation details, see the appendix to this chapter. The range of shaded values is for the elasticity of substitution between green and brown capital, σ = [2,4].

unit of capital efficiently. Using the dispersion in the social cost of capital across firms as a measure of misallocation, Faria-e-Castro, Kozlowski, and Majerovitz (2025) estimate that output loss due to capital misallocation is 0.5 to 1 percent in the United States—a small loss compared with those of other countries.[3]

Figure 13-3 benchmarks CEA-estimated output losses due to capital misallocation from environmentally-focused ESG investments against total capital misallocation estimated in the United States. Faria-e-Castro, Kozlowski, and Majerovitz (2025) estimate that capital misallocation cost the United States, on average, 0.54 percent of GDP over the period 2014–19, 1.11 percent over 2020–21, and 0.76 percent over 2022–23. CEA-estimated output losses from environmentally-focused ESG investments account for a significant and steadily increasing share of total U.S. capital misallocation (figure 13-3). In particular, the CEA estimates that the share of total U.S. capital misallocation from environmentally-focused ESG investments reached an all-time high of about 20 percent in 2023 and averaged about 10 percent over 2016–23.

[3] See Faria-e-Castro, Kozlowski, and Majerovitz (2025) for the 0.5–1 percent estimate and a comparison between the United States, Mexico, Brazil, and Pakistan. See Bartelsman, Haltiwanger, and Scarpetta (2013) for a comparison between the United States and Europe, and see Hsieh and Klenow (2009) for a comparison between the United States, China, and India.

The Administration's Efforts to Eliminate Capital Misallocation to ESG Investments

The Trump Administration has issued a series of Executive Orders designed to limit the influence of nonpecuniary ESG factors in investment decisions that come at a cost to investors and the U.S. economy. First, the Administration rescinded climate and environmental regulations that enabled capital to flow based on environmental signaling rather than expected financial returns (White House 2025a). Second, the Administration withdrew the United States from the Paris Agreement and other international climate commitments, weakening the regulatory and policy infrastructure supporting the environmental criteria in ESG investing (White House 2025b). Third, the Administration ended Federal DEI programs that encouraged socially motivated investment (White House 2025c). Fourth, the Administration mandated regulatory review of proxy advisory firms' ESG and DEI recommendations, limiting the influence of nonfinancial factors in shareholder voting and fiduciary investment decisions (White House 2025d).

After the Administration issued its pertinent Executive Orders, financial regulatory agencies such as the U.S. Securities and Exchange Commission (SEC) and DOL implemented regulatory actions to operationalize limits on nonpecuniary ESG investment. For example, the SEC ceased defending its 2024 climate disclosure rule in court in March 2025 and withdrew its proposed ESG-related regulations in June 2025, including enhanced ESG fund disclosures and shareholder proposal reforms—effectively rolling back mandatory climate risk transparency and weakening the influence of ESG factors on investment decisions. Meanwhile, DOL withdrew its defense of the ESG fiduciary rule for retirement plans in May 2025 (Miller & Chevalier 2025), effectively rescinding its 2022 ESG guidance—signaling a shift toward a skeptical stance on ESG investing under the Employee Retirement Income Security Act.

Conclusion

Since 2016, the rise of ESG investing due to fiduciary-imposed ESG constraints has distorted the allocation of capital, imposing a significant cost on investors and the broader U.S. economy. The CEA estimates that, from 2016 to 2023, the cumulative output loss from environmentally-focused ESG investments alone cost the U.S. economy about $98 billion to $196 billion. The estimated output losses from environmentally-focused ESG investments constitute a significant and growing share of total U.S. capital misallocation, reaching an all-time high of about 20 percent in 2023 and averaging about 10 percent over the period 2016–23. The CEA's estimates represent a lower bound on the true extent of output loss and capital misallocation due to ESG investing since it only quantifies the environmental component of ESG; there may be additional losses from the social and governance components.

Recognizing the substantial cost of capital misallocation to ESG investments, the Trump Administration has already taken important steps to eliminate the influence of nonpecuniary ESG factors on investment decisions. Moreover, financial regulatory agencies have taken regulatory actions and issued guidance, consistent with their fiduciary duty under U.S. State and Federal laws, that investment decisions should solely be based on risk-adjusted financial returns. These important steps, and future actions under the current Administration aimed at directing capital to its most productive use, will reduce costly misallocations from ESG investing, improve economic efficiency, and raise the living standards for both working and retired Americans.

Appendix: Quantifying Output Losses from ESG Investments with an Environmental Focus

This appendix describes the model and parameter calibration used to quantify the output losses that can be attributed to environmentally-focused ESG investments.

An Overview of the Model

To quantify the effect of capital misallocation to environmentally-focused (or green) ESG investments, the CEA studies a static economy with two sectors. The real sector produces output by combining labor with two types of physical capital (green and brown). Real demand for capital interacts with the financial sector's pricing of each capital type. The financial sector owns claims to the cash flows of each type of capital. A representative household owns the firm and all financial claims, and supplies labor inelastically to the firm. The CEA abstracts from households in this model to enable one to focus on how the financial sector's demand for green assets leads to production inefficiency through distortions in the cost of capital.

The real economy. A representative firm produces homogeneous output using a Cobb-Douglas production function $Y = K^{\alpha}L^{1-\alpha}$. The price of output is normalized to 1. Households supply 1 unit of labor, L, inelastically. K is a constant elasticity of substitution aggregator of green and brown capital, K_G and K_B. Firms face a perfectly elastic supply of capital services at the prevailing user costs of capital r_G and r_B. These prices are endogenous equilibrium objects set in the financial market but are taken as given by the firm.

The firm first determines the optimal mix of green and brown capital, and then how much output to produce. Taking capital costs as given, the firm solves a cost-minimization subproblem to determine the optimal mix of green and brown capital:

$$\min_{K_G,K_B} r_G K_G + r_B K_B \text{ subject to} \left(\theta^{1/\sigma} K_G^{\frac{\sigma-1}{\sigma}} + (1-\theta)^{1/\sigma} K_B^{\frac{\sigma-1}{\sigma}} \right)^{\frac{\sigma}{\sigma-1}} = 1. \tag{1}$$

The solution to equation 1 determines the optimal mix of green and brown capital for any given level of aggregate capital. There are two key parameters. First, θ determines how prevalent green capital is in production. In practice, the green share of the total capital stock is not very large. Second, the elasticity of substitution σ governs how easily firms can substitute green for brown capital. When $\sigma = 0$, green and brown capital types are perfect complements and firms will use both types in constant proportions. The higher σ is, the more easily a firm can reallocate toward the cheaper type of capital, with green and brown becoming perfect substitutes as $\sigma \to \infty$. For instance, if it became cheaper to finance green investments and σ is large, then firms would substitute toward more green capital. The solution to equation 1 yields the optimal ratio of green to brown capital, given the rental rates:

$$\frac{K_G}{K_B} = \frac{\theta}{1-\theta} \left(\frac{r_B}{r_G} \right)^{\sigma}. \tag{2}$$

Here, the CEA is primarily interested in how dispersion in the cost of capital leads to production inefficiency by inducing firms to use more green capital than they otherwise would because it is artificially cheaper. The wedge in the cost of capital is defined as:

$$\tau \equiv \log r_B - \log r_G.$$

This wedge is interpreted as a kind of tax on brown capital. As determined by Hsieh and Klenow (2009), the tax leads to dispersion in observed returns, which distorts production. To see why, note that one can write the price index of aggregate capital as:

$$P_K = r_B \left(\theta \exp\{-(1-\sigma)\tau\} + (1-\theta) \right)^{\frac{1}{1-\sigma}}. \tag{3}$$

At $\tau = 0$, firms have no incentive to increase the use of either type of capital. This means that the input mix is efficient and the price of aggregate capital is minimized. When $\tau \neq 0$, relative rental rates diverge and—because there is imperfect substitutability between green and brown capital—firms cannot fully reallocate toward the cheaper type of capital. As a result, the aggregate price of capital is inefficiently high and firms use more green capital than if there was no price dispersion. This matters for output, which is given by:

$$Y = \left(\frac{\alpha}{P_K}\right)^{\frac{\alpha}{1-\alpha}}. \tag{4}$$

When τ rises, because brown capital becomes expensive to rent relative to green, the aggregate price index rises; that is, aggregate capital becomes more expensive. When capital becomes more expensive, firms use less of it, which causes output to fall. The resulting output loss due to misallocation is:

$$L(\tau) = 0.5 \cdot \alpha \cdot \sigma \cdot \theta(1-\theta) \cdot \tau^2. \tag{5}$$

The GDP loss depends on four forces. The capital share α scales the importance of capital in production. Misallocation is costlier when capital is more important. When $\tau \neq 0$, a higher elasticity of substitution between capital types, σ, leads to larger distortions in the capital mix and amplifies GDP loss. Finally, the wedge, τ, captures dispersion in capital costs, with output loss increasing quadratically in its size. The wedge is costly for any kind of price dispersion between brown and green capital, not just when brown capital is more expensive. The CEA does not explicitly model household behavior, and simply assumes that households consume all output. In this case, welfare changes are proportional to the changes in output given by equation 5.

The financial sector. The wedge in user cost comes from a preference term that penalizes exposure to brown capital that can be viewed as a stand-in for fiduciary-imposed ESG constraints.[4] Investors own the claims to capital's cash flows. Holding 1 unit of the claim on type i entitles them to the flow payment r_i and costs v_i, so the return per dollar on asset i is r_i/v_i. It is assumed that the financial sector dislikes brown exposure. They choose a share $s_B \in [0,1]$ of their portfolio in brown claims to maximize return per dollar net of a convex penalty for brown exposure:

$$\max_{s_B} \; \frac{r_G}{v_G}(1-s_B) + \frac{r_B}{v_B}s_B - \frac{\eta}{2}\, s_B^2. \tag{6}$$

[4] The source of the return wedge does not affect the measurement of the efficiency costs in this model. Any deviation in required returns across capital types induces a misallocation that lowers output. It could arise from preferences, risk premia, regulatory frictions, or anything else. All that matters for efficiency is the presence of the wedge, not its origin. That said, we adopt a financial sector microfoundation based on preferences to provide a structural interpretation based on our reading of the factors underpinning growth in ESG, and to connect the model to observable data on asset prices and asset market shares.

Here, $\eta \geq 0$ captures the penalty for brown capital: a higher η means higher required compensation to hold brown assets. This could come from different sources, such as regulatory constraints, ESG mandates, or an asset's underlying risk. It is assumed that the penalty is convex to reflect the idea that the marginal disutility of holding brown capital rises with exposure to it.

The optimality condition from this problem shows that brown capital must offer a higher return per dollar than green, with the premium exactly equal to the marginal disutility of holding brown capital, ηs_B:

$$\frac{r_B}{v_B} - \frac{r_G}{v_B} = \eta s_B. \tag{7}$$

This return wedge summarizes the trade-off faced by the financial sector when allocating capital. As investors are forced to hold more brown capital, the required compensation per unit held goes up. This drives up the required return on brown capital, creating a wedge τ in observed costs of capital. In turn, these higher returns lower valuations, leading to a pricing gap between brown and green assets. To capture this link, the CEA imposes a reduced-form pricing relationship:

$$\log v_G - \log v_B = \kappa\tau. \tag{8}$$

This expression reflects standard asset pricing logic. When a higher return on brown capital is required, its valuation must fall. This sensitivity is parameterized by $\kappa > 0$, which maps the rental wedge τ into the green-brown valuation gap. κ exists only to ensure that an asset-pricing equilibrium exists that is consistent with a given τ. Because firms' choices and misallocation depend solely on τ, κ is not calibrated and it plays no role in the quantitative results. (Below, it is discussed how equation 8 allows one to go from financial data to real misallocation.)

Market clearing. Let $V_i = v_i K_i$, denoting dollar holdings in asset i, so that total wealth is $V = V_G + V_B$. The financial market clears when the dollar holdings equal the market value of the capital firms use:

$$V = V_G + V_B = v_G K_G + v_B K_B.$$

The level of wealth, V, is endogenous and plays no allocative role; only relative prices and returns matter.

Equilibrium. Taking the cost of capital r_i as given, firms choose a cost-minimizing mix of capital, according to equation 2, scaling up until the marginal product of aggregate capital equals the price of capital, as shown in equation 3. Investors take (r_i, v_i) as given and allocate their portfolio between green and brown assets to maximize return, net of a penalty for brown exposure, which induces a required return wedge of size ηs_B from equation 7 and a valuation wedge from equation 8. Prices and valuations adjust such that markets clear. When $\eta = 0$, all wedges vanish and the capital mix reflects only technological efficiency; with $\eta > 0$, brown capital must offer a higher return, trades at a discount, and is used less, which generates allocative inefficiency.

Model Parameter Calibration and Identification

This subsection describes model parameters' identification and calibration used to estimate output losses from ESG investments with an environmental focus.

Capital share and elasticity of substitution. Following Fernald (2014), the CEA sets the capital share $\alpha = 0.4$. Based on literature estimates, the elasticity of substitution σ is set to a range from 2 to 4.[5]

Green-brown return wedge. The return wedge is calibrated as $\tau \equiv \ln R_B/R_G$, using Gormsen, Huber, and Oh (2025); see figure 13-1 above. The authors estimate the perceived cost of capital for a large panel of publicly traded firms based on firms' weighted average cost of capital, as discussed on company earnings calls. This measure represents the firm's expected return on assets (outstanding debt and equity) in financial markets. In other words, a firm's perceived cost of capital is the rental rate of capital that it faces. Unlike the actual cost of capital measured from realized asset prices, the perceived cost of capital has a direct bearing on a firm's demand for green investments. A broader body of recent literature also estimates a positive return wedge between brown and green assets (i.e., brown investments have a higher expected return relative to green investments), based on the actual cost of capital.[6]

Green share. The CEA uses the green share of market capitalization as an input in measuring the undistorted share of green capital in production, θ. Although financial values V_i and physical quantities K_i generally differ, the CEA's model implies that when $\tau = 0$, $v_B = v_G$. Under these conditions, the undistorted green share of the real economy can be retrieved directly from financial shares:

$$\frac{V_G}{V_G + V_B} = \frac{vK_G}{v(K_G + K_B)} = \frac{K_G}{K_G + K_B} = \theta. \tag{9}$$

[5] Gormsen, Huber, and Oh (2025) use $\sigma = 3$ in their quantitative analysis. Papageorgiou, Saam, and Schulte (2017) find $\sigma = 2$, while Stockl and Zerrahn (2023) estimate $\sigma = 4$.

[6] Recent literature also finds that brown returns are higher than green returns. See, e.g., Hsu, Li, and Tsou 2023; Lioui and Misra 2023; Crosignani, Osambela, and Pritsker 2024; Giglio et al. 2025; Bolton and Kacperczyk 2021; Pástor, Stambaugh, and Taylor 2022; Lindsey, Pruitt, and Schiller 2021; Chava 2014; Faccini, Matin, and Skiadopoulos 2023; Eskildsen et al. 2024; Baker, Egan, and Sarkar 2024; Cheng et al. 2024; and Berk and van Binsbergen 2025.

Therefore, θ is normalized using a period with a negligible wedge. Figure 13-1 above shows that from 2009 to 2015, the wedge was close to zero and the green share of the market cap was constant, consistent with LSEG (2025) and Pástor, Stambaugh, and Taylor (2025). This period is used to calculate an average $\theta \approx 0.06$. In this step, equation 8 is relied on to assume that κ is stable over time. This allows one to interpret the constancy of green-brown valuation ratios during the period 2009–15 as evidence that the underlying rental wedge τ was essentially zero in that period. Subsequent movements in valuation ratios are then read as changes in τ rather than changes in κ, which provides the identifying link between financial valuations and the real-side wedge used in the misallocation calculations.

Model Results: Output Losses

Using the pinned-down structural parameters and the time series for green-brown wedges, the CEA estimates the misallocation-driven output loss using equation 5. Since losses scale with τ^2, the GDP loss implied by the range of substitutability σ values grow nonlinearly as the wedge widens. Cumulatively, from 2016 to 2023, the loss sums to $146 billion, which is about 0.5 percent of U.S. GDP in 2024. Based on the range of substitutability $\sigma \in [2,4]$, the implied range of output costs is between $98 billion and $196 billion. Figure 13-2 above reports the implied GDP loss in percentages and in 2024 dollars.

★★★★★★

Chapter 14

The Year in Review and the Years Ahead

The United States' real gross domestic product (GDP) grew 2.0 percent during the four quarters of 2025, down from 2.4 percent growth during the four quarters of 2024, largely reflecting the negative impact of the Federal government shutdown in the fourth quarter of 2025.[1] Strong growth in business fixed investment supported real GDP growth in each quarter of 2025, while the growth of consumer spending was solid, and export growth was positive. Residential investment, however, fell. Core Consumer Price Index (CPI) inflation was 2.6 percent during the 12 months of the year, down 0.6 percentage point from its year-earlier pace. Financial markets were generally orderly, except for some short-lived volatility in April. Interest rates declined over the course of the year, with the 10-year Treasury yield declining 0.4 percentage point and the average 30-year mortgage rate falling about 70 basis points. The Standard & Poor's (S&P) 500 stock market index rose 16.4 percent. In labor markets, private-sector job growth averaged 25,000 per month during 2025, down from a pace of 85,000 per month during 2024, as net immigration declined and the job vacancy rate continued its postpandemic moderation. The unemployment rate was relatively stable in 2025, edging up 0.2 percentage point from the first full month of the Trump Administration in February 2025 to a rate of 4.4 percent in December 2025. Looking ahead, real GDP is expected to grow at an annual rate of 3.0 percent during the 11-year Federal Budget window, with stable inflation and lower interest rates than in 2025.

This review of the economy during 2025 begins by exploring the evolution of GDP and its components. The review continues with the experience with price

[1] This chapter relies on data available on March 24, 2026. All references to economic statistics and trends in this chapter refer to the U.S. economy, unless otherwise specified.

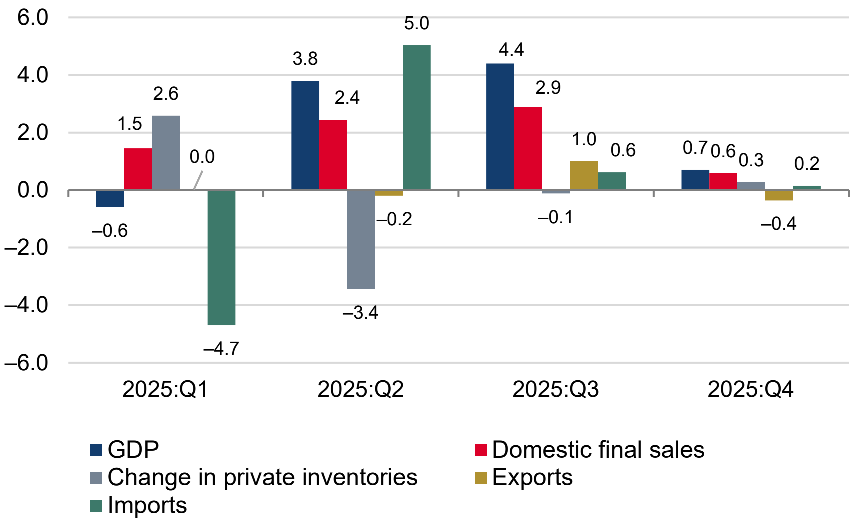
and wage inflation and the real wage. The chapter then describes various elements of how financial and labor markets developed during the year, before presenting prospects for the economy during the years ahead.

Real GDP and Its Components

The path of real GDP growth during 2025 was buffeted by swings in imports and inventory investment. Because new tariffs were expected in April, businesses appear to have imported goods in the first quarter in advance of these tariffs. As a result, the first-quarter increase in imports resulted in a large subtraction from GDP growth. In principle, this subtraction should not have affected the estimate of U.S. national production (which is what GDP is supposed to measure) if all those imported goods were absorbed into inventories or consumed or invested, providing an equal and offsetting boost to GDP. As it turned out, the contribution to GDP growth from increases in inventory investment (2.6 percentage points, at an annual rate) only partially offset the contribution from the increase in imports (–4.7 percentage points); as a result, real GDP fell at an annual rate of 0.6 percent in the first quarter (figure 14-1).

Figure 14-1. Quarterly GDP Growth (%) and Contributions (percentage points)

Seasonally adjusted, annual rate



Source: Bureau of Economic Analysis; CEA calculations.
Note: Domestic final sales include personal consumption, private fixed investment, and government expenditures.

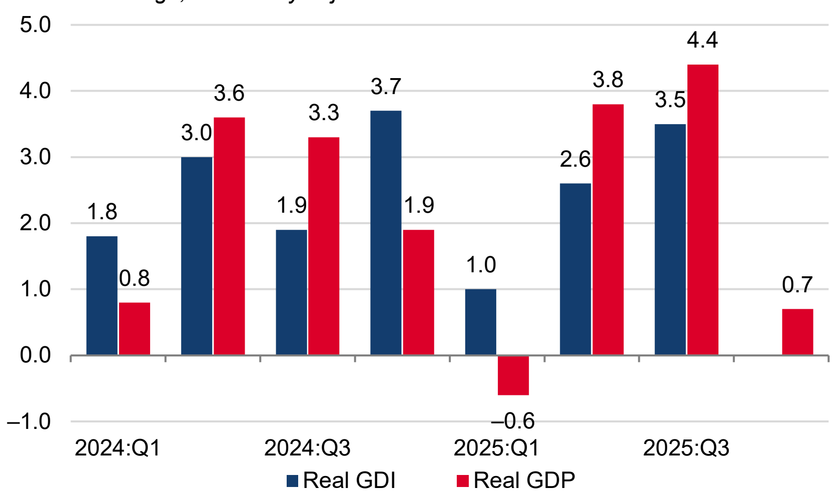
This pattern was largely reversed in the second quarter: imports fell sharply so that their contribution to real GDP was large and positive (5.0 percentage points, at an annual rate). The change in inventory investment fell from a large positive value to a negative one, so that its contribution was a highly negative (–3.4 percentage points, at an annual rate), but only partially offset the import contribution. Estimated real GDP growth was very strong (3.8 percent, at an annual rate) in the second quarter.

Real GDP growth remained strong in the third quarter (4.4 percent), with the increase in the rate of growth accounted for by stronger consumption growth and a surge in exports. Fourth-quarter growth was held down by the 43-day Federal government shutdown, which reduced the contribution of Federal government purchases to real GDP growth by at least 1.16 percentage points. One commonality across all four quarters was strong growth in business investment in equipment and intellectual property, both of which grew roughly 9 percent during the four quarters.

Output may not have actually declined in the first quarter, because the decline in real GDP contrasts with the increase in real gross domestic income (GDI, +1.0 percent), which is an aggregate of all forms of income that should equal GDP but differs because of measurement error (figure 14-2). As measured by GDI, output did not fall in the first quarter, nor did it rise as swiftly in the second and third quarters. During the first three quarters of 2025, real GDP and real GDI grew at a similar annual rate: 2.5 percent for GDP versus 2.4 percent for GDI.

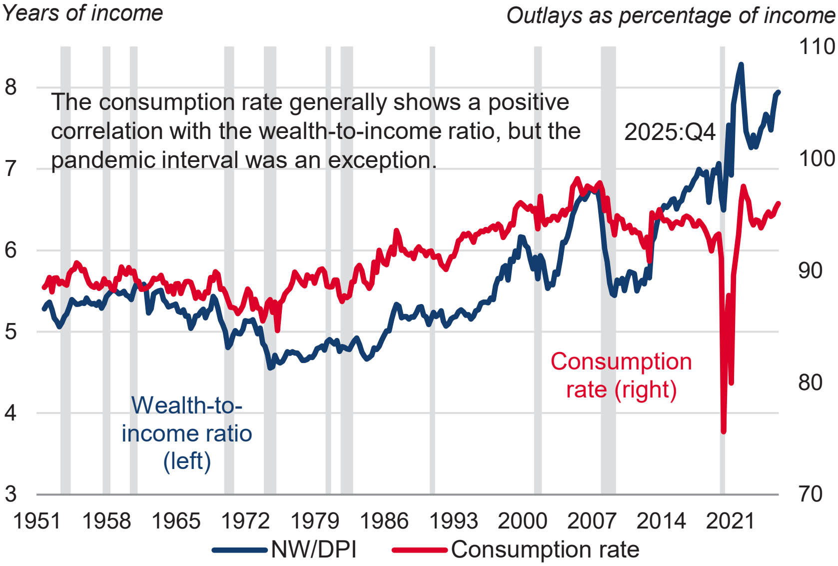
Figure 14-2. Quarterly Real U.S. GDP versus GDI Growth

Percent change, seasonally adjusted annual rate



Source: Bureau of Economic Analysis.
Note: GDI = gross domestic income. GDI for 2025:Q4 was not available at the time of production.

Figure 14-3. Consumption Rate versus Wealth-to-Income Ratio



Sources: Bureau of Economic Analysis; Federal Reserve (Financial Accounts of the United States); National Bureau of Economic Research.
Note: NW/DPI = net worth relative to disposable personal income. Gray bars indicate recessions.

Consumer Spending

Real U.S. consumer spending grew 2.1 percent during the four quarters of 2025, faster than the 1.3 percent growth of real disposable income. The saving rate fell from 4.7 percent in 2024:Q4 to 4.0 percent in 2025:Q4, lower than its 5.8 percent average since 2001.

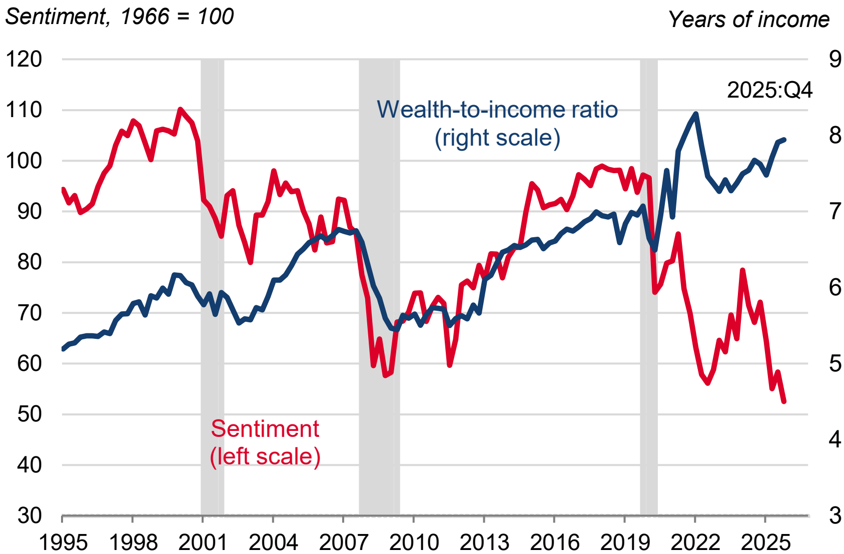
Aside from income, other forces acting on consumer spending included rising household wealth, volatile consumer sentiment, and the new Administration's policies. The ratio of household wealth to income has a positive effect on consumer spending, as can be seen in figure 14-3, where the long history (1951–2019) shows that rising wealth-to-income ratios correlate with a rising fraction of consumer outlays relative to income.[2]

Focusing on the past year, household wealth (especially stock market wealth) increased faster than income, so that the wealth-to-income ratio edged up from 7.6 years of income in 2024:Q4 to 7.9 years in 2025:Q3, nearly the highest level ever (with the exception of 2021). Figure 14-4 shows the dynamics of wealth and consumer sentiment.

Aspects of the Trump Administration's policies also affected the path of consumer spending during 2025. One of these was the anticipation and

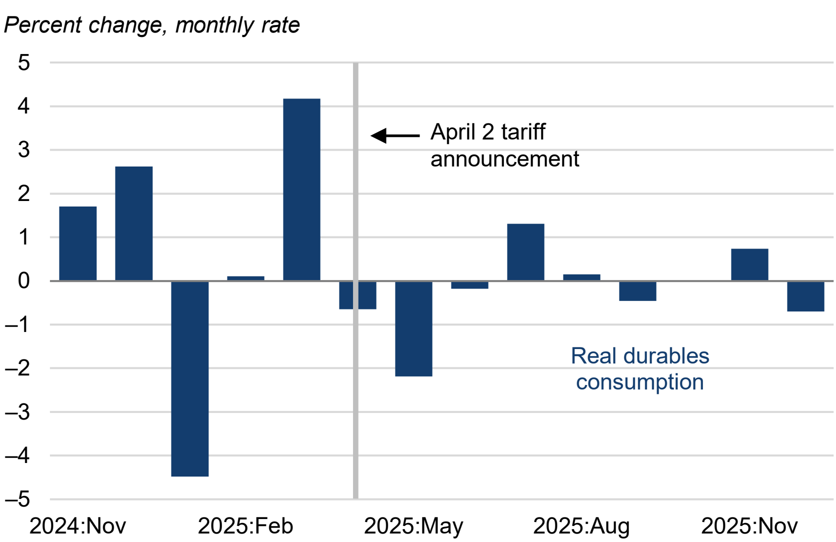
[2] That said, the COVID-19 pandemic period was an exception, as the wealth-to-income ratio increased due to Federal "economic impact payments," which were not fully spent while many services (e.g., restaurants, theaters, and sporting events) were difficult to consume.

Figure 14-4. Opposing Influences on U.S. Consumer Spending



Sources: University of Michigan Survey Research Center; Federal Reserve Financial Accounts of the United States; National Bureau of Economic Research.
Note: Gray bars indicate recessions.

Figure 14-5. U.S. Real Durables Consumption, Monthly Change



Source: Bureau of Economic Analysis.

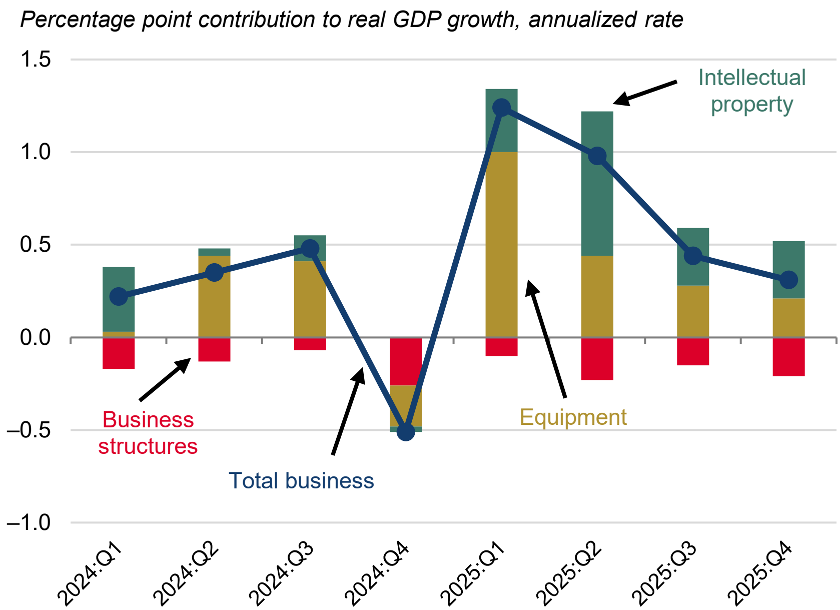
announcement of tariffs on April 2, 2025. Monthly data show that real consumer spending on durable goods spiked in March—in advance of the expected major announcement on tariffs—and then fell for each of the next three months after the reciprocal tariffs' implementation (figure 14-5).

Aspects of the One Big Beautiful Bill Act (OBBBA) also had an influence on income and consumption during 2025, and these are likely to spill over into 2026. These include, but are not limited to, no taxes on tips (retroactive to January 2025), no taxes on overtime (retroactive to January 2025), an increase in the standard deduction, a further deduction increase for seniors reducing taxes on Social Security income, and the temporary enlargement of the deduction for State and local taxes. Further discussion of the boost to output from these policies can be found in chapter 1 of this *Report*.

Business Fixed Investment

During the four quarters of 2025, business fixed investment grew 5.5 percent, faster than real GDP. During those four quarters, investment growth was especially fast in equipment (9.5 percent) and intellectual property (8.1 percent), but was partially offset by declines in structures (5.7 percent) (figure 14-6). Within the equipment component, essentially all the growth was accounted for by information processing equipment (i.e., computers and peripheral equipment

Figure 14-6. Contributions of Business Investment to U.S. GDP Growth



Source: Bureau of Economic Analysis.

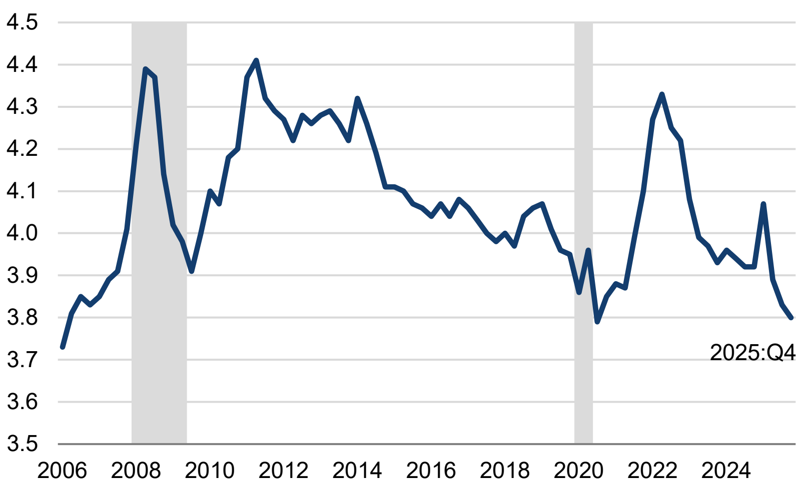
and communications equipment). Within the structures component, the decline was widespread across its subcomponents, with the notable exception of data-center structures, where investment increased by a rapid 20.1 percent. Despite this rapid growth, and leaving aside the value of the computer equipment that is installed inside these data centers, their construction constituted only 0.13 percent of GDP in 2025, and contributed only about 0.03 percentage point to real GDP growth in 2025.[3]

Inventory Investment

Changes in private inventory investment had particularly large effects on real GDP growth dynamics during each of the first two quarters of 2025; at an annual rate, they contributed 2.6 percentage points to growth in the first quarter and −3.4 percentage points to growth in the second quarter. These large movements in inventory investment likely reflect stockpiling behavior among businesses ahead of anticipated changes to tariff policy and inventory liquidation thereafter. After spiking in 2025:Q1, the ratio of nonfarm inventories to final sales of goods and structures fell toward the lower end of the range where this ratio has fluctuated during the past decade, so that inventories were lean with respect to sales by the end of the fourth quarter (figure 14-7). Over the four

Figure 14-7. Ratio of U.S. Nonfarm Inventories to Final Sales of Goods and Structures

Months' supply



Sources: Bureau of Economic Analysis; National Bureau of Economic Research.
Note: Gray bars indicate recessions.

[3] The computer equipment installed inside data centers is not counted in data center structures investment, and those data are not available separately from other uses of computer equipment.

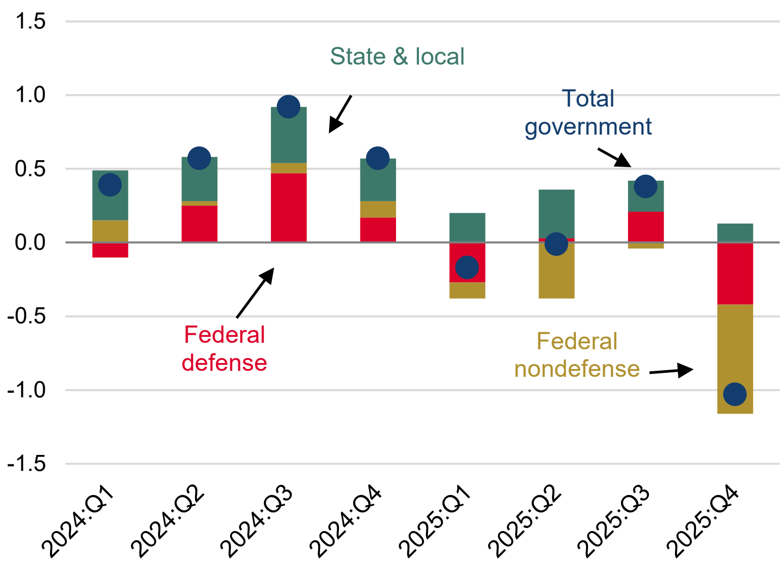
quarters of the year, inventory investment subtracted 0.2 percentage point from real GDP growth.

Government Consumption and Gross Investment

U.S. government consumption and gross investment fell 1.2 percent between 2024:Q4 and 2025:Q4, after having increased 3.6 percent over the four quarters of 2024. On a quarterly basis, Federal expenditures fell in the first and second quarters of 2025, increased in 2025:Q3, and fell markedly in 2025:Q4, largely due to the lapse in appropriations (figure 14-8). Expenditures by State and local governments increased in each quarter of 2025.

Figure 14-8. Government Consumption and Gross Investment, Contributions to Quarterly Real GDP Growth

Percentage points, annual rate



Source: Bureau of Economic Analysis.

The Federal Government

Federal purchases for consumption and investment ("Federal expenditures") fell 6.5 percent between 2024:Q4 and 2025:Q4, after a 4.5 percent increase over the four quarters ending 2024:Q4. The decline in Federal expenditures was concentrated in nondefense spending, which fell 11.1 percent over the four quarters of 2025, after rising 3.2 percent over 2024. Federal defense expenditures also fell in 2025, by 3.0 percent, after a 5.4 percent increase during 2024. The lapse in appropriations beginning in October 2025 weighed on inflation-adjusted

Federal expenditures over 2025:Q4. While the full effects of the shutdown cannot be isolated, the Bureau of Economic Analysis estimates that the reduction in labor services supplied by Federal employees due to the lapse reduced quarterly real GDP growth by about 1.0 percentage point at an annual rate.[4]

A sizable share of the Federal government's spending arises through transfers, which are not counted as government purchases or investment within the National Income and Product Accounts (NIPAs). Over Fiscal Year (FY) 2025, total Federal outlays equaled $7.0 trillion, up 4.1 percent from FY 2024. Much of the increase in outlays was concentrated in the largest mandatory spending programs—with Social Security benefits, Medicare, and Medicaid each rising more than 8 percent—and in net interest payments on public debt (up 8.3 percent). Total receipts also increased over FY 2025, reaching $5.2 trillion, up 6.4 percent from FY 2024, as increases in individual income taxes (up 9.5 percent) and payroll taxes (up 2.3 percent) more than offset declines in corporate income taxes (down 14.7 percent). Over FY 2025, the Federal deficit was $1.8 trillion, down 2.3 percent from FY 2024, reducing the deficit-to-GDP ratio from 6.2 percent of GDP to 5.8 percent. The Federal debt amounted to 97.4 percent of annual GDP at the end of FY 2025, up 1.4 percentage points from the end of FY 2024.

State and Local Government

State and local government purchases for consumption and investment rose 2.1 percent from 2024:Q4 to 2025:Q4, after a 3.1 percent increase over the four quarters of 2024. Consumption across State and local governments rose 1.9 percent over 2025, after a 2.7 percent increase over 2024. Gross investment across State and local governments rose 2.6 percent over 2025, after a 4.6 percent increase during 2024.

Exports

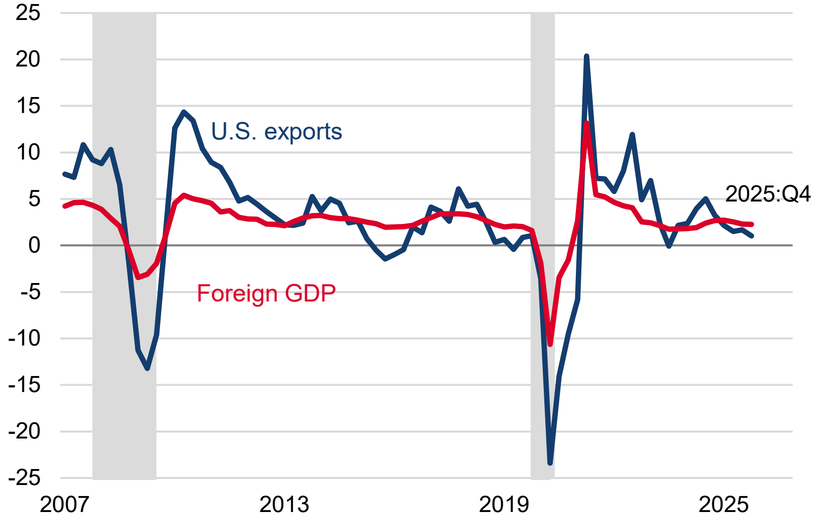
Real exports rose 1.0 percent over the four quarters of 2025, less than their 3.3 percent growth during the four quarters of 2024. Real exports of goods rose 1.9 percent over 2025, while real exports of services fell 0.5 percent. Growth in U.S. exports tends to follow foreign GDP growth; since 2008, both have grown about 2.3 percent, and they tend to vary together over the business cycle (figure 14-9). However, during 2025, the 1.0 percent growth in real U.S. exports was lower than that of real foreign GDP (2.3 percent).

To better capture trends across 2025 as a whole, table 14-1 aggregates exports across the four quarters of 2025, and compares them with exports over

[4] As Federal employees affected by the lapse in appropriations ultimately received back pay within 2025:Q4, nominal Federal compensation was unaffected by the lapse. However, because furloughed employees were unable to execute their work functions, the forgone real activities reduced real Federal expenditures.

Figure 14-9. Growth of Real Foreign GDP and U.S. Exports

Four-quarter growth rates, percent



Sources: Bureau of Economic Analysis; National Bureau of Economic Research; S&P Global Market Intelligence; CEA calculations.
Note: Gray bars indicate recessions. Foreign GDP is trade-weighted.

Table 14-1. Trends in Real U.S. Exports, by Type

Type of exports	Percent change 2025 from 2024*	Percent of total, 2025**
Total	1.6	—
Total goods	1.8	63.5
Capital goods, nonautomotive	9.2	21.6
Industrial supplies and materials	–1.1	21.1
Consumer goods, excluding food and autos	1.6	8.1
Food, feed, and beverages	–2.4	5.0
Automotive vehicles, engines, and parts	–10.2	4.8
Other goods	3.6	3.1
Total services	1.2	36.4
Other business services	2.0	20.4
Travel services	–2.3	6.4
Intellectual property usage	3.5	5.4
Transportation services	4.9	3.2

Sources: Bureau of Economic Analysis; CEA calculations.

Note: *Annual average of 2025 compared with the annual average of 2024. **Shares reflect 2025 four-quarter averages in nominal dollars; series do not sum to 100 percent due to the omission of miscellaneous services.

the four quarters of 2024. The rise in real goods exports over 2025 predominately reflected increases across nonautomotive capital goods, which rose 9.2 percent between the four quarters of 2024 and the four quarters of 2025, while automotive exports (down 10.2 percent) fell the most. The rise in real service exports was more broad-based, with each major type increasing except for travel services (which includes activity by foreign visitors), which fell 2.3 percent between 2024 (as a whole) and 2025 (as a whole).

Imports

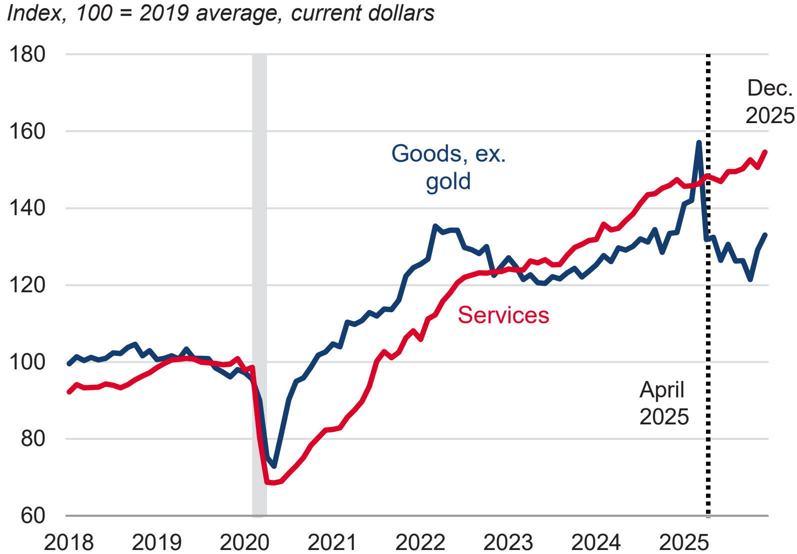
Trends in imports over 2025 were strongly influenced by the announcements and implementation of new tariff policies, particularly the reciprocal tariffs implemented in April. Policies implemented in 2025 brought the United States' effective tariff rate to 7.7 percent on average over the 12 months of 2025, the highest level in over 50 years. The reciprocal tariffs, which applied to a broad range of products from nearly all the United States' trading partners,[5] were foreshadowed in the preceding months, notably in a publicly released memorandum to senior trade officials in mid-February (National Archives 2025). Before the reciprocal tariffs' implementation, real goods imports increased by 52 percent at an annual rate in 2025:Q1, reaching a record high, before falling after the tariffs' implementation. To better illustrate these interyear trends, figure 14-10 depicts imports of goods and services at a monthly frequency, in nominal terms.[6] Nominal services expanded at a fairly steady pace throughout 2025, while nominal goods imports fell sharply from March to October, before rebounding in November and December. During the four quarters of 2025, real imports fell 2.0 percent from 2024:Q4, even as, across 2025 as a whole, imports still increased. Aggregating across the four quarters of 2025, real imports were 2.7 percent higher than over the four quarters of 2024, reflecting a 2.5 percent increase in goods imports and a 3.5 percent increase in services imports.

To better reflect the dynamics across the year as a whole, table 14-2 aggregates imports across the four quarters of 2025, and compares them with imports over the four quarters of 2024. As measured within the NIPAs, the rise in real goods imports over 2025 was driven by nonautomotive capital goods, which increased 15.7 percent between 2024 (as a whole) and 2025 (as a whole) and more than offset declines in automotive imports (which were down 10.0 percent); industrial supplies and materials (down 6.7 percent); and food, feed,

[5] The only trading partners that were exempt from the reciprocal tariffs were Canada and Mexico, which were subject to separate tariffs applied to all goods not imported under the United States–Mexico–Canada Agreement.

[6] Monthly trade measures cover a slightly different set of goods than the quarterly measures in the NIPAs. In particular, the NIPA measures exclude transactions of precious metals that do not reflect current production. Also, the monthly trade measures include the five U.S. territories, which are excluded from the NIPAs. To partially address these discrepancies, the measure of goods imports displayed in figure 14-10 excludes imports of nonmonetary gold and of finished metal shapes.

Figure 14-10. Imports of Goods and Services



Sources: Census Bureau; National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions. Goods imports exclude nonmonetary gold and finished metal shapes. Reciprocal tariffs implemented in April 2025.

Table 14-2. Trends in U.S. Real Imports, by Type

Type of imports	Percent change 2025 from 2024*	Percent of total, 2025**
Total	2.7	—
Total goods	2.5	78.9
Capital goods, nonautomotive	15.7	26.6
Consumer goods, excluding food and autos	0.4	18.9
Industrial supplies and materials	–6.7	14.2
Automotive vehicles, engines, and parts	–10.0	10.0
Food, feed, and beverages	–3.0	5.1
Other goods	16.4	4.0
Total services	3.5	21.1
Other business services	5.2	11.0
Travel services	4.7	4.5
Transportation services	2.9	3.7
Intellectual property usage	–6.8	1.2

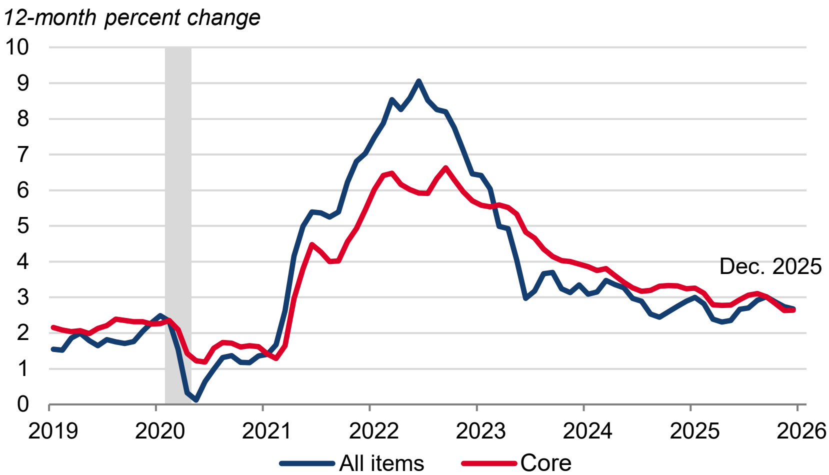
Sources: Bureau of Economic Analysis; CEA calculations.
Note: *Annual average of 2025 compared with the annual average of 2024. **Shares reflect 2025 four-quarter averages in nominal dollars; series do not sum to 100 percent due to the omission of miscellaneous services.

and beverages (down 3.0 percent). The increase in real services imports over 2025 predominately reflected a rise in imports of other business services (i.e., business services excluding travel, transportation, or the usage of intellectual property), which rose 4.7 percent between 2024 and 2025. The only major category of services imports to decline was intellectual property usage, which fell 6.8 percent.

Inflation

Inflation, as measured by the headline consumer price index (CPI), edged down 0.2 percentage point, to 2.7 percent, during the 12 months of 2025 from its 2024 rate (figure 14-11). This decrease in the rate of inflation is accounted for by core inflation (i.e., excluding food and energy inflation), which fell 0.6 percentage point in 2025 to 2.6 percent (figure 14-11). Food and energy price inflation both increased in 2025 from their year-earlier pace. Within the core CPI, the contrast between services and goods inflation—as shown in figure 14-12—is notable. Core services inflation fell 1.4 percentage points from its 2024 pace to a 3.0 percent rate during 2025, its third year of slowing inflation. In contrast, core goods inflation rose 2.0 percentage points, to 1.4 percent during 2025.

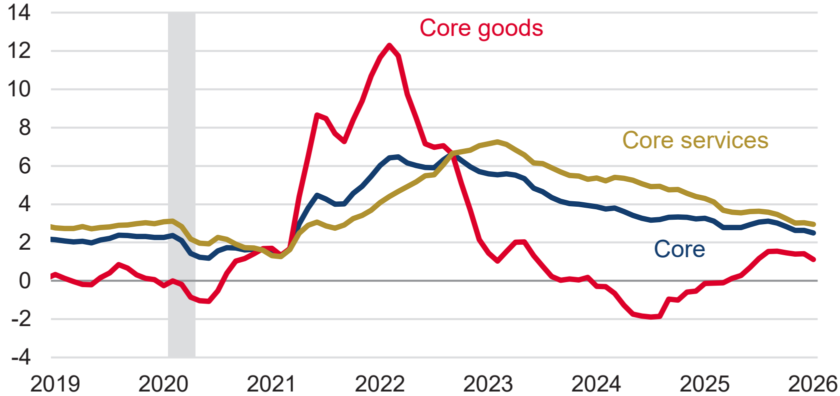
Figure 14-11. Total and Core U.S. Consumer Price Index



Source: Bureau of Labor Statistics; National Bureau of Economic Research; CEA calculations.
Note: October 2025 values are interpolated by the CEA. Gray bars indicate recessions.

Figure 14-12. Core U.S. Consumer Price Index Inflation and Components

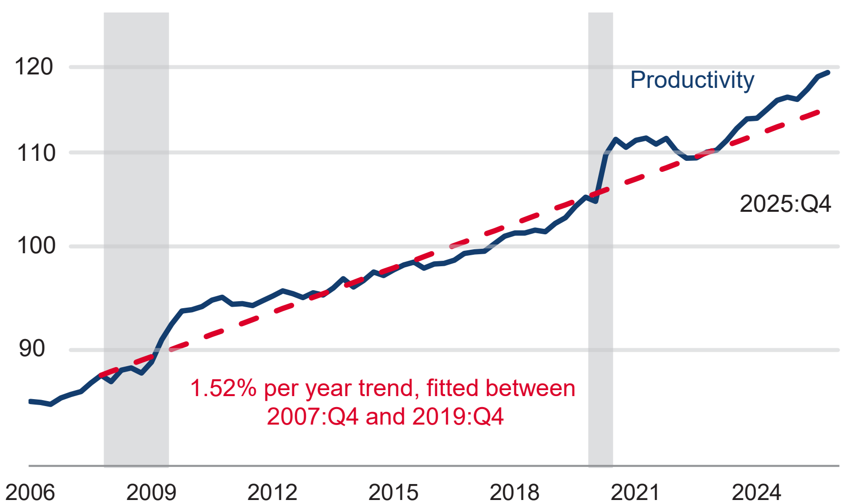
12-month percent change



Sources: Bureau of Labor Statistics; National Bureau of Economic Research; CEA calculations.
Note: October 2025 values are interpolated by the CEA. Gray bars indicate recessions.

Figure 14-13. U.S. Productivity versus Previous Trend

Ratio scale: 2017 = 100



Source: Bureau of Labor Statistics; National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions.

Productivity and Compensation

The pace of labor productivity growth increased during the current business cycle. Since the business-cycle peak in 2019:Q4, labor productivity has grown at a 2.1 percent annual rate, an increase from the 1.5 percent rate between the business-cycle peaks in 2007:Q4 and 2019:Q4 (figure 14-13).[7]

Nominal average hourly earnings rose 3.7 percent during the 12 months of 2025, down 0.4 percentage point from its year-earlier pace. Nominal hourly compensation, as measured by the Employment Cost Index for private-sector compensation, increased 3.4 percent during the 12 months of 2025, 0.2 percentage point below the year-earlier pace. With labor productivity growing at about a 2.1 percent annual rate (as estimated above), this rate of wage and hourly compensation increase implies an increase in unit labor costs in the range of 1.3 to 1.6 percent per year. At this rate, which is below the rate of price inflation, labor costs are pulling down the rate of price inflation.

Nominal wage increases exceeded consumer price inflation during 2025, and so real average hourly earnings deflated by the Consumer Price Index grew 1.1 percent during 2025. As computed from the Employment Cost Index for compensation, real hourly compensation grew 0.6 percent. In principle, real wages should grow at—or just under—the rate of productivity growth. Box 14-1 discusses the relationship between productivity growth and the real wage in the longer run.

[7] Labor productivity is not measured directly, but it is inferred after dividing output by employee-hours for the nonfarm business sector. This quotient is subject to measurement errors in either output or employee hours. As a consequence, it is difficult to infer major changes in growth from short-term movements in output and employee hours.

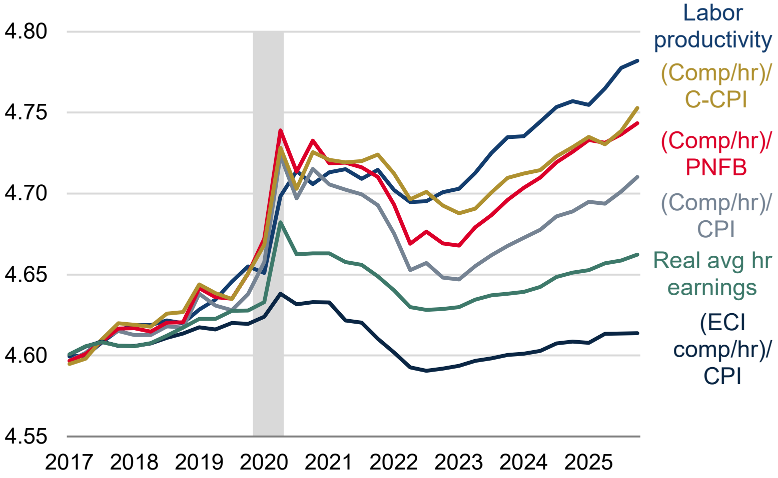
Box 14-1. Productivity and the Real Wage

The real wage should grow along with labor productivity, at least under standard economic theory (and with a Cobb-Douglas production function). In contrast, the real wage has fallen short of labor productivity growth in recent years, as shown in figure 14-i. This box examines two of the measurement issues that partially account for this shortfall: how to measure wages and how to deflate them.

How to measure wages. "Average hourly earnings for all employees" measures just the per-hour wage and salary cost to the employer and comes from the Bureau of Labor Statistics' (BLS) monthly Current Employment Survey. The "real" version of this series is deflated with the official Consumer Price Index for all urban consumers (CPI-U). As can be seen by the lower green line in figure 14-i, the growth of real average hourly earnings has fallen well short of labor productivity growth (by 1.4 percentage points per year) during the last nine years. The metric of real average hourly earnings has two major problems: not including benefits, and deflation with the official CPI (as discussed below).

Figure 14-i. U.S. Real Compensation per Hour, Various Measures

Natural log scale: 2017 = ln(100)



Sources: Bureau of Labor Statistics; Bureau of Economic Analysis; National Bureau of Economic Research; CEA calculations.
Note: C-CPI = Chain Consumer Price Index; PNFB = Price of Nonfarm Business Output; ECI = Employment Cost Index. Gray bars indicate recessions.

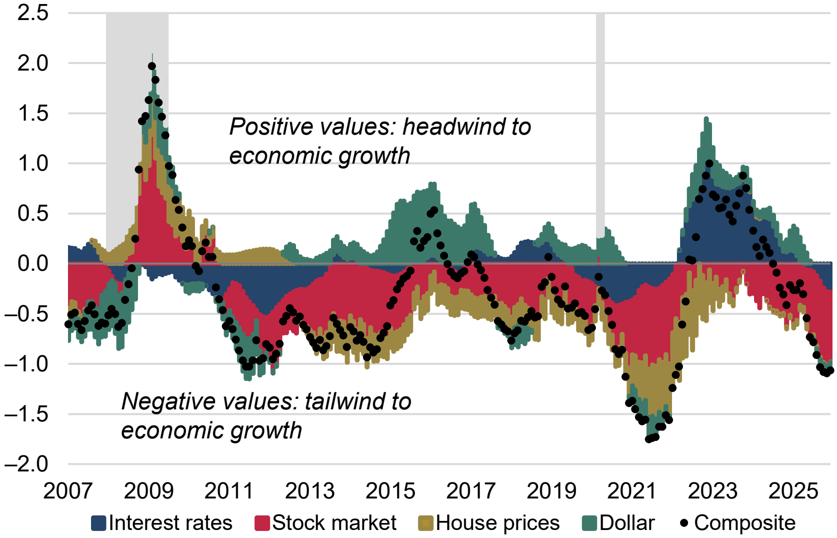
A more complete measure, which also includes benefits, is compensation per hour, as published by the Office of Productivity and Technology (OPT) at the BLS. In addition to wages and salaries, it also includes benefits as recorded in the National Income and Product Accounts (NIPAs). Real hourly compensation is calculated from compensation in the NIPAs, then divided by employee hours, and then deflated by the official CPI, and is shown by the gray line in the figure. This version of real "wage" growth fell 0.9 percentage point per year short of labor productivity growth over the nine years from 2017 to 2025.

Another important measure of real hourly compensation originates from the National Compensation Survey (a survey of employers), which the BLS publishes as the Employment Cost Index for compensation. The shortfall over this interval in this series is 2.0 percentage points per year, the largest of all the methods here (see the black series in figure 14-i). In comparison with the OPT version of real compensation per hour, the larger shortfall for the Employment Cost Index may reflect its construction as a fixed-weighted index by industry and occupation, so it does not pick up the wage gains that come from employees changing jobs; nor does it fully reflect stronger pay gains in growing industries.

How to deflate wages. The shortfall between the OPT measure of real compensation per hour (the gray series) can be reduced by replacing the fixed-weighted CPI, to deflate instead in one of two alternative ways. First, from the employers' point of view, the relevant price is the price of output in the nonfarm business sector, not the price of consumption; so if instead, compensation per hour is deflated by the price index for nonfarm business output (the red line), the shortfall is reduced to about 0.5 percentage point per year. Alternatively, about the same reduction in the shortfall from productivity growth (by 0.4 percentage point per year) can be accounted for if one deflates with the chain-weighted version of the CPI (the gold line). In contrast to the official (fixed-weighted) CPI, the chain-weighted CPI allows substitution. For example, when the price of beef falls relative to that of chicken, consumers will buy more beef and less chicken. Even with these adjustments, real hourly compensation falls short of productivity growth, which is another way of saying that the labor compensation share of GDP has fallen over this interval. (In fact, the labor share has generally fallen during the past 40 years.)

Figure 14-14. Financial Conditions Impulse to Growth and Underlying Components

Percentage point contribution to year–ahead real GDP growth



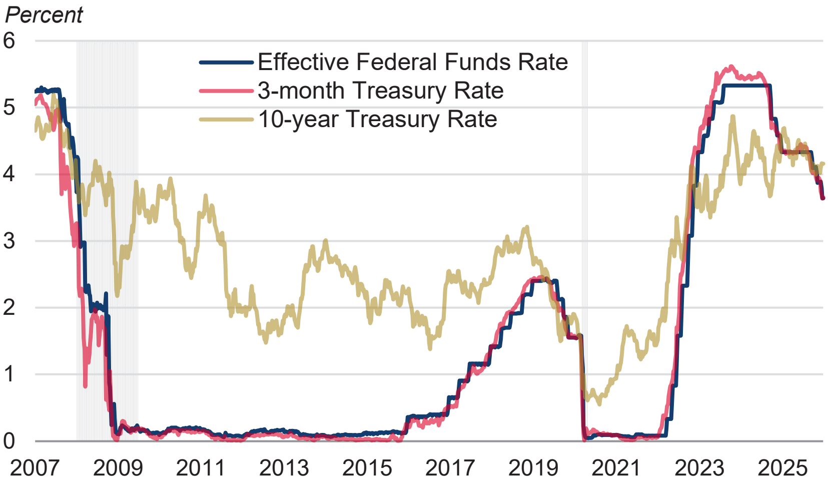
Sources: Ajello et al. (2025), National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions.

Financial Markets

Financial conditions broadly eased over 2025, generating a modest tailwind to economic growth. Such easing of financial conditions is illustrated by the Financial Conditions Impulse, a composite measure compiled by economists at the Federal Reserve Board of Governors (Ajello et al. 2025). The Financial Conditions Impulse to economic growth is illustrated in figure 14-14, with positive numbers reflecting tightening conditions whereas negative numbers reflect easing conditions. Across 2024, overall financial conditions had a roughly neutral effect on year-ahead GDP growth. Over 2025, they eased to provide a 0.7 percentage point tailwind to GDP growth. The primary factors driving the easing of financial conditions from 2024 to 2025 were lower interest rates and the rise in the stock market.

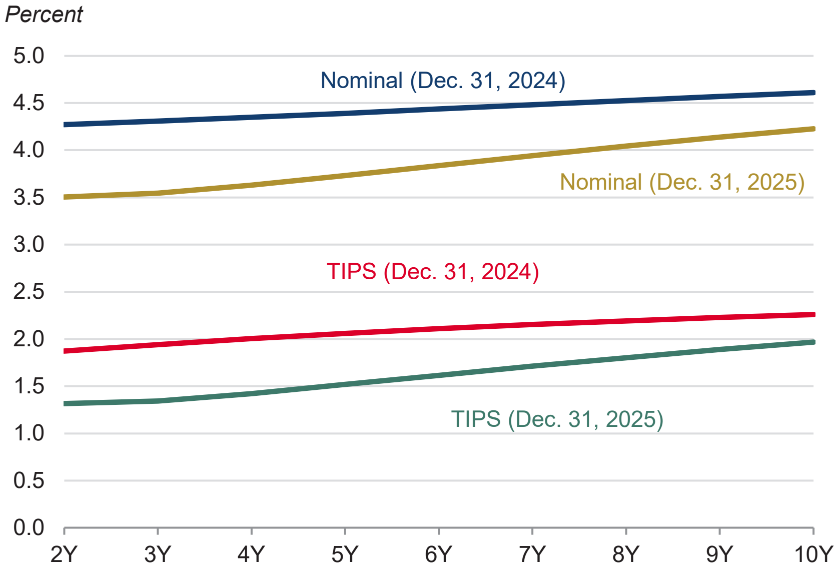
Interest rates fell during the 12 months of the year, on both the short and long ends. Shorter-term interest rates fell more than longer-term ones, with the Federal Funds and three-month Treasury Bill rates both falling 0.7 percentage point, while the yield on 10-year Treasury Notes fell 0.4 percentage point. The drop at the short end occurred mostly during the last four months of the year, while the drop at the long end was mostly in the first half of the year (figure 14-15). The adjustments to interest rates during 2025 left the yield curve more upward-sloping (figure 14-16), after having been inverted after the

Figure 14-15. Key U.S. Interest Rates



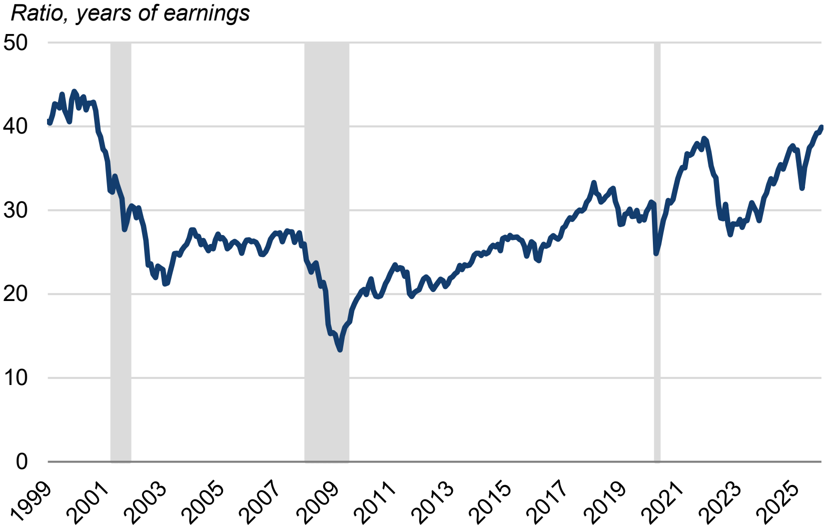
Sources: Federal Reserve Board of Governors; National Bureau of Economic Research.
Note: Gray bars indicate recessions.

Figure 14-16. Nominal and TIPS Treasury Yield Curves



Source: Federal Reserve Board.
Note: TIPS = Treasury Inflation–Protected Securities.

Figure 14-17. Cyclically Adjusted Standard & Poor's Price–to–Earnings Ratio



Sources: Robert Shiller; Haver Analytics; National Bureau of Economic Research.
Note: The cyclically adjusted S&P price–to–earnings ratio is the composite index's price divided by inflation-adjusted average earnings over the past 10 years. Gray bars indicate recessions.

COVID-19-induced recession. Changes to the nominal yield curve were parallel to those for the real yield curve inferred from Treasury Inflation-Protected Securities (usually called TIPS), suggesting that changes to these interest rates over the year predominately reflected adjustments to expected real interest rates.

Equity markets continued to trend upward during 2025. The S&P 500 rose 16.4 percent over the year, after a 23.3 percent increase over 2024. Equity valuations continued to rise relative to earnings. Using Robert Shiller's (2014) cyclically adjusted S&P price-to-earnings ratio (CAPE)—the ratio of the composite S&P 500 price to its average inflation-adjusted annual earnings over the preceding 10 years—averaged 37.1 years of earnings during 2025, up 2.2 years from its 2024 average. On an average annual basis, the CAPE is at its highest level since 2000 (41.7), when the dot-com stock market boom peaked (figure 14-17). One can infer that the market expects a rapid rise in earnings.

The U.S. dollar depreciated against foreign currencies during 2025. Relative to other advanced-economy currencies, the dollar traded at 8.1 percent less at the end of 2025 than at the end of 2024 (figure 14-18). Including emerging-market currencies, the dollar fell 6.7 percent over the year. The depreciation was concentrated in March and April, when the dollar fell 6.2 percent relative to other advanced-economy currencies. These declines coincided with the announcement of prominent changes in U.S. trade policy. Even with the dollar's

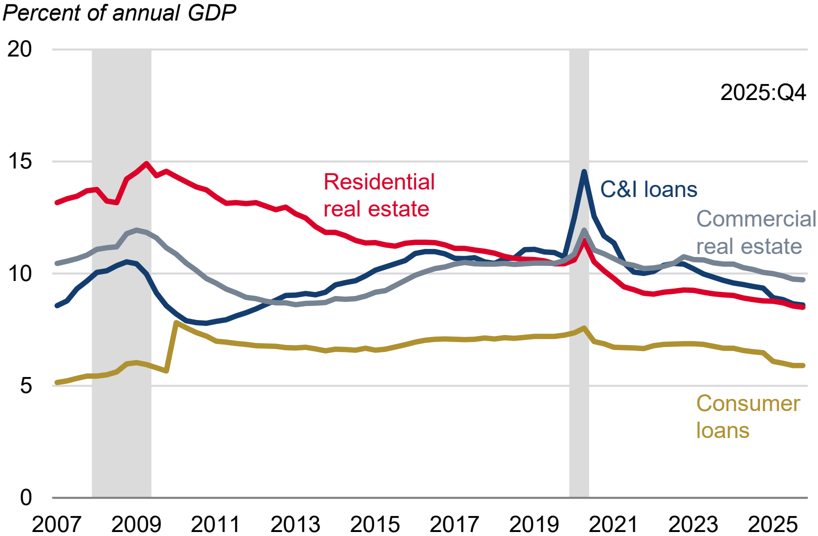
Figure 14-18. Exchange Value of the U.S. Dollar against Advanced–Economy Currencies

Sources: Federal Reserve Board of Governors; National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions.

depreciation over 2025, its value is still higher than just before the COVID-19 pandemic. Relative to 2019 averages, the dollar ended 2025 0.9 percent higher when compared with other advanced-economy currencies and 3.7 percent higher when compared with the broader basket of foreign currencies.

Bank lending accounts for a considerable share of credit to individuals and businesses. Household and commercial loans outstanding at banks fell 0.3 percent over the four quarters of 2025 in nominal terms, after 1.5 percent growth during 2024. The 2025 decline was concentrated in commercial and industrial (C&I) lending (down 2.9 percent) and in nonmortgage consumer loans (down 3.8 percent). In contrast, residential and commercial real estate loans both increased over the year by 2.1 percent. Figure 14-19 normalizes loan stocks by annualized GDP to facilitate comparisons over longer horizons, reflecting broader changes in the size of the economy and price level. In 2025:Q4, C&I, consumer, and real estate loan balances at banks were equivalent to 32.7 percent of annualized GDP, down from 34.7 percent in 2024:Q4. Outstanding bank loans to businesses and consumers are also down from prepandemic levels, relative to the size of the overall economy; in 2019:Q4, they amounted to 39.0 percent of annual GDP. These declines from 2019:Q4 levels to 2025 were broad-based, ranging from a decline of 0.9 percentage point across commercial real estate to a decline of 2.1 percentage points for C&I loans.

Figure 14-19. U.S. Outstanding Loan Balances Relative to Annual GDP

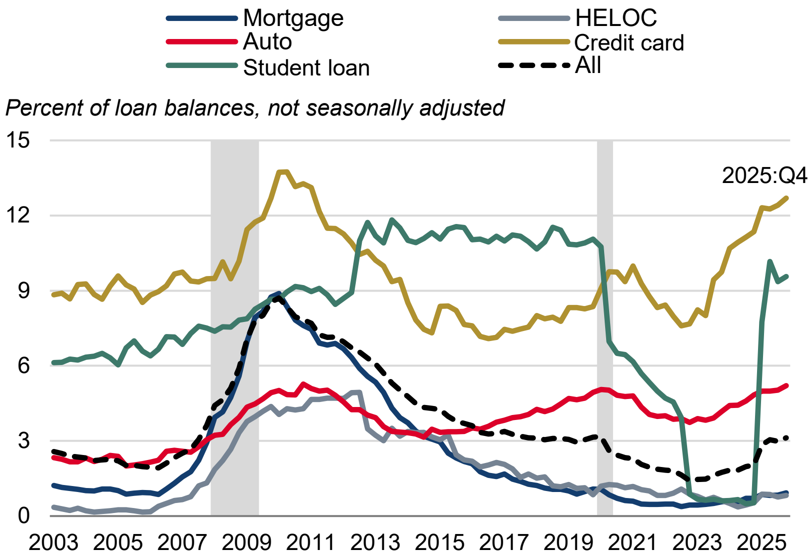


Sources: Federal Reserve Board; Bureau of Economic Analysis; National Bureau of Economic Research.
Note: C&I = commercial and industrial. Loan amounts are for all commercial banks from the Federal Reserve's H.8 release. Gray bars indicate recessions.

Consumer loan delinquency moved higher across loan products in 2025 but especially rose for student loans, reflecting the change in policies for loan forgiveness and forbearance (these policies had previously been obscuring repayment conditions) (figure 14-20; data are not seasonally adjusted). The transition rates into delinquency and serious delinquency were flat across non-housing loan types, with the exception of student debt, which rose.[8] During the COVID-19 pandemic, Federal student loans were placed in forbearance. That forbearance expired in October 2023 and, starting in October 2024, missed payments on Federal student loans were once again reported to credit bureaus. Excluding student loans, the overall serious delinquency rate rose 0.3 percentage point over the year ending in 2025:Q4, to 2.5 percent. While the serious delinquency rate for student loans rose 9.0 percentage points over the year ending in 2025:Q4, at 9.6 percent, it remains below its level in 2019:Q4 (11.1 percent). A combination of house price appreciation and relatively low interest rates that homeowners were able to lock in during the COVID-19 pandemic have helped keep the serious delinquency rate on mortgages below its prepandemic level (1.1 percent in 2019:Q4). Third-party collections were flat in 2025 and

[8] The serious delinquency rate is the share of loan balances that are at least 90 days delinquent or in a severely derogatory status, e.g., repossession, charge off, or foreclosure. The delinquency rate is the share of loans that are at least 30 days late.

Figure 14-20. Consumer Loan Serious Delinquency Rates



Sources: Federal Reserve Bank of New York/Equifax; National Bureau of Economic Research.
Note: Serious delinquency = at least 90 days past due or in a severely derogatory status (repossession, charge off, foreclosure). HELOC = Home equity lines of credit. Gray bars indicate recessions.

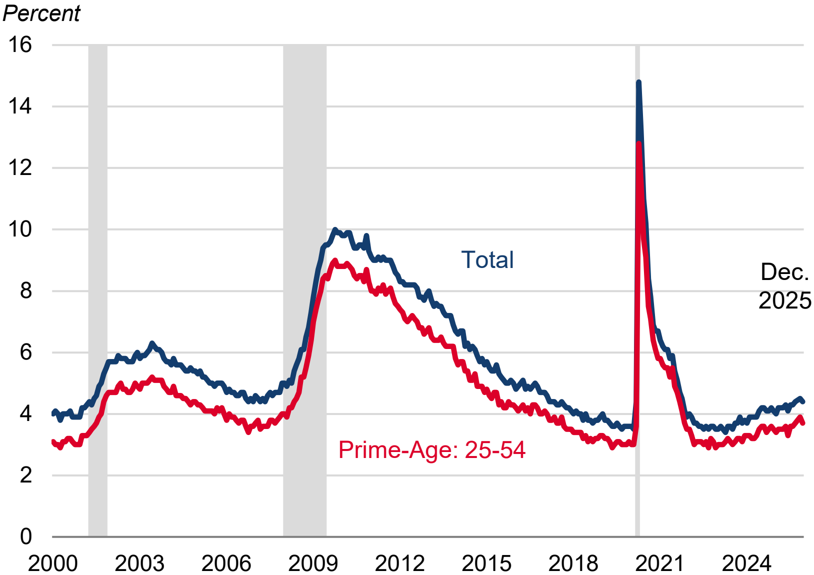
remain markedly below pre-COVID levels, even while the average collection amount per person in collections has increased.

The Labor Market

The U.S. labor market remained largely in balance during 2025. The unemployment rate remained roughly unchanged, and average hourly earnings continued to rise on an inflation-adjusted basis, though the pace of employment growth slowed.

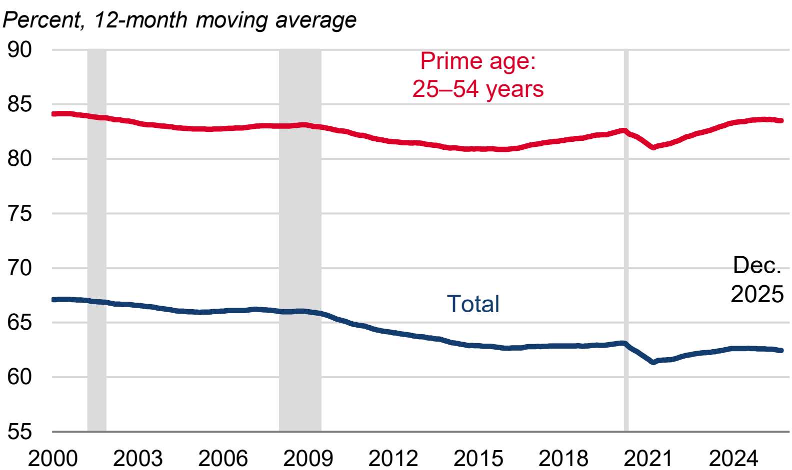
In December, the unemployment rate was 4.4 percent, up 0.3 percentage point from the end of 2024 (figure 14-21) and 0.2 percentage point from the first full month of the Trump Administration in February 2025. Similarly, the unemployment rate for the "prime-age" segment of the population—those age 25 to 54 years—rose 0.2 percentage point, to 3.7 percent. The unemployment rate remains relatively low by historical standards; for example, from 2000 through 2019, the overall unemployment rate averaged 5.8 percent outside recessions, as assessed by the National Bureau of Economic Research, while the prime-age rate averaged 5.0 percent. Additionally, the Labor Force Participation Rate (LFPR) remained fairly stable on net over 2025 (figure 14-22). Across the full adult population, the LFPR averaged 62.4 percent during the year as a whole, slightly lower than during 2024 (0.2 percentage point). The prime-age LFPR in

Figure 14-21. Unemployment Rate



Sources: Bureau of Labor Statistics; National Bureau of Economic Research.
Note: Gray bars indicate recession.

Figure 14-22. The United States' Labor Force Participation Rate



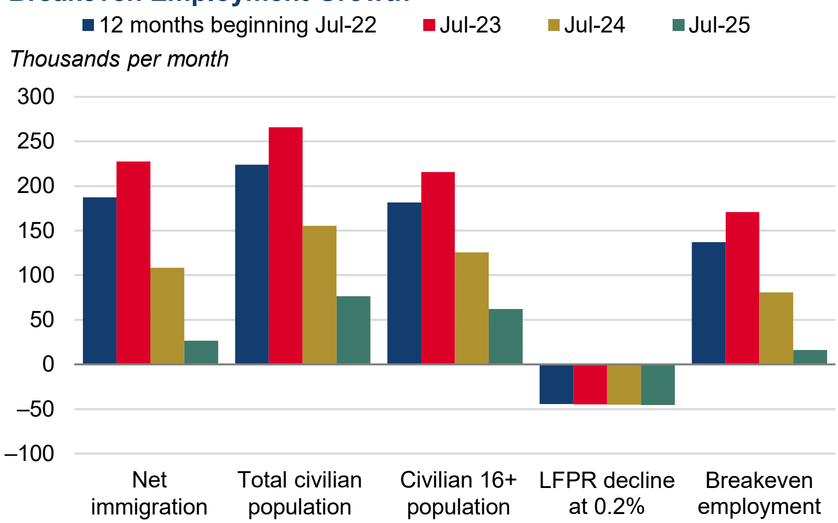
Sources: Bureau of Labor Statistics; National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions.

2025 was 83.6 percent, unchanged from 2024. While the retirement of the Baby Boom generation has put secular downward pressure on the overall LFPR in recent years, the prime-age LFPR in 2025 was up 1.1 percentage points from its 2019 average, pointing to increased economic engagement for that segment of the population.

Employment growth slowed during 2025. Nonfarm payrolls increased by an average of 10,000 per month, roughly one-twelfth of their monthly increase in 2024 (122,000). Government employment declined an average of 15,000 jobs per month in 2025, in large part reflecting reductions in the Federal workforce. Private-sector employment growth also slowed in 2025, rising an average 25,000 per month, down from 85,000 per month in 2024.

On the supply side, slower employment growth is consistent with the decline in net immigration during the year. Net migration into the United States fell substantially from 2023 to 2025, which ultimately reduced the supply of workers in the U.S. job market. Working with the Census' practice of measuring population figures in July, net immigration increased from 188,000 per month during the 12 months beginning in July 2022 to 228,000 during the 12 months beginning in July 2023, as shown by the lefthand cluster of bars in figure 14-23. Net immigration then plunged during the next two July-to-July intervals, ultimately to 27,000 per month during the 12 months beginning in July 2025.

Figure 14-23. Effect of Declining U.S. Net Immigration on Breakeven Employment Growth



Sources: Census Bureau; CEA calculations.
Note: LFPR = labor force participation rate. This figure uses Census estimates and projections for net immigration and the civilian population for the 12-month period beginning in July of each year. It also uses CEA estimates of the effect on 16+ population and the breakeven employment.

These trends in net immigration importantly affect the pace of population growth. The Census estimates that total population growth slowed from 266,000 during the 12 months that began with July 2023 to 77,000 during the 12 months that began with July 2025 (as shown in the second cluster of bars in figure 14-23). The Census demographers' estimates for the working-age (16+) civilian noninstitutional population were not available when this *Report* was finalized. In the meantime, the figures for the growth of this working-age population are calculated as a constant share of the growth of the total civilian noninstitutional population, as shown in the third cluster of bars in figure 14-23.[9] The resulting estimate for the growth rate of the working-age population during the 12 months that began in July 2025 is 62,000 per month. If the LFPR were to stay constant, this pace of 62,000 per month would also be an estimate of the growth of employment needed to maintain a stable unemployment rate.

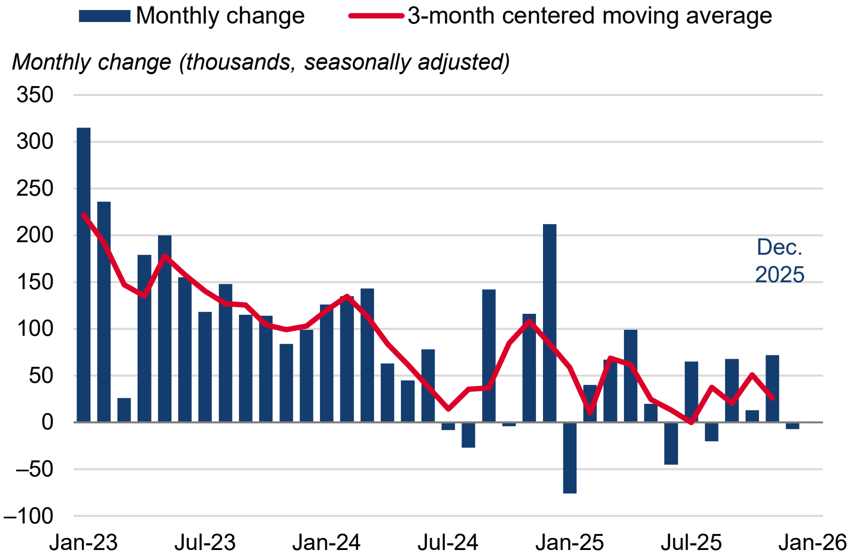
The LFPR is still trending down, however, because of the retirement of the Baby Boom cohorts, and this trend must be factored into the calculation of the breakeven rate. The cohort born in 1961—which was still a Baby Boom year—will reach the common retirement age of 65 this year, and the CEA estimates that the LFPR is on a downward trend of about −0.2 percent per year, or about 45,000 per month (the fourth cluster of bars in figure 14-23). As a result, the breakeven rate in the second half of 2025 may have fallen to roughly 16,000 per month, down from 170,000 two years earlier. To put the diminished rate of job growth in context, it should be remembered that the President's goal is for more of the job growth to go to legal American residents rather than to illegal immigrants.

The decline in the breakeven rate has been noticed by professional forecasters. Nearly all (94 percent) of the professional forecasters surveyed by Blue Chip in December 2025 reported that recent changes in immigration policy were factors in their downward revisions of breakeven employment growth. During 2024, total nonfarm payrolls rose on average 122,000 per month, while private nonfarm payrolls increased by an average 85,000 per month (figure 14-24). Over 2025, total average nonfarm payrolls rose 10,000 per month, while private nonfarm payrolls rose an average 25,000 per month.

On the demand side, metrics for job openings and labor market churn suggest a somewhat less tight labor market after several years of elevated demand for workers. The ratio of job openings to unemployed individuals is a common proxy for the tightness of the labor market, given that it compares a measure of firms' demand for additional workers with the number of people lacking a job and actively searching for one. Over the 12 months of 2025, the job openings per unemployed individual averaged 1.0, down from 1.2 in 2024 (figure 14-25), but still noticeably higher than its average of 0.6 between 2001 and 2019.

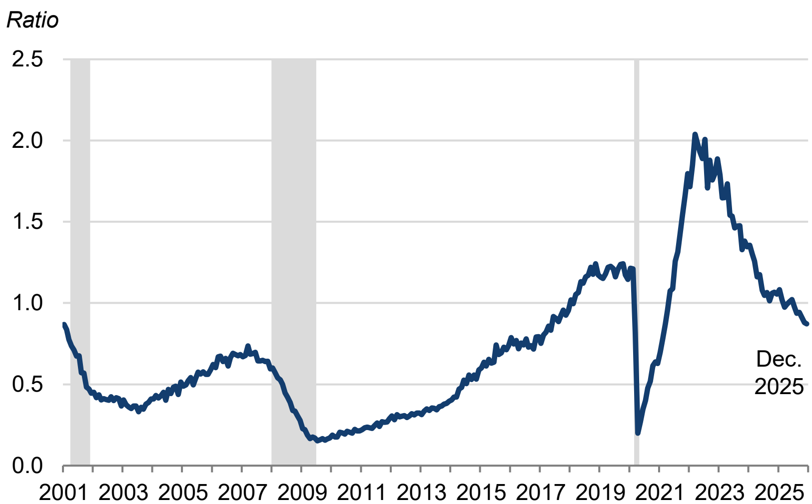
[9] The constant share (81.045 percent) is calculated from the January 2025 ratios of these two populations in last year's (vintage 2024) estimates.

Figure 14-24. Private Nonfarm Employment



Source: Bureau of Labor Statistics; CEA calculations.

Figure 14-25. Job Openings per Unemployed Individual



Sources: Bureau of Labor Statistics; National Bureau of Economic Research; CEA calculations.
Note: Gray bars indicate recessions.

Table 14-3. U.S. Nonfarm Employment, December 2025 from December 2024

Sector	Share of total employment, percent	Average monthly change, thousands	12-monthy growth rate, percent
Trade, transportation, and utilities	18.1	–16	–0.6
Education and health services	17.3	57	2.4
Government	14.8	–15	–0.7
Professional and business services	14.1	–13	–0.6
Leisure and hospitality	10.6	8	0.4
Manufacturing	8.0	–9	–0.8
Financial services	5.8	1	0.1
Construction	5.2	0	0.0
Other services	3.8	4	0.7
Information services	1.8	–4	–1.6
Mining and logging	0.4	–2	–2.7
Total	—	10	0.1

Sources: Bureau of Labor Statistics; CEA calculations.

Note: Shares of total employment reflect averages over 2025.

The incidence of hiring, voluntarily quitting, and layoffs changed little between 2024 and 2025. Relative to 2019, the average hires rate in 2025 was down 0.5 percentage point, while the quits rate was 0.3 percentage point lower.

Employment trends varied markedly across industry supersectors during 2025 (table 14-3). Between December 2024 and December 2025, jobs increased in four supersectors, were little changed in one, and declined in six. Both in percentage and level terms, payrolls rose the most in education and health services (57,000 per month; 2.4 percent over the year); except for education and health services, economy-wide net employment fell by 47,000 jobs per month. Trade, transportation, and utilities experienced the largest decline of any sector in level terms (down 16,000 per month), while mining and logging experienced the largest percentage decline of any sector (down 2.7 percent over the year).

The Forecast for the Years Ahead

The Trump Administration foresees that the United States' macroeconomy will quickly settle into a healthy steady state during 2026, and then will maintain this course during the next 11 years. In this steady state, real GDP growth will average 3 percent, inflation will be steady at a rate consistent with the Federal Reserve's target, the unemployment rate will remain flat, and interest rates will edge down and then stabilize.

The Administration's economic forecast underpins the President's Budget and sets forth its expectations of the major macroeconomic variables over the

Table 14-4. Economic Projections, 2025–36

	Percent change (Q4-to-Q4)				Level (percent)			
		Inflation measures			Unemployment rate		Interest rates	
Year	Real GDP	GDP Price Index	PCE Price Index	CPI	Annual	Q4	3-Month T-Bills	10-Year T-Notes
Actual								
2023	3.4	2.7	2.9	3.2	3.6	3.8	5.1	4.0
2024	2.4	2.5	2.6	2.7	4.0	4.1	5.0	4.2
Forecast								
2025	1.8	3.2	2.8	2.8	4.2	4.2	4.1	4.3
2026	3.5	2.2	2.0	2.3	3.9	3.7	3.2	3.7
2027	3.1	2.0	2.0	2.3	3.7	3.7	3.1	3.5
2028	3.1	2.0	2.0	2.2	3.7	3.7	3.1	3.5
2029	3.1	2.0	2.0	2.2	3.7	3.7	3.1	3.4
2030	3.0	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2031	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2032	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2033	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2034	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2035	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3
2036	2.9	2.0	2.0	2.2	3.7	3.7	3.1	3.3

Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; Department of the Treasury; Office of Management and Budget; CEA calculations.

Note: The forecast is based on data available as of November 4, 2025. The interest rate on 3-month (91-day) Treasury Bills is measured on a secondary-market discount basis.

next 11 years. This forecast is summarized in table 14-4. The Administration finalized its macroeconomic forecast using data available through November 4, 2025. At that moment, GDP data were available only through 2025:Q2, due to the government shutdown, and labor market and price data were also delayed.

Real GDP growth fluctuated during 2025, partially due to the fourth-quarter government shutdown. The Administration expects that the sectors suppressed by the shutdown will bounce back to their trend levels immediately as those components that subtracted from real GDP growth in 2025:Q4 are added back in 2026:Q1. Also boosting real GDP growth for all of 2026 are several provisions of the OBBBA.[10] A partial list of the growth-boosting provisions include a permanent program of 100 percent expensing for equipment investment and for research and development expenditures, the permanent extension of the 199-A passthrough deduction for small businesses, and temporary (five-year) expensing for qualified production property.[11] Although the OBBBA was signed into law by the President on July 4, 2025, these provisions are retroactive to January 21, 2025, when this legislation was first proposed. As a result, the positive effects on real GDP are likely to have begun in 2025 and will spill over into 2026.

The six key supply-side components of this expected 3 percent average annual rate of growth are shown in table 14-5: the population (16 and over), the Labor Force Participation Rate, the employment rate, the workweek, labor productivity growth, and the output per person differential.[12] The levels of these six components multiply together to form an identity for real GDP. Therefore, the growth rates of these six factors approximately sum to the growth rate of real GDP. Each of these growth rates is discussed in turn here.

The Population 16 and Over

Growth of the 16-and-over population has several key components: the number of 15-year-olds who turn 16 every year, deaths, and net immigration. Effects from changes to migration policy deserve a special focus. Customarily, the Trump Administration's population forecast follows the one put together by the demographers at the Social Security Administration (SSA), but their latest forecast was assembled in 2024—before the Administration announced its immigration reforms—and is now out of date, especially with respect to net

[10] See chapter 1 of this *Report* and see the Congressional Budget Office's paper (CBO 2025; see the heading "How H.R.1 Would Affect Real GDP").

[11] In addition to manufacturing, the possibility of 100 percent expensing applies to other forms of production properties such as refining, chemical processing, and agricultural processing.

[12] The output per person differential—when measured as a level—is the ratio of GDP per worker in the economy as a whole to output per worker in the nonfarm business sector. When measured as a growth rate, it is the growth rate of real GDP per worker in the economy as a whole, less the growth rate of output per person in the nonfarm business sector. Productivity growth is best measured in the nonfarm business sector. In contrast, productivity does not grow—by assumption—in the government and household sectors.

Table 14-5. Supply-Side Components of Actual and Potential Real U.S. Output Growth, 1953–2036

	Component	Growth rate (percentage points)					
		1953:Q2 to 2019:Q4	1953:Q2 to 1973:Q4	2001:Q1 to 2007:Q4	2007:Q4 to 2019:Q4	2019:Q4 to 2025:Q2	2025:Q2 to 2036:Q4
		(1)	(2)	(3)	(4)	(5)	(6)
1	Civilian noninstitutional population age 16+	1.4	1.6	1.1	1.0	0.9	0.5
2	Labor force participation rate	0.1	0.2	–0.3	–0.3	–0.2	–0.1
3	Employed share of the labor force	0.0	–0.1	0.1	0.1	–0.1	0.0
4	Average weekly hours (nonfarm business)	–0.2	–0.3	–0.3	–0.1	–0.2	0.0
5	Output per hour (productivity, nonfarm business)	2.1	2.6	2.4	1.6	1.9	2.9
6	Output per worker differential: GDO versus nonfarm**	–0.3	–0.3	–0.5	–0.4	0.1	–0.5
7	Sum: Actual real GDO	3.0	3.7	2.4	1.8	2.3	3.0

Sources: Bureau of Labor Statistics; Bureau of Economic Analysis; Department of the Treasury; Office of Management and Budget; CEA calculations.

Note: All contributions are in percentage points at an annual rate. The forecast jumps off from data available in early November 2025. Total may not add up due to rounding. 1953:Q2, 1990:Q3, 2001:Q1, 2007:Q4, and 2019:Q4 are all quarterly business-cycle peaks. Gross domestic output (GDO) is the average of GDP and gross domestic income. Population, labor force, and household employment have been adjusted for discontinuities in the population series.

**The output-per-worker differential (row 6) is the difference between output-per-worker growth in the economy as a whole (GDO divided by household employment), and output-per-worker growth in the nonfarm business sector.

[a] Real GDO and real nonfarm business output are measured as the average of income- and product-side measures.

migration. The Administration's immigration policy reduced growth of the foreign-born population substantially during 2025. And the Administration's immigration policy will continue to be more restrictive relative to the previous policy.

To arrive at the net migration forecast, the Administration begins with the SSA population growth forecast, and adjusts this forecast downward by 0.4, 0.2, 0.1, and 0.1 percentage point, respectively, during the first four full years of the forecast, 2026-29. For the 11-year forecast, this averages out to a reduction of 0.1 percentage point in the population row (row 1, column 6) of table 14-5 relative to the one that would have been consistent with the latest SSA forecast. The population growth rate of 0.5 percent per year is less than the growth rates in any of the historical intervals shown in table 14-5. It is similar, however, to the average annual rate of population growth during the four years of the first Trump Administration.

The Labor Force Participation Rate

The Labor Force Participation Rate is expected to continue to be weighed down during the next several years by the retirement of the Baby Boom cohorts. Birthrates were elevated from 1946 to 1962, and the retirement of those large Baby Boom cohorts has caused the overall LFPR to drift lower since about 2008. Following the profile of how the LFPR varies with age, the steepest declines—relative to the age of the individual—are between age 62 and age 66. The large 1961 and 1962 birth cohorts are now 65 and 64 years old, respectively. Therefore, substantial retirements—accompanying a diminishing LFPR—are likely for the next several years, even if they would be partially offset by the Administration's policy of lower tax rates that encourage labor force participation. The downward force from these Baby Boom cohorts retiring will diminish after 2028, and so the overall LFPR is likely to stabilize. Averaging the continued near-term declines in the LFPR with the stabilization thereafter results in a LFPR that is likely to edge lower by 0.1 percent per year—on average—during the 11-year projection interval (table 14-5, row 2, column 6).

The Employment Rate

The employed rate (equal to 1 minus the unemployment rate) is projected to rise a bit as the unemployment rate edges lower—during 2026—to 3.7 percent (the rate of unemployment that the Administration considers to be consistent with stable inflation, as shown in table 14-4). But the employed share of the labor force is essentially flat over the 11-year projection interval (row 3, column 6).

The Workweek

The workweek is projected to become stable after a long period of shortening (table 14-5, row 4, column 6). The decline in the workweek in the post–World

War II period reflected the entry of women into the labor force (because women—on average—work shorter workweeks than men) and the long-term decline of factory employment (because the manufacturing workweek is longer than the workweek in other sectors). In the future, however, these factors are less likely to dominate the length of the workweek than during the historical interval, because the female participation rate has plateaued and the manufacturing share of employment is expected to stabilize near its recent levels.

Labor Productivity

Labor productivity growth (measured as output per hour in the nonfarm sector) is projected to average 2.9 percent during the 11-year projection period, notably faster than the 2.1 percent annual growth rate during the years 1953–2019 (table 14-5, row 5, columns 1 and 6). Labor productivity is expected to be boosted by the Administration's policies, such as deregulation (see chapter 2 of this *Report*) and pro-growth OBBBA tax policy leading to increased capital per worker. In addition, increasing use of artificial intelligence is widely expected to boost productivity growth. The United States has experienced long-term growth of labor productivity at such a pace before, most recently during the 15 years 1948–63.

Output per Worker Differential

Finally, the output per worker differential—the difference between the growth rate of output per worker for the economy as a whole and the growth rate of output per worker in the nonfarm business sector—is expected to be negative. This negative value is largely a consequence of the national accounting convention that productivity does not grow in the government and household sectors, while productivity growth is usually positive in the nonfarm business sector. As a result, this differential is negative when measured during long periods. Furthermore, when nonfarm productivity growth is higher than average, the differential is usually more negative than average, so that a more-negative differential partially offsets higher-than-usual nonfarm productivity growth. As a result, the productivity differential is expected to be more negative during the 11-year forecast interval relative to most of the other long periods shown in table 14-5.

Adding It All Up

In sum, the Trump Administration expects real gross domestic output growth during the 11-year projection period to exceed the 2.3 percent average pace during the six years since the last business-cycle peak in 2019:Q4 (table 14-5, row 7, column 5). The higher-than-historic average productivity growth—the result of artificial intelligence and Administration policies of deregulation and pro-growth tax policy that leads to capital deepening—will more than offset lower-than-historic average population growth.

Conclusion

Real GDP grew at a solid 2.0 percent annual rate over the four quarters of 2025, supported by strong growth in business fixed investment and steady growth in consumer spending. Policy, as embodied in the One Big Beautiful Bill Act, played a positive role, given that many of its features were backdated to January 2025, when they were first proposed. Inflation continued to edge lower and real wages showed moderate gains. Financial markets supported growth with large gains in stock market values. Looking ahead, the Administration projects real GDP to grow at a 3.0 percent annual rate, with steady inflation and some further near-term declines in interest rates.

References

Chapter 1

Arefeva, A., M. Davis, A. Ghent, and M. Park. 2025. "The Effect of Capital Gains Taxes on Business Creation and Employment: The Case of Opportunity Zones." *Management Science* 71, no. 6: 4566–81.

Azémar, C., and R. Hubbard. 2015. "Country Characteristics and the Incidence of Capital Income Taxation on Wages: An Empirical Assessment." *Canadian Journal of Economics* 48, no. 5: 1761–92. https://onlinelibrary.wiley.com/doi/abs/10.1111/caje.12179.

Auclert, A., M. Rognlie, and L. Straub. 2024. "The Intertemporal Keynesian Cross." *Journal of Political Economy* 132, no. 12. https://www.journals.uchicago.edu/doi/epdf/10.1086/732531.

Auerbach, A., and K. Hassett. 1992. "Tax Policy and Business Fixed Investment in the United States." *Journal of Public Economics* 47, no. 2: 141–70. https://www.sciencedirect.com/science/article/pii/004727279290046I.

Bell, D., and D. Blanchflower. 2011. "Young People and the Great Recession." *Oxford Review of Economic Policy* 27, no. 2: 241–67. https://academic.oup.com/oxrep/article-abstract/27/2/241/429358.

Boulware, K., and K. Kuttner. 2024. "What Explains Black Employment Dynamics?" *AEA Papers and Proceedings* 114: 191–95. https://www.aeaweb.org/articles?id=10.1257/pandp.20241125.

Carroll, C., et al. 2017. "The Distribution of Wealth and the Marginal Propensity to Consume." *Quantitative Economics* 8, no. 3: 977–1020. https://onlinelibrary.wiley.com/doi/abs/10.3982/QE694.

CEA (Council of Economic Advisers). 2018. *Economic Report of the President*. Chapter 1: "Evaluating the Effects of the Tax Cuts and Jobs Act." Washington.: U.S. Government Publishing Office. https://www.govinfo.gov/features/ERP-2018.

———. 2025a. "Igniting a Second Blue-Collar Boom with Tax Cuts in the President's One, Big, Beautiful Bill." White Paper. https://www.whitehouse.gov/wp-content/uploads/2025/03/Igniting-a-Second-Blue-Collar-Boom-with-Tax-Cuts-in-the-Presidents-One-Big-Beautiful-Bill.pdf.

———. 2025b. "The One Big Beautiful Bill: Legislation for Historic Prosperity and Deficit Reduction." White Paper. https://www.whitehouse.gov/wp-content/uploads/2025/03/The-One-Big-Beautiful-Bill-Legislation-for-Historic-Prosperity-and-Deficit-Reduction-1.pdf.

———. 2025c. "The Deterioration of Housing Affordability in Rural America." White Paper. https://www.whitehouse.gov/wp-content/uploads/2025/03/The-Deterioration-of-Housing-Affordability-in-Rural-America.pdf.

———. 2025d. "Preserving and Expanding Low Tax Rates to Create American Economic Prosperity." White Paper. https://www.whitehouse.gov/wp-content/uploads/2025/03/Preserving-and-Expanding-Low-Tax-Rates-to-Create-American-Economic-Prosperity.pdf.

———. 2025e. “The Economic Benefits of Current Deregulatory Policies.” White Paper. https://www.whitehouse.gov/wp-content/uploads/2025/03/The-Economic-Benefits-of-Current-Deregulatory-Efforts.pdf.

Chetty, R., A. Guren, D. Manoli, and A. Weber. 2011. “Are Micro and Macro Labor Supply Elasticities Consistent?” A Review of Evidence on the Intensive and Extensive Margins.” *American Economic Review* 101, no. 3: 471–75. https://www.aeaweb.org/articles?id=10.1257/aer.101.3.471.

Congressional Budget Office. 2025. “2025 Budget Projections.” https://www.cbo.gov/system/files/2025-01/51118-2025-01-Budget-Projections.xlsx.

Felix, R. 2007. “Passing the Burden: Corporate Tax Incidence in Open Economies.” LIS Working Paper. 468. https://www.econstor.eu/handle/10419/95465.

Finkelstein, A., M. Notowidigdo, F. Schilbach, and J. Zhang. 2025. “Lives versus Livelihoods: The Impact of the Great Recession on Mortality and Welfare.” *Quarterly Journal of Economics* 140, no. 3: 2269–2328. https://academic.oup.com/qje/article/140/3/2269/8132935.

Glasner, B., A. Ozimek, and J. Lettieri. 2025. “The Impact of Opportunity Zones on Housing Supply.” Economic Innovation Group. https://eig.org/wp-content/uploads/2025/02/The_Impact_of_Opportunity_Zones_on_Housing_Supply.pdf.

Internal Revenue Service. No date. “SOI Tax Stats: Individual information return Form W-2 Statistic.” https://www.irs.gov/statistics/soi-tax-stats-individual-information-return-form-w2-statistics.

Joint Committee on Taxation. 2025a. “Distribution of the Estimated Revenue Effects of the Tax Provisions of the Chairman’s Amendment in the Nature of a Substitute to the Budget Reconciliation Legislative Recommendations Related to Tax.” https://www.whitehouse.gov/wp-content/uploads/2025/05/x-23-25.pdf.

———. 2025b. “Estimated Revenue Effects Relative to a Current Policy Baseline of Tax Provisions Contained In a Senate Substitute to Provide Reconciliation of the Fiscal Year 2025 Budget.” https://www.jct.gov/publications/2025/jcx-29-25/.

Kaplan, G., and G. Violante. 2022. “The Marginal Propensity to Consume in Heterogeneous Agent Models.” *Annual Review of Economics* 14, no. 1: 747–75. https://www.annualreviews.org/content/journals/10.1146/annurev-economics-080217-053444.

Ozkan, S., and N. Sullivan. 2025. “The Unemployment Gap Between College Graduates and Noncollege Workers.” FRED Blog. https://fredblog.stlouisfed.org/2025/11/the-unemployment-gap-between-college-graduates-and-noncollege-workers/.

Ramey, V. 2019. “Ten Years After the Financial Crisis: What Have We Learned from the Renaissance in Fiscal Research?” *Journal of Economic Perspectives* 33, no. 2: 89–114. https://www.aeaweb.org/articles?id=10.1257/jep.33.2.89.

Risch, M. 2025. “Does Taxing Business Owners Affect Employees? Evidence from a Change in the Top Marginal Tax Rate.” *Quarterly Journal of Economics* 139, no. 1: 637–92. https://academic.oup.com/qje/article/139/1/637/7260871.

Schwandt, H., and T. von Wachter. 2023. “Life-Cycle Impacts of Graduating in a Recession.” *NBER Reporter* 1: 17–21. https://www.econstor.eu/bitstream/10419/277935/1/2023number1-4.pdf.

Senate Committee on Finance. “Senate Finance Committee Section-by-Section.” https://www.finance.senate.gov/imo/media/doc/finance_committee_section-by-section_title_vii3.pdf.

U.S. Office of Management and Budget and Federal Reserve Bank of Saint Louis. 2026. ”Federal Debt Held by the Public as Percent of Gross Domestic Product [FYGFGDQ188S],” FRED. https://fred.stlouisfed.org/series/FYGFGDQ188S.

Chapter 2

Agarwal, S., and M. Bos. 2019. "Rationality in the Consumer Credit Market: Choosing Between Alternative and Mainstream Credit." In *Handbook of U.S. Consumer Economics*, ed. A. Haughwout and B. Mandel, 121–39. New York: Academic Press. https://doi.org/10.1016/B978-0-12-813524-2.00005-6.

Akerlof, G. 1970. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 8: 488–500.

Bailey, J. 2016. *Can Health Spending Be Reined In Through Supply Constraints? An Evaluation of Certificate-of-Need Laws*. Working Paper. Arlington, VA: Mercatus Center. https://www.mercatus.org/research/working-papers/can-health-spending-be-reined-through-supply-constraints-evaluation.

Bailey, J., and D. Thomas. 2017. "Regulating Away Competition: The Effect of Regulation on Entrepreneurship and Employment." *Journal of Regulatory Economics* 52: 237–54, https://doi.org/10.1007/s11149-017-9343-9.

Beach, W., and P. Sheppard. 2025. "Reducing Regulations Produces Strong Economic Growth Responses," Heritage Foundation Backgrounder 3890, February 19. https://www.heritage.org/sites/default/files/2025-02/BG3890.pdf.

Bradley, N. 2025. "How Excessive Regulation Hurts the Economy," U.S. Chamber of Commerce, January 15. https://www.uschamber.com/economy/how-excessive-regulation-hurts-the-economy.

Buchanan, J., and G. Tullock. 1962. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor: University of Michigan Press.

Calabrese, E. 2019. "The Linear No-Threshold (LNT) Dose Response Model: A Comprehensive Assessment of Its Historical and Scientific Foundations." *Chemico-Biological Interactions* 301: 6–25, https://doi.org/10.1016/j.cbi.2018.11.020.

CEA (Council of Economic Advisers). 2019. *Economic Report of the President*. Washington: U.S. Government Publishing Office.

Chambers, D., C. Collins, and A. Krause. 2019. "How Do Federal Regulations Affect Consumer Prices? An Analysis of the Regressive Effects of Regulation." *Public Choice* 180: 57–90.

Chambers, D., P. McLaughlin, and L. Stanley. 2019. "Regulation and Poverty: An Empirical Examination of the Relationship between the Incidence of Federal Regulation and the Occurrence of Poverty across the U.S. States." *Public Choice* 180: 131–44. https://doi.org/10.1007/s11127-018-0603-8.

Chambers, D., and C. O'Reilly. 2022. "Regulation and Income Inequality in the United States." *European Journal of Political Economy* 72. https://doi.org/10.1016/j.ejpoleco.2021.102101.

Coase, R. 1960. "The Problem of Social Cost." *Journal of Law & Economics* 3; 1–44.

Coffey, B., P. McLaughlin, and P. Peretto. 2020. "The Cumulative Cost of Regulations." *Review of Economic Dynamics* 38: 1–21. https://doi.org/10.1016/j.red.2020.03.004.

Cordes, J., S. Dudley, and L. Washington. 2022. "Regulatory Compliance Burdens." George Washington University Regulatory Studies Center, October.

Cornell Law School. "Regulation." Legal Information Institute. https://www.law.cornell.edu/wex/regulation.

Crain, M., and N. Crain. 2014. "The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business." National Association of Manufacturers, September 10. https://www.nam.org/wp-content/uploads/2019/05/Federal-Regulation-Full-Study.pdf.

Crews, C. 2024. “Ten Thousand Commandments 2024.” Competitive Enterprise Institute. https://cei.org/studies/ten-thousand-commandments-2024/.

Demsetz, H. 2011. “The Problem of Social Cost: What Problem? A Critique of the Reasoning of A. C. Pigou and R. H. Coase.” *Review of Law and Economics* 7: 1–13, DOI: 10.2202/1555-5879.1502.

EPA (U.S. Environmental Protection Agency). 2025. Draft Regulatory Impact Analysis for “Reconsideration of the 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards.” EPA-420-D-25-003. Office of Transportation and Air Quality, July. https://www.epa.gov/system/files/documents/2025-07/420d25003.pdf.

Gayer, T., and W. Viscusi. 2013. “Overriding Consumer Preferences with Energy Regulations.” *Journal of Regulatory Economics* 43: 248–64. https://doi.org/10.1007/s11149-013-9210-2.

Goldbeck, D. 2025. “The Biden Regulatory Record.” American Action Forum. https://www.americanactionforum.org/insight/the-biden-regulatory-record/.

Gutiérrez, G., and T. Philippon. 2017. *Declining Competition and Investment in the U.S*. NBER Working Paper 23583. Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w23583.

Hayek, F. 1945. “The Use of Knowledge in Society.” *American Economic Review* 35: 519–30.

Mannix, B., and S. Dudley. 2015. “The Limits of Irrationality as a Rationale for Regulation.” *Journal of Policy Analysis and Management* 34: 705–12. https://doi.org/10.1002/pam.21841.

Mas-Colell, A., M. Whinston, and J. Green. 1995. *Microeconomic Theory*. Oxford: Oxford University Press,.

Mulligan, C. 2024. “Biden-Harris Regulations Cost the Average Family Almost $50,000.” Committee to Unleash Prosperity, July. https://committeetounleashprosperity.com/wp-content/uploads/2024/07/240724_CTUP_BidenHarrisRegulations_Doc.pdf.

———. 2025. “Testimony of Casey B. Mulligan, Chief Counsel, Office of Advocacy, U.S. Small Business Administration.” Hearing before the U.S. Senate Committee on Small Business & Entrepreneurship, November 19. https://advocacy.sba.gov/wp-content/uploads/2025/11/FINAL-Mulligan-Testimony_11192025.pdf.

OMB (U.S. Office of Management and Budget). 2024. *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2025*. Washington: U.S. Government Printing Office.

Ostrom, E. 1999. “Coping with Tragedies of the Commons.” *Annual Review of Political Science* 2: 493–535.

Pigou, A. 1920. *The Economics of Welfare*. London: Macmillan.

RegStats. 2023. Regulatory Studies Center, George Washington University. https://regulatorystudies.columbian.gwu.edu/regstats.

Sallee, J., S. West, and W. Fan. 2015. *Do Consumers Recognize the Value of Fuel Economy? Evidence from Used Car Prices and Gasoline Price Fluctuations*. NBER Working Paper 21441. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w21441.

Stigler, G. 1971. “The Theory of Economic Regulation,” *Bell Journal of Economics and Management Science* 2: 3–21. https://doi.org/10.2307/3003160.

Sunstein, C. 2013. “The Storrs Lectures: Behavioral Economics and Paternalism.” *Yale Law Journal* 122: 1826–99. https://www.yalelawjournal.org/pdf/1164_j5m12m5y.pdf.

Thaler, R., and C. Sunstein. 2003. “Libertarian Paternalism.” *American Economic Review* 93, no. 2: 175–79.

Thomas, D. 2019. “Regressive Effects of Regulation.” *Public Choice* 180: 1-10. https://doi.org/10.1007/s11127-018-00634-8.

Trebbi, F., M. Zhang, and M. Simkovic. 2024. “The Cost of Regulatory Compliance in the United States.” CESifo Working Paper 10589.

Viscusi, W. 2024. “Why Office of Management and Budget’s (OMB) Social Welfare Function Is Not Society’s Social Welfare Function.” *Journal of Benefit-Cost Analysis* 15: 252–75.

Viscusi, W., and T. Gayer. 2015. “Behavioral Public Choice: The Behavioral Paradox of Government Policy.” *Harvard Journal of Law & Public Policy* 38: 973–1007.

Wölfl, A., I. Wanner, O. Röhn, and G. Nicoletti. 2010. “Product Market Regulation: Extending the Analysis Beyond OECD Countries,” OECD Economics Department Working Paper 799. https://dx.doi.org/10.1787/5km68g3d1xzn-en.

Yackee, J., and S. Yackee. 2012. “Delay in Notice and Comment Rulemaking: Evidence of Systemic Regulatory Breakdown?” In *Regulatory Breakdown: The Crisis of Confidence in U.S. Regulation*, edited by C. Coglianese, 163–79. Philadelphia: University of Pennsylvania Press.

Zinberg, J. 2024. “Restoring Good Guidance Practices.” Competitive Enterprise Institute, June 12. https://cei.org/studies/restoring-good-guidance-practices/.

Chapter 3

Alfaro, L., and D. Chor. 2025. *An Anatomy of the Great Reallocation in U.S. Supply Chain Trade*. NEBR Working Paper 34490. Cambridge, MA: National Bureau of Economic Research.

Autor, D., D. Dorn, and G. Hanson. 2016. *The China Shock: Learning From Labor Market Adjustment to Large Changes in Trade*. NBER Working Paper 21906. Cambridge, MA: National Bureau of Economic Research.

BEA (U.S. Bureau of Economic Analysis). 2026a. “Private Fixed Investment: New Motor Vehicles.” FRED, Federal Reserve Bank of Saint Louis; https://fred.stlouisfed.org/series/AB68RC1Q027SBEA,

———. 2026b. “Table 1.1.5. Gross Domestic Product.” https://apps.bea.gov/iTable/?reqid=19&step=2&isuri=1&categories=survey&_gl=1*kil0mw*_ga.

CBP (U.S. Customs and Border Protection). 2025a. “CBP Uncovers More Than $400 Million in Duty Evasion by Bad Actors Who Undercut American Workers.” https://www.cbp.gov/newsroom/national-media-release/cbp-uncovers-more-400-million-duty-evasion-bad-actors-who-undercut.

———. 2025b. “CBP Ready to Enforce End of De Minimis Loophole, Securing Borders and Strengthening Trade Enforcement.” https://www.cbp.gov/newsroom/national-media-release/cbp-ready-enforce-end-de-minimis-loophole-securing-borders-and.

Chava, S., A. Oettl, M. Singh, and L.Zeng. 2023. “Creative Destruction? Impact of E-Commerce on the Retail Sector.” *Management Science*. https://doi.org/10.1287/mnsc.2023.4795.

DOC (U.S. Department of Commerce). 2026. "Fact Sheet: Restoring American Semiconductor Manufacturing Leadership Through an Agreement on Trade & Investment with Taiwan." https://www.commerce.gov/news/fact-sheets/2026/01/fact-sheet-restoring-american-semiconductor-manufacturing-leadership.

DOC (U.S. Department of Commerce), IEA (International Trade Administration), and USTR (Office of the U.S. Trade Representative). 2025a. "Implementing Certain Tariff-Related Elements of the U.S.-EU Framework on an Agreement on Reciprocal, Fair, and Balanced Trade." 90 *FR* 46136. https://www.federalregister.gov/documents/2025/09/25/2025-18660/impl—ementing-certain-tariff-related-elements-of-the-us-eu-framework-on-an-agreement-on-reciprocal.

———. 2025b. "Implementing the General Terms of the United States of America-United Kingdom Economic Prosperity Deal." 90 *FR* 26419. https://www.federalregister.gov/documents/2025/06/23/2025-11473/implementing-the-general-terms-of-the-united-states-of-america-united-kingdom-economic-prosperity.

DOJ (U.S. Department of Justice). 2025a. "Ceratizit USA LLC Agrees to Pay $54.4M to Settle False Claims Act Allegations Relating to Evaded Customs Duties." https://www.justice.gov/opa/pr/ceratizit-usa-llc-agrees-pay-544m-settle-false-claims-act-allegations-relating-evaded-0.

———. 2025b. "International Audio Electronics Company Harman Pays $11.8 Million to Settle Fraud Allegations for Evading Customs Duties on Chinese Extruded Aluminum." https://www.justice.gov/usao-edmi/pr/international-audio-electronics-company-harman-pays-118-million-settle-fraud.

———. 2025c. "Departments of Justice and Homeland Security Partnering on Cross-Agency Trade Fraud Task Force." https://www.justice.gov/opa/pr/departments-justice-and-homeland-security-partnering-cross-agency-trade-fraud-task-force.

———. 2025d. "Indonesian Jewelry Company, Co-Owner, and Two Other Employees Charged in Large-Scale Duty and Tariff Evasion Scheme." https://www.justice.gov/usao-nj/pr/indonesian-jewelry-company-co-owner-and-two-other-employees-charged-large-scale-duty-and.

European Commission. 2025. "Joint Statement on a United States–European Union Framework on an Agreement on Reciprocal, Fair and Balanced Trade." https://policy.trade.ec.europa.eu/news/joint-statement-united-states-european-union-framework-agreement-reciprocal-fair-and-balanced-trade-2025-08-21_en.

Jozepa, I., and D. Webb. 2026. "U.S. Trade Tariffs." U.K. Parliament, House of Commons Library. https://commonslibrary.parliament.uk/research-briefings/cbp-10240/.

Pillsbury Winthrop Shaw Pittman LLP. 2025. "DOJ and DHS Launch New Trade Fraud Task Force to Target China-Related Enforcement Actions." https://www.pillsburylaw.com/en/news-and-insights/doj-dhs-trade-fraud-task-force-china-enforcement-actions.html.

Public Law 243, Chapter 397, August 8, 1953. https://www.congress.gov/83/statute/STATUTE-67/STATUTE-67-Pg507.pdf.

U.S. Census Bureau and BEA (U.S. Bureau of Economic Analysis). 2026. "Trade Balance: Goods, Balance of Payments Basis." Federal Reserve Bank of Saint Louis. https://fred.stlouisfed.org/series/BOPGTB.

USTR (U.S. Trade Representative). 2025a. "U.S. Government Announces Agreement in Principle with the United Kingdom on Pharmaceutical Pricing." https://ustr.gov/about/policy-offices/press-office/press-releases/2025/december/us-government-announces-agreement-principle-united-kingdom-pharmaceutical-pricing.

———. 2025b. “Fact Sheet: The United States and Korea Agree to the Korea Strategic Trade and Investment Deal.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/november/fact-sheet-united-states-and-korea-agree-korea-strategic-trade-and-investment-deal.

———. 2025c. “Fact Sheet: The United States and Malaysia Reach an Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/october/fact-sheet-united-states-and-malaysia-reach-agreement-reciprocal-trade.

———. 2025d. “Fact Sheet: The United States and Cambodia Reach an Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/october/fact-sheet-united-states-and-cambodia-reach-agreement-reciprocal-trade/.

———. 2025e. “Fact Sheet: The United States and Thailand Reach a Framework for an Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/october/fact-sheet-united-states-and-thailand-reach-framework-agreement-reciprocal-trade.

———. 2025f. “Fact Sheet: The United States and Viet Nam Reach a Framework for an Agreement on Reciprocal, Fair, and Balanced Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/october/fact-sheet-united-states-and-viet-nam-reach-framework-agreement-reciprocal-fair-and-balanced-trade.

———. 2025g. “Fact Sheet: The United States and El Salvador Agree to a Framework for Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/november/fact-sheet-united-states-and-el-salvador-agree-framework-agreement-reciprocal-trade/.

———. 2025h. “Fact Sheet: The United States and Argentina Agree to a Framework for an Agreement on Reciprocal Trade and Investment.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/november/fact-sheet-united-states-and-argentina-agree-framework-agreement-reciprocal-trade-and-investment.

———. 2025i. “Fact Sheet: The United States and Ecuador Agree to a Framework for Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/november/fact-sheet-united-states-and-ecuador-agree-framework-agreement-reciprocal-trade.

———. 2025j. “Fact Sheet: The United States and Guatemala Agree to a Framework for Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2025/november/fact-sheet-united-states-and-guatemala-agree-framework-agreement-reciprocal-trade.

———. 2026a. “Fact Sheet on U.S.-Taiwan Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2026/february/fact-sheet-us-taiwan-agreement-reciprocal-trade.

———. 2026b. “Fact Sheet: The United States and Bangladesh Reach an Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2026/february/fact-sheet-united-states-and-bangladesh-reach-agreement-reciprocal-trade.

———. 2026c. “Fact Sheet: The United States and North Macedonia Reach a Framework for Agreement on Reciprocal Trade.” https://ustr.gov/about/policy-offices/press-office/fact-sheets/2026/february/fact-sheet-united-states-and-north-macedonia-reach-framework-agreement-reciprocal-trade.

White House. 2025a. “Fact Sheet: The United States and European Union Reach Massive Trade Deal.” https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-the-united-states-and-european-union-reach-massive-trade-deal/.

———. 2025b. “Fact Sheet: President Donald J. Trump Secures Unprecedented U.S.–Japan Strategic Trade and Investment Agreement.” https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-secures-unprecedented-u-s-japan-strategic-trade-and-investment-agreement/.

———. 2025c. “General Terms for the United States of America and the United Kingdom of Great Britain and Northern Ireland Economic Prosperity Deal.” https://www.whitehouse.gov/briefings-statements/2025/05/general-terms-for-the-united-states-of-america-and-the-united-kingdom-of-great-britain-and-northern-ireland-economic-prosperity-deal/.

———. 2025d. “Joint Fact Sheet on President Donald J. Trump’s Meeting with President Lee Jae Myung.” https://www.whitehouse.gov/fact-sheets/2025/11/joint-fact-sheet-on-president-donald-j-trumps-meeting-with-president-lee-jae-myung/.

———. 2025e. “Fact Sheet: The United States, Switzerland, and Liechtenstein Reach a Historic Trade Deal.” https://www.whitehouse.gov/fact-sheets/2025/11/fact-sheet-the-united-states-switzerland-and-liechtenstein-reach-a-historic-trade-deal/.

———. 2026a. “United States–India Joint Statement.” https://www.whitehouse.gov/briefings-statements/2026/02/united-states-india-joint-statement/.

———. 2026b. “Fact Sheet: Trump Administration Finalizes Trade Deal with Indonesia.” https://www.whitehouse.gov/fact-sheets/2026/02/fact-sheet-trump-administration-finalizes-trade-deal-with-indonesia/.

Chapter 4

ABB. 2025. “ABB to Invest US$110 Million in U.S. Manufacturing.” https://new.abb.com/news/detail/129047/abb-to-invest-us110-million-in-us-manufacturing.

Abnett, K. 2025. “EU Seeks More U.S. Gas, Renewable Energy to Replace Russian Supplies.” Reuters. https://www.reuters.com/business/energy/eu-seeks-more-us-gas-renewable-energy-replace-russian-supplies-2025-02-21/.

Anderson, J. “U.S. Gas-Fired Turbine Wait Times as Much as Seven Years; Costs Up Sharply.” S&P Global. https://www.spglobal.com/energy/en/news-research/latest-news/electric-power/052025-us-gas-fired-turbine-wait-times-as-much-as-seven-years-costs-up-sharply.

Bank of America Institute. 2025. “Power Check: Watt’s Going On with the Grid?” https://institute.bankofamerica.com/content/dam/transformation/us-electrical-grid.pdf.

Barth, A., D. González, J. Gonzalez, V. Hanzlík, G. Pinheiro, H. Tai, and A. Weiss. 2024. “How Grid Operators Can Integrate the Coming Wave of Renewable Energy.” McKinsey & Company. https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/how-grid-operators-can-integrate-the-coming-wave-of-renewable-energy#/.

Bipartisan Policy Center. 2012. “The Executive Branch and National Energy Policy: Time for Renewal.” https://bipartisanpolicy.org/wp-content/uploads/2019/03/BPC_Governance_Report_0.pdf.

Borenstein, S. and J. Bushnell. 2015. “The U.S. Electricity Industry After 20 Years of Restructuring.” *Annual Review of Economics* 7: 437–63.

———. 2022. “Do Two Electricity Pricing Wrongs Make a Right? Cost Recovery, Externalities, and Efficiency.” *American Economic Journal* 14, no. 4. https://pubs.aeaweb.org/doi/pdfplus/10.1257/pol.20190758.

Borenstein, S., M. Fowlie, and J. Sallee. 2022. "Paying for Electricity in California: How Residential Rate Design Impacts Equity and Electrification." Energy Institute at Haas. https://haas.berkeley.edu/wp-content/uploads/WP330.pdf.

California Air Resources Board. No date. "Advanced Clean Cars." https://ww2.arb.ca.gov/our-work/programs/drive-forward-light-duty-vehicle-program/advanced-clean-cars.

———. 2023, "Final Regulation Order: Advanced Clean Trucks Regulation." https://ww2.arb.ca.gov/sites/default/files/2023-06/ACT-1963.pdf.

———. 2024. "California Greenhouse Gas Emissions from 2000 to 2022: Trends of Emissions and Other Indicators." https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-2000_2022_ghg_inventory_trends.pdf.

California Energy Commission. 2024. "Electric Generation and Capacity 2024." https://www.energy.ca.gov/media/3757.

California New Car Dealers Association. 2025. "California Auto Outlook." https://www.cncda.org/wp-content/uploads/Cal-Covering-1Q-25.pdf.

Climate Action Tracker. 2024. "USA." https://climateactiontracker.org/countries/usa/2024-11-13/targets/.

Council of Economic Advisers. 2019. "The Value of U.S. Energy Innovation and Policies Supporting the Shale Revolution." https://trumpwhitehouse.archives.gov/wp-content/uploads/2019/10/The-Value-of-U.S.-Energy-Innovation-and-Policies-Supporting-the-Shale-Revolution.pdf.

Council on Environmental Quality. 2025. "Environmental Impact Statement Timelines (2010–2024)." https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timeline_Report_2025-1-13.pdf.

Crownhart, C. 2024. "Why Microsoft Made a Deal to Help Restart Three Mile Island." *MIT Technology Review*. https://www.technologyreview.com/2024/09/26/1104516/three-mile-island-microsoft/.

Disavino, S. 2025. "U.S. Natgas Prices at Waha Hub in Texas Fall into Negative Territory." Reuters. https://www.reuters.com/business/energy/us-natgas-prices-waha-hub-texas-fall-into-negative-territory-2025-05-19/.

Dunkle Werner, K., and S. Jarvis. 2025. "Rate of Return Regulation Revisited." SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5183367.

EDGAR (Emissions Database for Global Atmospheric Research). 2024. "Community GHG Database—a Collaboration Between the European Commission, Joint Research Centre (JRC), and the International Energy Agency (IEA), and Comprising IEA-EDGAR CO2, EDGAR CH4, EDGAR N2O, and EDGAR F-GASES version EDGAR_2024_GHG European Commission." https://edgar.jrc.ec.europa.eu/dataset_ghg2024.

Edison Electric Institute. "Weekly Electric Output." Vol. 93, no. 36.

European Commission. No date. "Climate Mainstreaming." https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/horizontal-priorities/green-budgeting/climate-mainstreaming_en.

Federal Register. 2025. Vol. 90, no. 36. https://www.govinfo.gov/content/pkg/FR-2025-02-25/pdf/2025-03014.pdf.

FERC (Federal Energy Regulatory Commission). 2023. "Order No. 2023: Improvements to Generator Interconnection Procedures and Agreements." https://www.ferc.gov/media/order-no-2023.

Gaffney, M., B. King, and J. Larsen. "Preliminary U.S. Greenhouse Gas Emissions Estimates for 2024." Rhodium Group. https://rhg.com/research/preliminary-us-greenhouse-gas-estimates-for-2024/.

GE Vernova. 2025. "GE Vernova Plans New $41 Million, 50 Job Investment in Schenectady to Expand Gas Power Capacity." https://www.gevernova.com/news/press-releases/ge-vernova-plans-new-41-million-50-job-investment-schenectady-expand-gas-power.

Greenstone, M. 2025. "Episode 1: Bad Energy." University of Chicago Institute for Climate & Sustainable Growth. https://climate.uchicago.edu/insights/ep1-bad-energy/.

Hitachi. 2025. "Hitachi Announces Historic $1 Billion USD Manufacturing Investment to Power America's Energy Future Through Production of Critical Grid Infrastructure." https://www.hitachienergy.com/us/en/news-and-events/press-releases/2025/09/hitachi-announces-historic-1-billion-usd-manufacturing-investment-to-power-america-s-energy-future-through-production-of-critical-grid-infrastructure.

Holland, S., E. Mansur, and A. Yates. 2021. "The Electric Vehicle Transition and the Economics of Banning Gasoline Vehicles." *American Economic Journal* 13, no. 3. https://www.aeaweb.org/articles?id=10.1257/pol.20200120.

Institute for Energy Research. 2024. "China in Command of the U.S. Domestic Solar Panel Manufacturing Industry." https://www.instituteforenergyresearch.org/renewable/china-in-command-of-the-u-s-domestic-solar-panel-manufacturing-industry/.

International Energy Agency. 2020. "Power Systems in Transition: Challenges and Opportunities Ahead for Electricity Security." https://iea.blob.core.windows.net/assets/cd69028a-da78-4b47-b1bf-7520cdb20d70/Power_systems_in_transition.pdf.

———. 2022. "Special Report on Solar PV Global Supply Chains." https://iea.blob.core.windows.net/assets/d2ee601d-6b1a-4cd2-a0e8-db02dc64332c/SpecialReportonSolarPVGlobalSupplyChains.pdf.

———. 2024. "Batteries and Secure Energy Transitions." https://iea.blob.core.windows.net/assets/cb39c1bf-d2b3-446d-8c35-aae6b1f3a4a0/BatteriesandSecureEnergyTransitions.pdf.

———. 2025a. "Electricity Mid-Year Update 2025." https://iea.blob.core.windows.net/assets/cc64f0aa-30e4-4497-9cca-1ffae2c55fe5/ElectricityMid-YearUpdate2025.pdf.

———. 2025b. "CO2 Emissions." https://www.iea.org/reports/global-energy-review-2025/co2-emissions.

———. No date. "India." https://www.iea.org/countries/india.

Jopson, B. 2025. "Spain's Grid Operator Warns of Renewed Blackout Risks." *Financial Times*, October 9. https://www.ft.com/content/b155d922-288a-4bb8-b207-a9f49bb645c7.

Larsen, P., et al. 2022. "A Turning Point for U.S. Climate Progress: Assessing the Climate and Clean Energy Provisions in the Inflation Reduction Act." Rhodium Group. https://rhg.com/research/climate-clean-energy-inflation-reduction-act/.

Lazzari, S. 2008. "Energy Tax Policy: History and Current Issues." Congressional Research Service. https://www.everycrsreport.com/files/20081030_RL33578_cf4843f39394d8832539b0ad5bada9c1cb900cce.pdf.

MacAvoy, P. 2000. *The Natural Gas Market: Sixty Years of Regulation and Deregulation*. New Haven, CT: Yale University Press.

Maldonado, S. 2025. "Gas Pipeline Rejected Three Times Is Back Under Consideration in New York." https://www.thecity.nyc/2025/09/04/natural-gas-pipeline-hochul-energy-trump-water-quality/.

Marcellus Drilling News. 2025. "Homer City Power Pledges to Buy $15 Billion of PA NatGas from EQT." https://marcellusdrilling.com/2025/07/homer-city-power-pledges-to-buy-15-billion-of-pa-natgas-from-eqt/.

Ministry of Ecology and Environment of the People's Republic of China. 2022. "China's Policies and Actions for Addressing Climate Change." https://english.mee.gov.cn/Resources/Reports/reports/202211/P020221110605466439270.pdf.

Moss. S. 2025. "Nvidia's Rubin Ultra NVL576 Rack Expected to Be 600kW, Coming Second Half of 2027." Data Center Dynamics. https://www.datacenterdynamics.com/en/news/nvidias-rubin-ultra-nvl576-rack-expected-to-be-600kw-coming-second-half-of-2027/.

National Automobile Dealers Association. 2024a. "Driving the United States' Economy." https://www.nada.org/media/7762/download?inline.

———. 2024b. "Driving California's Economy." https://www.nada.org/media/7722/download?inline.

National Laboratory of the Rockies. 2024. "Utility-Scale Battery Storage." Annual Technology Baseline. https://atb.nrel.gov/electricity/2024b/utility-scale_battery_storage.

New York ISO. 2025. "Power Trends: The New York ISO Annual Grid And Markets Report." https://www.nyiso.com/documents/20142/2223020/2025-Power-Trends.pdf.

New York Public Interest Group. 2025. "New York's About-Face on Gas Pipelines." https://www.nypirg.org/capitolperspective/new-yorks-about-face-on-gas-pipelines/.

Nixon, R. 1970. "Special Message to the Congress on Environmental Quality." American Presidency Project. https://www.presidency.ucsb.edu/documents/special-message-the-congress-environmental-quality.

Nixon Foundation. 2016. "Nixon's Nuclear Energy Vision." https://blog.nixonfoundation.org/2016/10/26948/.

Noffsinger, J. et al. 2025. "The Cost of Compute: A $7 Trillion Race to Scale Data Centers." McKinsey & Company. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-cost-of-compute-a-7-trillion-dollar-race-to-scale-data-centers.

North American Electric Reliability Corp. 2025a. "Statement on NPCC Northeast Gas/Electric System Study." https://www.nerc.com/newsroom/statement-on-npcc-northeast-gaselectric-system-study.

———. 2025b. "Iberian Peninsula Blackout: Contextual Comparison with North American BPS Reliability Safeguards." https://www.ferc.gov/sites/default/files/2025-06/Iberian%20Peninsula%20Blackout%20April%202025_final.pdf.

Norton Rose Fulbright 2025. "The Shift Back to Gas." https://www.projectfinance.law/publications/2025/august/the-shift-back-to-gas/.

New York Assembly. No date. "What the New All-Electric Buildings Plan Does." https://nyassembly.gov/all-electric-buildings/?sec=what_it_does.

Open Access Government. 2025. "U.S. Secures $200 Billion LNG Deal with Japan's JERA." https://www.openaccessgovernment.org/u-s-secures-200-billion-lng-deal-with-japans-jera/193951/.

PJM. 2025. "PJM Chooses 51 Generation Resource Projects to Address Near-Term Electricity Demand Growth." PJM Inside Lines. https://insidelines.pjm.com/pjm-chooses-51-generation-resource-projects-to-address-near-term-electricity-demand-growth/.

PR Newswire. 2025. "Energy Innovation Center Institute (EICI) Launches First-of-Its-Kind Infrastructure Academy Regional Training (IART) Facility." https://www.prnewswire.com/news-releases/energy-innovation-center-institute-eici-launches-first-of-its-kind-infrastructure-academy-regional-training-iart-facility-302508282.html.

Public Advocate's Office. 2023. "Distribution Grid Electrification Model: Study and Report." https://www.publicadvocates.cpuc.ca.gov/-/media/cal-advocates-website/files/press-room/reports-and-analyses/230824-public-advocates-distribution-grid-electrification-model-study-and-report.pdf.

Rand, J., et al. 2024. "Queued Up: 2024 Edition: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2023." Berkeley Lab. https://emp.lbl.gov/sites/default/files/2024-04/Queued%20Up%202024%20Edition_R2.pdf.

Saez, E., J. Slemrod, and S. Giertz. 2012. "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review." *Journal of Economic Literature* 50, no. 1: 3–50. https://pubs.aeaweb.org/doi/pdfplus/10.1257/jel.50.1.3/.

Sheldon, T., and R. Dua. 2019. "Measuring the Cost-Effectiveness of Electric Vehicle Subsidies," *Energy Economics* 84: 104545. https://doi.org/10.1016/j.eneco.2019.104545.

Silver, L., C. Huang, and L. Clancy. 2023. "Key Facts as India Surpasses China as the World's Most Populous Country." Pew Research Center. https://www.pewresearch.org/short-reads/2023/02/09/key-facts-as-india-surpasses-china-as-the-worlds-most-populous-country/.

Skidmore, Z. 2025. "DTE Energy signs 1.4GW Power Deal with Unnamed Hyperscaler." Data Center Dynamics. https://www.datacenterdynamics.com/en/news/dte-energy-signs-14gw-power-deal-with-unnamed-hyperscaler/.

Talen Energy. 2025. "Talen Energy Expands Nuclear Energy Relationship with Amazon." https://ir.talenenergy.com/news-releases/news-release-details/talen-energy-expands-nuclear-energy-relationship-amazon.

TC Energy. 2025. "TC Energy Commends President Trump and U.S. Senator McCormick for Prioritizing Energy Infrastructure at Pennsylvania Energy and Innovation Summit." https://www.tcenergy.com/newsroom/statements/2025-07-15-tc-energy-commends-president-trump-and-us-senator-mccormick-for-prioritizing-energy/.

Thomas, D., B. Boucher, and M. Medrek-Laske. "Transformer Troubles: Manufacturing and Policy Constraints Hit U.S. Transformer Supply." Wood Mackenzie. https://www.woodmac.com/news/opinion/transformer-troubles-manufacturing-and-policy-constraints-hit-us-transformer-supply/.

United Nations. 2015. "The Paris Agreement." https://www.un.org/en/climatechange/paris-agreement.

University of Pennsylvania. 2023. Penn Wharton Budget Model. April 27. "Update: Budgetary Cost of Climate and Energy Provisions in the Inflation Reduction Act." https://budgetmodel.wharton.upenn.edu/estimates/2023/4/27/update-cost-climate-and-energy-inflation-reduction-act.

U.S. Department of Energy. 2025. "Resource Adequacy Report: Evaluating the Reliability and Security of the United States Electric Grid." https://www.energy.gov/sites/default/files/2025-07/DOE%20Final%20EO%20Report%20%28FINAL%20JULY%207%29.pdf.

———. No date. "Adoption of California's Clean Vehicle Standards by State." https://afdc.energy.gov/laws/california-standards.

U.S. Energy Information Administration. 2011. “History of Energy Consumption in the United States, 1775–2009.” https://www.eia.gov/todayinenergy/detail.php?id=10.

———. 2014. “U.S. Energy Facts Explained.” https://www.eia.gov/energyexplained/us-energy-facts/.

———. 2021. “Electric Power Sector CO2 Emissions Drop as Generation Mix Shifts from Coal to Natural Gas.” https://www.eia.gov/todayinenergy/detail.php?id=48296.

———. 2023a. “Natural Gas Explained.” https://www.eia.gov/energyexplained/natural-gas/imports-and-exports.php.

———. 2023b. “Oil and Petroleum Products Explained.” https://www.eia.gov/energyexplained/oil-and-petroleum-products/imports-and-exports.php.

———. 2024a. “Retail Electricity Prices Closely Tracked Inflation over the Last 10 Years.” https://www.eia.gov/todayinenergy/detail.php?id=63064.

———. 2024b. “Grid Infrastructure Investments Drive Increase in Utility Spending over Last Two Decades.” https://www.eia.gov/todayinenergy/detail.php?id=63724.

———. 2024c. “Retail Electricity Prices Closely Tracked Inflation over the Last 10 Years.” https://www.eia.gov/todayinenergy/detail.php?id=63064.

———. 2025a. “Electric Power Monthly: Table 6.07.A: Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels.” https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_a.

———. 2025b. “Electric Power Monthly: Table 6.07.B: Capacity Factors for Utility Scale Generators Primarily Using Non-Fossil Fuels.” https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_b.

———. 2025c. “U.S. Developers Report Half of New Electric Generating Capacity Will Come from Solar.” https://www.eia.gov/todayinenergy/detail.php?id=65964.

———. 2025d. “U.S. Electricity Prices Continue Steady Increase.” https://www.eia.gov/todayinenergy/detail.php?id=65284/.

———. 2025e. “Rarely Used Oil, Coal Helped Power New England During Recent Cold Snap.” https://www.eia.gov/todayinenergy/detail.php?id=64484.

———. 2025f. “Electric Power Monthly: Table 5.6.A: Average Price of Electricity to Ultimate Customers by End-Use Sector.” https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a.

———. 2025g. “China Dominates Global Trade of Battery Minerals.” https://www.eia.gov/todayinenergy/detail.php?id=65305.

———. 2025h. “Table 4.5: Planned Utility-Scale Generating Capacity Changes, by Energy Source, 2025–2029.” https://www.eia.gov/electricity/annual/html/epa_04_05.html.

U.S. Environmental Protection Agency. 2025a. “What Is the National Environmental Policy Act?” https://www.epa.gov/nepa/what-national-environmental-policy-act.

———. 2025b. “Alternative Arrangements for Compliance with the National Environmental Policy Act amid the National Energy Emergency.” https://www.doi.gov/sites/default/files/documents/2025-04/alternative-arrangements-nepa-during-national-energy-emergency-2025-04-23-signed_1.pdf.

Weisenthal, J., and T. Alloway. 2025. “Neil Dutta’s Gut Check: Three Economies.” Bloomberg. https://www.bloomberg.com/news/newsletters/2025-08-06/neil-duttas-gut-check-three-economies.

White House. 2025a. “Ending Market Distorting Subsidies for Unreliable, Foreign Controlled Energy Sources.” https://www.whitehouse.gov/presidential-actions/2025/07/ending-market-distorting-subsidies-for-unreliable-foreign%E2%80%91controlled-energy-sources/.

———. 2025b. "TRUMP EFFECT: A Running List of New U.S. Investment in President Trump's Second Term." https://www.whitehouse.gov/articles/2025/08/trump-effect-a-running-list-of-new-u-s-investment-in-president-trumps-second-term/.

———. 2025c. "Ordering the Reform of the Nuclear Regulatory Commission." https://www.whitehouse.gov/presidential-actions/2025/05/ordering-the-reform-of-the-nuclear-regulatory-commission/.

———. 2025d. "Reforming Nuclear Reactor Testing at the Department of Energy." https://www.whitehouse.gov/presidential-actions/2025/05/reforming-nuclear-reactor-testing-at-the-department-of-energy/.

———. 2025e. "Reinvigorating the Nuclear Industrial Base." https://www.whitehouse.gov/presidential-actions/2025/05/reinvigorating-the-nuclear-industrial-base/.

———. 2025f. "Deploying Advanced Nuclear Reactor Technologies for National Security." https://www.whitehouse.gov/presidential-actions/2025/05/deploying-advanced-nuclear-reactor-technologies-for-national-security/.

———. 2025g. "Strengthening the Reliability and Security of the United States Electric Grid." https://www.whitehouse.gov/presidential-actions/2025/04/strengthening-the-reliability-and-security-of-the-united-states-electric-grid/.

———. 2025h. "Protecting American Energy from State Overreach." https://www.whitehouse.gov/presidential-actions/2025/04/protecting-american-energy-from-state-overreach/.

———. 2025i. "Fact Sheet: The United States and European Union Reach Massive Trade Deal." https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-the-united-states-and-european-union-reach-massive-trade-deal/.

Wing, I., et al. 2025. "A Method to Estimate the Economy-Wide Consequences of Widespread, Long Duration Electric Power Interruptions." *Nature Communications* 16. https://www.nature.com/articles/s41467-025-58537-4.

Wiser, R., G. Barbose, P. Cappers, J. Deason, S. Forrester, W. Gorman, E. O'Shaughnessy, R. Hledik, L. Lam, and A. Yan. 2025. "Factors Influencing Recent Trends in Retail Electricity Prices in the United States: What Do We Know? Where Are the Gaps?" https://eta-publications.lbl.gov/sites/default/files/2025-10/full_summary_retail_price_trends_drivers.pdf.

Wiser, R., E. O'Shaughnessy, G. Barbose, P. Cappers, and W. Gorman. 2025. "Factors Influencing Recent Trends in Retail Electricity Prices in the United States." *Electricity Journal* 38, no. 4. https://www.sciencedirect.com/science/article/pii/S1040619025000612?via%3Dihub.

Wolverton, A., R. Shadbegian, and W. Gray. 2022. *The U.S. Manufacturing Sector's Response to Higher Electricity Prices: Evidence from State-Level Renewable Portfolio Standards*. NBER Working Paper 30502. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w30502/w30502.pdf.

U.S. Congress. 2025. "Working Class Families Tax Cuts Act." https://www.congress.gov/119/plaws/publ21/PLAW-119publ21.pdf.

Yamashita, S., and T. Wholf. 2025. "Senate Votes to Revoke California's EV Emissions Waivers." CBS News. https://www.cbsnews.com/news/senate-gop-set-to-revoke-californias-car-emissions-standards-nuclear-option/.

Yergin, D., P. Orszag, and A. Arya. 2025. "The Troubled Energy Transition." Foreign Affairs. https://www.foreignaffairs.com/united-states/troubled-energy-transition-yergin-orszag-arya.

Zanger, J. 2025. "Hochul Delays New York's All-Electric Building Law That Was Set to Take Effect Next Year." CBS News. https://www.cbsnews.com/newyork/news/ny-all-electric-building-law-delayed/.

Chapter 5

Acemoglu, D. 2024. *The Simple Macroeconomics of AI*. NBER Working Paper 32487. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w32487/w32487.pdf.

Adamczewski, T., B. Cottier, D. Owen, and B. Snodin. 2025. "LLM inference Prices Have Fallen Rapidly but Unequally Across Tasks." Epoch AI. https://epoch.ai/data-insights/llm-inference-price-trends.

Adamson, G., T. Burga, T. Fist, and S. Khan. 2025. "Should the U.S. Sell Blackwell Chips to China?" IFP. https://ifp.org/the-b30a-decision/.

Aghion, P., A. Bergeaud, and J. Van Reenen. 2023. "The Impact of Regulation on Innovation." *American Economic Review*. https://www.aeaweb.org/articles?id=10.1257/aer.20210107.

Agten, C., and H. Ruthven. 2025. "Perspective: AI Productivity Will Not Benefit Employed Radiologists." *European Journal of Radiology Artificial Intelligence*. https://www.sciencedirect.com/science/article/pii/S3050577125000313.

Alcott, B. 2005. "Jevons' Paradox." *Ecological Economics*. https://www.sciencedirect.com/science/article/abs/pii/S0921800905001084.

Aldasoro, I., S. Doerr, L. Gambacorta, and D. Rees. 2024. "The Impact of Artificial Intelligence on Output and Inflation." Bank for International Settlements. https://www.bis.org/publ/work1179.pdf.

Alonso, C., A. Berg, S. Kothari, C. Papageorgiou, and S. Rehman. 2022. "Will the AI Revolution Cause a Great Divergence?" *Journal of Monetary Economics*. https://www.sciencedirect.com/science/article/abs/pii/S0304393222000162.

Andes, S., R. Atkinson, R. Bennett, D. Castro, and S. Ezell. 2010. "The Internet Economy 25 Years After .Com." Information Technology and Innovation Foundation. https://www2.itif.org/2010-25-years.pdf.

Appel, R., M. McCain, P. McCrory. T. Neylon, M. Stern, and A. Tamkin. 2025. "The Anthropic Economic Index Report." Anthropic. https://assets.anthropic.com/m/218c82b858610fac/original/Economic-Index.pdf.

Ashton, F. 2023. "Excessively Burdensome Regulation Negatively Impacts Competition." American Action Forum. https://www.americanactionforum.org/insight/excessively-burdensome-regulation-negatively-impacts-competition/.

Autor, D., C. Chin, A. Salomons, and B.Seegmiller. 2024. "New Frontiers: The Origins and Content of New Work, 1940–2018." *Quarterly Journal of Economics*. https://academic.oup.com/qje/article/139/3/1399/7630187.

Ayres, R. 1990. "Technological Transformations and Long Waves. Part I." Technological Forecasting and Social Change. https://www.sciencedirect.com/science/article/abs/pii/004016259090057З.

Azebu, L., and A. Varma. 2025. "International Tax Changes in the One Big Beautiful Bill Act." Steptoe. https://www.steptoe.com/en/news-publications/international-tax-changes-in-the-one-big-beautiful-bill-act.html.

Bailey, J., and D. Thomas. 2018. "Regulating Away Competition: The Effect of Regulation on Entrepreneurship and Employment." SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191318.

Bansal, M., M. Bartolo, A. Geiger, R. Jia, D. Kaushik, D. Kiela, Z. Ma, Y. Nie, C. Potts, G. Prasad, S. Riedel, P. Ringshia, A. Singh, P. Stenetorp, T. Thrush, B. Vidgenk, Z. Waseem, A. Williams, and Z. Wu. 2021. "Dynabench: Rethinking Benchmarking in NLP." Association for Computational Linguistics. https://www.researchgate.net/figure/Benchmark-saturation-over-time-for-popular-benchmarks-normalized-with-initial_fig1_351221914.

Benaich, N. 2025. "The State of AI Report 2025." Air Street Press, October 9. https://press.airstreet.com/p/the-state-of-ai-2025.

Blanco, L., J. Gu, and J. Prieger. 2016. "The Impact of Research and Development on Economic Growth and Productivity in the U.S. States." *Southern Economic Journal*. https://onlinelibrary.wiley.com/doi/abs/10.1002/soej.12107.

BPM. 2025. "How the One Big Beautiful Bill Act Reshapes the Tax Landscape for Technology Companies." https://www.bpm.com/insights/obbba-tech-companies/.

Brynjolfsson, E., B. Chandar, and R. Chen. 2025. "Canaries in the Coal Mine? Six Facts About the Recent Employment Effects of Artificial Intelligence." https://digitaleconomy.stanford.edu/wp-content/uploads/2025/08/Canaries_BrynjolfssonChandarChen.pdf.

Burnham, G. 2025. "OpenAI Is Projecting Unprecedented Revenue Growth." Epoch AI. https://epoch.ai/gradient-updates/openai-is-projecting-unprecedented-revenue-growth.

Ceballos, A., J. Fletcher III, N. Gerlach, G. Janoff, J. Krengel, J. Mainzer, B. Markoff, M. Olney, S. Simon, Z. Wertheimer, and P. Wolman. 2025. "Key Tax Changes in Public Law 119-21: What Individuals and Businesses Need to Know." JD Supra. https://www.jdsupra.com/legalnews/key-tax-changes-in-public-law-119-21-9564817/.

Chambers, D., C. Collins, and A. Krause. 2019. "How Do Federal Regulations Affect Consumer Prices? An Analysis of the Regressive Effects of Regulation." Springer. https://www.jstor.org/stable/pdf/48704154.pdf.

Chambers, D., P. McLaughlin, and L. Stanley. 2018. "Regulation and Poverty: An Empirical Examination of the Relationship Between the Incidence of Federal Regulation and the Occurrence of Poverty Across the U.S. States." Springer Nature. https://link.springer.com/article/10.1007/s11127-018-0603-8.

Chou, Y., H. Chuang, and B. Shao. 2014. "The Impacts of Information Technology on Total Factor Productivity: A Look at Externalities and Innovations." *International Journal of Production Economics*. https://www.sciencedirect.com/science/article/abs/pii/S0925527314002618.

Cloudflare. No date. "What Is a Large Language Model (LLM)?" https://www.cloudflare.com/learning/ai/what-is-large-language-model/.

Coffey, B., P. McLaughlin, and P. Peretto. 2020. "The Cumulative Cost of Regulations." *Review of Economic Dynamics*. https://www.sciencedirect.com/science/article/abs/pii/S1094202520300223.

Companies Market Cap. No date. "Revenue for Amazon (AMZN)." https://companiesmarketcap.com/amazon/revenue/.

Consello. No date. "S&P Q4 '24 Earnings Analysis." https://consello.com/reports/sp-q4-24-earnings-analysis/.

Cooper, R., P. Gumbel, and S. Lund. 2018. “What Can History Teach Us About Technology and Jobs?” McKinsey Global Institute. https://www.mckinsey.com/featured-insights/future-of-work/what-can-history-teach-us-about-technology-and-jobs.

Cottier, B., L. Fattorini, N. Maslej, R. Rahman, and D. Owen. 2024. “How Much Does It Cost to train Frontier AI Models?” Epoch AI. https://epoch.ai/blog/how-much-does-it-cost-to-train-frontier-ai-models.

Crain, M., and N. Crain. 2014. “The Cost of Federal Regulation to the U.S. Economy, Manufacturing, and Small Businesses.” National Association of Manufacturers. https://www.nam.org/wp-content/uploads/2019/05/Federal-Regulation-Full-Study.pdf.

Cveko, J. 2025. “AI Diffusion Report: Mapping Global AI Adoption and Innovation.” Microsoft. https://news.microsoft.com/source/emea/features/ai-diffusion-report-mapping-global-ai-adoption-and-innovation-3/.

Demombynes, G., L. Jörg, and M. Weber. 2025. “The Exposure of Workers to Artificial Intelligence in Low- and Middle-Income Countries.” World Bank. https://openknowledge.worldbank.org/entities/publication/4a11a37d-149a-44fb-a941-100065ff5eb8.

Dibal, D. 2025. “Jevons’ Paradox: The Case of Energy-Efficient Lighting.” *Medium*, February 22. https://medium.com/babson-germany/jevons-paradox-the-case-of-energy-efficient-lighting-1d682483d7ab.

DOE (U.S. Department of Energy). 2025. “DOE Identifies 16 Federal Sites Across the Country for Data Center and AI Infrastructure Development.” https://www.energy.gov/articles/doe-identifies-16-federal-sites-across-country-data-center-and-ai-infrastructure.

Donaldson, D. 2018. “Railroads of the Raj: Estimating the Impact of Transportation Infrastructure.” *American Economic Review*. https://www.aeaweb.org/articles?id=10.1257/aer.20101199.

Dragan, A., F. Flynn, S. Legg, and R. Shah. 2025. “Taking a Responsible Path to AGI.” Google DeepMind. https://deepmind.google/discover/blog/taking-a-responsible-path-to-agi/.

Duranton, G., and M. Turner. 2011. “The Fundamental Law of Road Congestion: Evidence from U.S. Cities.” *American Economic Review*. https://www.aeaweb.org/articles?id=10.1257/aer.101.6.2616.

Edelman, Y., L. Emberson, and J. Sanders. 2025. “What Did It Take to Train Grok 4?” Epoch AI. 2025. https://epoch.ai/data-insights/grok-4-training-resources.

Elvery, J. 2019. “Changes in the Occupational Structure of the United States: 1860 to 2015.” Federal Reserve Bank of Cleveland. https://www.clevelandfed.org/publications/economic-commentary/2019/ec-201909-changes-in-us-occupational-structure.

Emberson, L., L. Heim, K. Pilz, R. Rahman, and J. Sanders. 2025. “The U.S. Hosts the Majority of GPU Cluster Performance, Followed by China.” Epoch AI. https://epoch.ai/data-insights/ai-supercomputers-performance-share-by-country.

Emberson, L., D. Owen, and B. Snodin. 2025. “The Combined Revenues of Leading AI Companies Grew by Over 9x in 2023–2024.” Epoch AI. https://epoch.ai/data-insights/ai-companies-revenue.

Epoch AI. 2025. “AI Models.” https://epoch.ai/data/ai-models.

Federal Register. 2025a. “Accelerating Federal Permitting of Data Center Infrastructure.” https://www.federalregister.gov/documents/2025/07/28/2025-14212/accelerating-federal-permitting-of-data-center-infrastructure.

———. 2025b. “Ensuring a National Policy Framework for Artificial Intelligence.” https://www.federalregister.gov/documents/2025/12/16/2025-23092/ensuring-a-national-policy-framework-for-artificial-intelligence.

Feigenbaum, J., and D. Gross. 2024. “Answering the Call of Automation: How the Labor Market Adjusted to Mechanizing Telephone Operation.” *Quarterly Journal of Economics*. https://academic.oup.com/qje/article/139/3/1879/7614605.

Ferguson, R., Jr., and W. Wascher. 2004. “Distinguished Lecture on Economics in Government: Lessons from Past Productivity Booms.” *Journal of Economic Perspectives*. https://www.federalreserve.gov/boarddocs/speeches/2004/20040707/attachment.pdf.

Ferres, J., S. McCullers, A. Misra, J. Wang, and K. White. 2025. “Measuring AI Diffusion: A Population-Normalized Metric for Tracking Global AI Usage.” Microsoft AI for Good Lab. https://aka.ms/AI_Diffusion_Technical_Report.

FRED (Federal Reserve Economic Data). 2025a. “Gross Domestic Product (GDP).” https://fred.stlouisfed.org/graph/?g=1Pw1E.

———. 2025b. “Fixed Private Investment.” https://fred.stlouisfed.org/series/FPI.

———. 2025c. “Private Fixed Investment in Information Processing Equipment and Software.” https://fred.stlouisfed.org/series/A679RC1Q027SBEA.

———. 2025d. “Real Private Fixed Investment: Private Fixed Investment in Information Processing Equipment and Software.” https://fred.stlouisfed.org/series/A679RL1Q225SBEA.

Gimbel, M., M. Kinder, J. Kendall, and M. Lee. 2025. “Evaluating the Impact of AI on the Labor Market: Current State of Affairs.” Budget Lab. https://budgetlab.yale.edu/research/evaluating-impact-ai-labor-market-current-state-affairs.

Goldman Sachs. 2023. “Generative AI Could Raise Global GDP by 7%.” https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent.

Google Cloud. 2026. “What Is Artificial General Intelligence?” https://cloud.google.com/discover/what-is-artificial-general-intelligence.

———. No date. “What Is Agentic AI?” https://cloud.google.com/discover/what-is-agentic-ai.

Gourinchas, P. 2025. “As One Cycle Ends, Another Begins Amid Growing Divergence.” International Monetary Fund. https://www.imf.org/en/Blogs/Articles/2025/01/17/as-one-cycle-ends-another-begins-amid-growing-divergence.

Haag, A. 2025. “The State of AI Competition in Advanced Economies.” Federal Reserve System. https://www.federalreserve.gov/econres/notes/feds-notes/the-state-of-ai-competition-in-advanced-economies-20251006.html.

Hanson, R. 2001. “Economic Growth Given Machine Intelligence.” Working paper, University of California, Berkeley. https://mason.gmu.edu/~rhanson/aigrow.pdf.

Hartley, J., F. Jolevski, V. Melo, and B. Moore. 2025. “The Labor Market Effects of Generative Artificial Intelligence.” SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5136877.

Hausman, W., A. Pereria, and R. Pereria. 2014. “Railroads and Economic Growth in the Antebellum United States.” College of William and Mary, Department of Economics. https://economics.wm.edu/wp/cwm_wp153.pdf.

Heath, A. 2024. “Mark Zuckerberg’s New Goal Is Creating Artificial General Intelligence.” *Verge*, January 18. https://www.theverge.com/2024/1/18/24042354/mark-zuckerberg-meta-agi-reorg-interview.

Heim, L., K. Pilz, R. Rahman, and J. Sanders. 2025. "Trends in AI Supercomputers." Epoch AI. https://epoch.ai/blog/trends-in-ai-supercomputers.

Hong, J. 2025. "Access to Critical Minerals Is the Achilles' Heel of Trump's AI Ambitions." Tech Policy Press, September 5. https://www.techpolicy.press/access-to-critical-minerals-is-the-achilles-heel-of-trumps-ai-ambitions/.

Hötte, K., M. Somers, and A. Thedorakopoulos. 2023. "Technology and Jobs: A Systematic Literature Review." *Technological Forecasting and Social Change*. https://www.sciencedirect.com/science/article/pii/S0040162523004353.

Hsu, W., and H. Zhang. 2014. "The Fundamental Law of Highway Congestion Revisited: Evidence from National Expressways in Japan." *Journal of Urban Economics*. https://ideas.repec.org/a/eee/juecon/v81y2014icp65-76.html.

Hymel, K. 2019. "If You Build It, They Will Drive: Measuring Induced Demand for Vehicle Travel in Urban Areas." Transport Policy. https://ideas.repec.org/a/eee/trapol/v76y2019icp57-66.html.

IMF (International Monetary Fund). 2025. "GDP Based on PPP, Share of World." https://www.imf.org/external/datamapper/PPPSH@WEO/EU/CHN.

———. No date. "AI Preparedness Index." https://www.imf.org/external/datamapper/datasets/AIPI.

International Energy Association. No date. "World Energy Outlook Special Report: Energy and AI." https://iea.blob.core.windows.net/assets/de9dea13-b07d-42c5-a398-d1b3ae17d866/EnergyandAI.pdf.

Jie, W., X. Liyun, A. Long, Z. Pei, Y. Wang, D. Xiaoya, H. Yang, and L. Yang L. 2020. "The Verification of Jevons' Paradox of Agricultural Water Conservation in Tianshan District of China Based on Water Footprint." *Agricultural Water Management*. https://doi.org/10.1016/j.agwat.2020.106163.

Johnston, A., and C. Makridis. 2025. "The Labor Market Effects of Generative AI: A Difference-in-Differences Analysis of AI Exposure." SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5375017.

Kaur, D. 2025. "China to Deploy $98bn in AI Investment This Year Amid U.S. Tech Rivalry." *TechWire Asia*, June 26. https://techwireasia.com/2025/06/china-ai-investment-98-billion-2025-us-rivalry/.

Kharazian, A. 2026. "Ramp AI Index." RAMP. https://ramp.com/data/ai-index.

Liu, Y., and H. Wang. 2024. "Who on Earth Is Using Generative AI? (English)." World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099720008192430535.

Luna, A., and S. Pomerleau. 2025. "AI Data Centers: Why Are They So Energy Hungry?" American Action Forum. https://www.americanactionforum.org/insight/ai-data-centers-why-are-they-so-energy-hungry/.

McKinsey. 2023. "The Economic Potential of Generative AI: The Next Productivity Frontier." https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier.

METR. 2025. "Measuring AI Ability to Complete Long Tasks." https://metr.org/blog/2025-03-19-measuring-ai-ability-to-complete-long-tasks/?_hsenc=p2ANqtz-9DUlqNn6Sek19FuCpx_RpDPVQ1MzwEpE1LBhfSBDbnvo0lK4U1jwTw9gyqXi-8HIAeXmW0X.

Microsoft. 2025."AI Diffusion Report: Where AI Is Most Used, Developed and Built." https://www.microsoft.com/en-us/research/group/aiei/ai-diffusion/.

Mousa, D. 2025. "AI Isn't Replacing Radiologists." Understanding AI. https://www.understandingai.org/p/ai-isnt-replacing-radiologists.

Muppidi, S. 2025. “Nvidia Becomes First Company to Reach $5 Trillion Valuation, Fueled by AI Boom.” *The Information*, September 5. https://www.theinformation.com/articles/openai-says-business-will-burn-115-billion-2029.

Musk, E. 2025. “I Now Think @xAI Has a Chance of Reaching AGI with @Grok 5. Never Thought That Before.” X post, September 17. https://x.com/elonmusk/status/1968202372276163029.

National Science Foundation. 2025. “Overall R&D Scale and Growth.” https://ncses.nsf.gov/pubs/nsb20257.

OpenAI. 2023. “Planning for AGI and Beyond.” https://openai.com/index/planning-for-agi-and-beyond/.

———. 2025. “Introducing Stargate UAE.” https://openai.com/index/introducing-stargate-uae/.

Our World in Data. 2025a. “Cumulative Number of Large-Scale AI Systems by Country Since 2017.” https://ourworldindata.org/grapher/cumulative-number-of-large-scale-ai-systems-by-country.

———. 2025b. “External Funding for Privately Held AI Companies Raising Above $1.5 Million.” https://ourworldindata.org/grapher/private-investment-in-artificial-intelligence?time=earliest..2024.

Oxford Economics. 2024. “How GenAI Will Change the World Economy.” https://www.oxfordeconomics.com/resource/how-genai-will-change-the-world-economy/.

Penn Wharton Budget Model. 2025. “The Projected Impact of Generative AI on Future Productivity Growth.” https://budgetmodel.wharton.upenn.edu/issues/2025/9/8/projected-impact-of-generative-ai-on-future-productivity-growth.

Perkel, S. 2025. “Anthropic CEO Says AGI Is a Marketing Term and the Next AI Milestone Will Be Like a ‘Country of Geniuses in a Data Center.” *Business Insider*, January 22. https://www.businessinsider.com/anthropic-ceo-calls-agi-marketing-term-2025-1.

Pomeranz, K. 2000. *The Great Divergence: China, Europe, and the Making of the Modern World Economy*. Princeton, NJ: Princeton University Press.

Prescott, E. 1998. “Needed: A Theory of Total Factor Productivity.” *International Economic Review*. https://www.jstor.org/stable/2527389.

PricewaterhouseCoopers. 2025. “Value in Motion.” https://www.pwc.com/bm/en/press-releases/value-in-motion.html.

Public Investment Fund of Saudi Arabia. 2025. “HRH Crown Prince Launches HUMAIN as Global AI Powerhouse.” https://www.pif.gov.sa/en/news-and-insights/press-releases/2025/hrh-crown-prince-launches-humain-as-global-ai-powerhouse/.

Ritchie, H. 2024. “Many Countries Are ‘Leapfrogging’ Landlines and Going Straight to Mobile Phones,” Our World in Data. https://ourworldindata.org/data-insights/many-countries-are-leapfrogging-landlines-and-going-straight-to-mobile-phones.

Roldán, E., and J. Sevilla. 2024. “Training Compute of Frontier AI Models Grows by 4-5x per Year.” Epoch AI. https://epoch.ai/blog/training-compute-of-frontier-ai-models-grows-by-4-5x-per-year.

Rosalsky, G. 2025. “Why the AI World Is Suddenly Obsessed with a 160-Year-Old Economics Paradox.” NPR, February 4. https://www.npr.org/sections/planet-money/2025/02/04/g-s1-46018/ai-deepseek-economics-jevons-paradox.

Shackleton, R. 2013. “Total Factor Productivity Growth in Historical Perspective.” Congressional Budget Office. https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/workingpaper/44002_TFP_Growth_03-18-2013_1.pdf.

Similarweb. 2025. “Chatgpt.com Website Analysis for November 2025.” https://www.similarweb.com/website/chatgpt.com/#traffic.

Solow, R. 1987. “We’d Better Watch Out.” *New York Times Book Review*, July 12. http://digamo.free.fr/solow87.pdf.

Stanford Institute for Human-Centered Artificial Intelligence. 2025. “Artificial Intelligence Index Report 2025.” https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf.

Stryker, C. No date. “What Are Large Language Models (LLMs)?” IBM. https://www.ibm.com/think/topics/large-language-models.

Tang, W., T. Wang, and W. Xu. 2022. “Sooner or Later? The Role of Adoption Timing in New Technology Introduction.” *Production and Operations Management*. https://onlinelibrary.wiley.com/doi/epdf/10.1111/poms.13637?msockid=28439e724fd560f012f588f14e1861b7.

Triplett, J. 1999. “The Solow Productivity Paradox: What Do Computers Do to Productivity?” Brookings Institution. https://www.brookings.edu/articles/the-solow-productivity-paradox-what-do-computers-do-to-productivity/.

Turak, N. 2025. “Saudi AI Firm Humain Is Pouring Billions into Data Centers; Will It Pay Off?” CNBC, August 27. https://www.cnbc.com/2025/08/27/saudi-arabia-wants-to-be-worlds-third-largest-ai-provider-humain.html.

U.S. Bureau of Labor Statistics. 2025. “Economic News Release.” https://www.bls.gov/news.release/empsit.nr0.htm.

U.S. Census. 2025. “Business Trends and Outlook Survey.” https://www.census.gov/hfp/btos/data_downloads.

U.S. State Department. 2025a. “Pax Silica.” https://www.state.gov/pax-silica.

———. 2025b. “The United States Welcomes Qatar’s Signing of Pax Silica Declaration.” https://www.state.gov/releases/office-of-the-spokesperson/2026/01/the-united-states-welcomes-qatars-signing-of-pax-silica-declaration.

Voice of America. 2025. “Trump Advances U.S. Leadership in AI.” https://editorials.voa.gov/a/trump-advances-us-leadership-in-ai/8050987.html.

White House. 2025a. “The Economic Benefits of Unleashing American Energy.” https://www.whitehouse.gov/research/2025/07/the-economic-benefits-of-unleashing-american-energy/.

———. 2025b. “Winning the Race: America’s AI Action Plan.” https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf.

———. 2025c. “White House Unveils America’s AI Action Plan.” https://www.whitehouse.gov/articles/2025/07/white-house-unveils-americas-ai-action-plan/.

———. 2025d. “The Economic Benefits of Current Deregulatory Policies,” https://www.whitehouse.gov/wp-content/uploads/2025/03/The-Economic-Benefits-of-Current-Deregulatory-Efforts.pdf.

———. 2025e. “The One Big Beautiful Bill: Legislation for Historic Prosperity and Deficit Reduction.” https://www.whitehouse.gov/research/2025/06/the-one-big-beautiful-bill-legislation-for-historic-prosperity-and-deficit-reduction/.

Wolla, S. 2013. “What Are the ‘Ingredients’ for Economic Growth?” Federal Reserve Bank of Saint Louis. https://www.stlouisfed.org/publications/page-one-economics/2013/09/01/what-are-the-ingredients-for-economic-growth.

Zymek, R. 2024. "Total Factor Productivity." International Monetary Fund. https://www.imf.org/en/Publications/fandd/issues/2024/09/back-to-basics-total-factor-productivity-robert-zymek.

Chapter 6

Aastveit, K., B. Albuquerque, and A. Anundsen. 2023. "Changing Supply Elasticities and Regional Housing Booms." *Journal of Money, Credit and Banking* 55, no. 7: 1749–83.

Abramson, B., and T. Landvoigt. 2025. "Curbing Rising Housing Costs: A Model-Based Comparison." *Journal of Economic Perspectives* 39, no. 3: 67–92.

AEI Housing Center. 2025. "Home Price Appreciation Index and Months' Remaining Inventory." https://www.aei.org/home-price-appreciation-index-and-months-remaining-inventory/.

AFPI (America First Policy Institute). 2025a. "AFPI January 2026 Housing Survey—Topline Takeaways." https://www.americafirstpolicy.com/issues-new/afpi-january-2026-housing-survey-topline-takeaways.

———. 2025b. "Strong Foundations: A Playbook for Housing and Economic Growth." https://www.aei.org/strong-foundations-a-playbook-for-housing-and-economic-growth/.

Albuquerque, B., A. Anundsen, and K. Aastveit. 2020. "The Declining Elasticity of U.S. Housing Supply." VoxEU. https://cepr.org/voxeu/columns/declining-elasticity-us-housing-supply.

Austin, N. 2022. "Keeping Up with the Blackstones: Institutional Investors and Gentrification." Working paper, University of Oxford.

Bartik, A., A. Gupta, and D. Milo. 2025. "The Costs of Housing Regulation: Evidence from Generative Regulatory Measurement." Working paper.

Baum-Snow, N., and G. Duranton. 2025. "Housing Supply and Housing Affordability." In *Handbook of Regional and Urban Economics*, vol. 6, ed. D. Donaldson and S. Redding. Amsterdam: Elsevier.

Baum-Snow, N., and L. Han. 2024. "The Microgeography of Housing Supply." *Journal of Political Economy* 132, no. 6: 1897–1946. https://drive.google.com/file/d/1L4iUwSdUjqy1VMsvalJ6SgAWeYDkVwU2/view.

BEA (U.S. Bureau of Economic Analysis). 2026. "Gross Domestic Product, 3rd Quarter 2025 (Updated Estimate), GDP by Industry, and Corporate Profits (Revised)." https://www.bea.gov/sites/default/files/2026-01/gdp3q25-updated.pdf.

Bhutta, N., and D. Ringo. 2021. "The Effect of Interest Rates on Home Buying: Evidence from a Shock to Mortgage Insurance Premiums." *Journal of Monetary Economics* 118: 195–211.

Billings, S., and A. Soliman. 2025. *The Social Spillovers of Homeownership: Evidence from Institutional Investors*. CEP Discussion Paper 2123. London: Centre for Economic Performance, London School of Economics and Political Science.

Chudik, A., and A. Kumar. 2023. "Location, Location, Location: Mortgage Rate Impact Varies by Metro." Federal Reserve Bank of Dallas. https://www.dallasfed.org/research/economics/2023/0815.

Congressional Research Service. 2025. "Estimates of a 'Housing Shortage.'"

Coven, J. 2025. "The Impact of Institutional Investors on Homeownership and Neighborhood Access." Working paper, Baruch College of City University of New York.

D'Amico, L., E. Glaeser, J. Gyourko, W. Kerr, and G. Ponzetto. 2024. *Why Has Construction Productivity Stagnated? The Role of Land-Use Regulation*. NBER Working Paper 33188. Cambridge, MA: National Bureau of Economic Research.

Elmendorf, C., C. Nall, and S. Oklobdzija. 2025. "The Folk Economics of Housing." *Journal of Economic Perspectives* 39, no. 3: 45–66.

Emrath, P. 2021. "Government Regulation in the Price of a New Home: 2021." National Association of Home Builders. https://www.nahb.org/-/media/NAHB/news-and-economics/docs/housing-economics-plus/special-studies/2021/special-study-government-regulation-in-the-price-of-a-new-home-may-2021.pdf.

Fannie Mae. 2025. "B3-6-02, Debt-to-Income Ratios." In Fannie Mae Selling Guide. https://selling-guide.fanniemae.com/sel/b3-6-02/debt-income-ratios.

FEMA (Federal Emergency Management Agency). 2021. "2022–2026 FEMA Strategic Plan: Building the FEMA Our Nation Needs and Deserves." https://councilonstrategicrisks.org/wp-content/uploads/2025/04/FEMA-Strategic-Plan-2022-2026-2021.pdf.

———. 2022. "Building Codes Strategy." https://www.fema.gov/sites/default/files/documents/fema_building-codes-strategy.pdf.

FHFA (Federal Housing Finance Agency). 2026. "Fair Lending, Fair Housing, and Equitable Housing Finance Plans." *Federal Register*. https://www.federalregister.gov/documents/2026/02/06/2026-02325/fair-lending-fair-housing-and-equitable-housing-finance-plans.

———. No date. "2026–2028 Enterprise Housing Goals Final Rule." *Federal Register*. https://www.fhfa.gov/regulation/federal-register/final-rule/2026-2028-enterprise-housing-goals-final-rule.

Freddie Mac. "Guide Section 5401.2: Monthly Debt Payment-to-Income Ratio." In *Freddie Mac Single-Family Seller/Servicer Guide*. https://guide.freddiemac.com/app/guide/section/5401.2.

Foerster, A., A. Hornstein, P. Sarte, and M. Watson. 2022. "Aggregate Implications of Changing Sectoral Trends." *Journal of Political Economy* 130, no. 12: 3286–3333.

Ganong, P., and D. Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics* 102: 76–90.

Garcia, D., and R. Molloy. 2025. "Reexamining Lackluster Productivity Growth in Construction." Working paper, Federal Reserve Board of Governors.

Garriga, C. 2026. "The Hidden Barrier: Why Income, Not Savings, Is the Primary Obstacle to Homeownership." LinkedIn. https://www.linkedin.com/pulse/hidden-barrier-why-income-savings-primary-obstacle-carlos-garriga-8qbbc/.

Glaeser, E., and J. Gyourko. 2018. "The Economic Implications of Housing Supply." *Journal of Economic Perspectives* 32, no. 1: 3–30.

Glaeser, E., and J. Gyourko. 2025. *America's Housing Supply Problem: The Closing of the Suburban Frontier?* NBER Working Paper 33876. Cambridge, MA: National Bureau of Economic Research.

Glasner, B., A. Ozimek, and J. Lettieri. 2025. "The Impact of Opportunity Zones on Housing Supply." Economic Innovation Group.

Goolsbee, A., and C. Syverson. 2023. *The Strange and Awful Path of Productivity in the U.S. Construction Sector*. NBER Working Paper 30845. Cambridge, MA: National Bureau of Economic Research.

Gorback, C., and B. Keys. Forthcoming. "Global Capital and Local Assets: House Prices, Quantities, and Elasticities." *Journal of Financial Economics*.

Greenwald, D. 2018. "The Mortgage Credit Channel of Macroeconomic Transmission." Working paper, MIT Sloan.

Gyourko, J., and E. Glaeser. 2025. "America's Housing Affordability Crisis and the Decline of Housing Supply." *Brookings Papers on Economic Activity*, Spring.

Gyourko, J., J. Hartley, and J. Krimmel. 2021. "The Local Residential Land Use Regulatory Environment Across U.S. Housing Markets: Evidence from a New Wharton Index." *Journal of Urban Economics* 124: 103337. https://www.nber.org/papers/w26573.

Gyourko, J., and J. Krimmel. 2021. "The Impact of Local Residential Land Use Restrictions on Land Values." *Journal of Urban Economics* 126: 103374.

Gyourko, J., and R. Molloy. 2015. "Regulation and Housing Supply." In *Handbook of Regional and Urban Economics*, vol. 5, 1289–1337. Amsterdam: Elsevier.

Hatzius, J., A. Phillips, D. Mercile, R. Walker, M. Abecasis, E. Peng, P. Mei, and J. Rindels. 2025. "The State of Housing (Un)Affordability in the US (Peng/Mei)." Goldman Sachs. https://www.gspublishing.com/content/research/en/reports/2025/10/01/532d47b5-b67c-4428-a2fa-95f1ceacb419.html.

Hempel, Alexander. 2024. "Tightening the Belt: The Impact of Greenbelts on Housing Affordability." Working Paper, University of Toronto.

Herkenhoff, K., L. Ohanian, and E. Prescott. 2018. "Tarnishing the Golden and Empire States: Land-Use Restrictions and the U.S. Economic Slowdown." *Journal of Monetary Economics* 93: 89–109.

Howard, G., and J. Liebersohn. 2025. "How Regional Inequality and Migration Drive Housing Prices and Rents." *Journal of Economic Perspectives* 39, no. 3: 3–26.

Hsieh, C., and E. Moretti. 2019. "Housing Constraints and Spatial Misallocation." *American Economic Journal: Macroeconomics* 11, no. 2: 1–39.

HUD (U.S. Department of Housing and Urban Development). 2025a. "FHA Single-Family Housing Policy Handbook (Handbook 4000.1), Update 17." November 26, 390. https://www.hud.gov/sites/default/files/OCHCO/documents/40001-hsgh-Update-17.pdf.

———. 2025b. "FHA Single Family Origination Trends." December. https://www.hud.gov/sites/dfiles/Housing/documents/FHAOT-December2025.pdf.

HUD and USDA (U.S. Department of Agriculture). 2024. "Final Determination: Adoption of Energy Efficiency Standards for New Construction of HUD- and USDA-Financed Housing. April. https://www.federalregister.gov/documents/2024/04/26/2024-08793/final-determination-adoption-of-energy-efficiency-standards-for-new-construction-of-hud--and.

IECC. 2021. "2021 IECC: A Code on a Mission: Campaign Toolkit." https://www.iccsafe.org/products-and-services/iecc-on-a-mission-toolkit/.

Jackson, K. 2016. "Do Land Use Regulations Stifle Residential Development? Evidence from California Cities." *Journal of Urban Economics* 91: 59–72.

Koster, H. 2023. "The Welfare Effects of Greenbelt Policy: Evidence from England." *Economic Journal* 134: 363–401.

Lambie-Hanson, L., W. Li, and M. Slonkosky. 2022. "Real Estate Investors and the U.S. Housing Recovery." *Real Estate Economics* 50, no. 6: 1425–61.

Lee, H., and S. Yoo. 2025. "Giving Up: The Impact of Decreasing Housing Affordability on Consumption, Work Effort, and Investment." Working paper, SSRN.

Liu, H., et al. 2021. “The Housing Boom and the Decline in Mortgage Rates.” Federal Reserve Bank of New York. https://libertystreeteconomics.newyorkfed.org/2021/09/the-housing-boom-and-the-decline-in-mortgage-rates/.

NAHB (National Association of Home Builders). 2021. “Government Regulation in the Price of a New Home: 2021.”

———. 2024. “New Energy Codes Mandate a Blow to Housing Affordability.” https://www.nahb.org/blog/2024/04/new-energy-codes-mandate-blow-to-housing-affordability.

National Association of Realtors. 2025. “2025 International Transactions in U.S. Residential Real Estate.” https://www.nar.realtor/sites/default/files/2025-07/2025-international-transactions-in-us-residential-real-estate-report-07-09-2025.pdf.

National BPS Coalition. No date. “About the National BPS Coalition.” https://nationalbpscoalition.org/.

National Multifamily Housing Council. 2022. “NMHC-NAHB Cost of Regulations Report (2022).”

Oosthuizen, D. 2026. “Institutional Housing Investors and the Great Recession.” *European Economic Review* 182: 105211.

Patel, E., A. Rajan, and N. Tomeh. 2024. “Making It Count: Measuring Our Housing Supply Shortage.” Brookings Institution. https://www.brookings.edu/articles/make-it-count-measuring-our-housing-supply-shortage/.

Peng, L., and J. Mei. 2025. “The State of Housing (Un)Affordability in the U.S.” Working paper, Goldman Sachs.

Pinto, E., and T. Peter. 2026a. “Lower Rates Combined with Strong Economic Growth Needs Housing Supply Growth to Avoid Higher Home Prices.” AEI Housing Center Report.

———. 2026b. “Home Price Appreciation Index and Months’ Remaining Inventory.” AEI Housing Center Report. https://www.aei.org/home-price-appreciation-index-and-months-remaining-inventory/.

Polinsky, A., and D. Ellwood. 1979. “An Empirical Reconciliation of Micro and Grouped Estimates of the Demand for Housing.” *Review of Economics and Statistics* 61, no. 2: 199–205.

Ringo, D. 2023. “Monetary Policy and Home Buying Inequality.” *Journal of Monetary Economics* 139: 86–103.

Saiz, A. 2010. “The Geographic Determinants of Housing Supply.” *Quarterly Journal of Economics* 125, no. 3: 1253–96. https://doi.org/10.1162/qjec.2010.125.3.1253.

Song, J. 2025. “The Effects of Residential Zoning in U.S. Housing Markets.” Working paper; forthcoming in *Journal of Urban Economics*.

Urban Institute. “Housing Finance at a Glance: A Monthly Chartbook, December 2025.” December 31.

U.S. Census Bureau. 2025. “National, State, and County Housing Unit Totals: 2020-2024.” https://www.census.gov/data/tables/time-series/demo/popest/2020s-total-housing-units.html.

Ward, J., and M. Schlake. 2025. “The High Cost of Producing Multifamily Housing in California.” Working paper, RAND Corp.

White House. 2022. “Fact Sheet: Biden-Harris Administration Launches Initiative to Modernize Building Codes, Improve Climate Resilience, and Reduce Energy Costs.” https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/06/01/fact-sheet-biden-harris-administration-launches-initiative-to-modernize-building-codes-improve-climate-resilience-and-reduce-energy-costs/.

———. 2025. "Delivering Emergency Price Relief for American Families and Defeating the Cost-of-Living Crisis." https://www.whitehouse.gov/presidential-actions/2025/01/delivering-emergency-price-relief-for-american-families-and-defeating-the-cost-of-living-crisis/.

———. 2026. "Addressing State and Local Failures to Rebuild Los Angeles After Wildfire Disasters." https://www.whitehouse.gov/presidential-actions/2026/01/addressing-state-and-local-failures-to-rebuild-los-angeles-after-wildfire-disasters/.

Yeh, C. 2025. "Five Decades of Decline: U.S. Construction Sector Productivity." Federal Reserve Bank of Richmond Economic Brief 25-31 (August). https://www.richmondfed.org/publications/research/economic_brief/2025/eb_25-31.

Zillow Research. 2024. "Racial Disparities in Housing." https://www.zillow.com/research/racial-disparities-housing-33312/.

Chapter 7

Acemoglu, D., V. Carvalho, A. Ozdaglar, and A. Tahbaz-Salehi. 2012. "The Network Origins of Aggregate Fluctuations." *Econometrica* 80, no. 5: 1977–2016. https://doi.org/10.3982/ECTA9623.

Acemoglu, D., A. Ozdaglar, and A. Tahbaz-Salehi. 2017. "Microeconomic Origins of Macroeconomic Tail Risks." *American Economic Review* 107, no. 1: 54–108. https://doi.org/10.1257/aer.20151086.

Acemoglu, D., and A. Tahbaz-Salehi. 2025. "The Macroeconomics of Supply Chain Disruptions." *Review of Economic Studies* 92, no. 2: 656–95. https://doi.org/10.1093/restud/rdae038.

Alessandria, G., S. Yar Khan, A. Khederlarian, C. Mix, and K. Ruhl. 2023. "The Aggregate Effects of Global and Local Supply Chain Disruptions: 2020–2022." *Journal of International Economics* 146: 103788. https://doi.org/10.1016/j.jinteco.2023.103788.

Alfaro, L., and M. Xiaoyang Chen. 2012. "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance." *American Economic Journal: Economic Policy* 4, no. 3: 30–55. http://dx.doi.org/10.1257/pol.4.3.30.

Allen, T. 2014. "Information Frictions in Trade." *Econometrica* 82, no. 6: 2041–83. https://doi.org/10.3982/ECTA10984.

Antràs, P., and D. Chor. 2022. "Chapter 5: Global Value Chains." In *Handbook of International Economics*, ed. G. Gopinath, E. Helpman, and K. Rogoff. 5: 297–376. https://doi.org/10.1016/bs.hesint.2022.02.005.

Baqaee, D., A. Burstein, C. Duprez, and E. Farhi. 2025. *Consumer Surplus from Suppliers: How Big Is It and Does It Matter for Growth?* NBER Working Paper 31231. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w31231/w31231.pdf.

Barrot, J.-N., and J. Sauvagnat. 2016. "Input Specificity and the Propagation of Idiosyncratic Shocks in Production Networks." *Quarterly Journal of Economics* 131, no. 3: 1543–92. https://doi.org/10.1093/qje/qjw018.

Bernard, A., A. Moxnes, and Y. Saito. 2019. "Production Networks, Geography, and Firm Performance." *Journal of Political Economy* 127, no. 2: 639–88. https://doi.org/10.1086/700764.

Boehm, C., A. Flaaen, and N. Pandalai-Nayar. 2019. "Input Linkages and the Transmission of Shocks: Firm-Level Evidence from the 2011 Tohoku Earthquake." *Review of Economics and Statistics* 101, no. 1: 60–75. https://doi.org/10.1162/rest_a_00750.

Bureau of Industry and Security. 2024. "Public Report on the Use of Mature-Node Semiconductors." U.S. Department of Commerce. https://www.bis.gov/media/documents/public-report-use-mature-node-semiconductors-december-2024.

———. No date. "Section 232 Investigations: The Effects of Imports on the National Security." U.S. Department of Commerce. https://www.bis.gov/about-bis/bis-leadership-and-offices/SIES/section-232-investigations.

Cecire, M., A. Bodie, F. Gottron, V. Green, L. Halchin, E. Lee, A. Schwarzenberg, K. Sekar, M. Sutherland, and K. Sutter. 2020. "COVID-19 and Domestic PPE Production and Distribution: Issues and Policy Options." Congressional Research Service, R46628, December 7. https://www.congress.gov/crs_external_products/R/PDF/R46628/R46628.3.pdf.

Clayton, C., M. Maggiori, and J. Schreger. 2024. *A Framework for Geoeconomics*. NBER Working Paper 31852. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w31852/w31852.pdf.

Elliott, M., B. Golub, and M. Leduc. 2022. "Supply Network Formation and Fragility." *American Economic Review* 112, no. 8: 2701–47. https://doi.org/10.1257/aer.20210220.

Førland, T. 1991. "'Economic Warfare' and 'Strategic Goods': A Conceptual Framework for Analyzing COCOM." *Journal of Peace Research* 28, no. 2: 191–204. https://www.jstor.org/stable/424388.

Foster, T., M. Vu-Huy-Dat, and V. Trautwein. 2025. "Supply Chain Risk Pulse 2025: Tariffs Reshuffle Global Trade Priorities." December 2. McKinsey & Company. https://www.mckinsey.com/capabilities/operations/our-insights/supply-chain-risk-survey#/.

Fujimoto, T., M. Marinov, Y. Kato, and S. Iwao. 2019. "Strengthening Purchasing and Supply Chain Management at Toyota: A Lecture by Hiroaki Koda." MMRC Discussion Paper 514. https://merc.e.u-tokyo.ac.jp/mmrc/dp/pdf/MMRC514_2019.pdf.

Grossman, G., E. Helpman, and H. Lhuillier. 2023. "Supply Chain Resilience: Should Policy Promote International Diversification or Reshoring?" *Journal of Political Economy* 131, no. 12: 3462–96. https://doi.org/10.1086/725173.

Grossman, G., E. Helpman, and A. Sabal. 2024. "Optimal Resilience in Multitier Supply Chains." Quarterly Journal of Economics 139, no. 4: 2377–2425. https://doi.org/10.1093/qje/qjae024.

International Trade Administration. No date. "Case Announcement Archives." https://www.trade.gov/case-announcements-archives.

Ivanov, D., B. Sokolov, and A. Dolgui. 2014. "The Ripple Effect in Supply Chains: Trade-Off 'Efficiency-Flexibility-Resilience' in Disruption Management." *International Journal of Production Research* 52, no. 7: 2154–71. https://doi.org/10.1080/00207543.2013.858836.

Katsaliaki, K., P. Galetsi, and S. Kumar. 2021. "Supply Chain Disruptions and Resilience: A Major Review and Future Research Agenda." *Annals of Operations Research* 391: 965–1002. https://doi.org/10.1007/s10479-020-03912-1.

Kratsios, M., D. Sacks, and M. Rubio. 2025. "Winning the Race: America's AI Action Plan." Executive Office of the President. https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf.

Kunreuther, H., M. Pauly, and S. McMorrow. 2013. *Insurance & Behavioral Economics: Improving Decisions in the Most Misunderstood Industry*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781139050319.

Liu, E., and D. Yang. 2025. *International Power*. NBER Working Paper 34006. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w34006/w34006.pdf.

Lund, S., J. Manyika, J. Woetzel, E. Barriball, M. Krishnan, K. Alicke, M. Birshan, K. George, S. Smit, D. Swan, and K. Hutzler. 2020. "Risk, Resilience, and Rebalancing in Global Value Chains." McKinsey Global Institute, August. https://www.mckinsey.de/~/media/mckinsey/locations/europe%20and%20middle%20east/deutschland/news/presse/2020/2020-08-06%20mgi%20global%20value%20chains/risk-resilience-and-rebalancing-in-global-value-chains-exec-summary-vf.pdf.

MacDuffie, J., T. Fujimoto, and D. Heller. 2021. "Building Supply Chain Continuity Capabilities for a Post-Pandemic World." Working Paper, May 3. https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2021/05/Supply-Chain-Continuity-Competitiveness_MacDuffie-Fujimoto-Heller_Mack-Institute-Working-Paper_May-2021.pdf.

McAlinden, S., and B. Smith. 1993. "The Changing Structure of the U.S. Automotive Parts Industry." University of Michigan Transportation Research Institute, Office for the Study of Automotive Transportation. UMTRI-93-6. https://deepblue.lib.umich.edu/bitstream/handle/2027.42/1002/84234.0001.001.pdf;sequence=2.

McLain, S. 2021. "Auto Makers Retreat from 50 Years of 'Just in Time' Manufacturing." *Wall Street Journal*, May 3. https://www.wsj.com/business/autos/auto-makers-retreat-from-50-years-of-just-in-time-manufacturing-11620051251.

McLain, S., and R. Felton. 2025. "Automakers Race to Find Workaround to China's Stranglehold on Rare-Earth Magnets." *Wall Street Journal*, June 4. https://www.wsj.com/business/autos/car-companies-production-rare-earth-shortage-aaf87ad2.

MP Materials. 2025. "MP Materials Announces Transformational Public-Private Partnership with the Department of Defense to Accelerate U.S. Rare Earth Magnet Independence." July 10. https://mpmaterials.com/news/mp-materials-announces-transformational-public-private-partnership-with-the-department-of-defense-to-accelerate-u-s-rare-earth-magnet-independence/.

National Archives. 2025a. "Immediate Measures to Increase American Mineral Production." Executive Order 14241 of March 20. *Federal Register* 90, no. 56: 13673–77. https://www.govinfo.gov/content/pkg/FR-2025-03-25/pdf/2025-05212.pdf.

———. 2025b. "Further Modifying the Reciprocal Tariff Rates." Executive Order 14326 of July 31. *Federal Register* 90, no. 149: 37963–92. https://www.govinfo.gov/content/pkg/FR-2025-08-06/pdf/2025-15010.pdf.

———. 2025c. "Accelerating Federal Permitting of Data Center Infrastructure." Executive Order 14318 of July 23. *Federal Register* 90, no. 42: 35385–88. https://www.govinfo.gov/content/pkg/FR-2025-07-28/pdf/2025-14212.pdf.

———. 2025d. "Reinvigorating the Nuclear Industrial Base." Executive Order 14302 of May 23. *Federal Register* 90, no. 102: 22595–99. https://www.govinfo.gov/content/pkg/FR-2025-05-29/pdf/2025-09801.pdf.

———. 2025e. "Restoring America's Maritime Dominance." Executive Order 14269 of April 9. *Federal Register* 90, no. 71: 15635–41. https://www.govinfo.gov/content/pkg/FR-2025-04-15/pdf/2025-06465.pdf.

———. 2025f. "Establishing the National Energy Dominance Council." Executive Order 14213 of February 14. *Federal Register* 90, no. 33: 9945–47. https://www.govinfo.gov/content/pkg/FR-2025-02-20/pdf/2025-02928.pdf.

———. 2025g. "Ensuring American Pharmaceutical Supply Chain Resilience by Filling the Strategic Active Pharmaceutical Ingredients Reserve." Executive Order 14336 of August 13. *Federal Register* 90, no. 158: 40223–25. https://www.govinfo.gov/content/pkg/FR-2025-08-19/pdf/2025-15823.pdf.

———. 2025h. “Restoring Common Sense to Federal Procurement.” Executive Order 14275 of April 15. *Federal Register* 90, no. 74: 16447–49. https://www.govinfo.gov/content/pkg/FR-2025-04-18/pdf/2025-06839.pdf.

———. 2025i. “Eliminating Waste and Saving Taxpayer Dollars by Consolidating Procurement.” Executive Order 14240 of March 20. *Federal Register* 90, no. 56: 13671–72. https://www.govinfo.gov/content/pkg/FR-2025-03-25/pdf/2025-05197.pdf.

OECD (Organization for Economic Cooperation and Development). 2025. “The Market Implications of Industrial Subsidies.” May 28, 2025. TAD/TC(2025)7/FINAL. https://one.oecd.org/document/TAD/TC(2025)7/FINAL/en/pdf.

O’Hara, M., and W. Shaw. 1990. “Deposit Insurance and Wealth Effects: The Value of Being ‘Too Big to Fail’.” *Journal of Finance* 45, no. 5: 1587–1600. https://doi.org/10.1111/j.1540-6261.1990.tb03729.x.

Research Institute for Global Value Chains at the University of International Business and Economics, Asian Development Bank, the Institute of Developing Economies–Japan External Trade Organization, and the World Trade Organization. 2023. “Global Value Chain Development Report 2023: Resilient and Sustainable GVCs in Turbulent Times.” https://www.wto.org/english/res_e/booksp_e/gvc_dev_rep23_e.pdf.

Ricardo, D. 1817. *On the Principles of Political Economy and Taxation*.

Russell, W. 2025. “Defense Production Act: Use and Challenges from Fiscal Years 2018 to 2024.” Government Accountability Office, GAO-25-108497. https://www.gao.gov/assets/gao-25-108497.pdf.

Sáenz, M., and E. Revilla. 2014. “Creating More Resilient Supply Chains.” *MIT Sloan Management Review* 55, no. 4: 22–24. https://sloanreview.mit.edu/article/creating-more-resilient-supply-chains/.

Sheffi, Y. 2005. “Preparing for the Big One [Supply Chain Management].” *Manufacturing Engineer* 84, no. 5: 12–15. https://digital-library.theiet.org/doi/abs/10.1049/me%3A20050503.

U.S. Congress. 2025. “Public Law 119-21.” July 4. https://www.congress.gov/119/plaws/publ21/PLAW-119publ21.pdf.

U.S. Department of Energy. 2025. “Energy Department Announces Actions to Secure American Critical Minerals and Materials Supply Chain.” August 13. https://www.energy.gov/articles/energy-department-announces-actions-secure-american-critical-minerals-and-materials-supply.

U.S. Government Accountability Office. 2021. “COVID-19: Agencies Are Taking Steps to Improve Future Use of Defense Production Act Authorities.” GAO-22-105380. https://www.gao.gov/assets/gao-22-105380.pdf.

Wakelin, N. 2021. “How Many Parts Are in a Car?” NAPA Blog. July 2. https://knowhow.napaonline.com/how-many-parts-are-in-a-car/.

White House. 2025a. “Ensuring American Pharmaceutical Supply Chain Resilience by Filling the Strategic Active Pharmaceutical Ingredients Reserve.” August 13. https://www.whitehouse.gov/presidential-actions/2025/08/ensuring-american-pharmaceutical-supply-chain-resilience-by-filling-the-strategic-active-pharmaceutical-ingredients-reserve/.

———. 2025b. “Joint Statement on a United States–European Union Framework on an Agreement on Reciprocal, Fair, and Balanced Trade.” August 21. https://www.whitehouse.gov/briefings-statements/2025/08/joint-statement-on-a-united-states-european-union-framework-on-an-agreement-on-reciprocal-fair-and-balanced-trade/.

———. 2025c. "Simplifying the Funding of Energy Infrastructure and Critical Mineral and Material Projects." June 30. https://www.whitehouse.gov/presidential-actions/2025/06/simplifying-the-funding-of-energy-infrastructure-and-critical-mineral-and-material-projects/.

———. 2025d. "Fact Sheet: President Donald J. Trump Secures Unprecedented U.S.-Japan Strategic Trade and Investment Agreement." July 23. https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-secures-unprecedented-u-s-japan-strategic-trade-and-investment-agreement/.

———. 2025e. "Fact Sheet: President Donald J. Trump Modifies the Scope of Reciprocal Tariffs and Establishes Procedures for Implementing Trade Deals." September 5. https://www.whitehouse.gov/fact-sheets/2025/09/fact-sheet-president-donald-j-trump-modifies-the-scope-of-reciprocal-tariffs-and-establishes-procedures-for-implementing-trade-deals/.

———. 2025f. "Adjusting Imports of Copper into the United States." July 30. https://www.whitehouse.gov/presidential-actions/2025/07/adjusting-imports-of-copper-into-the-united-states/.

———. 2025g. "Fact Sheet: President Donald J. Trump Establishes the National Energy Dominance Council." February 14. https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-establishes-the-national-energy-dominance-council/.

———. 2025h. "Regulatory Relief for Certain Stationary Sources to Promote American Chemical Manufacturing Security." July 17. https://www.whitehouse.gov/presidential-actions/2025/07/regulatory-relief-for-certain-stationary-sources-to-promote-american-chemical-manufacturing-security/.

———. 2025i. "Regulatory Relief for Certain Stationary Sources to Promote American Energy." April 8. https://www.whitehouse.gov/presidential-actions/2025/04/rregulatory-relief-for-certain-stationary-sources-to-promote-american-energy/.

———. 2025j. "Regulatory Relief for Certain Stationary Sources to Promote American Energy." July 17. https://www.whitehouse.gov/presidential-actions/2025/07/regulatory-relief-for-certain-stationary-sources-to-further-promote-american-energy/.

———. 2025k. "Regulatory Relief for Certain Stationary Sources to Promote American Iron Ore Processing Security." July 17. https://www.whitehouse.gov/presidential-actions/2025/07/regulatory-relief-for-certain-stationary-sources-to-promote-american-iron-ore-processing-security/.

———. 2025l. "Regulatory Relief for Certain Stationary Sources to Promote American Security with Respect to Sterile Medical Equipment." July 17. https://www.whitehouse.gov/presidential-actions/2025/07/regulatory-relief-for-certain-stationary-sources-to-promote-american-security-with-respect-to-sterile-medical-equipment/.

———. 2025m. "Fact Sheet: President Donald J. Trump Grants Regulatory Relief from Burdensome EPA Restrictions to Promote American Security." July 17. https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-grants-regulatory-relief-from-burdensome-epa-restrictions-to-promote-american-security/.

Chapter 8

Allen, G., and D. Berenson. 2024. "Why Is the U.S. Defense Industrial Base So Isolated from the U.S. Economy?" Center for Strategic and International Studies. https://www.csis.org/analysis/why-us-defense-industrial-base-so-isolated-us-economy.

Antolin-Diaz, J., and P. Surico. 2025. "The Long-Run Effects of Government Spending." *American Economic Review* 115, no. 7: 2376–2413. https://doi.org/10.1257/aer.20231278.

ASTRO America. No date. "About the AM Forward Compact." https://astroa.org/project/am-forward/.

Beck, D. 2025. "Prepared Remarks by Douglas A. Beck, Director, Defense Innovation Unit, Before the United States House of Representatives Armed Services Committee Subcommittee on Tactical Air and Land Forces on Small UAS and Counter-Small UAS: Gaps, Requirements, and Projected Capabilities." https://armedservices.house.gov/uploadedfiles/diu_statement_for_hasc-talf_suas_cuas_final.pdf.

Benmelech, E., and J. Monteiro. 2025. *Military Spending and War*. NBER Working Paper 34123. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w34123.

Bloom, N., M. Schankerman, and J. Van Reenen. 2013. "Identifying Technological Spillovers and Product Market Rivalry. *Econometrica* 81, no. 4: 1347–93. https://doi.org/10.3982/ECTA9466.

Boorstin, J. 2025. "Anduril Tops 2025 CNBC Disruptor 50 List as Interest and Investment in Defense Tech Booms." CNBC, June 10. https://www.cnbc.com/2025/06/10/anduril-tops-cnbc-disruptor-50-list-as-interest-in-defense-tech-rises.html.

Bureau of Economic Analysis. 2026. "Value Added by Industry as a Percentage of Gross Domestic Product." Interactive Access to Industry Economic Accounts Data, last revised January 22. https://apps.bea.gov/iTable/?reqid=1603&step=2&Categories=GDPxInd&isURI=1&_gl=1*161o4hw*_ga*NjQ2MDE3MzUzLjE3MzgwOTgwMjQ.*_ga_J4698JNNFT*czE3NTgwNzEwOTAkbzYxJGcxJHQxNzU4MDcxMTAwJGo1MCRsMCRoMA. .

Carril, R., and M. Duggan. 2020. "The Impact of Industry Consolidation on Government Procurement: Evidence from Department of Defense Contracting." *Journal of Public Economics* 184: 104141. https://doi.org/10.1016/j.jpubeco.2020.104141.

Commission on the Future of the United States Aerospace Industry. 2002. "Final Report of the Commission on the Future of the United States Aerospace Industry." https://www.nasa.gov/wp-content/uploads/2024/01/aerocommissionfinalreport.pdf.

Council of Economic Advisers. 1991. *Economic Report of the President*. Washington: U.S. Government Printing Office.

DARPA (Defense Advanced Research Projects Agency). No date. "Innovation Timeline." https://www.darpa.mil/about/innovation-timeline.

Department of Defense Manufacturing Technology Program. No date. "Department of Defense Manufacturing Technology Program." https://www.dodmantech.mil/.

Defense Security Cooperation Agency. No date. "Foreign Military Sales FAQ." https://www.dsca.mil/Resources/Foreign-Military-Sales-FAQ.

DoW (U.S. Department of War). 2018. "Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States". https://media.defense.gov/2018/Oct/05/2002048904/-1/-1/1/ASSESSING-ANDSTRENGTHENING-THE-MANUFACTURING-AND-DEFENSE-INDUSTRIAL-BASE-AND-SUPPLY-CHAINRESILIENCY.PDF.

———. 2021. “Industrial Capabilities Report to Congress.” https://www.businessdefense.gov/docs/resources/USA002573-20_ICR_2020_Web.pdf.

———. 2022. “State of Competition within the Defense Industrial Base.” https://media.defense.gov/2022/feb/15/2002939087/-1/-1/1/state-of-competition-within-the-defense-industrial-base.pdf.

———. 2023a. “National Defense Industrial Strategy.” https://www.dau.edu/system/files/webform/documents/2721/NDIS%20FINAL.pdf.

———. 2023b. “Contract Finance Study Report.” https://www.acq.osd.mil/asda/dpc/pcf/docs/finance-study/FINAL%20-%20Defense%20Contract%20Finance%20Study%20Report%204.6.23.pdf.

———. 2024. “Military and Security Developments Involving the People’s Republic of China.” https://media.defense.gov/2024/Dec/18/2003615520/-1/-1/0/MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA-2024.PDF.

———. 2025a. “Acquisition Transformation Strategy.” https://media.defense.gov/2025/Nov/10/2003819441/-1/-1/1/ACQUISITION-TRANSFORMATION-STRATEGY.PDF.

———. 2025b. “Office of Strategic Capital Announces First Loan Through DoD Agreement With MP Materials to Secure Critical Minerals Supply Chain.” August 10. https://www.defense.gov/News/Releases/Release/Article/4270722/office-of-strategic-capital-announces-first-loan-through-dod-agreement-with-mp/.

———. 2025c. “Department of Defense Awards $6.2 Million to Sustain Critical Production of Tungsten.” July 22. https://www.war.gov/News/Releases/Release/Article/4252264/department-of-defense-awards-62-million-to-sustain-critical-production-of-tungs/.

———. 2025d. “Department of Defense Awards $10 Million to Develop a Domestic Mine-to-Master Alloy Scandium Supply Chain.” August 5. https://www.war.gov/News/Releases/Release/Article/4264389/department-of-defense-awards-10-million-to-develop-a-domestic-mine-to-master-al/.

———. 2026. “2026 National Defense Strategy.” https://media.defense.gov/2026/Jan/23/2003864773/-1/-1/0/2026-NATIONAL-DEFENSE-STRATEGY.PDF.

———. No date. “AUKUS: The Trilateral Security Partnership Between Australia, U.K. and U.S.” https://www.defense.gov/Spotlights/AUKUS/.

Eaglen, M. 2024. “Keeping Up with the Pacing Threat: Unveiling the True Size of Beijing’s Military Spending.” American Enterprise Institute. www.aei.org/research-products/report/keeping-up-with-the-pacing-threat-unveiling-the-true-size-of-beijings-military-spending.

Gross, D., and B. Sampat. 2023. “America, Jump-Started: World War II R&D and the Takeoff of the US Innovation System.” *American Economic Review* 113, no. 12: 3323–56. https://doi.org/10.1257/aer.20221365.

Hegseth, P. 2025a. “Record Version Statement by the Honorable Pete Hegseth, Secretary of Defense, before the Committee on Armed Services United States House of Representatives.” https://armedservices.house.gov/uploadedfiles/hon_hegseth_posture_written_statement.pdf.

———. 2025b. “Memorandum for Senior Pentagon Leadership, Commanders of Combatant Commands, Defense Agency and DOD Field Activity Directors; Subject: Directing Modern Software Acquisition to Maximize Lethality.” March 6. https://media.defense.gov/2025/Mar/07/2003662943/-1/-1/1/DIRECTING-MODERN-SOFTWARE-ACQUISITION-TO-MAXIMIZE-LETHALITY.PDF.

Howell, S., J. Rathje, J. Van Reenen, and J. Wong. 2025. "Opening Up Military Innovation: Causal Effects of Reforms to U.S. Defense Research." *Journal of Political Economy* 133, no. 11: 3605–51. https://doi.org/10.1086/737235.

Jones, S. 2023. "The U.S. Defense Industrial Base Is Not Prepared for a Possible Conflict with China." Center for Strategic and International Studies. https://features.csis.org/preparing-the-US-industrial-base-to-deter-conflict-with-China/.

Liang, X., N. Tian, D. Lopes da Silva, L. Scarazzato, Z. Karim, and J. Guiberteau Ricard. 2025. "Trends in World Military Expenditure, 2024." Stockholm International Peace Research Institute. https://www.sipri.org/sites/default/files/2025-04/2504_fs_milex_2024.pdf.

McGinn, J., M. Grinberg, and L. Everhart. 2024. "Stock Buybacks in Defense: What Drives Them, and How That Can Change?" *Defense News*, April 8. https://www.defensenews.com/opinion/2024/04/08/stock-buybacks-in-defense-what-drives-them-and-how-that-can-change/?utm_campaign=dfn-ebb&utm_medium=email&utm_source=sailthru.

Moretti, E., C. Steinwender, and J. Van Reenen. 2025. "The Intellectual Spoils of War? Defense R&D, Productivity, and International Spillovers." *Review of Economics and Statistics* 107, no. 1: 14–27. https://doi.org/10.1162/rest_a_01293.

MP Materials. 2025. "MP Materials Announces Transformational Public-Private Partnership with the Department of Defense to Accelerate U.S. Rare Earth Magnet Independence." https://mpmaterials.com/news/mp-materials-announces-transformational-public-private-partnership-with-the-department-of-defense-to-accelerate-u-s-rare-earth-magnet-independence/.

National Archives. 2025a. "Reforming Foreign Defense Sales to Improve Speed and Accountability." Executive Order 14268 of April 9, 2025. *Federal Register* 90, no. 71: 15631–633. https://www.govinfo.gov/content/pkg/FR-2025-04-15/pdf/2025-06464.pdf.

———. 2025b. "Modernizing Defense Acquisitions and Spurring Innovation in the Defense Industrial Base." Executive Order 14265, April 9. *Federal Register* 90, no. 71: 15621–24. https://www.govinfo.gov/content/pkg/FR-2025-04-15/pdf/2025-06461.pdf.

———. 2025c. "Restoring Common Sense to Federal Procurement." Executive Order 14275, April 15. *Federal Register* 90, no. 74: 16447–49. https://www.govinfo.gov/content/pkg/FR-2025-04-18/pdf/2025-06839.pdf.

———. 2026. "Prioritizing the Warfighter in Defense Contracting." Executive Order 14372, January 7. *Federal Register* 91, no. 8) 1377–79. https://www.govinfo.gov/content/pkg/FR-2026-01-13/pdf/2026-00554.pdf.

NATO (North Atlantic Treaty Organization). 2025a. "Closing Press Conference by NATO Secretary General Mark Rutte at the 2025 NATO Summit in The Hague." June 25. https://www.nato.int/en/news-and-events/events/transcripts/2025/06/25/closing-press-conference-sg.

———. 2025b. "Defence Expenditure of NATO Countries (2014–2025)." June 25. https://www.nato.int/content/dam/nato/webready/documents/finance/def-exp-2025-en.pdf.

———. 2025c. "The Hague Summit Declaration." June 25. https://www.nato.int/en/about-us/official-texts-and-resources/official-texts/2025/06/25/the-hague-summit-declaration.

Nicastro, Luke. 2024. "The U.S. Defense Industrial Base: Background and Issues for Congress." Congressional Research Service R47751. https://www.congress.gov/crs-product/R47751.

Office of Management and Budget. 2025. "President Trump's Fiscal Year 2026 Discretionary Funding Request." https://www.whitehouse.gov/wp-content/uploads/2025/05/President-Trumps-Fiscal-Year-2026-Discretionary-Funding-Request-Overview.pdf.

O'Rourke, R. 2025. "Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress." Congressional Research Service R41909. https://www.congress.gov/crs-product/R41909.

RAND Corporation. 2022. "Research Brief: Assessing Systemic Strengths and Vulnerabilities of China's Defense Industrial Base." https://www.rand.org/content/dam/rand/pubs/research_briefs/RBA900/RBA930-1/RAND_RBA930-1.pdf.

Rogerson, W. 1994. "Economic Incentives and the Defense Procurement Process." *Journal of Economic Perspectives* 8, no. 40: 65–90. https://doi.org/10.1257/jep.8.4.65.

SBA and DoW (Small Business Administration and Department of War). 2025. "Investment Policy Statement Small Business Investment Company Critical Technologies Initiative." https://www.cto.mil/wp-content/uploads/2025/08/Investment-Policy-Statement-Jan2025.pdf.

Stiglitz, J. 1999. "Knowledge as a Global Public Good." In *Global Public Goods: International Cooperation in the 21st Century*, edited by I. Kaul, I. Grunberg, and M. Stern. New York: Oxford University Press.

Tirole, J. 1986. "Procurement and Renegotiation." *Journal of Political Economy* 94, no. 2: 235–59. https://doi.org/10.1086/261372.

U.S. Army. 2025. "United States and Australia Ink Historic Defense Manufacturing Agreements." https://www.army.mil/article/283837/united_states_and_australia_ink_historic_defense_manufacturing_agreements.

U.S. Congress. 2023. "National Defense Authorization Act for Fiscal Year 2024." Public Law 118-31—December 22, 2023. https://www.congress.gov/bill/118th-congress/house-bill/2670/text.

———. 2025. "National Defense Authorization Act for Fiscal Year 2026." Public Law 119-60—December 18, 2025. https://www.congress.gov/bill/119th-congress/senate-bill/1071/text.

U.S. Department of State. 2025. "Major Non-NATO Ally Status." January 20. https://www.state.gov/major-non-nato-ally-status.

U.S. Government Accountability Office. 2025. "Weapon Systems Annual Assessment." GAO-25-107569. https://www.gao.gov/assets/gao-25-107569.pdf.

U.S. Mission to NATO. 2025. "Secretary of Defense Pete Hegseth and Secretary General Mark Rutte Joint Statement at the NATO Defense Ministerial Meeting in Brussels, Belgium." June 5. https://nato.usmission.gov/secretary-of-defense-pete-hegseth-and-secretary-general-mark-rutte-joint-statement-at-the-nato-defense-ministerial-meeting-in-brussels-belgium/.

U.S. Navy. 2025a. "SECNAV Phelan Visits Shipyards in South Korea." https://www.navy.mil/Press-Office/Press-Releases/display-pressreleases/Article/4170178/secnav-phelan-visits-shipyards-in-south-korea/.

———. 2025b. "Constellation Class—FFG." https://www.navy.mil/Resources/Fact-Files/Display-FactFiles/Article/2633250/constellation-class-ffg/.

Watts, B. 2008. "Strategy for the Long Haul: The U.S. Defense Industrial Base, Past, Present, and Future." Center for Strategic and Budgetary Assessments. https://apps.dtic.mil/sti/tr/pdf/ADA490689.pdf.

Weinbaum, C., C. O'Connell, S. Popper, M. Bond, H. Byrne, C. Curriden, G. Fauerbach, S. Lilly, J. Mondschein, and J. Schmid. 2022. "Assessing System Strengths and Vulnerabilities of China's Defense Industrial Base." RAND Corporation, RR-A930-1. https://www.rand.org/pubs/research_reports/RRA930-1.html.

White House. 2025a. "National Security Strategy of the United States of America." November. https://www.whitehouse.gov/wp-content/uploads/2025/12/2025-National-Security-Strategy.pdf.

———. 2025b. "United States–Japan Joint Leaders' Statement." February 7. https://www.whitehouse.gov/briefings-statements/2025/02/united-states-japan-joint-leaders-statement/.

———. 2025c. "Fact Sheet: The United States and European Union Reach Massive Trade Deal." July 28. https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-the-united-states-and-european-union-reach-massive-trade-deal/.

———. 2025d. "Fact Sheet: President Donald J. Trump Secures Unprecedented U.S.–Japan Strategic Trade and Investment Agreement." July 23. https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-secures-unprecedented-u-s-japan-strategic-trade-and-investment-agreement/.

Chapter 9

Abraham, K., and M. Kearney. 2020. "Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence." *Journal of Economic Literature* 58, no. 3, 585–643.

Acemoglu, D., U. Akcigit, and M. Celik. 2014. *Young, Restless and Creative: Openness to Disruption and Creative Innovations*. NBER Working Paper 19894. Cambridge, MA: National Bureau of Economic Research.

Acemoglu, D., and D. Autor. 2011. "Skills, Tasks and Technologies: Implications for Employment and Earnings." In *Handbook of Labor Economics*, vol. 4, 1043–1171. Amsterdam: Elsevier.

Acemoglu, D., and J. Pischke. 1999. "Beyond Becker: Training in Imperfect Labour Markets." *Economic Journal* 109, no. 453: 112–42.

Altig, D., A. Auerbach, L. Kotlikoff, E. Ilin, and V. Ye. 2020. *Marginal Net Taxation of Americans' Labor Supply*. NBER Working Paper 27164. Cambridge, MA: National Bureau of Economic Research.

Altonji, J., and N. Williams, 1992. *The Effects of Labor Market Experience, Job Seniority, and Job Mobility on Wage Growth*. NBER Working Paper 4133. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/papers/w4133.

Arrow, K. 1962. "The Economic Implications of Learning by Doing." *Review of Economic Studies* 29, no, 3: 155–73.

Autor, D., D. Dorn, and G. Hanson. 2019. "When Work Disappears: Manufacturing Decline and the Falling Marriage Market Value of Young Men." *American Economic Review: Insights* 1, no. 2: 161–78.

Autor, D., W. Kerr, and A. Kugler. 2007. "Does Employment Protection Reduce Productivity? Evidence from U.S. States." *Economic Journal* 117, no. 521: F189–F217.

Autor, D., Levy, F., and Murnane, R. J. 2003. "The Skill Content of Recent Technological Change: An Empirical Exploration." *Quarterly Journal of Economics* 118, no. 4: 1279–1333.

Baker, M., J. Gruber, and K. Milligan. 2008. "Universal Child Care, Maternal Labor Supply, and Family Well-Being." *Journal of Political Economy* 116, no. 4: 709–45.

Baker, R., E. Bettinger, B. Jacob, and I. Marinescu. 2018. “The Effect of Labor Market Information on Community College Students’ Major Choice.” *Economics of Education Review* 65: 18–30.

Bauernschuster, S., T. Hener, and H. Rainer. 2016. “Children of a (Policy) Revolution: The Introduction of Universal Child Care and Its Effect on Fertility.” *Journal of the European Economic Association* 14, no. 4: 975–1005.

Bayer, C., and F. Juessen. 2015. “Happiness and the Persistence of Income Shocks.” *American Economic Journal: Macroeconomics* 7, no. 4: 160–87.

Beaudry, P., D. Green, and B. Sand. 2016). ”The Great Reversal in the Demand for Skill and Cognitive Tasks.” *Journal of Labor Economics* 34, no. S1: S199–S247.

Ben-Shalom, Y., and A. Mamun. 2015. “Return-to-Work Outcomes Among Social Security Disability Insurance Program Beneficiaries.” *Journal of Disability Policy Studies* 26, no. 2: 100–110.

Bergsvik, J., A. Fauske, and R. Hart. 2020. “Effects of Policy on Fertility: A Systematic Review of (Quasi) Experiments.” https://ideas.repec.org/p/ssb/dispap/922.html.

Bessen, J. 2016. “How Computer Automation Affects Occupations: Technology, Jobs, and Skills.” Boston University School of Law, Law and Economics Research Paper 15-49.

Blanchflower, D., and A. Oswald. 2004. “Well-Being Over Time in Britain and the USA.” *Journal of Public Economics* 88, nos. 7–8: 1359–86.

Blank, R. 2002. “Evaluating Welfare Reform In the United States.” *Journal of Economic Literature* 40, no. 4: 1105–66.

Bloom, D., D. Canning, and G. Fink. 2010. “Implications of Population Aging for Economic Growth.” *Oxford Review of Economic Policy* 26, no. 4: 583–612.

Bonsang, E., S. Adam, and S. Perelman. 2012. “Does Retirement Affect Cognitive Functioning?” *Journal of Health Economics* 31, no. 3: 490–501.

Browning, M., and E. Heinesen. 2012. “Effect of Job Loss Due to Plant Closure on Mortality and Hospitalization.” *Journal of Health Economics* 31, no. 4: 599–616.

Buason, A., E. Norton, P. McNamee, E. Bjork Thordardottir, and T. Laufey Asgeirsdottir. 2021. *The Causal Effect of Depression and Anxiety on Life Satisfaction: An Instrumental Variable Approach*. NBER Working Paper 28575. Cambridge, MA: National Bureau of Economic Research.

Campbell, D., M. Green, N. Davies, E. Demou, J. Ward, L. Howe, S. Harrison, J. Johnston, R. Strawbridge, F. Popham, D. Smith, M. Munafò, and S. Katikireddi. 2021. ”Effects of Increased Body Mass Index on Employment Status: A Mendelian Randomisation Study.” *International Journal of Obesity* 45: 1790–1801. https://doi.org/10.1038/s41366-021-00846-x.

Cappelli, P. 2014. *Skill Gaps, Skill Shortages and Skill Mismatches: Evidence for the U.S*. NBER Working Paper w20382. Cambridge, MA: National Bureau of Economic Research.

Cawley, J., A. Biener, C. Meyerhoefer, Y. Ding, T. Zvenyach, B. Smolarz, and A. Ramasamy. 2021. “Direct Medical Costs of Obesity in the United States and the Most Populous States.” *Journal of Managed Care & Specialty Pharmacy* 27, no. 3. https://doi.org/10.18553/jmcp.2021.20410.

Celidoni, M., C. Dal Bianco, and G. Weber. 2017. “Retirement and Cognitive Decline: A Longitudinal Analysis Using SHARE Data. *Journal of Health Economics* 56: 113–25.

CEWD (Center for Energy Workforce Development) 2022. “Gaps in the Energy Workforce Pipeline.” https://cewd.org/wp-content/uploads/2022/02/Gaps-In-Energy-Careers-Report-2022_Final-pages.pdf, Csikszentmihalyi, M., and J. LeFevre. 1989. "Optimal Experience in Work and Leisure." *Journal of Personality and Social Psychology* 56, no. 5: 815.

Davis, S., and T. Von Wachter. 2011. *Recessions and the Cost of Job Loss*. Working Paper w17638. Cambridge, MA: National Bureau of Economic Research.

Del Boca, D. 2002. "The Effect of Child Care and Part-Time Opportunities on Participation and Fertility Decisions in Italy." *Journal of Population Economics* 15, no. 3 549–73.

Deming, D., J. Fuller, R. Lipson, K. McKittrick, A. Epstein, and E. Catalfamo. 2023. "Delivering on the Degree: The College-to-Jobs Playbook." Unpublished paper.

Denning, J., and P. Turley. 2017. "Was That SMART? Institutional Financial Incentives and Field of Study." *Journal of Human Resources* 52, no. 1: 152–86.

DOE (U.S. Department of Energy). 2021. "Critical Minerals and Materials: U.S. Department of Energy's Strategy to Support Domestic Critical Mineral and Material Supply Chains." https://www.energy.gov/eere/ammto/2021-doe-critical-materials-strategy.

DOL (U,S. Department of Labor, Employment and Training Administration). 2020. "Availability of TrainingProviderResults.gov," Training and Employment Notice No. 9-20). https://www.dol.gov/sites/dolgov/files/ETA/advisories/TEN/2020/TEN_9-20.pdf.

——— (U.S. Department of Labor, Women's Bureau). 2024. "Childcare Costs Remain an Almost Prohibitive Expense." Blog post. https://blog.dol.gov/2024/11/19/new-data-childcare-costs-remain-an-almost-prohibitive-expense.

Durkheim, É. 1897. *Suicide: A Study in Sociology*. Trans. J. Spaulding and G. Simpson. Glencoe, IL: Free Press.

Eliason, M., and D. Storrie. 2009. "Does Job Loss Shorten Life?" *Journal of Human Resources* 44, no. 2: 277–302.

Fazio, D., T. Ramadorai, J. Skrastins, and B. van Doornik. 2025. "Housing and Fertility." Social Science Research Network, Working Paper 5046571. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5046571.

Fiorillo, D., and F. Sabatini. 2015. "Structural Social Capital and Health in Italy." *Economics & Human Biology* 17: 129–42.

Fitzpatrick, M., and T. Moore. 2018. "The Mortality Effects of Retirement: Evidence from Social Security Eligibility at Age 62." *Journal of Public Economics* 157: 121–37.

Godard, M. 2016. "Gaining Weight Through Retirement? Results from the SHARE Survey". *Journal of Health Economics* 45: 27–46. https://doi.org/10.1016/j.jhealeco.2015.11.002.

Gorry, D., and D. Thomas. 2017. "Regulation and the Cost of Childcare." *Applied Economics* 49, no. 41: 4138–47.

Gordon, R. 2017. *The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War*. Princeton, NJ: Princeton University Press.

Grogger, J. 2003. "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income Among Female-Headed Families." *Review of Economics and Statistics* 85, no. 2: 394–408.

———. 2009. "Welfare Reform, Returns to Experience, and Wages: Using Reservation Wages to Account for Sample Selection Bias." *Review of Economics and Statistics* 91, no. 3: 490–502.

Grogger, J., and L. Karoly. 2005. *Welfare Reform: Effects of a Decade of Change*. Cambridge, MA: Harvard University Press.

Hamilton, B., J. Martin, and M. Osterman. 2023. “Births: Provisional Data for 2022.” National Vital Statistics Report, Centers for Disease Control and Prevention.

Haskins, R. 2007. *Work Over Welfare: The Inside Story of the 1996 Welfare Reform Law*. Lanham, MD: Rowman & Littlefield.

Helliwell, J., and H. Huang. 2014. “New Measures of the Costs of Unemployment: Evidence from the Subjective Well-Being of 3.3 Million Americans.” *Economic Inquiry* 52, no. 4: 1485–1502.

Herbst, C. 2023. “Child Care in the United States: Markets, Policy, and Evidence.” *Journal of Policy Analysis and Management* 42, no. 1: 255–304.

HHS (U.S. Department of Health and Human Services). 2025. “Standard Values for Regulatory Analysis, 2025,” https://aspe.hhs.gov/sites/default/files/documents/639756a60fbe7e51786bcec176ad52f1/Standard-RIA-Values-2025.pdf.

Hotz, V., and M. Xia. 2011. “The Impact of Regulations on the Supply and Quality of Care in Child Care Markets.” *American Economic Review* 101, no. 5: 1775–1805.

Hurwitz, M., and J. Smith. 2018. “Student Responsiveness to Earnings Data in the College Scorecard.” *Economic Inquiry* 56, no. 2: 1220–43.

Ilin, E., and A. Sanchez. 2023. *Mitigating Benefits Cliffs for Low-Income Families: District of Columbia Career Mobility Action Plan as a Case Study*. Discussion Paper 23-1. Atlanta: Federal Reserve Bank of Atlanta,

Jäger, S., and J. Heining. 2022. *How Substitutable Are Workers? Evidence from Worker Deaths*. NBER Working Paper 30629. Cambridge, MA: National Bureau of Economic Research.

Jahoda, M. 1982. *Employment and Unemployment: A Social-Psychological Analysis*. Cambridge: Cambridge University Press.

Jarosch, G., E. Oberfield, and E. Rossi-Hansberg. 2021. “Learning from Coworkers.” *Econometrica* 89, no. 2: 647–76.

Jones, B. 2010. “Age and Great Invention.” *Review of Economics and Statistics* 92, no. 1: 1–14.

Krueger, A. 2017. “Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate.” *Brookings Papers on Economic Activity*, no. 2: 1.

Krueger, A., and A. Mueller. 2012. “Time Use, Emotional Well-Being, and Unemployment: Evidence from Longitudinal Data.” *American Economic Review* 102, no. 3: 594–99.

Lalive, R., and J. Zweimüller. 2009. “How Does Parental Leave Affect Fertility and Return to Work? Evidence from Two Natural Experiments.” *Quarterly Journal of Economics* 124, no. 3: 1363–1402.

Lazear, E. 1990. “Job Security Provisions and Employment.” *Quarterly Journal of Economics* 105, no. 3: 699–726.

Maestas, N., K. Mullen, and D. Powell. 2016. *The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity*. NBER Working Paper 22452. Cambridge, MA: National Bureau of Economic Research.

Mazzonna, F., and F. Peracchi. 2012. “Ageing, Cognitive Abilities and Retirement.” *European Economic Review* 56, no.4: 691–710.

Moffitt, R. 1992. “Incentive Effects of the U.S. Welfare System: A Review.” *Journal of Economic Literature* 30, no. 1: 1–61.

———. 2008. *Welfare Reform: The U.S. Experience*. IFAU Paper 2008: 13, Institute for Evaluation of Labour Market and Education Policy. Uppsala: Swedish Ministry of Employment.

Morton, J. 2018. *Social Security Disability Insurance (SSDI): Overview and Recent Developments*. CRS Report R44948. Washington: Congressional Research Service. https://crsreports.congress.gov/product/pdf/R/R44948.

Mulligan, C. 2012. *The Redistribution Recession: How Labor Market Distortions Contracted the Economy*. New York: Oxford University Press.

NAM (National Association of Manufacturers). 2021. "2.1 Million Manufacturing Jobs Could Go Unfilled by 2030." https://www.nam.org/2-1-million-manufacturing-jobs-could-go-unfilled-by-2030/.

National Center for Education Statistics. 2022. "NAEP Long-Term Trend Assessment Results: Reading and Mathematics, Age 9; The Nation's Report Card." U.S. Department of Education, Institute of Education Sciences. https://www.nationsreportcard.gov/highlights/ltt/2022/.

Nickell, S. 1997. "Unemployment and Labor Market Rigidities: Europe versus North America." *Journal of Economic Perspectives* 11, no. 3: 55–74. https://doi.org/10.1257/jep.11.3.55.

Nickerson, J., and D. Solomon. 2024. "Car Seats as Contraception." *Journal of Law and Economics* 67, no. 3: 517–53.

NSCAI (National Security Commission on Artificial Intelligence). 2021. "National Security Commission on Artificial Intelligence: The Final Report." https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/48187/nscai_full_report_digital.04d6b124173c.pdf.

Price, B. 2025. *The Duration and Wage Effects of Long-Term Unemployment Benefits: Evidence from Germany's Hartz IV Reform*. Working Paper. Washington: Board of Governors of the Federal Reserve System.

RAND. 2023. "RAND HRS Longitudinal File." RAND Center for the Study of Aging. https://hrsdata.isr.umich.edu/data-products/rand.

Richardson, C., and Z. Blizard. 2022. "Benefits Cliffs, Disincentive Deserts, and Economic Mobility." *Journal of Poverty* 26, no. 1: 1–22.

Rohwedder, S., and R. Willis. 2010. "Mental Retirement." *Journal of Economic Perspectives* 24, no. 1: 119–38.

SIA (Semiconductor Industry Association). 2023. *Chipping In: The U.S. Semiconductor Workforce Shortage*. Washington: SIA.

Social Security Administration. 2023. "Annual Statistical Report on the Social Security Disability Insurance program, 2023." Office of Research, Evaluation, and Statistics. https://www.ssa.gov/policy/docs/statcomps/di_asr/2023/index.html.

Social Security Board of Trustees. 2024. "Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds." https://www.ssa.gov/oact/tr/2024/trTOC.html.

Sullivan, D., and T. Von Wachter. 2009. "Job Displacement and Mortality: An Analysis Using Administrative Data." *Quarterly Journal of Economics* 124, no. 3: 1265–1306.

Symonds, W., R. Schwartz, and R. Ferguson. 2011. *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Centur*y. Cambridge, MA: Harvard Graduate School of Education.

Thomas, J., F. Rowe, P. Williamson, , and E. Lin, 2022. "The Effect of Leave Policies on Increasing Fertility: A Systematic Review." *Humanities and Social Sciences Communications* 9, article 262.

U.S. Congress. 2025. “One Big Beautiful Bill Act.” Public Law 119-21, 139 Stat. 502. https://www.congress.gov/bill/119th-congress/house-bill/1.

Winkelmann, L., and R. Winkelmann. 1998. “Why Are the Unemployed So Unhappy? Evidence from Panel Data.” *Economica* 65, no. 257: 1–15.

Wiswall, M., and B. Zafar. 2015. “Determinants of College Major Choice: Identification Using an Information Experiment.” *Review of Economic Studies* 82, no. 2: 791-824.

Xue, B., D. Cadar, M. Fleischmann, S. Stansfeld, E. Carr, M. Kivimäki, A. McMunn, and J. Head. 2018. “Effect of Retirement on Cognitive Function: The Whitehall II Cohort Study.” *European Journal of Epidemiology* 33, no. 10: 989–1001.

Yeh, C., C. Macaluso, and B. Hershbein. 2022. “Monopsony in the U.S. Labor Market.” *American Economic Review* 112, no. 7: 2099–138.

Chapter 10

Becker, G. 1957. *The Economics of Discrimination*. Chicago: University of Chicago Press.

Coate, S., and G. Loury.1993. “Will Affirmative-Action Policies Eliminate Negative Stereotypes?” *American Economic Review* 83, no. 5:, 1220–40.

Goldberg, E., A. Krolik, and L. Boyce. 2025. “How Corporate America Is Retreating from DEI.” *New York Times*, March 13.

Goldstein, D., M. Grewal, R. Imose, and M. Williams. 2022. “Unlocking the Potential of Chief Diversity Officers.” McKinsey & Company.

Green, J., and J. Hand. 2024. “McKinsey’s Diversity Matters / Delivers / Wins Results Revisited.” *Econ Journal Watch* 21, no.1.

Heisler, S. 2020, “How DEI Efforts Lead to Better Employee Retention.” *Marketing News*, American Marketing Association, October 12.

Hsieh, C., E. Hurst, C. Jones, and P. Klenow. 2019. “The Allocation of Talent and U.S. Economic Growth.” *Econometrica* 87, no. 5: 1439–74.

Johnston, A., and B. Wheaton. 2026. “Diverse Management and Productivity.” Working paper, University of Texas–Austin.

Kessler, S. 2024. “DEI Goes Quiet.” *New York Times*, January 13.

Lau, E., and T. Telford. 2025. “‘DEI’ Vanishing from Corporate Filings, Mirroring Business World’s Retreat.” *Washington Post*, April 30.

McKinsey & Company. 2015. “Diversity Matters.” White Paper. https://www.mckinsey.com/insights/organization/~/media/2497d4ae4b534ee89d929cc6e3aea485.ashx.

———. 2018. “Delivering Through Diversity.” White Paper. https://www.mckinsey.com/~/media/mckinsey/business%20functions/organization/our%20insights/delivering%20through%20diversity/delivering-through-diversity_full-report.pdf.

———. 2020. “Diversity Wins: How Inclusion Matters.” White Paper. https://www.mckinsey.com/~/media/mckinsey/featured%20insights/diversity%20and%20inclusion/diversity%20wins%20how%20inclusion%20matters/diversity-wins-how-inclusion-matters-vf.pdf.

Murray, C. 2025. “Corporate Mentions of ‘Diversity’ and ‘DEI’ Dropped 72% in 2025, Analysis Finds.” *Forbes*, May 29.

Murray, C., and M. Bohannon. 2025. “IBM Reportedly Walks Back Diversity Policies, Citing ‘Inherent Tensions’: Here Are All the Companies Rolling Back DEI Programs.” *Forbes*, April 11.

Rozado, D. 2020. "Prejudice and Victimization Themes in *New York Times* Discourse: A Chronological Analysis." *Academic Questions* 33, no. 1: 89–101.

Rozado, D., M. Al-Gharbi, and J. Halberstadt. 2023. "Prevalence of Prejudice-Denoting Words in News Media Discourse: A Chronological Analysis." *Social Science Computer Review* 41, no. 1: 99–122.

Rufo, C. 2024. "DEI Captures the Treasury Department." *City Journal*, October 16.

S&P Global. 2022. "Diversity Equity and Inclusion Report, 2022."

Singman, B. 2025. "Defunding DEI: Here's How the Trump Administration Has Undone Biden's Very Prized Programs." Fox News, April 27.

Wenner, A. 2025. "Want to Create the Most Profitable, Innovative, and Productive Workplace Possible? Double Down on DEI." *Success Magazine*, April 23.

Chapter 11

Advisory Board. 2025. "Charted: The Rise of Hospital-Owned Physician Practices." https://www.advisory.com/daily-briefing/2025/06/03/physician-practices.

AHIP. 2025. "Health Plans Take Action to Simplify Prior Authorization." https://www.ahip.org/news/press-releases/health-plans-take-action-to-simplify-prior-authorization.

American Hospital Association. 2025. "Report: Examining the Real Factors Driving Physician Practice Acquisition." https://www.aha.org/fact-sheets/2023-06-07-fact-sheet-examining-real-factors-driving-physician-practice-acquisition.

AMN Healthcare. 2025. "2025 Survey of Physician Appointment Wait Times and Medicare and Medicaid Acceptance Rates." https://online.flippingbook.com/view/83050962?sharedOn=.

Antitrust Division. 2025. "Anticompetitive Regulations Task Force Press Release." https://www.regulations.gov/document/ATR-2025-0001-0002.

Bhattacharya, J. 2005. "Specialty Selection and Lifetime Returns to Specialization within Medicine." *Journal of Human Resources* 40, no. 1, 115–43.

California Department of Finance. "2025–2026 Budget Change Proposal—Cover Sheet." https://bcp.dof.ca.gov/2526/FY2526_ORG4260_BCP8045.pdf.

Capps, C., D. Dranove, and C. Ody. 2018. "The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending." *Journal of Health Economics* 59 (May): 139–52.

Casalino, L., D. Gans, R. Weber, et al. 2016. "U.S. Physician Practices Spend More Than $15.4 Billion Annually to Report Quality Measures." *Health Affairs* 35, no. 3: 401–6.

Centers for Disease Control and Prevention. 2024 "National ART Surveillance System." https://www.cdc.gov/art/php/nass/index.html.

———. 2025. "Fast Facts: Health and Economic Costs of Chronic Conditions." https://www.cdc.gov/chronic-disease/data-research/facts-stats/index.html.

CMS (Centers for Medicare & Medicaid Services). No date, a. "Rural Health Transformation Program." https://apply07.grants.gov/apply/opportunities/instructions/PKG00291485-instructions.pdf.

———. No date, b. "Medicare and Medicaid Programs; CY 2026 Payment Policies under the Physician Fee Schedule and Other Changes to Part B Payment and Coverage Policies; Medicare Shared Savings Program Requirements; and Medicare Prescription Drug Inflation Rebate Program." https://public-inspection.federalregister.gov/2025-13271.pdf.

———. 2025a. "ASM (Ambulatory Specialty Model)." https://www.cms.gov/priorities/innovation/innovation-models/asm.

———. 2025b. "Calendar Year 2026 Hospital Outpatient Prospective Payment System (OPPS) and Ambulatory Surgical Center Proposed Rule (CMS-1834-P) Administration Pay." https://www.cms.gov/newsroom/fact-sheets/calendar-year-2026-hospital-outpatient-prospective-payment-system-opps-and-ambulatory-surgical.

———. 2025c. "Calendar Year (CY) 2026 Medicare Physician Fee Schedule (PFS) Proposed Rule (CMS-1832-P)." https://www.cms.gov/newsroom/fact-sheets/calendar-year-cy-2026-medicare-physician-fee-schedule-pfs-proposed-rule-cms-1832-p.

———. 2025d. "Hospital Price Transparency Frequently Asked Questions (FAQs)." https://www.cms.gov/files/document/hospital-price-transparency-frequently-asked-questions.pdf.

———. 2025e. "Innovation Insight: Proposed Changes Expand Reach of the Medicare Diabetes Prevention Program to Achieve MAHA Goals." https://www.cms.gov/innovation-insight-proposed-changes-expand-reach-medicare-diabetes-prevention-program-achieve-maha.

———. 2025f. "Medicare Regulatory Relief." https://www.cms.gov/medicare-regulatory-relief-rfi.

———. 2025g. "Rural Health Transformation (RHT) Program." https://www.cms.gov/priorities/rural-health-transformation-rht-program/overview.

———. 2025h. "White House, Tech Leaders Commit to Create Patient-Centric Healthcare Ecosystem." https://www.cms.gov/newsroom/press-releases/white-house-tech-leaders-commit-create-patient-centric-healthcare-ecosystem.

Chandra, A., A. Finkelstein, A. Sacarny, and C. Syverson. 2016a. "Health Care Exceptionalism? Performance and Allocation in the US Health Care Sector." *American Economic Review* 106, no. 8: 2110–44.

———. 2016b. "Productivity Dispersion in Medicine and Manufacturing." *American Economic Review* 106, no. 5: 99–103.

Clemens, J., and J. Gottlieb. 2017. "In the Shadow of a Giant: Medicare's Influence on Private Physician Payments." *Journal of Political Economy* 125, no. 1: 1–39.

Condon, A. 2024. "Nearly 80% of Physicians Now Employed by Hospitals, Corporations: 5 Things to Know." Becker's Clinical Leadership. https://www.beckershospitalreview.com/quality/hospital-physician-relationships/nearly-80-physicians-now-employed-by-hospitals-corporations-report-finds/.

Congressional Budget Office. 2022. "The Prices That Commercial Health Insurers and Medicare Pay for Hospitals' and Physicians' Services." https://www.cbo.gov/system/files/2022-01/57422-medical-prices.pdf.

———. 2024. "An Update to the Budget and Economic Outlook: 2024 to 2034." https://www.cbo.gov/publication/60419#_idTextAnchor069.

Cooper, Z., S. Craig, A. Epanomeritakis, et al. 2025. *Are Hospital Acquisitions of Physician Practices Anticompetitive?* NBER Working Paper 34039. Cambridge, MA: National Bureau of Economic Research.

Danzon, P., and L. Chao. 2000. "Cross-National Price Differences for Pharmaceuticals: How Large, and Why?" *Journal of Health Economics* 19, no. 2: 159–95.

Ding, H., M. Duggan, and A. Starc. 2025. “Getting the Price Right? The Impact of Competitive Bidding in the Medicare Program.” *Review of Economics and Statistics* 107, no. 1: 204–20.

Dranove, D., and P. Wehner. 1994. “Physician-Induced Demand for Childbirths.” Journal of Health Economics 13, no. 1: 61–73. https://doi.org/10.1016/0167-6296(94)90004-3.

Dunn, A. 2009. “Does Competition Among Medicare Advantage Plans Matter? An Empirical Analysis of the Effects of Local Competition in a Regulated Environment.” Economic Analysis Group.

Dunn, A., and A. Shapiro. 2014. “Do Physicians Possess Market Power?” *Journal of Law and Economics* 57, no. 1.

Federal Register. 2024. “Medicaid Program; Medicaid and Children’s Health Insurance Program (CHIP) Managed Care Access, Finance, and Quality.” https://www.federalregister.gov/documents/2024/05/10/2024-08085/medicaid-program-medicaid-and-childrens-health-insurance-program-chip-managed-care-access-finance#h-20.

———. 2025a. “Making America Healthy Again by Empowering Patients with Clear, Accurate, and Actionable Healthcare Pricing Information.” https://www.federalregister.gov/documents/2025/02/28/2025-03440/making-america-healthy-again-by-empowering-patients-with-clear-accurate-and-actionable-healthcare.

———. 2025b. “Medicare and Medicaid Programs; CY 2026 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment and Coverage Policies; Medicare Shared Savings Program Requirements; and Medicare Prescription Drug Inflation Rebate Program.” https://www.federalregister.gov/documents/2025/07/16/2025-13271/medicare-and-medicaid-programs-cy-2026-payment-policies-under-the-physician-fee-schedule-and-other.

———. 2025c. “Unleashing Prosperity Through Deregulation.” https://www.federalregister.gov/documents/2025/02/06/2025-02345/unleashing-prosperity-through-deregulation.

Fortune Business Insights. 2025. “U.S. Retail Clinics Market Size & Growth.” https://www.fortunebusinessinsights.com/u-s-retail-clinics-market-106419.

Government of the District of Columbia, Department of Health. No date. “Information Sheet on DC’s Updated HPSAs and MUA/Ps.” https://dchealth.dc.gov/sites/default/files/dc/sites/doh/Information%20Sheet%20on%202012%20HPSA%20and%20MUAP%20Updates.pdf.

HRSA (Health Resources and Services Administration). 2025. “2025 National Shortage Designation Update.” https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/2025-nsdu-may-29-webinar-slides.pdf.

Kane, C. 2023. “Policy Research Perspectives.” American Medical Association. https://www.ama-assn.org/system/files/2022-prp-practice-arrangement.pdf.

MACPAC. 2024. “Directed Payments in Medicaid Managed Care.” https://www.macpac.gov/wp-content/uploads/2024/10/Directed-Payments-in-Medicaid-Managed-Care.pdf.

McDermott Will & Schulte. 2025. “FTC chairman Warns Healthcare Employers About Noncompetes.” https://www.mwe.com/insights/ftc-chairman-warns-health-care-employers-about-noncompetes/.

National Resident Matching Program. 2025. “Results and Data: Specialties Matching Service, 2025 Appointment Year.” https://www.nrmp.org/match-data/2025/02/results-and-data-specialties-matching-service-2025-appointment-year/.

NHSC (National Health Service Corps). No date. "NHSC Loan Repayment Program." https://nhsc.hrsa.gov/loan-repayment/nhsc-loan-repayment-program.

———. 2021. "Program Directs Funding to Areas with Greatest Provider Shortages." https://www.gao.gov/assets/720/714090.pdf.

Nicholson, S. 2003. *Barriers to Entering Medical Specialties*. NBER Working Paper 9649. Cambridge, MA: National Bureau of Economic Research.

Paragon Health Institute. 2024. "Where Are Provider Shortages? Reassessing Outdated Methodologies." https://paragoninstitute.org/private-health/where-are-provider-shortages-reassessing-outdated-methodologies/.

Perry, M. 2022. "What Economic Lessons About Health Care Costs Can We Learn from the Competitive Market for Aesthetic Plastic Surgery?" American Enterprise Institute. https://www.aei.org/carpe-diem/what-economic-lessons-about-health-care-costs-can-we-learn-from-the-competitive-market-for-aesthetic-plastic-surgery-2/.

Rabideau, B., M. Richards, and C. Whaley. 2024. "Training Labor and Treatment Behavior: Evidence from Physician Residency Programs." *Health Economics* 33, no. 9: 2059–87.

RAND. 2016. "The Evolving Role of Retail Clinics." https://www.rand.org/pubs/research_briefs/RB9491-2.html.

Robinson, J., and T. Brown. 2013. "Increases in Consumer Cost Sharing Redirect Patient Volumes and Reduce Hospital Prices for Orthopedic Surgery." *Health Affairs* (Project Hope) 32, no. 8: 1392–97.

Telesford, I., M. McGough, D. Tevis, and L. Cotter. 2025. "How Has the Burden of Chronic Diseases in the U.S. and Peer Nations Changed Over Time?" Health System Tracker. https://www.healthsystemtracker.org/chart-collection/how-has-the-burden-of-chronic-diseases-in-the-u-s-and-peer-nations-changed-over-time/.

U.S. Bureau of Labor Statistics. 2025. "Physician Assistants." https://www.bls.gov/ooh/healthcare/physician-assistants.htm.

U.S. Congress. 2025. "H.R.1833—Working Families Tax Cut Act." https://www.congress.gov/bill/119th-congress/house-bill/1833.

U.S. Department of Health and Human Services. 2025. "HHS Secretary Kennedy, CMS Administrator Oz Secure Industry Pledge to Fix Broken Prior Authorization System." https://www.hhs.gov/press-room/kennedy-oz-cms-secure-healthcare-industry-pledge-to-fix-prior-authorization-system.html.

U.S. Department of Labor. 2025. "FAQs about Affordable Care Act Implementation Part 70." https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/faqs/aca-part-70.

U.S. Government Accountability Office. 2025. "Health Care Consolidation." https://www.gao.gov/assets/gao-25-107450.pdf.

White House. 2025a. "America's AI Action Plan." https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf.

———. 2025b. "Make Our Children Healthy Again." https://www.whitehouse.gov/wp-content/uploads/2025/09/The-MAHA-Strategy-WH.pdf.

Chapter 12

Aladangady, A., J. Bricker, A. Chang, S. Goodman, J. Krimmel, K. Moore, S, Reber, A. Henriques Volz, and R. Windle. 2023. *Changes in U.S. Family Finances from 2019 to 2022: Evidence from the Survey of Consumer Finances*. Washington: Board of Governors of the Federal Reserve System, https://www.federalreserve.gov/publications/files/scf23.pdf.

Ang, A., B. Chen, W. Goetzmann, and L. Phalippou. 2018. "Estimating Private Equity Returns from Limited Partner Cash Flows." *Journal of Finance* 73, no. 4: 1751–83. http://www.jstor.org/stable/26654664.

Asker, J., J. Farre-Mensa, and A. Ljungqvist. 2011. *Comparing the Investment Behavior of Public and Private Firms*. NBER Working Paper 17394. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w17394/w17394.pdf.

BEA (U.S. Bureau of Economic Analysis). 2025. "Table 1.1.5: Gross Domestic Product—Quarterly." In *National Income and Product Accounts Tables*, U.S. Department of Commerce. Washington: U.S. Government Publishing Office.

BlackRock. 2025. "How Private Markets Could Improve Retirement Outcomes." https://www.blackrock.com/us/financial-professionals/practice-management/defined-contribution/insights/private-markets-in-tdfs.

BLS (U.S. Bureau of Labor Statistics). 2004. "Employee Participation in Defined Benefit and Defined Contribution Plans, 1985–2000." https://www.bls.gov/opub/mlr/cwc/employee-participation-in-defined-benefit-and-defined-contribution-plans-1985-2000.pdf.

———. 2024. "What Statistics Does the BLS Provide on Frozen Defined Benefit Plans?" May 7. https://www.bls.gov/ebs/factsheets/defined-benefit-frozen-plans.htm.

Boyle, P., and M. Hardy. 2003. "Guaranteed Annuity Options." *ASTIN Bulletin: The Journal of the IAA* 33, no. 2: 125–52. https://www.casact.org/sites/default/files/old/astin_vol33no2_v33n2.pdf.

Broadbent, J., M. Palumbo, and E. Woodman. 2006. "The Shift from Defined Benefit to Defined Contribution Pension Plans: Implications for Asset Allocation and Risk Management." December. https://www.bis.org/publ/wgpapers/cgfs27broadbent3.pdf.

CalPERS. 2024. "CalPERS Will Increase Private Markets Investments." https://www.calpers.ca.gov/newsroom/calpers-news/2024/calpers-will-increase-private-markets-investments.

Carroll, R., and D. Joulfaian. 1997. "Taxes and Corporate Choice of Organizational Form." U.S. Department of the Treasury, OTA Paper 73. https://home.treasury.gov/system/files/131/WP-73.pdf.

Davis, S., J. Haltiwanger, K. Handley, R. Jarmin, J. Lerner, and J. Miranda. 2014. "Private Equity, Jobs, and Productivity." *American Economic Review* 104, no. 12: 3956–90. https://www.aeaweb.org/articles?id=10.1257/aer.104.12.3956.

Doidge, C., K. Kahle, A. Karolyi, and R. Stulz. 2018. "Eclipse of the Corporation or the Eclipse of Public Markets?" *Journal of Applied Corporate Finance* 30, no. 1: 8–16. https://doi.org/10.1111/jacf.12272.

Doidge, C., A. Karolyi, and R. Stulz. 2017. "The U.S. Listing Gap." *Journal of Financial Economics* 123, no. 3: 464–87. https://doi.org/10.1016/j.jfineco.2016.12.002.

DOL (U.S. Department of Labor). 2019. "Types of Retirement Plans." https://www.dol.gov/general/topic/retirement/typesofplans.

———. 2020. “Information Letter 06-03-2020.” June 3. https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/information-letters/06-03-2020.

———. 2021. “Supplement Statement on Private Equity in Defined Contribution Plan Designated Investment Alternatives.” December 21. https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/information-letters/06-03-2020-supplemental-statement.

———. 2025. “U.S. Department of Labor Rescinds 2021 Supplemental Statement on Alternative Assets in 401(k) Plans.” https://www.dol.gov/newsroom/releases/ebsa/ebsa20250812.

Duffee, G. 2005. “Time Variation in the Covariance between Stock Returns and Consumption Growth.” *Journal of Finance* 60, no. 4: 1673–1712. https://doi.org/10.1111/j.1540-6261.2005.00777.x.

Dyrda, S., and B. Pugsley. 2025. “The Rise of Pass-Throughs: An Empirical Investigation.” *Economic Journal* 135, no. 665: 387–403. https://doi.org/10.1093/ej/ueae062.

Easton, P., S. Larocque, P. Mason, and S. Utke. 2023. “Monitoring in Private Equity.” In *Palgrave Encyclopedia of Private Equity*, 742–47. https://doi.org/10.1007/978-3-030-38738-9_116-1.

Ernst & Young. 2024. “Economic Contribution of the U.S. Private Equity Sector in 2024.” https://www.investmentcouncil.org/wp-content/uploads/2025/03/EY-AIC-2024-Economic-contribution-of-the-US-private-equity-sector.pdf.

Ewens, M., and J. Farre-Mensa. 2020. “The Deregulation of the Private Equity Markets and the Decline in IPOs.” *Review of Financial Studies* 33, no. 12: 5463–5509. https://doi.org/10.1093/rfs/hhaa053.

Federal Reserve Bank of Saint Louis. 2025. “B.103 Balance Sheet of Nonfinancial Corporate Business.” In *Financial Accounts of the United States (Z.1)*. Washington: Board of Governors of the Federal Reserve System. https://fred.stlouisfed.org/release/tables?rid=52&eid=810145&od=.

Finley, J. 2019. “Expanding Retail Investor Access to Private Markets.” November. https://www.sec.gov/spotlight/sbcfac/expanding-retail-access-to-private-markets-finley.pdf.

Gao, X., J. Ritter, and Z. Zhu. 2013. “Where Have All the IPOs Gone?” *Journal of Financial and Quantitative Analysis* 48, no. 6: 1663–92. https://www.jstor.org/stable/43303857.

Ghosh, P. 2024. “U.S. Public Pension Plans Now Overallocated to Alternatives vs. Target—Preqin.” May 13. https://www.pionline.com/alternatives/more-one-third-us-public-pension-assets-now-alternatives-preqin/.

Hall, Jessica. 2025. “Private Equity in 401(K) Plans? ‘Highly Risky’ for the Average Investor.” MarketWatch, January 8. https://www.marketwatch.com/story/private-equity-in-401-k-plans-highly-risky-for-the-average-investor-6eced355.

Harberger, A. 1962. “The Incidence of the Corporation Income Tax.” *Journal of Political Economy* 70, no. 3: 215–40. https://doi.org/10.1086/258636.

Harris, R., T. Jenkinson, and S. Kaplan. 2014. “Private Equity Performance: What Do We Know?” *Journal of Finance* 69, no. 5: 1851–82. http://www.jstor.org/stable/43612946.

Harris, R., T. Jenkinson, S. Kaplan, and R. Stucke. 2023. “Has Persistence Persisted in Private Equity? Evidence from Buyout and Venture Capital Funds.” *Journal of Corporate Finance* 81: 102361. https://doi.org/10.1016/j.jcorpfin.2023.102361.

Higson, C., and R. Stucke. 2012. “The Performance of Private Equity.” March 2. https://ssrn.com/abstract=2009067.

ICI (Investment Company Institute). 2020. "Investment Company Fact Book: A Review of Trends and Activities in the Investment Company Industry." https://www.ici.org/system/files/attachments/2020_factbook.pdf.

———. 2022. "2022 Investment Company Fact Book: A Review of Trends and Activities in the Investment Company Industry." https://www.ici.org/system/files/2022-05/2022_factbook.pdf.

———. 2025a. "2025 Investment Company Fact Book: A Review of Trends and Activities in the Investment Company Industry." https://www.ici.org/system/files/2025-05/2025-factbook.pdf.

———. 2025b. "Release: Quarterly Retirement Market Data, First Quarter 2025." Investment Company Institute. June 18, 2025. https://www.ici.org/research/statistics/quarterly-retirement-market-data.

INSEAD. 2019. "Measuring Private Equity Fund Performance." No date. https://www.insead.edu/sites/default/files/assets/dept/centres/gpei/docs/Measuring_PE_Fund-Performance-2019.pdf.

Kahle, K., and R. Stulz. 2017. "Is the U.S. Public Corporation in Trouble?" *Journal of Economic Perspectives* 31, no. 3: 67–88. https://www.aeaweb.org/articles?id=10.1257/jep.31.3.67.

Kaplan, S., and A. Schoar. 2005. "Private Equity Performance: Returns, Persistence, and Capital Flows." *Journal of Finance* 60, no. 4: 1791–1823. https://doi.org/10.1111/j.1540-6261.2005.00780.x.

Kaplan, S., and P. Strömberg. 2009. "Leveraged Buyouts and Private Equity." *Journal of Economic Perspectives* 23, no. 1: 121–46. https://www.aeaweb.org/articles?id=10.1257/jep.23.1.121.

Katz, M. 2021. "Lawsuit: D.C. Plans More Vulnerable to ERISA Litigation Than DB Plans." Chief Investment Officer, April 20. https://www.ai-cio.com/news/lawsuit-dc-plans-vulnerable-erisa-litigation-db-plans/.

Korteweg, A., and M. Westerfield. 2022. "Asset Allocation with Private Equity." *Foundations and Trends in Finance* 13: no. 2: 95–204. http://dx.doi.org/10.1561/0500000062.

L'Her, J.-F., R. Stoyanova, K. Shaw, W. Scott, and C. Lai. 2016. "A Bottom-Up Approach to the Risk-Adjusted Performance of the Buyout Fund Market." *Financial Analysts Journal* 72, no. 4: 36–48. https://doi.org/10.2469/faj.v72.n4.1.

Lerner, J., A. Schoar, and W. Wongsunwai. 2007. "Smart Institutions, Foolish Choices: The Limited Partner Performance Puzzle." *Journal of Finance* 62, no. 2: 731–64. https://www.jstor.org/stable/4622285.

Nain, A., and J. Ying. 2018. "Initial Public Offerings Over the Industry Life Cycle." SSRN 3239726. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3239726.

Poterba, J., S. Venti, and D. Wise. 2009. "The Decline of Defined Benefit Retirement Plans and Asset Flows." In *Social Security Policy in a Changing Environment*, 333–79. Chicago: University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/S/bo6680344.html.

Robinson, D., and B. Sensoy. 2016. "Cyclicality, Performance Measurement, and Cash Flow Liquidity in Private Equity." *Journal of Financial Economics* 122, no. 3: 521–43. https://doi.org/10.1016/j.jfineco.2016.09.008.

Schlingemann, F., and R. Stulz. 2022. "Have Exchange-Listed Firms Become Less Important for the Economy?" *Journal of Financial Economics* 143, no. 2: 927–58. https://doi.org/10.1016/j.jfineco.2021.08.009.

SEC (U.S. Securities and Exchange Commission). 2023. "Review of the 'Accredited Investor' Definition under the Dodd-Frank Act." https://www.sec.gov/files/review-definition-accredited-investor-2023.pdf.

———. 2024. "Investment Adviser Statistics." Division of Investment Management." https://www.sec.gov/files/im-investment-adviser-statistics-20240515.pdf.

———. 2025. "Accredited Investors." https://www.sec.gov/resources-small-businesses/capital-raising-building-blocks/accredited-investors.

SIFMA (Securities Industry and Financial Markets Association). 2024. "2024 SIFMA Capital Markets Factbook." July. http://sifma.org/wp-content/uploads/2023/07/2024-SIFMA-Capital-Markets-Factbook.pdf.

Sokolova, A. 2023. "Marginal Propensity to Consume and Unemployment: A Meta-Analysis." *Review of Economic Dynamics* 51: 813–46. https://doi.org/10.1016/j.red.2023.08.005.

Stoel Rives LLP. 2022. "ERISA Litigation Update: ERISA Fiduciary Duty of Prudence: Fees and Monitoring Investment Options." https://www.stoel.com/insights/publications/erisa-litigation-update-erisa-fiduciary-duty-of-pr.

Stucke, R. 2011. "Updating History." SSRN 1967636. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1967636.

Thole v. U.S. Bank N.A. 2020, https://www.supremecourt.gov/opinions/19pdf/17-1712_0971.pdf.

U.S. Census Bureau. 2001. "1997 Economic Census Company Statistics Series." September. https://www2.census.gov/programs-surveys/sbo/tables/1997/1997-sbo-company-summary/e97cs-1.pdf.

———. 2025. "Statistics of U.S. Businesses." https://www.census.gov/programs-surveys/susb.html.

Vanguard. 2020. "TDF Glide Path." https://institutional.vanguard.com/investment/strategies/tdf-glide-path.html.

———. 2025. "How America Saves 2025." Viewpoints, June. https://institutional.vanguard.com/content/dam/inst/iig-transformation/insights/pdf/2025/has/2025_How_America_Saves.pdf.

Weitzman, H. 2023. "Is the U.S. Economy 'Going Dark'?" *Chicago Booth Review*, May 30. https://www.chicagobooth.edu/review/is-us-economy-going-dark.

Wharton. 2012. "A Premature Eulogy for Public Companies?" *Knowledge@Wharton*, October 10. https://knowledge.wharton.upenn.edu/article/a-premature-eulogy-for-public-companies/.

White House. 2025. Democratizing Access to Alternative Assets for 401(k) Investors. August 7. Executive Order 14330. https://www.whitehouse.gov/presidential-actions/2025/08/democratizing-access-to-alternative-assets-for-401k-investors/.

Chapter 13

Agoraki, M., G. Kouretas, H. Wu, and B. Zhao. 2025. "Imbalanced ESG Investing?" *Journal of Corporate Finance*, 102810. https://doi.org/10.1016/j.jcorpfin.2025.102810.

Baker, M., M. Egan, and S. Sarkar. 2024. *Demand for ESG*. NBER Working Paper 30708. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w30708/w30708.pdf.

Barber, B., A. Morse, and A. Yasuda. 2021. "Impact Investing." *Journal of Financial Economics* 139, no. 1: 162–85. https://doi.org/10.1016/j.jfineco.2020.07.008.

Bartelsman, E., J. Haltiwanger, and S. Scarpetta. 2013. "Cross-Country Differences in Productivity: The Role of Allocation and Selection." *American Economic Review* 103, no. 1: 305–34. https://www.aeaweb.org/articles?id=10.1257/aer.103.1.305.

Berg, F, J. Kolbel, and R. Rigobon. 2022. "Aggregate Confusion: The Divergence of ESG Ratings." *Review of Finance* 26, no. 6: 1315–44. https://doi.org/10.1093/rof/rfac033.

Berk, J., and J. Van Binsbergen. 2025. "The Impact of Impact Investing." *Journal of Financial Economics* 164: 103972. https://doi.org/10.1016/j.jfineco.2024.103972.

Bolton, P., and M. Kacperczyk. 2021. "Do Investors Care about Carbon Risk?" *Journal of Financial Economics* 142, no. 2: 517–49. https://doi.org/10.1016/j.jfineco.2021.05.008.

———. 2023. "Global Pricing of Carbon-Transition Risk." *Journal of Finance* 78, no. 6: 3677–3754. https://doi.org/10.1111/jofi.13272.

Miller & Chevalier. 2025. "The ERISA Edit: DOL Charts New Course on Cryptocurrency and ESG." June 5. https://www.millerchevalier.com/publication/erisa-edit-dol-charts-new-course-cryptocurrency-and-esg.

Chava, S. 2014. "Environmental Externalities and Cost of Capital." *Management Science* 60: 2223–47. http://dx.doi.org/10.1287/mnsc.2013.1863.

Cheng, G., E. Jondeau, B. Mojon, and D. Vayanos. 2024. *The Impact of Green Investors on Stock Prices*. NBER Working Paper w32317. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/papers/w32317.

Crosignani, M., E. Osambela, and M. Pritsker. 2025. "Understanding the Pricing of Carbon Emissions: New Evidence from the Stock Market." Federal Reserve Bank of New York Staff Report 1161. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1161.pdf.

DOL (U.S. Department of Labor). 2015. "Employee Benefits Security Administration." *Federal Register* 80, no. 206. https://www.govinfo.gov/content/pkg/FR-2015-10-26/pdf/2015-27146.pdf.

Eskildsen, M, M. Ibert, T. Jensen, and L Pedersen. 2024. "In Search of the True Greenium." SSRN 4744608. http://dx.doi.org/10.2139/ssrn.4744608.

Faccini, R., R. Matin, and G. Skiadopoulos. 2023. "Dissecting Climate Risks: Are They Reflected in Stock Prices?" *Journal of Banking & Finance* 155: 106948. https://doi.org/10.1016/j.jbankfin.2023.106948.

Fama, E., and M. Jensen. 1983. "Agency Problems and Residual Claims." *Journal of Law and Economics* 26, no. 2: 327–49. https://doi.org/10.1086/467038.

Faria-e-Castro, M., J. Kozlowski, and J. Majerovitz. 2025. "The Cost of Capital and Misallocation in the United States." Federal Reserve Bank of Saint Louis. https://doi.org/10.20955/wp.2025.013.

Fernald, J. 2014. "A Quarterly, Utilization-Adjusted Series on Total Factor Productivity." Federal Reserve Bank of San Francisco Working Paper 2012-19. https://www.frbsf.org/wp-content/uploads/wp12-19bk.pdf.

Fifth Third Bancorp v. Dudenhoeffer. 2014. 573 U.S. 409. https://www.law.cornell.edu/supct/pdf/12-751.pdf.

Friedman, M. 1970. "The Social Responsibility of Business Is to Increase Its Profits." *New York Times Magazine*, September 13, 122–26. https://link.springer.com/chapter/10.1007/978-3-540-70818-6_14.

Geczy, C., R. Stambaugh, and D. Levin. 2021. "Investing in Socially Responsible Mutual Funds." *Review of Asset Pricing Studies* 11, no. 2: 309–51. https://doi.org/10.1093/rapstu/raab004.

Giglio, S., M. Maggiori, J. Stroebel, Z. Tan, S. Utkus, and X. Xu. 2025. "Four Facts About ESG Beliefs and Investor Portfolios." *Journal of Financial Economics* 164: 103984. https://doi.org/10.1016/j.jfineco.2024.103984.

Gormsen, Ni., K. Huber, and S. Oh. 2025. *Climate Capitalists*. NBER Working Paper w32933. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w32933/w32933.pdf.

Hsieh, C., and P. Klenow. 2009. "Misallocation and Manufacturing TFP in China and India." *Quarterly Journal of Economics* 124, no. 4: 1403–48. https://doi.org/10.1162/qjec.2009.124.4.1403.

Hsu, P., K. Li, and C. Tsou. 2023. "The Pollution Premium." *Journal of Finance* 78, no. 3: 1343–92. https://doi.org/10.1111/jofi.13217.

Lindsey, L., S. Pruitt, and C. Schiller. 2021. "ESG and the Conditional Pricing of Risk." SSRN 3975077. http://dx.doi.org/10.2139/ssrn.3975077.

Lioui, A., and S. Misra. 2023. "Which Carbon Factor?" SSRN 4613025. http://dx.doi.org/10.2139/ssrn.4613025.

LSEG (London Stock Exchange Group). 2025. "Investing in the Green Economy 2025: Navigating Volatility and Disruption." https://www.lseg.com/content/dam/lseg/en_us/documents/sustainability/investing-in-green-economy-2025.pdf.

Meckling, W., and M. Jensen. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3, no. 4: 305–60. https://doi.org/10.1016/0304-405X(76)90026-X.

Modigliani, F., and M. Miller. 1958. "The Cost of Capital, Corporation Finance and the Theory of Investment." *American Economic Review* 48, no. 3: 261–97. https://www.jstor.org/stable/1809766.

Papageorgiou, C., M. Saam, and P. Schulte. 2017. "Substitution between Clean and Dirty Energy Inputs: A Macroeconomic Perspective." *Review of Economics and Statistics* 99, no. 2: 281–90. https://www.jstor.org/stable/26616117.

Pástor, L., R. Stambaugh, and L. Taylor. 2022. "Dissecting Green Returns." *Journal of Financial Economics* 146, no. 2: 403–24. https://doi.org/10.1016/j.jfineco.2022.07.007.

———. 2025. "Green Tilts." *Journal of Financial Economics* 174: 104173. https://doi.org/10.1016/j.jfineco.2025.104173.

Pástor, L., and M. Vorsatz. 2020. "Mutual Fund Performance and Flows during the COVID-19 Crisis." *Review of Asset Pricing Studies* 10, no. 4: 791–833. https://doi.org/10.1093/rapstu/raaa015.

Restuccia, D., and R. Rogerson. 2017. "The Causes and Costs of Misallocation." *Journal of Economic Perspectives* 31, no. 3: 151–74. https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.31.3.151.

Shleifer, A., and R. Vishny. 1997. "A Survey of Corporate Governance." *Journal of Finance* 52, no. 2: 737–83. https://www.jstor.org/stable/2329497.

Stockl, F., and A. Zerrahn. 2023. "Substituting Clean for Dirty Energy: A Bottom-Up Analysis." *Journal of the Association of Environmental and Resource Economists* 10, no. 3: 819–63. https://doi.org/10.1086/722612.

White House. 2025a. "Initial Rescissions of Harmful Executive Orders and Actions." Executive Order 14148, January 20. *Federal Register*. https://www.federalregister.gov/documents/2025/01/28/2025-01901/initial-rescissions-of-harmful-executive-orders-and-actions.

———. 2025b. “Putting America First in International Environmental Agreements.” Executive Order 14162, January 20. *Federal Register*. https://www.federalregister.gov/documents/2025/01/30/2025-02010/putting-america-first-in-international-environmental-agreements.

———. 2025c. “Ending Radical and Wasteful Government DEI Programs and Preferencing.” Executive Order 14151, January 20. *Federal Register*. https://www.federalregister.gov/documents/2025/01/29/2025-01953/ending-radical-and-wasteful-government-dei-programs-and-preferencing.

———. 2025d. “Protecting American Investors from Foreign-Owned and Politically-Motivated Proxy Advisors.” Executive Order 14366, December 11. *Federal Register*. https://www.federalregister.gov/documents/2025/12/16/2025-23093/protecting-american-investors-from-foreign-owned-and-politically-motivated-proxyadvisors.

Chapter 14

Ajello, A., M. Cavallo, G. Favara, W. Peterman, J. Schindler IV, and N. Sinha. 2025. “A New Index to Measure U.S. Financial Conditions.” *FEDS Notes*, June 30. https://www.federalreserve.gov/econres/notes/feds-notes/a-new-index-to-measure-us-financial-conditions-20230630.html.

CBO (Congressional Budget Office). 2025. “ H.R. 1, One Big Beautiful Bill Act (Dynamic Estimate).” https://www.cbo.gov/publication/61486.

National Archives. 2025. “Presidential Documents 9837: Memorandum of February 13, 2025, Reciprocal Trade and Tariffs.” *Federal Register* 90, no. 32. https://www.govinfo.gov/content/pkg/FR-2025-02-19/pdf/2025-02872.pdf.

Shiller, R. 2014. “The Mystery of Lofty Elevations.” *New York Times*, August 14. https://www.nytimes.com/2014/08/17/upshot/the-mystery-of-lofty-elevations.html?module=Search&mabReward=relbias%3Ar%2C%7B%222%22%3A%22RI%3A16%22%7D&abt=0002&abg=0.

★★★★★★

Appendix A

Report to the President on the Activities of the Council of Economic Advisers during 2025

Letter of Transmittal

Council of Economic Advisers
Washington, March 25, 2026

Mr. President:

The Council of Economic Advisers herewith submits this report on its activities during calendar year 2025 in accordance with the Employment Act of 1946, as amended by the Full Employment and Balanced Growth Act of 1978.

Sincerely yours,

Pierre Yared
Chairman

Aaron Hedlund
Member

Council Members and Their Dates of Service

Name	Position	Oath of office date	Separation date
Edwin G. Nourse	Chairman	August 9, 1946	November 1, 1949
Leon H. Keyserling	Vice Chairman	August 9, 1946	
	Acting Chairman	November 2, 1949	
	Chairman	May 10, 1950	January 20, 1953
John D. Clark	Member	August 9, 1946	
	Vice Chairman	May 10, 1950	February 11, 1953
Roy Blough	Member	June 29, 1950	August 20, 1952
Robert C. Turner	Member	September 8, 1952	January 20, 1953
Arthur F. Burns	Chairman	March 19, 1953	December 1, 1956
Neil H. Jacoby	Member	September 15, 1953	February 9, 1955
Walter W. Stewart	Member	December 2, 1953	April 29, 1955
Raymond J. Saulnier	Member	April 4, 1955	
	Chairman	December 3, 1956	January 20, 1961
Joseph S. Davis	Member	May 2, 1955	October 31, 1958
Paul W. McCracken	Member	December 3, 1956	January 31, 1959
Karl Brandt	Member	November 1, 1958	January 20, 1961
Henry C. Wallich	Member	May 7, 1959	January 20, 1961
Walter W. Heller	Chairman	January 29, 1961	November 15, 1964
James Tobin	Member	January 29, 1961	July 31, 1962
Kermit Gordon	Member	January 29, 1961	December 27, 1962
Gardner Ackley	Member	August 3, 1962	
	Chairman	November 16, 1964	February 15, 1968
John P. Lewis	Member	May 17, 1963	August 31, 1964
Otto Eckstein	Member	September 2, 1964	February 1, 1966
Arthur M. Okun	Member	November 16, 1964	
	Chairman	February 15, 1968	January 20, 1969
James S. Duesenberry	Member	February 2, 1966	June 30, 1968
Merton J. Peck	Member	February 15, 1968	January 20, 1969
Warren L. Smith	Member	July 1, 1968	January 20, 1969
Paul W. McCracken	Chairman	February 4, 1969	December 31, 1971
Hendrik S. Houthakker	Member	February 4, 1969	July 15, 1971
Herbert Stein	Member	February 4, 1969	
	Chairman	January 1, 1972	August 31, 1974
Ezra Solomon	Member	September 9, 1971	March 26, 1973
Marina v.N. Whitman	Member	March 13, 1972	August 15, 1973
Gary L. Seevers	Member	July 23, 1973	April 15, 1975
William J. Fellner	Member	October 31, 1973	February 25, 1975
Alan Greenspan	Chairman	September 4, 1974	January 20, 1977
Paul W. MacAvoy	Member	June 13, 1975	November 15, 1976
Burton G. Malkiel	Member	July 22, 1975	January 20, 1977
Charles L. Schultze	Chairman	January 22, 1977	January 20, 1981
William D. Nordhaus	Member	March 18, 1977	February 4, 1979
Lyle E. Gramley	Member	March 18, 1977	May 27, 1980
George C. Eads	Member	June 6, 1979	January 20, 1981
Stephen M. Goldfeld	Member	August 20, 1980	January 20, 1981
Murray L. Weidenbaum	Chairman	February 27, 1981	August 25, 1982
William A. Niskanen	Member	June 12, 1981	March 30, 1985
Jerry L. Jordan	Member	July 14, 1981	July 31, 1982

Council Members and Their Dates of Service

Name	Position	Oath of office date	Separation date
Martin Feldstein	Chairman	October 14, 1982	July 10, 1984
William Poole	Member	December 10, 1982	January 20, 1985
Beryl W. Sprinkel	Chairman	April 18, 1985	January 20, 1989
Thomas Gale Moore	Member	July 1, 1985	May 1, 1989
Michael L. Mussa	Member	August 18, 1986	September 19, 1988
Michael J. Boskin	Chairman	February 2, 1989	January 12, 1993
John B. Taylor	Member	June 9, 1989	August 2, 1991
Richard L. Schmalensee	Member	October 3, 1989	June 21, 1991
David F. Bradford	Member	November 13, 1991	January 20, 1993
Paul Wonnacott	Member	November 13, 1991	January 20, 1993
Laura D'Andrea Tyson	Chair	February 5, 1993	April 22, 1995
Alan S. Blinder	Member	July 27, 1993	June 26, 1994
Joseph E. Stiglitz	Member	July 27, 1993	
	Chairman	June 28, 1995	February 10, 1997
Martin N. Baily	Member	June 30, 1995	August 30, 1996
Alicia H. Munnell	Member	January 29, 1996	August 1, 1997
Janet L. Yellen	Chair	February 18, 1997	August 3, 1999
Jeffrey A. Frankel	Member	April 23, 1997	March 2, 1999
Rebecca M. Blank	Member	October 22, 1998	July 9, 1999
Martin N. Baily	Chairman	August 12, 1999	January 19, 2001
Robert Z. Lawrence	Member	August 12, 1999	January 12, 2001
Kathryn L. Shaw	Member	May 31, 2000	January 19, 2001
R. Glenn Hubbard	Chairman	May 11, 2001	February 28, 2003
Mark B. McClellan	Member	July 25, 2001	November 13, 2002
Randall S. Kroszner	Member	November 30, 2001	July 1, 2003
N. Gregory Mankiw	Chairman	May 29, 2003	February 18, 2005
Kristin J. Forbes	Member	November 21, 2003	June 3, 2005
Harvey S. Rosen	Member	November 21, 2003	
	Chairman	February 23, 2005	June 10, 2005
Ben S. Bernanke	Chairman	June 21, 2005	January 31, 2006
Katherine Baicker	Member	November 18, 2005	July 11, 2007
Matthew J. Slaughter	Member	November 18, 2005	March 1, 2007
Edward P. Lazear	Chairman	February 27, 2006	January 20, 2009
Donald B. Marron	Member	July 17, 2008	January 20, 2009
Christina D. Romer	Chair	January 29, 2009	September 3, 2010
Austan D. Goolsbee	Member	March 11, 2009	
	Chairman	September 10, 2010	August 5, 2011
Cecilia Elena Rouse	Member	March 11, 2009	February 28, 2011
Katharine G. Abraham	Member	April 19, 2011	April 19, 2013
Carl Shapiro	Member	April 19, 2011	May 4, 2012
Alan B. Krueger	Chairman	November 7, 2011	August 2, 2013
James H. Stock	Member	February 7, 2013	May 19, 2014
Jason Furman	Chairman	August 4, 2013	January 20, 2017
Betsey Stevenson	Member	August 6, 2013	August 7, 2015
Maurice Obstfeld	Member	July 21, 2014	August 28, 2015
Sandra E. Black	Member	August 10, 2015	January 20, 2017
Jay C. Shambaugh	Member	August 31, 2015	January 20, 2017

Council Members and Their Dates of Service

Name	Position	Oath of office date	Separation date
Kevin A. Hassett	Chairman	September 13, 2017	June 30, 2019
Richard V. Burkhauser	Member	September 28, 2017	May 18, 2019
Tomas J. Philipson	Member	August 31, 2017	
	Acting Chairman	July 1, 2019	
	Vice Chairman	July 24, 2019	June 22, 2020
Tyler B. Goodspeed	Member	May 22, 2019	
	Acting Chairman	June 23, 2020	
	Vice Chairman	June 23, 2020	January 6, 2021
Cecilia Elena Rouse	Chair	March 2, 2021	April 1, 2023
Jared Bernstein	Member	January 20, 2021	
	Chair	June 13, 2023	January 20, 2025
Heather Boushey	Member	January 20, 2021	January 20, 2025
C. Kirabo Jackson	Member	August 28, 2023	October 11, 2024
Stephen I. Miran	Chairman	March 12, 2025	February 3, 2026
Kim J. Ruhl	Member	February 24, 2025	February 27, 2026
Pierre Yared	Vice Chairman	January 22, 2025	
	Acting Chairman	September 16, 2025	
Aaron D. Hedlund	Member	March 6, 2026	

Report to the President on the Activities of the Council of Economic Advisers during 2025

The Employment Act of 1946 established the Council of Economic Advisers to provide the President with objective economic analysis on the development and implementation of policy for the full range of domestic and international economic issues that can affect the United States. Governed by a Chairman, who is appointed by the President and confirmed by the United States Senate, the Council has two additional Members who are also appointed by the President.

The Chair of the Council

Pierre Yared has served as the Acting Chair of the Council of Economic Advisers since September 16, 2025. He is on a leave of absence as the MUTB Professor of International Business at Columbia Business School. He previously served as the Senior Vice Dean for Faculty Affairs and Vice Dean for Executive Education at Columbia Business School. His research, which has been published in leading academic journals, studies the political economy of macroeconomic policy.

Yared teaches Global Economic Environment, a Core MBA course in macroeconomics for which he received the Dean's Award for Teaching Excellence. He is on leave as a research associate of the National Bureau of Economic Research, as a member of the Council on Foreign Relations, and as a member of the Economic Club of New York. He received his AB in Economics from Harvard University and his PhD in Economics from the Massachusetts Institute of Technology.

The Member of the Council

Aaron Hedlund serves as a Member on the Council of Economic Advisers. He is on leave as an Associate Professor of Economics and Real Estate Finance at the Mitch Daniels School of Business at Purdue University and as a Research Fellow at the Federal Reserve Bank of Saint Louis. Hedlund previously served at the Council as Chief Economist and, in 2020–21, as Chief Domestic Economist and Senior Adviser. His research, which has been published in leading academic journals and cited by prominent media outlets, studies the macroeconomic and policy implications of issues at the intersection of capital markets, real estate, and household finance, with a particular focus on debt. He has also testified to Congress on economic policy matters. He received his PhD in Economics from the University of Pennsylvania and his BS in Economics and Mathematics, summa cum laude, from Duke University.

The Former Members of the Council

Stephen Miran was the thirty-second Chairman of the Council of Economic Advisers. In September 2025, he departed from the CEA to become a member of the Board of Governors of the Federal Reserve System. Before joining the CEA, he was a senior fellow at the Manhattan Institute for Policy Research and a senior strategist at Hudson Bay Capital Management, served in the U.S. Department of the Treasury during the pandemic-induced recession, and spent over a decade in the investment management industry. He received a PhD in economics from Harvard University and a BA in economics and philosophy from Boston University.

Kim J. Ruhl served as a Member of the Council of Economic Advisers from February 2025 until February 2026. He is the Curt and Sue Culver Chair of Economics at the University of Wisconsin–Madison, co-director of the Center for Research on the Wisconsin Economy, and a Research Associate at the National Bureau of Economic Research. His research focuses on policy issues broadly related to macroeconomics, economic security, and international trade. His work has been published in leading academic journals and has been supported by the National Science Foundation and the U.S. Department of Homeland Security. He received a BS in Economics from Bowling Green State University and a PhD in Economics from the University of Minnesota.

Areas of Activity

Macroeconomic Policies

Throughout 2025, in fulfilling its mandate from the Employment Act of 1946, the Council continued "to gather timely and authoritative information concerning economic developments and economic trends, both current and prospective," and "to formulate and recommend national economic policy to promote employment, production, and purchasing power." The Council appraises the President and White House staff of new economic data and their significance on an ongoing basis and advises on the economic impacts of various policy options. These regular appraisals include written memoranda, presentations, and studies. The Council also prepares in-depth briefings on certain topics as well as public reports that address macroeconomic issues. During the spring and summer of 2025, the Council worked with other White House components on formulating and analyzing provisions of the One Big Beautiful Bill Act. In addition to its contributions to internal deliberations, the Council released public reports that forecasted the impact of the proposed legislation on families, businesses, and the economy at large, and the Council discussed its findings with members of Congress leading up to the bill's passage. The reports found that these provisions, included in the Act when passed, would increase investment, lead to higher levels of GDP, boost annual real wages, and decrease the Federal deficit as a share of the economy.

The Council also analyzed the macroeconomic impact of a number of deregulatory actions. The Council found that the then-proposed reset of the Corporate Average Fuel Economy (CAFE) program would protect consumer choice and preserve affordability. The Council also studied deregulation in the energy sector, publishing a report that found significant positive GDP effects of proposed deregulatory actions.

The Council also analyzed the effects of the government shutdown that began on October 1, 2025, quantifying its effects on GDP. Other reports included studies on healthcare, inflation, and affordability. The Council looks forward to engaging in the analysis of future Administration policy.

In addition, the Council, the Department of the Treasury, and the Office of Management and Budget—the Administration's economic "troika"—are responsible for producing the economic forecasts that underlie the Administration's budget proposals. The Council, under the leadership of the Chairman and the Members, initiates the forecasting process.

The Chairman and Members maintained the Council's tradition of meeting regularly with the Chairman and Members of the Board of Governors of the Federal Reserve System to exchange views on the economy.

Microeconomic Policies

The Council participated in discussions, internal to the Federal Government as well as external, on a range of issues in microeconomic policy. Topics included deregulation, immigration reform, housing, healthcare, financial reform, energy, labor and the workforce, and financial reforms, including with respect to stablecoins and other digital assets.

On financial reform, the Council has released reports on Trump Investment Accounts and retail access to alternative investments. Both reforms increase families' access to financial markets and will help Americans build wealth. Similarly, the Council studied how HSA eligibility expansion under the One Big

Beautiful Bill Act, creating savings while improving financial security and flexibility for consumers.

The Council also investigated the One Big Beautiful Bill Act's impact on the workforce. In addition, the Council studied work requirements, noting broad benefits of work to individuals as well as reducing the reliance on government programs.

Additionally, the Chairman of the CEA participated in the MAHA commission, advising on the economic benefits of health and well-being. The Council also analyzed proposed and realized changes to immigration policy, evaluated various potential impacts of artificial intelligence on firms and workers, and helped develop policies to boost housing affordability.

International Economics

The Council participated in the analysis of numerous issues in the area of international economics. The Council engages with several international organizations. The Council is a leading participant in the activities of the Organization for Economic Cooperation and Development (OECD), a forum for facilitating economic coordination and cooperation among the world's primary market-based democracies. Acting Chairman Yared serves as the Chairman of the OECD's Economic Policy Committee. Council Members and Council staff have also engaged with the OECD working-party meetings on a range of issues and shaped the organization's agenda and mission. In coordination with other Federal agencies, the Council also represents the United States during the International Monetary Fund's Article IV consultations.

The Council continues to analyze developments in international trade and global finance, advising the President and White House staff on how events abroad make an impact on the economy. It has studied the impact of tariffs on efforts to secure U.S. supply chains, reshoring manufacturing, labor markets, and the outlook for businesses. The Council has monitored new and existing foreign investment flows into the United States as a consequence of various new trade deals in 2025 and its impact on GDP. The Council has also studied and advised the Administration on unfair foreign trading practices, intellectual property issues, and emerging developments of artificial intelligence globally.

The Council looks forward to continuing to analyze the United States' international economic position.

The Staff of the Council of Economic Advisers

Front Office

Benjamin A. LeRoy	Chief of Staff
Steven B. Levine	General Counsel and Senior Adviser
Graham D. Newell	Chief Economist
Brian N. Wheaton	Chief Economist
Hugo Dante Jr.	Special Adviser to the Chairman and Senior Economist
Nya Kamhi	Deputy Chief of Staff
Alyssa L. Craig	Deputy Director of Operations
DJ Nordquist	Counselor (January 2025–September 2025)
Alexander W. Titus	Chief of Staff (January 2025–January 2026)
Eric J. Wallerstein	Senior Adviser (May 2025–October 2025)

Senior Staff

Andre J. Barbe	Senior Economist
George J. Borjas	Senior Policy Adviser (March 2025–January 2026)
Steven N. Braun	Director of Macroeconomic Forecasting
Morris A. Davis	Chief Housing Economist (March 2025–November 2025)
Gustavo F. Ferreira	Senior Economist
Theodore F. Figinski	Senior Economist
Andrew C. Johnston	Senior Economist
Jonathan D. Ketcham	Chief Healthcare Economist
Benjamin B. Lidofsky	Deputy Director of Macroeconomic Forecasting
Brett R. Matsumoto	Senior Economist
Diana G. Mikhail	Senior Economist
Stephen T. Parente	Senior Policy Adviser
Anastasia V. Shcherbakova	Senior Economist and Senior Adviser
Dyanne A. Vaught	Senior Economist
Dustin L. Chambers	Senior Economist (March 2025–January 2026)
Alexander J. Chesney	Senior Economist (June 2025–September 2025)

Staff

Kole A. Nichols. . . . . Economist and Adviser

Maxwell J. Cook . . . . Economist

Jackson Mejia . . . . Economist

Jessie Lynn Wall Banks. . . . . Economist

Grayson B. Robinson . . . . Staff Economist

Jarrett M. Miller. . . . . Research Economist

Nathaniel J. H. Winik . . . . Research Economist

William N. Chance . . . . Research Assistant

Michael Oved . . . . Research Assistant

Joseph M. Webb. . . . . Research Assistant

Statistical Office

Brian A. Amorosi . . . . Director of the Statistical Office

Madeleine G. Phillips . . . . Statistical Office Associate

Administrative Office

Megan M. Packer . . . . Director of Finance and Administration

Interns

Matthew Allen, Joseph Dell'Olio, Adam Devine, Zain Khawaja, William Pirone, Ethan Robertson, Benjamin Sweeney, Derek Vlasblom, Teddy Wallen, Andrew Horne, Donny Steinberg, Jai Kasera, Connor McNeil, Dev Joshi, Jacob Genualdi, Danielle Guo, Elijah Hernandez, Michael Lippman, Britt Nordquist, William Pallan, Shreya Seshadri, Tanya Solati, Chloe Yang, Isaac Yi

Editor

Alfred F. Imhoff

Appendix B

Statistical Tables Relating to Income, Employment, and Production

Contents

National Income or Expenditure

Labor Market Indicators

Production and Business Activity

Prices

Money Stock, Credit, and Finance

Government Finance

Corporate Profits and Finance

International Statistics

General Notes

Detail in these tables may not add to totals due to rounding.

Because of the formula used for calculating real gross domestic product (GDP), the chained (2017) dollar estimates for the detailed components do not add to the chained-dollar value of GDP or to any intermediate aggregate. The Department of Commerce (Bureau of Economic Analysis) no longer publishes chained-dollar estimates prior to 2007, except for selected series.

Because of the method used for seasonal adjustment, the sum or average of seasonally adjusted monthly values generally will not equal annual totals based on unadjusted values.

Unless otherwise noted, all dollar figures are in current dollars.

Symbols used:

- [p] Preliminary.
- ... Not available (also, not applicable).
- NSA Not seasonally adjusted.

Data in these tables reflect revisions made by source agencies through March 25, 2026.

Excel versions of these tables are available at www.gpo.gov/erp.

National Income or Expenditure

Table B–1. Percent changes in real gross domestic product, 1975–2025

[Percent change, fourth quarter over fourth quarter; quarterly changes at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Personal consumption expenditures			Gross private domestic investment							
		Total	Goods	Services	Total	Fixed investment						Change in private inventories
						Total	Nonresidential				Residential	
							Total	Structures	Equipment	Intellectual property products		
1975	2.6	5.1	6.1	4.1	−9.8	−2.6	−5.9	−8.1	−6.7	2.8	7.8	
1976	4.3	5.4	6.4	4.5	15.2	12.1	7.8	3.8	9.0	11.8	23.8	
1977	5.0	4.2	4.9	3.7	14.9	12.1	11.9	5.7	17.2	4.8	12.6	
1978	6.7	4.0	3.5	4.4	14.3	13.1	16.0	21.7	14.5	10.3	6.8	
1979	1.3	1.7	.3	2.9	−3.4	1.1	5.5	8.8	2.7	9.4	−9.1	
1980	.0	.0	−2.5	2.2	−7.2	−4.8	−.9	2.7	−4.4	4.7	−15.3	
1981	1.3	.1	−.2	.3	6.7	1.5	9.0	14.1	4.6	12.1	−22.0	
1982	−1.4	3.5	3.6	3.4	−17.3	−8.0	−9.5	−13.5	−10.0	3.4	−1.7	
1983	7.9	6.6	8.3	5.3	31.3	18.3	10.4	−3.9	19.9	13.0	49.7	
1984	5.6	4.3	5.3	3.6	14.2	11.3	13.9	15.7	13.4	12.6	3.7	
1985	4.2	4.8	4.6	5.0	1.9	3.7	3.2	3.3	1.7	7.7	5.2	
1986	2.9	4.4	6.5	3.0	−4.1	.6	−3.2	−14.3	.8	5.4	11.8	
1987	4.5	2.8	.4	4.5	9.8	1.5	2.2	4.9	.1	4.2	−.5	
1988	3.8	4.6	4.5	4.7	−.5	3.7	5.1	−3.3	8.2	9.8	.1	
1989	2.7	2.4	1.8	2.7	.7	1.5	4.5	3.3	2.5	11.3	−6.5	
1990	.6	.8	−1.6	2.3	−6.5	−4.2	−.9	−3.2	−2.7	6.2	−13.6	
1991	1.2	.9	−.8	2.0	2.1	−1.9	−3.4	−12.8	−3.2	7.2	2.9	
1992	4.4	4.9	5.3	4.7	7.7	8.7	7.1	1.0	11.3	4.8	13.6	
1993	2.6	3.3	4.4	2.7	7.6	8.4	7.6	.2	13.1	2.9	10.6	
1994	4.1	3.8	5.5	2.8	11.5	6.6	8.5	1.6	12.5	5.8	1.6	
1995	2.2	2.8	2.3	3.0	.8	5.5	7.4	4.7	8.1	8.3	.1	
1996	4.4	3.4	4.8	2.7	11.2	9.9	11.3	10.9	11.1	12.1	5.6	
1997	4.5	4.5	5.3	4.0	11.4	8.3	9.7	4.4	10.7	12.4	4.0	
1998	4.9	5.6	8.1	4.3	9.7	11.5	11.6	4.3	14.8	11.5	11.3	
1999	4.8	5.2	6.6	4.5	8.5	7.2	8.4	−.1	9.5	13.3	3.5	
2000	2.9	4.3	4.0	4.5	4.4	5.9	8.5	10.8	8.5	6.6	−1.5	
2001	.2	2.5	4.9	1.3	−11.1	−4.7	−6.8	−10.6	−7.7	−2.1	2.0	
2002	2.0	2.0	1.7	2.1	4.4	−1.5	−5.1	−15.7	−3.7	.9	8.1	
2003	4.3	3.8	6.6	2.3	8.7	8.6	6.8	1.9	9.6	5.8	12.7	
2004	3.4	3.8	4.3	3.6	8.0	6.5	6.5	.3	9.8	5.7	6.6	
2005	3.0	2.8	3.0	2.7	6.1	5.8	6.1	1.5	8.7	5.1	5.2	
2006	2.6	3.2	4.6	2.5	−1.4	.0	8.1	9.0	7.1	9.3	−15.2	
2007	2.1	2.0	1.8	2.0	−2.0	−1.1	7.3	17.7	3.9	4.0	−21.2	
2008	−2.5	−1.5	−6.8	1.2	−15.3	−11.1	−7.0	−.9	−15.9	.9	−24.7	
2009	.1	−.2	.6	−.6	−9.0	−10.5	−10.3	−27.1	−8.4	3.8	−11.5	
2010	2.8	2.8	4.3	2.1	12.0	6.2	9.0	−3.4	22.6	1.6	−5.7	
2011	1.5	1.0	.9	1.0	10.5	9.2	10.1	9.0	12.7	7.2	5.3	
2012	1.6	1.5	2.4	1.1	3.9	7.3	5.7	4.1	7.8	3.7	15.4	
2013	3.0	2.2	3.9	1.4	10.6	6.6	6.4	6.4	6.7	6.1	7.5	
2014	2.7	3.5	5.3	2.6	5.8	7.8	7.7	9.6	6.4	8.2	8.1	
2015	2.1	2.6	4.0	1.9	3.5	2.6	.9	−5.6	2.0	4.3	9.7	
2016	2.2	2.5	3.7	1.9	2.3	3.5	3.3	3.7	−.9	9.0	4.5	
2017	3.0	3.1	5.4	2.0	4.9	5.5	5.6	−.4	7.5	7.2	5.1	
2018	2.1	2.0	2.1	2.0	4.7	3.3	5.6	3.5	3.3	9.9	−4.1	
2019	3.4	2.8	3.8	2.4	1.2	2.9	3.1	5.9	−2.2	7.8	2.3	
2020	−.9	−.9	8.3	−5.0	2.9	1.2	−3.2	−13.5	−3.2	3.3	16.5	
2021	5.8	7.8	6.5	8.4	8.1	4.0	5.1	−1.4	1.1	12.7	.7	
2022	1.3	1.6	−1.8	3.3	−.2	1.4	8.1	9.7	4.6	10.6	−15.9	
2023	3.4	3.0	3.5	2.8	3.1	5.7	6.6	16.8	3.1	4.3	2.4	
2024	2.4	3.4	4.2	3.0	.1	1.0	.9	−4.8	3.2	2.3	1.3	
2025 p	2.0	2.1	1.4	2.4	2.4	3.4	5.5	−5.7	9.5	8.1	−3.5	
2022: I	−1.0	.4	−2.0	1.6	7.9	6.7	12.2	7.9	12.9	13.8	−6.9	
II	.6	3.3	−.4	5.3	−8.6	1.9	7.0	8.9	.7	12.4	−11.1	
III	2.9	1.9	−2.5	4.2	−6.7	−2.2	6.0	10.7	2.7	6.9	−23.0	
IV	2.8	.8	−2.3	2.3	8.0	−.5	7.1	11.5	2.5	9.3	−21.3	
2023: I	2.9	4.5	7.2	3.2	−7.1	4.9	8.5	30.5	−.2	5.5	−6.6	
II	2.5	1.5	.4	2.0	7.2	9.5	11.0	20.1	12.6	4.7	4.2	
III	4.7	3.1	4.4	2.4	9.4	3.8	1.7	6.8	−2.6	2.9	11.5	
IV	3.4	3.0	2.2	3.4	3.6	4.6	5.5	11.3	3.3	4.2	1.5	
2024: I	.8	1.7	−1.3	3.2	−1.6	3.0	1.5	−5.0	.5	6.7	8.2	
II	3.6	3.9	5.5	3.2	8.2	1.4	2.5	−3.9	8.9	.7	−2.0	
III	3.3	4.0	6.1	3.0	.9	1.5	3.5	−2.2	8.2	2.6	−4.8	
IV	1.9	3.9	6.9	2.5	−6.8	−1.9	−3.7	−8.1	−4.3	−.6	4.3	
2025: I	−.6	.6	.2	.8	23.3	7.1	9.5	−3.1	21.4	6.5	−1.0	
II	3.8	2.5	2.2	2.6	−13.8	4.4	7.3	−7.5	8.5	15.0	−5.1	
III	4.4	3.5	3.0	3.6	.0	.8	3.2	−5.0	5.2	5.6	−7.1	
IV p	.7	2.0	.4	2.7	3.3	1.6	2.2	−7.1	3.9	5.7	−.5	

See next page for continuation of table.

TABLE B–1. Percent changes in real gross domestic product, 1975–2025—*Continued*

[Percent change, fourth quarter over fourth quarter; quarterly changes at seasonally adjusted annual rates]

Year or quarter	Net exports of goods and services			Government consumption expenditures and gross investment					Final sales of domestic product	Gross domestic purchases [1]	Final sales to private domestic purchasers [2]	Gross domestic income (GDI) [3]	Average of GDP and GDI
	Net exports	Exports	Imports	Total	Federal			State and local					
					Total	National defense	Non-defense						
1975	....	1.5	–5.6	3.0	0.8	0.5	1.4	4.9	3.9	2.0	3.4	2.7	2.6
1976	....	4.3	19.2	–1.3	–1.0	–2.1	1.3	–1.6	3.8	5.4	6.7	3.8	4.1
1977	....	–1.4	5.7	1.9	2.3	.1	6.8	1.7	4.5	5.6	5.9	6.0	5.5
1978	....	18.8	9.9	4.4	3.5	2.9	4.8	5.2	6.4	6.0	6.1	5.4	6.0
1979	....	10.5	.9	.9	1.2	2.4	–1.1	.7	2.2	.5	1.5	.8	1.0
1980	....	3.9	–9.3	.3	4.0	3.7	4.6	–2.9	.5	–1.4	–1.2	1.3	.6
1981	....	.7	6.2	2.5	6.0	7.9	2.0	–.7	.3	1.8	.4	1.2	1.2
1982	....	–12.2	–3.9	2.6	4.5	7.3	–1.6	.8	.4	–.7	.8	–1.2	–1.3
1983	....	5.5	24.6	1.9	2.7	6.5	–6.6	1.1	6.0	9.5	9.1	6.6	7.3
1984	....	9.1	18.9	6.3	7.1	5.6	11.5	5.4	5.0	6.5	5.9	6.7	6.1
1985	....	1.5	5.6	6.1	6.7	8.2	2.8	5.5	4.6	4.5	4.6	3.4	3.8
1986	....	10.6	7.9	4.7	5.3	4.7	6.8	4.1	3.9	2.9	3.5	2.7	2.8
1987	....	12.8	6.3	3.0	3.6	5.3	–1.0	2.4	3.0	4.1	2.5	5.5	5.0
1988	....	14.0	3.8	1.4	–1.4	–.8	–3.0	4.1	4.6	3.0	4.4	4.7	4.2
1989	....	10.2	2.6	2.5	.5	–1.3	5.8	4.3	2.9	2.1	2.2	1.0	1.9
1990	....	7.4	–.2	2.6	1.5	.0	5.4	3.6	1.0	–.1	–.3	1.0	.8
1991	....	9.2	5.7	.0	–2.3	–4.9	4.3	1.9	.5	.9	.3	.7	.9
1992	....	4.5	6.5	1.3	1.6	–.4	6.2	1.1	4.5	4.6	5.6	3.9	4.1
1993	....	4.4	9.9	–.7	–4.5	–5.4	–2.5	2.2	2.7	3.2	4.3	3.0	2.8
1994	....	10.8	12.2	.0	–4.2	–6.7	1.1	3.1	3.3	4.3	4.4	4.3	4.2
1995	....	9.4	4.8	–.6	–4.8	–5.0	–4.3	2.2	3.0	1.8	3.3	2.9	2.6
1996	....	10.1	11.1	2.6	1.1	.3	2.6	3.6	4.2	4.6	4.8	4.8	4.6
1997	....	8.3	14.2	1.7	.2	–.8	1.9	2.7	3.9	5.2	5.3	5.5	5.0
1998	....	2.6	11.0	2.8	–.3	–2.4	3.3	4.6	5.2	5.9	6.9	4.9	4.9
1999	....	6.2	12.4	3.9	3.3	3.8	2.4	4.2	4.6	5.6	5.7	4.4	4.6
2000	....	6.0	11.1	.5	–1.9	–3.3	.4	1.8	3.2	3.7	4.7	3.6	3.3
2001	....	–12.2	–7.6	4.9	5.5	4.7	6.8	4.6	1.5	.4	.9	–.4	–.1
2002	....	4.0	9.6	3.8	8.1	8.1	8.2	1.5	.9	2.7	1.3	3.2	2.6
2003	....	7.2	5.9	1.8	6.6	9.0	2.6	–.8	4.3	4.2	4.8	2.7	3.5
2004	....	7.2	10.9	.8	2.6	2.8	2.3	–.2	3.1	4.0	4.4	3.8	3.6
2005	....	7.4	6.1	.8	1.8	1.8	1.9	.2	2.9	3.0	3.4	4.1	3.6
2006	....	9.9	4.0	1.9	2.4	3.1	1.3	1.6	2.9	2.1	2.5	2.6	2.6
2007	....	9.2	1.6	2.3	3.6	3.9	3.1	1.5	2.3	1.3	1.3	–.3	.9
2008	....	–2.0	–5.4	2.6	6.4	7.4	4.5	.3	–1.8	–3.1	–3.5	–2.6	–2.6
2009	....	1.3	–5.2	3.1	6.2	4.9	8.9	1.0	–.2	–.8	–2.1	.6	.4
2010	....	10.4	11.3	–1.5	1.8	1.3	2.7	–3.7	2.0	3.1	3.4	3.3	3.0
2011	....	4.8	3.3	–3.4	–3.6	–3.6	–3.5	–3.2	1.3	1.4	2.4	2.0	1.8
2012	....	2.9	.5	–2.1	–2.6	–4.7	1.2	–1.7	2.0	1.2	2.6	2.8	2.2
2013	....	5.2	2.9	–2.3	–6.0	–6.4	–5.4	.2	2.4	2.7	3.1	1.3	2.1
2014	....	2.4	6.5	.3	–1.0	–3.4	2.8	1.1	3.0	3.3	4.3	4.1	3.4
2015	....	–1.5	3.3	2.6	1.4	–.2	3.8	3.3	2.0	2.7	2.6	1.4	1.8
2016	....	1.4	2.2	1.5	.2	–.5	1.2	2.2	2.4	2.3	2.7	1.3	1.7
2017	....	6.1	5.8	1.0	1.4	2.1	.4	.8	3.1	3.0	3.6	3.0	3.0
2018	....	.3	3.0	1.9	3.5	4.5	2.1	.9	1.9	2.5	2.3	2.8	2.4
2019	....	1.1	–1.8	4.8	4.0	4.3	3.5	5.3	3.7	2.9	2.9	2.6	3.0
2020	....	–9.5	.3	1.6	5.2	4.3	6.7	–.6	–1.2	.2	–.4	.2	–.3
2021	....	7.1	11.1	–.5	.7	–4.6	8.4	–1.3	5.0	6.3	7.0	5.1	5.4
2022	....	4.9	2.3	.3	–1.2	–1.5	–1.0	1.3	1.6	1.1	1.6	.5	.9
2023	....	2.2	1.3	4.3	3.6	4.1	2.9	4.8	3.9	3.2	3.6	3.2	3.3
2024	....	3.3	6.2	3.6	4.5	5.4	3.2	3.1	2.6	2.8	2.9	2.6	2.5
2025 *p*	....	1.0	–2.0	–1.2	–6.5	–3.0	–11.1	2.1	2.2	1.6	2.4	....	....
2022: I	....	–4.1	12.0	–3.0	–8.2	–10.4	–5.2	.2	–1.3	1.1	1.7	1.2	.1
II	....	13.1	7.1	–1.4	–3.7	1.4	–10.1	.0	2.7	.3	3.0	–.3	.2
III	....	15.0	–5.8	1.7	–1.3	–4.2	2.5	3.5	3.8	.3	1.0	3.6	3.2
IV	....	–2.9	–3.1	4.1	9.1	8.3	10.1	1.4	1.3	2.6	.5	–2.3	.2
2023: I	....	3.8	–1.0	4.1	4.1	4.6	3.6	4.1	5.2	2.3	4.6	3.1	3.0
II	....	–5.3	–2.1	3.3	–.1	2.4	–3.1	5.4	2.9	2.8	3.1	1.6	2.1
III	....	4.4	3.0	5.2	6.8	7.4	6.0	4.2	3.7	4.5	3.2	2.4	3.6
IV	....	6.1	5.4	4.7	3.4	2.0	5.2	5.4	3.6	3.4	3.4	5.8	4.6
2024: I	....	4.6	6.9	2.3	.8	–2.6	5.5	3.2	1.7	1.2	2.0	1.8	1.3
II	....	.7	8.4	3.3	4.3	6.9	.9	2.8	2.4	4.5	3.4	3.0	3.3
III	....	8.9	10.1	5.4	8.6	13.5	2.4	3.6	3.5	3.7	3.4	1.9	2.6
IV	....	–.9	–.2	3.3	4.4	4.6	4.1	2.7	2.8	1.9	2.7	3.7	2.8
2025: I	....	.2	38.0	–1.0	–5.6	–6.9	–3.8	1.9	–3.2	4.0	1.9	1.0	.2
II	....	–1.8	–29.3	–.1	–5.3	.9	–13.0	3.1	7.5	–1.0	2.9	2.6	3.2
III	....	9.6	–4.4	2.2	2.7	5.7	–1.4	2.0	4.5	2.7	2.9	3.5	4.0
IV *p*	....	–3.3	–1.1	–5.8	–16.7	–10.7	–24.4	1.2	.4	.9	1.9	....	....

[1] Gross domestic product (GDP) less exports of goods and services plus imports of goods and services.
[2] Personal consumption expenditures plus gross private fixed investment.
[3] Gross domestic income is deflated by the implicit price deflator for GDP.

Note: Percent changes based on unrounded GDP quantity indexes.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–2. Contributions to percent change in real gross domestic product, 1975–2025

[Percentage points, except as noted; annual average to annual average, quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product (percent change)	Personal consumption expenditures			Gross private domestic investment							
		Total	Goods	Services	Total	Fixed investment						Change in private inventories
						Total	Nonresidential				Residential	
							Total	Structures	Equipment	Intellectual property products		
1975	–0.2	1.36	0.20	1.16	–2.91	–1.68	–1.13	–0.42	–0.73	0.01	–0.54	–1.24
1976	5.4	3.41	2.03	1.38	2.91	1.54	.66	.09	.39	.18	.88	1.37
1977	4.6	2.59	1.26	1.33	2.47	2.23	1.26	.15	1.01	.11	.97	.24
1978	5.5	2.68	1.19	1.49	2.22	2.10	1.72	.52	1.08	.12	.38	.12
1979	3.2	1.44	.45	.99	.72	1.11	1.34	.51	.62	.20	–.22	–.40
1980	–.3	–.19	–.72	.53	–2.07	–1.18	.00	.26	–.35	.09	–1.19	–.89
1981	2.5	.85	.33	.52	1.64	.50	.87	.39	.28	.21	–.37	1.13
1982	–1.8	.88	.19	.69	–2.46	–1.16	–.43	–.09	–.47	.12	–.72	–1.31
1983	4.6	3.51	1.69	1.82	1.60	1.32	–.06	–.56	.32	.17	1.38	.28
1984	7.2	3.30	1.91	1.39	4.73	2.83	2.18	.58	1.29	.30	.65	1.90
1985	4.2	3.20	1.38	1.83	–.01	1.02	.91	.31	.39	.21	.11	–1.03
1986	3.5	2.58	1.45	1.13	.03	.34	–.24	–.49	.08	.17	.58	–.31
1987	3.5	2.14	.47	1.67	.53	.11	.01	–.11	.03	.10	.10	.41
1988	4.2	2.65	.96	1.69	.45	.59	.63	.02	.43	.18	–.05	–.13
1989	3.7	1.86	.64	1.21	.72	.55	.71	.07	.35	.29	–.16	.17
1990	1.9	1.28	.16	1.12	–.45	–.25	.14	.05	–.14	.22	–.38	–.21
1991	–.1	.12	–.49	.61	–1.09	–.84	–.48	–.38	–.28	.18	–.35	–.26
1992	3.5	2.36	.76	1.60	1.11	.83	.33	–.18	.34	.17	.49	.28
1993	2.7	2.24	.99	1.26	1.24	1.17	.84	–.01	.73	.12	.32	.07
1994	4.0	2.51	1.26	1.26	1.90	1.29	.91	.05	.75	.11	.38	.61
1995	2.7	1.91	.71	1.20	.55	.99	1.15	.16	.78	.20	–.15	–.44
1996	3.8	2.26	1.06	1.20	1.49	1.48	1.13	.15	.65	.33	.35	.02
1997	4.4	2.45	1.12	1.33	2.01	1.49	1.38	.21	.76	.41	.11	.52
1998	4.5	3.42	1.54	1.88	1.76	1.82	1.44	.16	.91	.37	.38	–.07
1999	4.8	3.49	1.83	1.66	1.62	1.65	1.36	.01	.89	.45	.29	–.03
2000	4.1	3.29	1.23	2.06	1.31	1.34	1.31	.24	.71	.36	.03	–.03
2001	1.0	1.63	.72	.92	–1.11	–.27	–.31	–.04	–.31	.04	.04	–.84
2002	1.7	1.70	.92	.78	–.16	–.64	–.94	–.56	–.35	–.03	.29	.49
2003	2.8	2.13	1.15	.98	.76	.77	.30	–.09	.26	.14	.47	–.02
2004	3.8	2.54	1.21	1.34	1.64	1.23	.67	.00	.49	.18	.57	.40
2005	3.5	2.38	.98	1.40	1.26	1.33	.92	.06	.60	.26	.41	–.07
2006	2.8	1.95	.87	1.08	.60	.50	1.00	.22	.57	.21	–.50	.10
2007	2.0	1.63	.65	.98	–.49	–.24	.89	.42	.25	.23	–1.13	–.25
2008	.1	.10	–.71	.81	–1.52	–1.05	.08	.23	–.29	.14	–1.14	–.47
2009	–2.6	–.88	–.70	–.18	–3.49	–2.69	–1.95	–.71	–1.21	–.02	–.74	–.80
2010	2.7	1.31	.62	.68	1.84	.44	.52	–.50	.91	.11	–.08	1.40
2011	1.6	1.16	.49	.68	.95	1.00	1.00	.08	.69	.24	.00	–.05
2012	2.3	.94	.48	.46	1.65	1.48	1.16	.35	.62	.20	.31	.17
2013	2.1	1.18	.76	.42	1.19	.96	.61	.03	.33	.25	.34	.24
2014	2.5	1.91	.96	.95	1.09	1.20	1.07	.33	.48	.26	.13	–.11
2015	2.9	2.27	1.08	1.19	1.08	.78	.44	.01	.24	.20	.34	.30
2016	1.8	1.65	.78	.87	–.02	.50	.25	–.10	–.05	.40	.25	–.52
2017	2.5	1.79	.88	.90	.77	.77	.61	.08	.22	.31	.16	.00
2018	3.0	1.86	.84	1.01	1.02	.90	.93	.17	.35	.41	–.03	.12
2019	2.6	1.45	.65	.80	.57	.49	.52	.07	.06	.39	–.04	.08
2020	–2.1	–1.69	.97	–2.66	–.79	–.34	–.63	–.29	–.56	.22	.29	–.45
2021	6.2	5.84	2.49	3.35	1.58	1.29	.82	–.08	.36	.54	.47	.29
2022	2.5	2.04	–.14	2.18	1.09	.44	.84	.10	.14	.60	–.40	.65
2023	2.9	1.74	.39	1.35	.15	.61	.97	.49	.15	.33	–.35	–.46
2024	2.8	2.00	.61	1.38	.54	.53	.40	.04	.18	.19	.13	.01
2025 [p]	2.1	1.78	.68	1.10	.36	.47	.56	–.17	.42	.31	–.09	–.12
2022: I	–1.0	.22	–.48	.70	1.45	1.15	1.49	.20	.60	.69	–.35	.30
II	.6	2.19	–.11	2.30	–1.69	.34	.91	.24	.04	.63	–.56	–2.03
III	2.9	1.27	–.58	1.85	–1.26	–.40	.80	.30	.14	.37	–1.20	–.86
IV	2.8	.53	–.52	1.05	1.43	–.09	.94	.33	.12	.49	–1.03	1.52
2023: I	2.9	2.99	1.55	1.44	–1.33	.85	1.13	.84	–.01	.30	–.28	–2.18
II	2.5	1.02	.09	.92	1.27	1.63	1.47	.61	.61	.25	.16	–.36
III	4.7	2.08	.95	1.13	1.66	.69	.25	.22	–.13	.16	.44	.97
IV	3.4	2.04	.47	1.57	.65	.82	.76	.36	.17	.23	.06	–.17
2024: I	.8	1.17	–.29	1.46	–.29	.54	.22	–.17	.03	.35	.32	–.83
II	3.6	2.61	1.14	1.47	1.44	.27	.35	–.13	.44	.04	–.08	1.17
III	3.3	2.66	1.27	1.38	.18	.28	.48	–.07	.41	.14	–.20	–.11
IV	1.9	2.61	1.43	1.17	–1.26	–.34	–.51	–.26	–.22	–.03	.17	–.91
2025: I	–.6	.42	.04	.37	3.79	1.21	1.24	–.10	1.00	.34	–.04	2.58
II	3.8	1.68	.47	1.21	–2.66	.77	.98	–.23	.44	.78	–.21	–3.44
III	4.4	2.34	.64	1.70	.03	.15	.44	–.15	.28	.31	–.29	–.12
IV [p]	.7	1.33	.07	1.25	.57	.29	.31	–.21	.21	.31	–.02	.28

See next page for continuation of table.

Table B–2. Contributions to percent change in real gross domestic product, 1975–2025—*Continued*

[Percentage points, except as noted; annual average to annual average, quarterly data at seasonally adjusted annual rates]

Year or quarter	Net exports of goods and services							Government consumption expenditures and gross investment					Final sales of domestic product
	Net exports	Exports			Imports			Total	Federal			State and local	
		Total	Goods	Services	Total	Goods	Services		Total	National defense	Non-defense		
1975	0.86	–0.05	–0.14	0.09	0.91	0.85	0.06	0.49	0.05	–0.07	0.13	0.43	1.03
1976	–1.05	.36	.34	.02	–1.41	–1.31	–.10	.12	.01	–.04	.06	.10	4.01
1977	–.70	.19	.12	.07	–.89	–.82	–.07	.26	.21	.06	.15	.05	4.38
1978	.05	.80	.64	.17	–.76	–.66	–.10	.60	.23	.04	.19	.37	5.42
1979	.64	.80	.69	.11	–.16	–.13	–.02	.36	.20	.15	.05	.16	3.56
1980	1.64	.95	.88	.07	.69	.66	.03	.36	.38	.22	.16	–.02	.63
1981	–.15	.12	–.05	.17	–.26	–.18	–.09	.20	.43	.40	.03	–.23	1.41
1982	–.59	–.71	–.63	–.08	.12	.20	–.08	.37	.35	.47	–.11	.01	–.50
1983	–1.32	–.22	–.21	.00	–1.10	–.98	–.12	.79	.65	.51	.14	.14	4.31
1984	–1.54	.61	.41	.20	–2.16	–1.78	–.38	.74	.33	.38	–.04	.41	5.34
1985	–.39	.24	.20	.05	–.63	–.50	–.13	1.37	.78	.62	.16	.59	5.20
1986	–.29	.53	.27	.25	–.82	–.80	–.02	1.14	.61	.52	.09	.53	3.77
1987	.17	.77	.62	.15	–.60	–.39	–.21	.62	.38	.38	.01	.24	3.04
1988	.81	1.23	.99	.24	–.41	–.35	–.07	.26	–.15	–.04	–.12	.42	4.31
1989	.51	.97	.72	.26	–.46	–.37	–.09	.58	.15	–.02	.18	.43	3.50
1990	.40	.78	.56	.22	–.37	–.25	–.13	.65	.20	.02	.18	.45	2.09
1991	.62	.61	.45	.16	.01	–.04	.05	.25	.01	–.06	.07	.24	.15
1992	–.04	.66	.52	.14	–.70	–.76	.05	.10	–.15	–.31	.16	.25	3.24
1993	–.56	.31	.22	.09	–.87	–.82	–.05	–.17	–.32	–.32	.00	.15	2.68
1994	–.41	.84	.65	.19	–1.25	–1.15	–.10	.02	–.31	–.28	–.02	.32	3.41
1995	.12	1.02	.83	.19	–.90	–.84	–.06	.10	–.21	–.21	.00	.31	3.13
1996	–.15	.86	.68	.18	–1.01	–.91	–.10	.18	–.09	–.08	–.01	.27	3.76
1997	–.31	1.26	1.10	.16	–1.57	–1.40	–.17	.30	–.06	–.13	.07	.36	3.92
1998	–1.14	.26	.17	.08	–1.39	–1.18	–.21	.44	–.06	–.09	.03	.50	4.55
1999	–.90	.52	.32	.20	–1.42	–1.31	–.11	.59	.12	.06	.06	.47	4.82
2000	–.85	.86	.72	.13	–1.71	–1.45	–.26	.33	.02	–.04	.06	.31	4.11
2001	–.24	–.59	–.49	–.10	.35	.39	–.04	.67	.24	.13	.12	.43	1.80
2002	–.67	–.19	–.24	.05	–.48	–.41	–.07	.83	.47	.30	.18	.35	1.21
2003	–.49	.19	.19	.01	–.68	–.67	–.01	.40	.45	.35	.10	–.06	2.81
2004	–.63	.88	.58	.30	–1.51	–1.28	–.22	.30	.31	.26	.05	–.02	3.45
2005	–.30	.67	.52	.15	–.98	–.88	–.09	.14	.15	.11	.04	.00	3.55
2006	–.06	.95	.71	.24	–1.01	–.81	–.20	.30	.17	.07	.10	.13	2.68
2007	.52	.94	.53	.41	–.42	–.27	–.15	.34	.14	.13	.01	.20	2.26
2008	1.04	.67	.48	.19	.37	.47	–.10	.49	.46	.33	.14	.03	.58
2009	1.07	–1.00	–1.00	.00	2.07	2.10	–.03	.72	.48	.29	.20	.24	–1.78
2010	–.43	1.40	1.13	.28	–1.83	–1.73	–.10	–.02	.34	.16	.18	–.36	1.30
2011	.12	.90	.65	.26	–.79	–.74	–.05	–.67	–.23	–.12	–.12	–.44	1.61
2012	.12	.54	.37	.17	–.42	–.38	–.04	–.42	–.16	–.18	.02	–.26	2.12
2013	.20	.41	.27	.13	–.20	–.28	.07	–.46	–.43	–.33	–.10	–.03	1.88
2014	–.31	.52	.41	.12	–.84	–.75	–.09	–.16	–.18	–.18	.00	.02	2.64
2015	–.77	.04	–.03	.07	–.81	–.74	–.07	.37	.00	–.09	.09	.36	2.65
2016	–.16	.06	.05	.01	–.22	–.14	–.08	.35	.04	–.02	.06	.31	2.34
2017	–.20	.49	.32	.17	–.69	–.53	–.16	.10	.03	.04	–.01	.07	2.46
2018	–.26	.35	.34	.01	–.60	–.62	.02	.35	.22	.13	.09	.12	2.85
2019	–.11	.07	.01	.05	–.18	–.06	–.11	.68	.25	.21	.04	.43	2.50
2020	–.21	–1.46	–.75	–.71	1.25	.67	.58	.60	.42	.11	.30	.18	–1.63
2021	–1.25	.68	.53	.14	–1.92	–1.58	–.34	–.02	.13	–.04	.17	–.15	5.87
2022	–.39	.83	.46	.37	–1.22	–.81	–.41	–.22	–.22	–.14	–.08	.00	1.87
2023	.45	.32	.17	.15	.13	.23	–.10	.59	.21	.13	.08	.38	3.40
2024	–.39	.40	.15	.25	–.79	–.57	–.23	.65	.24	.14	.10	.41	2.78
2025 *p*	–.21	.17	.13	.05	–.39	–.29	–.10	.19	–.08	.04	–.12	.27	2.23
2022: I	–2.15	–.44	–.65	.20	–1.71	–1.44	–.27	–.54	–.56	–.40	–.16	.02	–1.32
II	.38	1.45	.98	.47	–1.07	–.52	–.55	–.26	–.25	.05	–.30	–.01	2.66
III	2.63	1.70	1.30	.39	.94	1.18	–.24	.28	–.09	–.15	.06	.37	3.77
IV	.14	–.33	–.45	.11	.47	.34	.13	.69	.54	.28	.26	.15	1.27
2023: I	.58	.43	.46	–.03	.14	.14	.01	.69	.25	.16	.09	.44	5.11
II	–.30	–.60	–.81	.21	.30	.49	–.19	.56	–.01	.08	–.09	.56	2.90
III	.09	.49	.43	.06	–.40	–.44	.04	.87	.42	.26	.16	.44	3.73
IV	–.06	.66	.45	.21	–.72	–.30	–.42	.79	.21	.08	.14	.57	3.59
2024: I	–.42	.49	–.01	.50	–.91	–.78	–.13	.39	.05	–.10	.15	.34	1.68
II	–1.04	.08	.03	.05	–1.11	–.95	–.16	.57	.27	.25	.03	.30	2.42
III	–.41	.95	.58	.37	–1.36	–.95	–.41	.92	.54	.47	.07	.38	3.45
IV	–.06	–.10	–.28	.18	.03	.35	–.32	.57	.28	.17	.11	.29	2.77
2025: I	–4.68	.02	.42	–.40	–4.70	–4.88	.18	–.17	–.37	–.27	–.11	.20	–3.23
II	4.83	–.20	–.33	.13	5.03	4.99	.04	–.01	–.35	.03	–.38	.33	7.27
III	1.62	1.00	.57	.43	.62	.80	–.18	.38	.17	.21	–.04	.21	4.50
IV *p*	–.22	–.36	–.12	–.24	.15	.26	–.11	–1.03	–1.16	–.42	–.74	.13	.37

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–3. Gross domestic product, 2010–2025

[Quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Personal consumption expenditures			Gross private domestic investment							
						Fixed investment						Change in private inventories
							Nonresidential				Residential	
		Total	Goods	Services	Total	Total	Total	Structures	Equipment	Intellectual property products		
	Billions of dollars											
2010	15,049.0	10,260.3	3,317.8	6,942.4	2,165.5	2,111.6	1,735.0	379.8	777.0	578.2	376.6	53.9
2011	15,599.7	10,698.9	3,518.1	7,180.7	2,332.6	2,286.3	1,907.5	404.5	881.3	621.7	378.8	46.3
2012	16,254.0	11,047.4	3,637.7	7,409.6	2,621.8	2,550.5	2,118.5	479.4	983.4	655.7	432.0	71.2
2013	16,880.7	11,388.2	3,742.2	7,646.1	2,838.3	2,732.9	2,221.3	491.5	1,035.3	694.6	511.5	105.5
2014	17,608.1	11,874.5	3,886.6	7,987.9	3,074.0	2,989.2	2,425.2	574.6	1,109.1	741.5	564.0	84.8
2015	18,295.0	12,297.4	3,955.1	8,342.3	3,288.5	3,148.4	2,507.5	584.5	1,144.1	778.9	640.9	140.1
2016	18,804.9	12,726.8	4,033.0	8,693.8	3,278.3	3,239.2	2,529.0	566.2	1,119.8	843.0	710.2	39.1
2017	19,612.1	13,290.6	4,212.2	9,078.4	3,467.7	3,435.0	2,661.1	594.9	1,160.0	906.2	773.9	32.7
2018	20,656.5	13,934.4	4,414.2	9,520.2	3,724.8	3,668.4	2,856.5	636.6	1,227.6	992.2	811.9	56.4
2019	21,540.0	14,437.5	4,532.8	9,904.7	3,893.7	3,820.8	2,993.7	677.9	1,240.9	1,074.9	827.1	73.0
2020	21,375.3	14,231.4	4,708.6	9,522.7	3,763.4	3,793.9	2,873.3	624.6	1,112.5	1,136.2	920.5	–30.5
2021	23,725.6	16,119.7	5,499.4	10,620.2	4,246.5	4,219.7	3,087.2	627.9	1,196.3	1,263.1	1,132.4	26.9
2022	26,054.6	17,690.0	5,938.7	11,751.3	4,844.3	4,663.1	3,484.6	755.1	1,305.8	1,423.7	1,178.5	181.2
2023	27,811.5	18,833.2	6,115.7	12,717.5	5,023.7	4,970.0	3,856.0	926.8	1,404.7	1,524.5	1,114.0	53.7
2024	29,298.0	19,896.0	6,261.5	13,634.5	5,259.3	5,205.8	4,022.9	934.8	1,484.3	1,603.9	1,182.8	53.5
2025 p	30,767.1	20,956.0	6,508.2	14,447.8	5,462.7	5,444.8	4,251.1	893.2	1,643.4	1,714.5	1,193.8	17.9
2022: I	25,250.3	17,149.0	5,843.3	11,305.7	4,814.3	4,531.1	3,315.0	688.1	1,262.7	1,364.2	1,216.2	283.2
II	25,861.3	17,606.6	5,980.8	11,625.8	4,811.5	4,660.9	3,438.7	732.7	1,292.2	1,413.8	1,222.2	150.6
III	26,336.3	17,893.1	5,977.7	11,915.4	4,812.3	4,712.7	3,547.6	780.9	1,320.6	1,446.0	1,165.1	99.6
IV	26,770.5	18,111.4	5,952.8	12,158.5	4,939.2	4,747.6	3,637.0	818.7	1,347.6	1,470.7	1,110.6	191.6
2023: I	27,216.4	18,487.0	6,068.4	12,418.6	4,883.8	4,837.9	3,756.6	885.8	1,369.4	1,501.4	1,081.4	45.9
II	27,530.1	18,693.1	6,079.4	12,613.7	4,961.1	4,943.5	3,854.3	925.2	1,411.6	1,517.5	1,089.2	17.6
III	28,074.8	18,961.8	6,149.9	12,811.9	5,088.8	5,006.3	3,871.6	931.3	1,411.2	1,529.1	1,134.7	82.5
IV	28,424.7	19,190.6	6,165.0	13,025.6	5,161.2	5,092.3	3,941.3	964.9	1,426.4	1,550.1	1,150.9	68.9
2024: I	28,708.2	19,443.8	6,136.3	13,307.5	5,155.0	5,139.6	3,963.8	946.9	1,440.6	1,576.3	1,175.8	15.5
II	29,147.0	19,756.1	6,224.4	13,531.7	5,290.2	5,192.5	4,012.4	941.7	1,478.5	1,592.2	1,180.1	97.7
III	29,511.7	20,032.8	6,291.6	13,741.3	5,330.2	5,247.0	4,069.2	934.7	1,515.7	1,618.8	1,177.8	83.3
IV	29,825.2	20,351.3	6,393.9	13,957.4	5,261.8	5,244.0	4,046.4	916.0	1,502.2	1,628.3	1,197.7	17.8
2025: I	30,042.1	20,555.0	6,432.3	14,122.7	5,556.2	5,344.0	4,137.8	911.2	1,579.1	1,647.5	1,206.2	212.2
II	30,485.7	20,789.9	6,471.1	14,318.8	5,358.6	5,404.4	4,207.5	891.3	1,625.0	1,691.2	1,196.9	–45.8
III	31,098.0	21,111.2	6,545.6	14,565.5	5,419.0	5,478.7	4,293.5	887.3	1,669.4	1,736.7	1,185.2	–59.7
IV p	31,442.5	21,368.1	6,583.8	14,784.3	5,517.0	5,552.2	4,365.5	883.0	1,700.0	1,782.5	1,186.7	–35.3
	Billions of chained (2017) dollars											
2010	16,789.8	11,335.6	3,300.2	8,065.3	2,309.0	2,269.9	1,794.3	454.8	757.8	586.4	472.8	54.4
2011	17,052.4	11,528.5	3,372.3	8,183.9	2,463.1	2,432.5	1,951.3	469.0	859.6	622.9	472.2	44.4
2012	17,442.8	11,686.1	3,444.2	8,265.3	2,735.3	2,678.0	2,137.1	531.5	953.9	653.8	533.3	69.2
2013	17,812.2	11,889.9	3,562.3	8,341.9	2,938.7	2,842.0	2,238.6	537.3	1,006.5	695.0	601.1	103.5
2014	18,261.7	12,226.4	3,717.7	8,516.3	3,129.0	3,052.6	2,421.1	597.2	1,086.0	739.1	626.8	85.1
2015	18,799.6	12,638.8	3,902.5	8,738.9	3,323.4	3,193.6	2,498.9	598.2	1,127.2	774.0	693.2	133.6
2016	19,141.7	12,949.0	4,044.7	8,904.9	3,320.2	3,286.9	2,544.8	579.7	1,117.5	847.6	742.2	33.4
2017	19,612.1	13,290.6	4,212.2	9,078.4	3,467.7	3,435.0	2,661.1	594.9	1,160.0	906.2	773.9	32.7
2018	20,193.9	13,654.9	4,378.7	9,276.6	3,668.1	3,611.7	2,844.3	629.2	1,228.6	986.5	768.5	54.3
2019	20,715.7	13,948.1	4,513.6	9,436.2	3,784.0	3,710.9	2,952.2	644.0	1,241.1	1,067.0	761.6	72.4
2020	20,284.5	13,596.9	4,724.4	8,892.4	3,618.6	3,639.4	2,817.8	584.6	1,118.5	1,115.1	818.2	–24.0
2021	21,532.4	14,792.4	5,257.7	9,564.0	3,944.4	3,905.7	2,993.0	568.6	1,197.4	1,230.9	904.8	23.4
2022	22,075.9	15,236.8	5,225.9	10,032.8	4,184.9	4,002.4	3,187.4	588.2	1,231.1	1,374.9	831.3	145.5
2023	22,723.7	15,627.8	5,316.3	10,331.8	4,219.5	4,140.4	3,418.6	686.4	1,267.0	1,460.0	766.1	47.4
2024	23,358.4	16,088.5	5,466.8	10,642.1	4,346.5	4,264.0	3,518.9	694.0	1,311.5	1,511.0	790.4	43.5
2025 p	23,853.0	16,511.1	5,643.1	10,892.1	4,433.2	4,377.7	3,662.7	657.3	1,420.1	1,596.6	773.7	30.6
2022: I	21,932.7	15,100.9	5,253.6	9,871.0	4,272.4	4,000.5	3,110.1	567.5	1,223.5	1,326.2	889.8	227.4
II	21,967.0	15,224.4	5,248.3	9,998.8	4,177.0	4,019.8	3,163.4	579.7	1,225.7	1,365.4	863.9	114.4
III	22,125.6	15,295.8	5,215.8	10,101.3	4,105.3	3,997.2	3,210.2	594.6	1,233.8	1,388.3	809.2	79.7
IV	22,278.3	15,326.2	5,185.9	10,159.9	4,185.0	3,992.1	3,266.0	611.0	1,241.4	1,419.5	762.1	160.6
2023: I	22,439.6	15,495.8	5,276.6	10,240.0	4,108.5	4,039.7	3,333.3	653.1	1,240.6	1,438.6	749.2	43.5
II	22,580.5	15,553.7	5,282.1	10,291.4	4,180.8	4,132.3	3,421.8	683.6	1,278.0	1,455.2	756.9	17.0
III	22,841.0	15,671.9	5,338.8	10,353.8	4,275.5	4,171.2	3,436.4	695.0	1,269.6	1,465.5	777.7	67.5
IV	23,033.8	15,789.7	5,367.6	10,441.9	4,313.2	4,218.5	3,483.0	713.8	1,279.9	1,480.7	780.6	61.9
2024: I	23,082.1	15,857.7	5,349.5	10,524.4	4,296.3	4,249.7	3,496.0	704.8	1,281.4	1,504.8	796.2	12.4
II	23,286.5	16,009.6	5,421.0	10,606.8	4,382.0	4,264.9	3,517.5	697.8	1,309.0	1,507.3	792.2	75.1
III	23,478.6	16,165.8	5,501.9	10,685.1	4,392.2	4,281.3	3,547.6	693.9	1,335.0	1,517.1	782.5	69.4
IV	23,586.5	16,320.9	5,594.7	10,752.1	4,315.6	4,260.3	3,514.4	679.5	1,320.6	1,515.0	790.7	17.1
2025: I	23,548.2	16,345.8	5,597.4	10,773.6	4,547.9	4,333.6	3,595.4	674.2	1,386.0	1,539.0	788.8	172.0
II	23,771.0	16,445.7	5,628.4	10,842.3	4,382.8	4,380.5	3,659.3	661.2	1,414.7	1,593.8	778.5	–18.3
III	24,026.8	16,585.9	5,670.7	10,939.6	4,383.2	4,389.3	3,687.8	652.8	1,432.9	1,615.6	764.3	–23.9
IV p	24,066.0	16,667.0	5,675.7	11,012.9	4,418.9	4,407.2	3,708.4	640.9	1,446.6	1,637.9	763.2	–7.5

See next page for continuation of table.

Table B–3. Gross domestic product, 2010–2025—*Continued*

[Quarterly data at seasonally adjusted annual rates]

Year or quarter	Net exports of goods and services			Government consumption expenditures and gross investment					Final sales of domestic product	Gross domestic purchases [1]	Final sales to private domestic purchasers [2]	Gross domestic income (GDI) [3]	Average of GDP and GDI
	Net exports	Exports	Imports	Total	Federal			State and local					
					Total	National defense	Non-defense						
	Billions of dollars												
2010	–532.3	1,857.2	2,389.6	3,155.6	1,300.2	828.0	472.2	1,855.4	14,995.1	15,581.3	12,371.8	14,979.5	15,014.2
2011	–579.6	2,115.9	2,695.5	3,147.9	1,299.8	834.0	465.8	1,848.2	15,553.5	16,179.3	12,985.2	15,624.0	15,611.9
2012	–551.6	2,217.7	2,769.3	3,136.5	1,287.0	814.2	472.8	1,849.5	16,182.8	16,805.6	13,597.9	16,407.6	16,330.8
2013	–478.5	2,287.9	2,766.4	3,132.6	1,227.4	764.3	463.1	1,905.2	16,775.2	17,359.1	14,121.1	16,910.5	16,895.6
2014	–508.9	2,378.5	2,887.4	3,168.6	1,217.1	744.1	473.0	1,951.5	17,523.3	18,117.0	14,863.6	17,749.1	17,678.6
2015	–524.3	2,270.6	2,794.9	3,233.4	1,222.8	730.4	492.4	2,010.6	18,154.9	18,819.3	15,445.8	18,388.0	18,341.5
2016	–503.3	2,235.6	2,738.8	3,303.0	1,237.4	729.4	507.9	2,065.7	18,765.8	19,308.2	15,966.1	18,752.0	18,778.5
2017	–543.3	2,388.3	2,931.6	3,397.1	1,266.1	748.3	517.8	2,131.1	19,579.4	20,155.4	16,725.6	19,544.2	19,578.2
2018	–593.1	2,538.1	3,131.2	3,590.4	1,346.3	795.1	551.2	2,244.1	20,600.1	21,249.6	17,602.8	20,593.1	20,624.8
2019	–577.3	2,539.4	3,116.7	3,786.0	1,419.5	849.5	570.0	2,366.5	21,467.0	22,117.3	18,258.3	21,482.9	21,511.5
2020	–618.6	2,163.8	2,782.4	3,999.1	1,524.6	884.9	639.7	2,474.5	21,405.8	21,993.8	18,025.2	21,254.7	21,315.0
2021	–849.2	2,568.7	3,417.9	4,208.7	1,604.4	909.1	695.3	2,604.3	23,698.8	24,574.9	20,339.4	23,687.8	23,706.7
2022	–937.9	3,036.4	3,974.3	4,458.2	1,640.5	929.6	710.9	2,817.7	25,873.4	26,992.5	22,353.1	26,055.0	26,054.8
2023	–786.5	3,073.4	3,859.9	4,741.2	1,765.7	1,004.0	761.7	2,975.5	27,757.8	28,598.0	23,803.2	27,485.7	27,648.6
2024	–898.5	3,215.4	4,113.8	5,041.1	1,892.4	1,082.7	809.7	3,148.7	29,244.5	30,196.5	25,101.8	29,001.7	29,149.9
2025 *p*	–926.2	3,319.7	4,245.8	5,274.5	1,967.0	1,143.4	823.6	3,307.5	30,749.2	31,693.3	26,400.9	....	....
2022: I	–1,049.2	2,865.2	3,914.4	4,336.2	1,609.0	905.1	703.9	2,727.2	24,967.2	26,299.5	21,680.1	25,355.5	25,302.9
II	–996.2	3,093.7	4,089.9	4,439.4	1,622.6	929.0	693.6	2,816.7	25,710.7	26,857.5	22,267.5	25,911.0	25,886.2
III	–855.6	3,129.1	3,984.7	4,486.5	1,639.1	928.6	710.5	2,847.4	26,236.7	27,191.9	22,605.9	26,428.7	26,382.5
IV	–850.6	3,057.7	3,908.3	4,570.6	1,691.3	955.7	735.6	2,879.2	26,578.9	27,621.1	22,858.9	26,524.8	26,647.7
2023: I	–794.9	3,085.5	3,880.4	4,640.5	1,727.7	975.0	752.7	2,912.8	27,170.5	28,011.4	23,325.0	26,980.5	27,098.5
II	–797.5	3,016.2	3,813.7	4,673.4	1,738.8	988.0	750.8	2,934.6	27,512.5	28,327.5	23,636.6	27,229.1	27,379.6
III	–765.5	3,082.1	3,847.6	4,789.7	1,784.4	1,018.4	766.0	3,005.4	27,992.4	28,840.4	23,968.2	27,615.6	27,845.2
IV	–788.0	3,109.6	3,897.7	4,861.0	1,812.0	1,034.5	777.5	3,049.0	28,355.9	29,212.8	24,282.9	28,117.4	28,271.1
2024: I	–822.5	3,164.1	3,986.6	4,931.8	1,834.3	1,039.6	794.6	3,097.5	28,692.7	29,530.6	24,583.4	28,468.4	28,588.3
II	–894.4	3,192.6	4,087.0	4,995.2	1,867.5	1,064.3	803.2	3,127.6	29,049.4	30,041.4	24,948.6	28,861.1	29,004.1
III	–938.3	3,256.5	4,194.8	5,086.9	1,917.9	1,104.2	813.7	3,169.1	29,428.4	30,450.0	25,279.8	29,117.3	29,314.5
IV	–938.7	3,248.3	4,186.9	5,150.7	1,950.0	1,122.7	827.2	3,200.8	29,807.4	30,763.8	25,595.3	29,560.0	29,692.6
2025: I	–1,264.6	3,293.7	4,558.3	5,195.5	1,949.7	1,116.6	833.1	3,245.8	29,829.9	31,306.7	25,899.0	29,895.7	29,968.9
II	–899.8	3,267.5	4,167.3	5,237.0	1,956.4	1,135.8	820.7	3,280.6	30,531.5	31,385.5	26,194.3	30,244.9	30,365.3
III	–756.6	3,366.9	4,123.4	5,324.4	1,989.7	1,161.9	827.8	3,334.7	31,157.7	31,854.6	26,589.9	30,789.4	30,943.7
IV *p*	–783.7	3,350.6	4,134.3	5,341.1	1,972.0	1,159.3	812.7	3,369.2	31,477.7	32,226.2	26,920.3	....	....
	Billions of chained (2017) dollars												
2010	–388.0	1,907.3	2,295.3	3,539.7	1,422.6	897.3	524.1	2,117.0	16,755.0	17,169.9	13,600.3	16,712.3	16,751.0
2011	–361.6	2,044.2	2,405.8	3,426.9	1,384.2	878.1	504.9	2,042.3	17,025.8	17,409.2	13,957.7	17,079.0	17,065.7
2012	–338.4	2,126.3	2,464.7	3,356.0	1,357.9	848.2	508.8	1,997.7	17,387.5	17,773.1	14,362.5	17,607.6	17,525.2
2013	–304.3	2,190.3	2,494.6	3,275.6	1,283.9	792.4	491.0	1,991.8	17,715.9	18,102.6	14,730.8	17,843.6	17,827.9
2014	–347.6	2,275.8	2,623.4	3,247.3	1,251.9	760.4	491.3	1,995.3	18,185.6	18,602.0	15,278.6	18,407.9	18,334.8
2015	–476.5	2,283.1	2,759.5	3,313.6	1,252.7	744.9	507.8	2,060.8	18,669.0	19,276.0	15,832.3	18,895.2	18,847.4
2016	–505.8	2,293.9	2,799.7	3,378.5	1,260.0	741.1	518.8	2,118.5	19,108.4	19,647.5	16,235.9	19,087.8	19,114.7
2017	–543.3	2,388.3	2,931.6	3,397.1	1,266.1	748.3	517.8	2,131.1	19,579.4	20,155.4	16,725.6	19,544.2	19,578.2
2018	–593.5	2,456.4	3,050.0	3,465.0	1,309.9	774.6	535.3	2,155.2	20,137.6	20,787.5	17,266.5	20,131.9	20,162.9
2019	–616.3	2,469.5	3,085.9	3,600.4	1,360.3	816.3	544.1	2,240.2	20,642.8	21,332.6	17,658.8	20,660.8	20,688.2
2020	–655.8	2,157.8	2,813.6	3,722.7	1,446.1	839.7	606.4	2,277.5	20,304.5	20,942.8	17,235.9	20,170.1	20,227.3
2021	–926.4	2,297.2	3,223.5	3,718.6	1,473.0	832.3	640.7	2,247.9	21,493.9	22,451.2	18,698.1	21,498.1	21,515.2
2022	–1,024.4	2,472.1	3,496.4	3,672.7	1,424.1	800.8	623.3	2,248.6	21,896.7	23,082.8	19,239.2	22,076.3	22,076.1
2023	–925.2	2,541.0	3,466.2	3,800.7	1,471.4	830.5	640.9	2,329.2	22,645.5	23,638.1	19,768.1	22,457.5	22,590.6
2024	–1,032.6	2,633.6	3,666.2	3,945.3	1,527.4	863.5	663.9	2,417.8	23,276.9	24,371.1	20,352.5	23,122.2	23,240.3
2025 *p*	–1,090.6	2,675.4	3,766.0	3,989.3	1,509.7	873.6	635.7	2,478.5	23,796.7	24,923.0	20,888.3	....	....
2022: I	–1,106.8	2,377.5	3,484.4	3,665.5	1,428.9	799.0	630.0	2,237.3	21,666.6	23,026.3	19,101.4	22,024.1	21,978.4
II	–1,093.0	2,451.7	3,544.7	3,652.4	1,415.4	801.8	613.5	2,237.0	21,812.9	23,041.5	19,244.2	22,009.3	21,988.2
III	–953.1	2,538.9	3,492.0	3,667.8	1,410.6	793.3	617.4	2,256.3	22,019.1	23,057.6	19,293.0	22,203.2	22,164.4
IV	–944.5	2,520.1	3,464.6	3,705.1	1,441.6	809.3	632.4	2,263.9	22,088.1	23,205.8	19,318.2	22,073.9	22,176.1
2023: I	–912.2	2,543.5	3,455.7	3,742.9	1,456.3	818.4	638.0	2,287.0	22,370.9	23,337.7	19,535.4	22,245.1	22,342.4
II	–928.1	2,509.3	3,437.4	3,773.5	1,456.1	823.2	632.9	2,317.1	22,532.1	23,498.3	19,686.0	22,333.6	22,457.1
III	–926.2	2,536.7	3,462.9	3,821.2	1,480.3	838.1	642.2	2,340.9	22,738.3	23,758.4	19,843.1	22,467.4	22,654.2
IV	–934.1	2,574.6	3,508.8	3,865.1	1,492.8	842.3	650.4	2,372.0	22,940.5	23,957.9	20,008.0	22,784.8	22,909.3
2024: I	–964.1	2,603.6	3,567.8	3,887.1	1,495.8	836.7	659.3	2,390.7	23,035.5	24,031.7	20,107.0	22,889.4	22,985.7
II	–1,032.2	2,608.0	3,640.2	3,919.2	1,511.5	850.9	660.7	2,407.3	23,171.8	24,300.1	20,274.3	23,058.1	23,172.3
III	–1,064.9	2,664.3	3,729.2	3,971.3	1,542.9	878.2	664.6	2,428.5	23,369.6	24,519.6	20,446.9	23,164.8	23,321.7
IV	–1,069.0	2,658.5	3,727.4	4,003.8	1,559.5	888.0	671.2	2,444.7	23,530.8	24,633.0	20,581.6	23,376.9	23,481.7
2025: I	–1,380.7	2,659.5	4,040.2	3,993.9	1,537.2	872.3	664.7	2,456.3	23,340.5	24,874.0	20,679.0	23,433.4	23,490.8
II	–1,058.0	2,647.3	3,705.3	3,993.0	1,516.6	874.2	642.0	2,475.3	23,765.6	24,812.9	20,825.4	23,583.2	23,677.1
III	–955.5	2,708.8	3,664.3	4,015.0	1,526.6	886.4	639.7	2,487.4	24,029.1	24,976.1	20,974.9	23,788.4	23,907.6
IV *p*	–968.2	2,685.9	3,654.1	3,955.2	1,458.5	861.6	596.4	2,495.1	24,051.4	25,029.1	21,074.1	....	....

[1] Gross domestic product (GDP) less exports of goods and services plus imports of goods and services.
[2] Personal consumption expenditures plus gross private fixed investment.
[3] For chained dollar measures, gross domestic income is deflated by the implicit price deflator for GDP.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–4. Percentage shares of gross domestic product, 1975–2025

[Percent of nominal GDP]

Year or quarter	Gross domestic product (percent)	Personal consumption expenditures			Gross private domestic investment							
						Fixed investment						Change in private inventories
							Nonresidential					
		Total	Goods	Services	Total	Total	Total	Structures	Equipment	Intellectual property products	Residential	
1975	100.0	61.2	29.2	32.0	15.3	15.6	11.7	3.6	6.4	1.7	4.0	–0.4
1976	100.0	61.3	29.2	32.1	17.3	16.3	11.7	3.5	6.5	1.7	4.6	.9
1977	100.0	61.2	28.8	32.4	19.1	18.0	12.4	3.6	7.1	1.7	5.5	1.1
1978	100.0	60.5	28.2	32.3	20.3	19.2	13.4	4.0	7.7	1.7	5.9	1.1
1979	100.0	60.3	28.1	32.3	20.5	19.9	14.2	4.5	7.9	1.8	5.6	.7
1980	100.0	61.3	28.0	33.3	18.6	18.8	14.2	4.8	7.6	1.9	4.5	–.2
1981	100.0	60.3	27.1	33.2	19.7	18.8	14.7	5.2	7.5	2.0	4.0	.9
1982	100.0	61.9	26.9	35.0	17.4	17.8	14.5	5.3	7.0	2.2	3.3	–.4
1983	100.0	62.8	26.8	36.0	17.5	17.7	13.3	4.2	6.8	2.2	4.4	–.2
1984	100.0	61.7	26.3	35.4	20.3	18.7	14.0	4.4	7.2	2.4	4.7	1.6
1985	100.0	62.5	26.2	36.3	19.1	18.6	14.0	4.5	7.1	2.4	4.6	.5
1986	100.0	63.0	26.1	36.9	18.5	18.4	13.3	3.9	6.9	2.5	5.1	.1
1987	100.0	63.4	25.9	37.5	18.4	17.8	12.7	3.6	6.6	2.5	5.1	.6
1988	100.0	63.6	25.5	38.1	17.9	17.5	12.6	3.5	6.6	2.5	4.9	.4
1989	100.0	63.4	25.2	38.2	17.7	17.2	12.7	3.4	6.6	2.7	4.5	.5
1990	100.0	63.9	25.0	38.9	16.7	16.4	12.4	3.4	6.2	2.8	4.0	.2
1991	100.0	64.0	24.3	39.7	15.3	15.3	11.8	3.0	5.9	2.9	3.6	.0
1992	100.0	64.4	24.0	40.4	15.5	15.3	11.4	2.6	5.9	2.9	3.9	.3
1993	100.0	64.9	23.9	41.0	16.1	15.8	11.7	2.6	6.2	2.9	4.2	.3
1994	100.0	64.8	24.0	40.8	17.2	16.4	11.9	2.6	6.5	2.8	4.4	.9
1995	100.0	65.0	23.8	41.2	17.2	16.8	12.6	2.7	6.9	3.0	4.2	.4
1996	100.0	65.0	23.8	41.2	17.7	17.4	12.9	2.8	7.0	3.1	4.4	.4
1997	100.0	64.5	23.4	41.2	18.6	17.8	13.4	2.9	7.1	3.4	4.4	.8
1998	100.0	64.9	23.3	41.6	19.2	18.5	13.8	3.0	7.3	3.5	4.6	.7
1999	100.0	65.2	23.7	41.5	19.6	19.0	14.2	3.0	7.4	3.8	4.8	.6
2000	100.0	66.0	23.9	42.1	19.9	19.4	14.6	3.1	7.5	4.0	4.7	.5
2001	100.0	66.8	23.9	43.0	18.3	18.6	13.8	3.2	6.7	3.9	4.8	–.4
2002	100.0	67.2	23.8	43.5	17.7	17.5	12.4	2.6	6.0	3.7	5.1	.2
2003	100.0	67.6	23.8	43.8	17.7	17.6	12.0	2.5	5.9	3.7	5.6	.1
2004	100.0	67.4	23.8	43.6	18.7	18.1	12.0	2.5	5.9	3.6	6.1	.5
2005	100.0	67.3	23.6	43.6	19.4	19.0	12.4	2.7	6.1	3.6	6.6	.4
2006	100.0	67.2	23.4	43.7	19.6	19.1	13.0	3.1	6.2	3.7	6.1	.5
2007	100.0	67.3	23.3	44.1	18.5	18.2	13.5	3.5	6.2	3.8	4.8	.2
2008	100.0	68.0	22.8	45.3	16.8	17.0	13.5	3.9	5.7	3.9	3.5	–.2
2009	100.0	68.3	22.0	46.4	13.3	14.4	11.7	3.1	4.6	3.9	2.7	–1.0
2010	100.0	68.2	22.0	46.1	14.4	14.0	11.5	2.5	5.2	3.8	2.5	.4
2011	100.0	68.6	22.6	46.0	15.0	14.7	12.2	2.6	5.6	4.0	2.4	.3
2012	100.0	68.0	22.4	45.6	16.1	15.7	13.0	2.9	6.1	4.0	2.7	.4
2013	100.0	67.5	22.2	45.3	16.8	16.2	13.2	2.9	6.1	4.1	3.0	.6
2014	100.0	67.4	22.1	45.4	17.5	17.0	13.8	3.3	6.3	4.2	3.2	.5
2015	100.0	67.2	21.6	45.6	18.0	17.2	13.7	3.2	6.3	4.3	3.5	.8
2016	100.0	67.7	21.4	46.2	17.4	17.2	13.4	3.0	6.0	4.5	3.8	.2
2017	100.0	67.8	21.5	46.3	17.7	17.5	13.6	3.0	5.9	4.6	3.9	.2
2018	100.0	67.5	21.4	46.1	18.0	17.8	13.8	3.1	5.9	4.8	3.9	.3
2019	100.0	67.0	21.0	46.0	18.1	17.7	13.9	3.1	5.8	5.0	3.8	.3
2020	100.0	66.6	22.0	44.6	17.6	17.7	13.4	2.9	5.2	5.3	4.3	–.1
2021	100.0	67.9	23.2	44.8	17.9	17.8	13.0	2.6	5.0	5.3	4.8	.1
2022	100.0	67.9	22.8	45.1	18.6	17.9	13.4	2.9	5.0	5.5	4.5	.7
2023	100.0	67.7	22.0	45.7	18.1	17.9	13.9	3.3	5.1	5.5	4.0	.2
2024	100.0	67.9	21.4	46.5	18.0	17.8	13.7	3.2	5.1	5.5	4.0	.2
2025 p	100.0	68.1	21.2	47.0	17.8	17.7	13.8	2.9	5.3	5.6	3.9	.1
2022: I	100.0	67.9	23.1	44.8	19.1	17.9	13.1	2.7	5.0	5.4	4.8	1.1
II	100.0	68.1	23.1	45.0	18.6	18.0	13.3	2.8	5.0	5.5	4.7	.6
III	100.0	67.9	22.7	45.2	18.3	17.9	13.5	3.0	5.0	5.5	4.4	.4
IV	100.0	67.7	22.2	45.4	18.5	17.7	13.6	3.1	5.0	5.5	4.1	.7
2023: I	100.0	67.9	22.3	45.6	17.9	17.8	13.8	3.3	5.0	5.5	4.0	.2
II	100.0	67.9	22.1	45.8	18.0	18.0	14.0	3.4	5.1	5.5	4.0	.1
III	100.0	67.5	21.9	45.6	18.1	17.8	13.8	3.3	5.0	5.4	4.0	.3
IV	100.0	67.5	21.7	45.8	18.2	17.9	13.9	3.4	5.0	5.5	4.0	.2
2024: I	100.0	67.7	21.4	46.4	18.0	17.9	13.8	3.3	5.0	5.5	4.1	.1
II	100.0	67.8	21.4	46.4	18.1	17.8	13.8	3.2	5.1	5.5	4.0	.3
III	100.0	67.9	21.3	46.6	18.1	17.8	13.8	3.2	5.1	5.5	4.0	.3
IV	100.0	68.2	21.4	46.8	17.6	17.6	13.6	3.1	5.0	5.5	4.0	.1
2025: I	100.0	68.4	21.4	47.0	18.5	17.8	13.8	3.0	5.3	5.5	4.0	.7
II	100.0	68.2	21.2	47.0	17.6	17.7	13.8	2.9	5.3	5.5	3.9	–.2
III	100.0	67.9	21.0	46.8	17.4	17.6	13.8	2.9	5.4	5.6	3.8	–.2
IV p	100.0	68.0	20.9	47.0	17.5	17.7	13.9	2.8	5.4	5.7	3.8	–.1

See next page for continuation of table.

TABLE B–4. Percentage shares of gross domestic product, 1975–2025—*Continued*

[Percent of nominal GDP]

Year or quarter	Net exports of goods and services							Government consumption expenditures and gross investment				
	Net exports	Exports			Imports			Total	Federal			State and local
		Total	Goods	Services	Total	Goods	Services		Total	National defense	Non-defense	
1975	0.9	8.2	6.7	1.6	7.3	5.9	1.4	22.6	10.3	7.0	3.3	12.3
1976	–.1	8.0	6.5	1.5	8.1	6.7	1.4	21.6	9.9	6.7	3.2	11.7
1977	–1.1	7.7	6.2	1.5	8.8	7.3	1.4	20.9	9.6	6.5	3.2	11.2
1978	–1.1	7.9	6.4	1.6	9.0	7.5	1.5	20.3	9.3	6.2	3.1	10.9
1979	–.9	8.8	7.1	1.6	9.6	8.1	1.5	20.0	9.2	6.1	3.0	10.8
1980	–.5	9.8	8.1	1.8	10.3	8.7	1.6	20.6	9.6	6.4	3.2	11.0
1981	–.4	9.5	7.6	1.9	9.9	8.4	1.6	20.4	9.8	6.7	3.1	10.6
1982	–.6	8.5	6.7	1.8	9.1	7.5	1.6	21.3	10.4	7.3	3.1	10.9
1983	–1.4	7.6	5.9	1.7	9.0	7.5	1.5	21.1	10.5	7.5	3.0	10.6
1984	–2.5	7.5	5.7	1.8	10.0	8.3	1.7	20.5	10.2	7.4	2.8	10.3
1985	–2.6	7.0	5.2	1.7	9.6	7.9	1.7	21.0	10.4	7.6	2.8	10.5
1986	–2.9	7.0	5.1	2.0	9.9	8.1	1.8	21.3	10.5	7.7	2.8	10.8
1987	–3.0	7.5	5.5	2.0	10.5	8.5	1.9	21.2	10.4	7.7	2.7	10.9
1988	–2.1	8.5	6.3	2.1	10.6	8.6	1.9	20.6	9.8	7.3	2.5	10.8
1989	–1.5	8.9	6.6	2.3	10.5	8.6	1.9	20.4	9.5	6.9	2.5	11.0
1990	–1.3	9.3	6.8	2.5	10.6	8.5	2.0	20.8	9.4	6.8	2.6	11.3
1991	–.5	9.7	7.0	2.7	10.1	8.1	2.0	21.1	9.5	6.7	2.7	11.6
1992	–.5	9.7	7.0	2.7	10.2	8.4	1.9	20.6	9.0	6.2	2.8	11.6
1993	–1.0	9.5	6.8	2.7	10.5	8.6	1.9	19.9	8.5	5.7	2.7	11.4
1994	–1.3	9.9	7.1	2.8	11.2	9.3	1.9	19.2	7.9	5.2	2.6	11.4
1995	–1.2	10.6	7.8	2.9	11.8	9.9	1.9	19.0	7.5	4.9	2.6	11.4
1996	–1.2	10.7	7.8	3.0	11.9	10.0	1.9	18.5	7.2	4.7	2.5	11.3
1997	–1.2	11.1	8.2	3.0	12.3	10.3	2.0	18.0	6.8	4.3	2.5	11.2
1998	–1.8	10.5	7.6	2.9	12.3	10.3	2.0	17.8	6.5	4.1	2.4	11.3
1999	–2.7	10.3	7.4	2.9	13.0	10.9	2.1	17.9	6.3	4.0	2.4	11.5
2000	–3.7	10.7	7.8	2.9	14.4	12.2	2.2	17.8	6.2	3.8	2.3	11.6
2001	–3.6	9.7	7.0	2.7	13.3	11.1	2.1	18.4	6.3	3.9	2.4	12.1
2002	–4.0	9.1	6.5	2.7	13.2	11.0	2.2	19.1	6.8	4.2	2.6	12.3
2003	–4.6	9.0	6.4	2.6	13.6	11.3	2.3	19.3	7.2	4.5	2.7	12.1
2004	–5.2	9.6	6.8	2.9	14.8	12.4	2.4	19.1	7.3	4.7	2.6	11.8
2005	–5.7	10.0	7.1	2.9	15.7	13.2	2.4	19.0	7.3	4.7	2.6	11.7
2006	–5.7	10.6	7.6	3.1	16.3	13.8	2.6	19.0	7.2	4.6	2.6	11.7
2007	–5.1	11.5	8.0	3.5	16.5	13.8	2.7	19.3	7.3	4.7	2.6	12.0
2008	–5.0	12.4	8.7	3.7	17.4	14.5	2.9	20.2	7.8	5.1	2.7	12.4
2009	–2.9	10.9	7.3	3.6	13.8	11.0	2.9	21.2	8.4	5.4	3.0	12.8
2010	–3.5	12.3	8.5	3.9	15.9	12.9	2.9	21.0	8.6	5.5	3.1	12.3
2011	–3.7	13.6	9.4	4.2	17.3	14.3	3.0	20.2	8.3	5.3	3.0	11.8
2012	–3.4	13.6	9.4	4.2	17.0	14.1	2.9	19.3	7.9	5.0	2.9	11.4
2013	–2.8	13.6	9.3	4.3	16.4	13.6	2.8	18.6	7.3	4.5	2.7	11.3
2014	–2.9	13.5	9.2	4.3	16.4	13.6	2.8	18.0	6.9	4.2	2.7	11.1
2015	–2.9	12.4	8.2	4.2	15.3	12.5	2.8	17.7	6.7	4.0	2.7	11.0
2016	–2.7	11.9	7.7	4.2	14.6	11.8	2.8	17.6	6.6	3.9	2.7	11.0
2017	–2.8	12.2	7.9	4.3	14.9	12.1	2.9	17.3	6.5	3.8	2.6	10.9
2018	–2.9	12.3	8.1	4.2	15.2	12.4	2.8	17.4	6.5	3.8	2.7	10.9
2019	–2.7	11.8	7.6	4.2	14.5	11.7	2.8	17.6	6.6	3.9	2.6	11.0
2020	–2.9	10.1	6.7	3.5	13.0	10.8	2.2	18.7	7.1	4.1	3.0	11.6
2021	–3.6	10.8	7.4	3.5	14.4	12.0	2.4	17.7	6.8	3.8	2.9	11.0
2022	–3.6	11.7	7.9	3.7	15.3	12.5	2.8	17.1	6.3	3.6	2.7	10.8
2023	–2.8	11.1	7.3	3.8	13.9	11.1	2.8	17.0	6.3	3.6	2.7	10.7
2024	–3.1	11.0	7.0	4.0	14.0	11.2	2.9	17.2	6.5	3.7	2.8	10.7
2025 *p*	–3.0	10.8	6.9	3.9	13.8	10.9	2.9	17.1	6.4	3.7	2.7	10.8
2022: I	–4.2	11.3	7.7	3.6	15.5	12.9	2.6	17.2	6.4	3.6	2.8	10.8
II	–3.9	12.0	8.3	3.7	15.8	13.0	2.8	17.2	6.3	3.6	2.7	10.9
III	–3.2	11.9	8.1	3.8	15.1	12.3	2.8	17.0	6.2	3.5	2.7	10.8
IV	–3.2	11.4	7.6	3.8	14.6	11.8	2.8	17.1	6.3	3.6	2.7	10.8
2023: I	–2.9	11.3	7.6	3.8	14.3	11.5	2.8	17.1	6.3	3.6	2.8	10.7
II	–2.9	11.0	7.2	3.8	13.9	11.1	2.8	17.0	6.3	3.6	2.7	10.7
III	–2.7	11.0	7.2	3.8	13.7	11.0	2.7	17.1	6.4	3.6	2.7	10.7
IV	–2.8	10.9	7.2	3.8	13.7	10.9	2.8	17.1	6.4	3.6	2.7	10.7
2024: I	–2.9	11.0	7.1	3.9	13.9	11.1	2.8	17.2	6.4	3.6	2.8	10.8
II	–3.1	11.0	7.1	3.9	14.0	11.2	2.8	17.1	6.4	3.7	2.8	10.7
III	–3.2	11.0	7.1	4.0	14.2	11.3	2.9	17.2	6.5	3.7	2.8	10.7
IV	–3.1	10.9	6.9	4.0	14.0	11.1	3.0	17.3	6.5	3.8	2.8	10.7
2025: I	–4.2	11.0	7.0	3.9	15.2	12.3	2.9	17.3	6.5	3.7	2.8	10.8
II	–3.0	10.7	6.8	3.9	13.7	10.8	2.9	17.2	6.4	3.7	2.7	10.8
III	–2.4	10.8	6.9	4.0	13.3	10.4	2.9	17.1	6.4	3.7	2.7	10.7
IV *p*	–2.5	10.7	6.7	3.9	13.1	10.2	2.9	17.0	6.3	3.7	2.6	10.7

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–5. Chain-type price indexes for gross domestic product, 1975–2025

[Index numbers, 2017=100, except as noted; quarterly data seasonally adjusted]

Year or quarter	Gross domestic product	Personal consumption expenditures			Gross private domestic investment						
						Fixed investment					
							Nonresidential				
		Total	Goods	Services	Total	Total	Total	Structures	Equipment	Intellectual property products	Residential
1975	27.796	26.860	46.159	19.302	40.356	38.984	50.410	17.065	84.000	50.336	19.109
1976	29.327	28.333	47.966	20.641	42.587	41.233	53.187	17.901	89.157	52.561	20.347
1977	31.148	30.176	50.526	22.203	45.725	44.397	56.710	19.454	94.635	54.868	22.425
1978	33.339	32.276	53.626	23.910	49.431	48.111	60.502	21.332	99.891	57.725	25.179
1979	36.104	35.143	58.698	25.915	53.867	52.434	65.368	23.811	106.353	61.562	28.023
1980	39.375	38.928	65.271	28.610	58.908	57.325	71.138	26.024	115.715	66.316	31.045
1981	43.092	42.415	70.120	31.541	64.404	62.589	77.902	29.603	124.182	71.265	33.557
1982	45.756	44.771	72.031	34.017	67.817	66.105	82.329	31.939	129.288	75.312	35.356
1983	47.545	46.676	73.331	36.106	68.025	66.357	82.193	31.125	129.659	78.125	36.193
1984	49.262	48.439	74.718	37.985	68.758	67.004	82.453	31.397	128.600	80.315	37.265
1985	50.820	50.128	75.917	39.843	69.609	67.980	83.305	32.144	128.600	81.651	38.289
1986	51.850	51.219	75.562	41.480	71.174	69.644	84.766	32.760	131.183	82.286	39.978
1987	53.126	52.802	77.992	42.726	72.656	71.061	85.734	33.286	132.038	83.761	41.707
1988	55.002	54.865	80.048	44.769	74.483	73.044	87.893	34.698	133.864	86.381	43.159
1989	57.159	57.261	83.128	46.880	76.382	74.928	89.937	36.057	136.423	87.494	44.570
1990	59.307	59.775	86.532	49.029	77.978	76.565	91.867	37.222	139.212	88.404	45.597
1991	61.303	61.774	88.647	50.946	79.300	77.906	93.606	37.896	141.570	90.535	46.190
1992	62.701	63.420	89.717	52.758	79.300	77.949	93.300	37.905	141.355	89.634	46.759
1993	64.189	65.000	90.496	54.582	80.240	78.886	93.500	39.016	139.703	90.261	48.663
1994	65.557	66.356	91.417	56.066	81.437	80.099	94.238	40.394	139.454	90.732	50.424
1995	66.933	67.754	92.271	57.632	82.748	81.430	95.176	42.143	137.927	93.406	52.227
1996	68.156	69.203	93.285	59.214	82.700	81.498	94.599	43.214	134.799	93.818	53.348
1997	69.337	70.407	93.177	60.883	82.748	81.640	94.070	44.864	131.083	94.326	54.634
1998	70.102	70.967	91.777	62.172	82.140	81.196	92.594	46.915	125.201	93.868	56.075
1999	71.084	72.001	92.258	63.409	82.218	81.333	91.666	48.357	120.368	95.383	58.176
2000	72.709	73.822	94.089	65.210	83.296	82.486	92.068	50.252	117.751	98.100	60.758
2001	74.385	75.302	94.018	67.292	84.006	83.206	91.698	52.884	114.281	97.969	63.642
2002	75.500	76.291	93.122	69.033	84.281	83.453	91.219	55.089	111.883	96.657	65.218
2003	77.012	77.894	93.003	71.336	84.973	84.183	90.517	57.057	108.990	95.926	68.308
2004	79.069	79.827	94.311	73.528	87.455	86.642	91.409	61.282	108.078	95.613	73.102
2005	81.537	82.127	96.203	75.998	90.993	90.223	93.780	68.841	107.827	96.232	78.338
2006	84.074	84.440	97.494	78.750	94.194	93.428	96.066	77.037	106.758	97.372	82.914
2007	86.352	86.607	98.576	81.388	95.615	94.857	97.621	81.581	106.377	98.571	84.010
2008	87.977	89.170	101.524	83.783	96.400	95.658	99.131	85.751	105.708	100.125	82.828
2009	88.557	88.921	99.084	84.432	95.297	94.494	98.488	84.186	106.354	98.877	79.930
2010	89.618	90.514	100.533	86.077	93.688	93.026	96.695	83.502	102.543	98.593	79.643
2011	91.466	92.804	104.325	87.742	94.598	93.991	97.756	86.244	102.518	99.807	80.236
2012	93.176	94.534	105.620	89.648	95.797	95.241	99.130	90.209	103.088	100.292	81.006
2013	94.786	95.781	105.049	91.659	96.678	96.160	99.229	91.474	102.857	99.948	85.095
2014	96.436	97.121	104.542	93.795	98.331	97.922	100.170	96.213	102.124	100.326	89.986
2015	97.277	97.299	101.350	95.462	98.728	98.582	100.345	97.719	101.498	100.626	92.454
2016	98.208	98.284	99.710	97.629	98.549	98.550	99.380	97.668	100.206	99.453	95.699
2017	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
2018	102.290	102.047	100.811	102.626	101.539	101.568	100.427	101.174	99.921	100.582	105.640
2019	103.981	103.509	100.426	104.965	102.912	102.961	101.406	105.261	99.982	100.736	108.600
2020	105.398	104.666	99.666	107.088	104.118	104.245	101.970	106.852	99.461	101.897	112.510
2021	110.184	108.972	104.599	111.044	107.651	108.039	103.147	110.427	99.908	102.609	125.162
2022	118.035	116.100	113.639	117.130	115.821	116.507	109.323	128.372	106.065	103.551	141.779
2023	122.389	120.511	115.037	123.091	119.054	120.036	112.793	135.028	110.865	104.419	145.415
2024	125.430	123.666	114.538	128.119	121.014	122.085	114.324	134.698	113.173	106.144	149.655
2025 p	128.996	126.923	115.325	132.646	123.299	124.372	116.057	135.931	115.715	107.375	154.276
2022: I	115.162	113.582	111.224	114.564	112.778	113.264	106.618	121.339	103.206	102.875	136.505
II	117.760	115.658	113.951	116.294	115.278	115.945	108.739	126.538	105.439	103.553	141.252
III	119.042	116.986	114.600	117.976	117.210	117.896	110.547	131.501	107.049	104.163	143.774
IV	120.175	118.176	114.781	119.685	118.019	118.923	111.387	134.110	108.567	103.614	145.583
2023: I	121.291	119.308	115.002	121.287	118.839	119.763	112.712	135.680	110.390	104.366	144.286
II	121.933	120.190	115.094	122.575	118.694	119.636	112.643	135.325	110.463	104.281	143.922
III	122.923	120.999	115.194	123.749	119.031	120.027	112.662	133.969	111.162	104.340	145.957
IV	123.409	121.546	114.856	124.752	119.651	120.719	113.155	135.138	111.444	104.689	147.496
2024: I	124.366	122.622	114.707	126.454	119.914	120.943	113.378	134.336	112.427	104.751	147.707
II	125.167	123.409	114.817	127.586	120.695	121.751	114.073	134.935	112.956	105.638	148.968
III	125.715	123.930	114.349	128.613	121.426	122.557	114.705	134.704	113.547	106.706	150.504
IV	126.474	124.703	114.280	129.821	122.022	123.091	115.141	134.818	113.761	107.482	151.442
2025: I	127.597	125.759	114.911	131.096	122.244	123.316	115.091	135.174	113.939	107.051	152.891
II	128.266	126.424	114.969	132.075	122.330	123.375	114.985	134.818	114.879	106.117	153.712
III	129.457	127.293	115.424	133.155	123.740	124.819	116.427	135.946	116.517	107.503	155.052
IV p	130.664	128.214	115.996	134.256	124.884	125.979	117.725	137.785	117.527	108.828	155.450

See next page for continuation of table.

Table B–5. Chain-type price indexes for gross domestic product, 1975–2025—*Continued*

[Index numbers, 2017=100, except as noted; quarterly data seasonally adjusted]

Year or quarter	Exports and imports of goods and services		Government consumption expenditures and gross investment					Final sales of domestic product	Personal consumption expenditures excluding food and energy	Gross domestic purchases [1]	Percent change [2]			
				Federal							Gross domestic product	Personal consumption expenditures		Gross domestic purchases [1]
	Exports	Imports	Total	Total	National defense	Non-defense	State and local					Total	Excluding food and energy	
1975	51.491	46.087	22.297	26.785	26.442	27.411	19.421	27.609	26.899	27.815	9.3	8.3	8.4	9.1
1976	53.181	47.475	23.522	28.451	28.170	28.935	20.369	29.140	28.534	29.343	5.5	5.5	6.1	5.5
1977	55.348	51.658	24.977	30.201	30.015	30.477	21.636	30.962	30.369	31.278	6.2	6.5	6.4	6.6
1978	58.715	55.299	26.629	32.239	32.216	32.179	23.042	33.151	32.382	33.501	7.0	7.0	6.6	7.1
1979	65.787	64.761	28.820	34.664	34.765	34.353	25.077	35.899	34.743	36.440	8.3	8.9	7.3	8.8
1980	72.462	80.674	31.802	38.013	38.319	37.286	27.821	39.148	37.936	40.234	9.1	10.8	9.2	10.4
1981	77.828	85.035	34.959	41.563	41.995	40.574	30.731	42.834	41.260	43.945	9.4	9.0	8.8	9.2
1982	78.199	82.173	37.336	44.501	45.155	43.034	32.742	45.508	43.942	46.478	6.2	5.6	6.5	5.8
1983	78.518	79.093	38.781	45.977	46.824	44.065	34.189	47.289	46.191	48.095	3.9	4.3	5.1	3.5
1984	79.252	78.409	40.464	48.003	48.969	45.814	35.650	48.997	48.106	49.722	3.6	3.8	4.1	3.4
1985	76.893	75.834	41.718	49.022	49.794	47.327	37.102	50.578	50.060	51.200	3.2	3.5	4.1	3.0
1986	75.610	75.832	42.418	49.255	49.815	48.109	38.171	51.621	51.788	52.268	2.0	2.2	3.5	2.1
1987	77.280	80.416	43.564	49.597	50.173	48.415	39.953	52.888	53.460	53.747	2.5	3.1	3.2	2.8
1988	81.237	84.264	45.004	51.215	51.745	50.179	41.289	54.784	55.732	55.648	3.5	3.9	4.2	3.5
1989	82.583	86.106	46.723	52.646	53.147	51.695	43.244	56.938	58.045	57.838	3.9	4.4	4.2	3.9
1990	83.048	88.575	48.682	54.272	54.872	53.079	45.465	59.091	60.397	60.127	3.8	4.4	4.1	4.0
1991	83.974	87.837	50.450	56.224	56.601	55.584	47.130	61.086	62.554	62.015	3.4	3.3	3.6	3.1
1992	83.566	87.907	51.978	57.660	58.247	56.548	48.736	62.486	64.456	63.457	2.3	2.7	3.0	2.3
1993	83.704	87.234	53.203	58.918	59.147	58.565	49.950	63.972	66.206	64.890	2.4	2.5	2.7	2.3
1994	84.676	88.053	54.613	60.539	60.696	60.335	51.237	65.343	67.688	66.251	2.1	2.1	2.2	2.1
1995	86.569	90.466	56.163	62.413	62.422	62.496	52.602	66.722	69.163	67.680	2.1	2.1	2.2	2.2
1996	85.419	88.889	57.314	63.455	63.465	63.538	53.809	67.963	70.474	68.857	1.8	2.1	1.9	1.7
1997	83.914	85.800	58.439	64.436	64.350	64.698	55.006	69.162	71.718	69.873	1.7	1.7	1.8	1.5
1998	81.927	81.180	59.433	65.260	65.152	65.560	56.078	69.958	72.630	70.339	1.1	.8	1.3	.7
1999	81.311	81.664	61.422	66.872	66.801	67.112	58.231	70.955	73.583	71.410	1.4	1.5	1.3	1.5
2000	82.873	85.236	64.059	69.115	69.056	69.339	61.030	72.595	74.898	73.265	2.3	2.5	1.8	2.6
2001	82.223	83.031	65.909	70.395	70.365	70.576	63.128	74.272	76.317	74.690	2.3	2.0	1.9	1.9
2002	81.507	82.042	67.610	72.669	72.712	72.735	64.538	75.380	77.593	75.713	1.5	1.3	1.7	1.4
2003	82.800	84.523	70.091	75.849	76.317	75.221	66.646	76.898	78.845	77.355	2.0	2.1	1.6	2.2
2004	85.818	88.553	73.016	78.458	78.965	77.770	69.726	78.952	80.396	79.572	2.7	2.5	2.0	2.9
2005	88.784	93.764	76.726	81.723	82.562	80.461	73.667	81.426	82.158	82.346	3.1	2.9	2.2	3.5
2006	91.604	97.393	80.063	84.327	85.452	82.573	77.406	83.963	84.126	84.997	3.1	2.8	2.4	3.2
2007	95.059	100.794	83.653	86.829	88.071	84.879	81.603	86.244	86.001	87.308	2.7	2.6	2.2	2.7
2008	99.387	110.783	87.213	89.472	90.999	87.023	85.692	87.871	87.688	89.787	1.9	3.0	2.0	2.8
2009	93.484	98.534	86.836	89.279	90.352	87.637	85.201	88.429	88.503	89.397	.7	–.3	.9	–.4
2010	97.378	104.107	89.149	91.394	92.273	90.094	87.642	89.496	89.785	90.734	1.2	1.8	1.4	1.5
2011	103.508	112.040	91.861	93.900	94.979	92.262	90.494	91.352	91.209	92.921	2.1	2.5	1.6	2.4
2012	104.298	112.359	93.460	94.783	95.990	92.927	92.579	93.071	92.897	94.548	1.9	1.9	1.9	1.8
2013	104.457	110.894	95.634	95.597	96.459	94.308	95.654	94.690	94.285	95.908	1.7	1.3	1.5	1.4
2014	104.515	110.067	97.578	97.215	97.850	96.287	97.804	96.358	95.697	97.408	1.7	1.4	1.5	1.6
2015	99.455	101.283	97.581	97.609	98.053	96.968	97.567	97.246	96.874	97.593	.9	.2	1.2	.2
2016	97.457	97.825	97.766	98.205	98.419	97.897	97.505	98.207	98.426	98.241	1.0	1.0	1.6	.7
2017	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	1.8	1.7	1.6	1.8
2018	103.325	102.662	103.619	102.775	102.642	102.968	104.126	102.297	101.897	102.222	2.3	2.0	1.9	2.2
2019	102.829	100.999	105.155	104.352	104.067	104.767	105.638	103.993	103.573	103.680	1.7	1.4	1.6	1.4
2020	100.279	98.891	107.425	105.423	105.374	105.499	108.650	105.424	104.976	105.039	1.4	1.1	1.4	1.3
2021	111.820	106.032	113.177	108.918	109.225	108.518	115.855	110.258	108.705	109.457	4.5	4.1	3.6	4.2
2022	122.830	113.668	121.386	115.194	116.078	114.050	125.305	118.161	114.511	116.949	7.1	6.5	5.3	6.8
2023	120.949	111.357	124.745	120.003	120.888	118.857	127.744	122.576	119.289	120.982	3.7	3.8	4.2	3.4
2024	122.090	112.211	127.775	123.896	125.394	121.953	130.231	125.637	122.802	123.905	2.5	2.6	2.9	2.4
2025 p	124.080	112.746	132.231	130.361	130.911	129.711	133.445	129.210	126.263	127.181	2.8	2.6	2.8	2.6
2022: I	120.533	112.368	118.297	112.596	113.270	111.721	121.900	115.251	112.453	114.245	8.4	7.7	6.1	8.1
II	126.201	115.391	121.551	114.644	115.870	113.058	125.920	117.884	113.795	116.586	9.3	7.5	4.9	8.5
III	123.251	114.109	122.328	116.201	117.058	115.093	126.208	119.167	115.231	117.935	4.4	4.7	5.1	4.7
IV	121.335	112.803	123.369	117.334	118.113	116.328	127.190	120.342	116.565	119.032	3.9	4.1	4.7	3.8
2023: I	121.310	112.287	123.992	118.644	119.152	117.986	127.375	121.464	117.917	120.027	3.8	3.9	4.7	3.4
II	120.205	110.947	123.855	119.425	120.041	118.627	126.659	122.111	119.069	120.563	2.1	3.0	4.0	1.8
III	121.500	111.110	125.354	120.548	121.532	119.273	128.395	123.114	119.768	121.399	3.3	2.7	2.4	2.8
IV	120.781	111.085	125.777	121.396	122.828	119.540	128.548	123.613	120.403	121.939	1.6	1.8	2.1	1.8
2024: I	121.527	111.741	126.885	122.642	124.268	120.536	129.569	124.565	121.588	122.875	3.1	3.6	4.0	3.1
II	122.420	112.278	127.462	123.572	125.110	121.577	129.925	125.371	122.454	123.628	2.6	2.6	2.9	2.5
III	122.226	112.490	128.100	124.313	125.751	122.448	130.497	125.932	123.168	124.205	1.8	1.7	2.4	1.9
IV	122.187	112.333	128.654	125.055	126.447	123.251	130.931	126.680	123.997	124.912	2.4	2.5	2.7	2.3
2025: I	123.845	112.827	130.093	126.850	128.023	125.336	132.145	127.809	125.000	125.881	3.6	3.4	3.3	3.1
II	123.430	112.474	131.162	129.016	129.939	127.835	132.535	128.476	125.804	126.507	2.1	2.1	2.6	2.0
III	124.297	112.537	132.621	130.357	131.109	129.412	134.067	129.673	126.699	127.566	3.8	2.8	2.9	3.4
IV p	124.749	113.146	135.049	135.222	134.573	136.263	135.033	130.883	127.549	128.768	3.8	2.9	2.7	3.8

[1] Gross domestic product (GDP) less exports of goods and services plus imports of goods and services.
[2] Quarterly percent changes are at annual rates.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–6. Gross value added by sector, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Business[1]			Households and institutions			General government[3]			Addendum: Gross housing value added
		Total	Nonfarm[1]	Farm	Total	House-holds	Nonprofit institu-tions serving house-holds[2]	Total	Federal	State and local	
1975	1,684.9	1,284.8	1,239.2	45.6	151.6	93.7	58.0	248.4	110.5	138.0	121.3
1976	1,873.4	1,443.3	1,400.2	43.0	164.9	101.7	63.2	265.3	117.3	148.0	130.9
1977	2,081.8	1,616.2	1,572.7	43.5	179.9	110.7	69.2	285.7	125.2	160.6	144.2
1978	2,351.6	1,838.2	1,787.5	50.7	202.1	124.8	77.3	311.3	135.8	175.5	160.2
1979	2,627.3	2,062.8	2,002.7	60.1	226.3	139.5	86.9	338.2	145.4	192.8	177.7
1980	2,857.3	2,225.8	2,174.4	51.4	258.2	158.8	99.3	373.4	159.8	213.5	204.0
1981	3,207.0	2,502.0	2,437.0	65.0	291.6	179.2	112.4	413.5	178.3	235.2	231.6
1982	3,343.8	2,568.6	2,508.2	60.4	323.8	198.2	125.6	451.4	195.7	255.6	258.6
1983	3,634.0	2,801.9	2,757.0	44.9	352.5	213.6	138.9	479.7	207.1	272.6	280.6
1984	4,037.6	3,136.7	3,072.6	64.2	383.8	230.9	152.8	517.1	225.3	291.9	303.1
1985	4,339.0	3,369.6	3,305.9	63.7	411.8	248.2	163.6	557.5	240.0	317.6	333.8
1986	4,579.6	3,539.3	3,479.4	59.9	447.0	268.4	178.6	593.3	250.6	342.7	364.5
1987	4,855.2	3,735.2	3,673.2	62.0	489.5	289.8	199.7	630.4	261.0	369.4	392.1
1988	5,236.4	4,019.3	3,957.9	61.4	539.8	316.4	223.4	677.4	278.5	398.8	424.2
1989	5,641.6	4,326.7	4,252.8	73.9	586.0	341.4	244.6	728.8	292.8	436.1	452.7
1990	5,963.1	4,542.0	4,464.2	77.8	636.3	367.6	268.8	784.9	306.7	478.2	487.0
1991	6,158.1	4,645.0	4,574.7	70.4	677.3	386.6	290.7	835.8	323.5	512.2	515.3
1992	6,520.3	4,920.2	4,840.4	79.9	720.3	407.1	313.2	879.8	329.6	550.2	545.2
1993	6,858.6	5,177.4	5,106.2	71.3	772.8	437.6	335.1	908.3	331.5	576.9	578.4
1994	7,287.2	5,523.7	5,440.1	83.6	824.7	472.7	352.0	938.8	332.6	606.2	619.6
1995	7,639.7	5,795.1	5,726.7	68.4	877.8	506.9	370.9	966.9	333.0	633.9	662.6
1996	8,073.1	6,159.5	6,066.9	92.6	923.2	534.6	388.7	990.3	331.8	658.6	695.0
1997	8,577.6	6,578.8	6,490.6	88.1	975.9	565.7	410.2	1,022.9	333.5	689.3	731.9
1998	9,062.8	6,959.2	6,879.2	80.0	1,040.6	601.6	439.0	1,063.0	336.8	726.2	774.8
1999	9,631.2	7,401.8	7,330.2	71.7	1,111.2	644.0	467.2	1,118.1	345.0	773.1	825.1
2000	10,251.0	7,875.9	7,799.3	76.7	1,190.7	692.3	498.4	1,184.3	360.3	824.0	880.6
2001	10,581.9	8,057.7	7,978.6	79.0	1,271.7	748.9	522.8	1,252.6	370.3	882.3	947.7
2002	10,929.1	8,256.0	8,181.0	75.1	1,344.7	781.6	563.0	1,328.4	397.8	930.6	983.5
2003	11,456.5	8,642.9	8,550.4	92.4	1,408.8	814.1	594.6	1,404.8	434.7	970.1	1,014.8
2004	12,217.2	9,249.3	9,128.4	120.9	1,489.2	862.6	626.6	1,478.7	459.4	1,019.3	1,074.1
2005	13,039.2	9,911.0	9,804.7	106.3	1,572.8	922.3	650.5	1,555.4	488.4	1,067.0	1,149.7
2006	13,815.6	10,524.7	10,426.4	98.3	1,658.9	976.2	682.8	1,631.9	509.9	1,122.1	1,209.4
2007	14,474.2	10,997.8	10,880.0	117.9	1,749.5	1,035.9	713.6	1,726.9	535.7	1,191.2	1,279.3
2008	14,769.9	11,061.8	10,943.0	118.8	1,886.9	1,125.2	761.7	1,821.2	569.1	1,252.1	1,388.7
2009	14,478.1	10,659.6	10,557.1	102.5	1,934.9	1,136.8	798.2	1,883.5	603.0	1,280.5	1,415.5
2010	15,049.0	11,137.8	11,020.8	117.0	1,965.0	1,150.7	814.3	1,946.1	640.0	1,306.1	1,443.9
2011	15,599.7	11,614.9	11,463.7	151.1	2,012.0	1,164.0	848.0	1,972.9	659.8	1,313.1	1,471.0
2012	16,254.0	12,206.4	12,057.7	148.8	2,058.4	1,168.8	889.6	1,989.1	663.7	1,325.5	1,493.6
2013	16,880.7	12,723.8	12,539.3	184.5	2,117.2	1,203.0	914.2	2,039.7	658.6	1,381.1	1,534.5
2014	17,608.1	13,340.5	13,173.5	167.1	2,177.9	1,230.6	947.3	2,089.7	667.9	1,421.8	1,574.4
2015	18,295.0	13,900.9	13,754.7	146.3	2,251.0	1,260.3	990.6	2,143.1	674.6	1,468.5	1,618.6
2016	18,804.9	14,282.7	14,152.4	130.3	2,334.3	1,304.1	1,030.3	2,187.9	686.8	1,501.1	1,675.4
2017	19,612.1	14,941.9	14,803.1	138.7	2,423.2	1,359.3	1,063.9	2,247.0	702.1	1,544.9	1,734.0
2018	20,656.5	15,776.7	15,639.9	136.8	2,539.1	1,423.3	1,115.7	2,340.8	729.7	1,611.0	1,814.9
2019	21,540.0	16,469.3	16,346.7	122.6	2,657.2	1,485.6	1,171.6	2,413.4	751.7	1,661.7	1,908.4
2020	21,375.3	16,094.1	15,973.6	120.5	2,782.9	1,565.3	1,217.6	2,498.3	788.4	1,709.9	1,994.2
2021	23,725.6	18,211.7	18,026.0	185.7	2,920.7	1,648.3	1,272.4	2,593.2	826.6	1,766.6	2,102.9
2022	26,054.6	20,153.1	19,906.0	247.1	3,192.5	1,821.3	1,371.2	2,709.0	872.4	1,836.6	2,318.6
2023	27,811.5	21,469.5	21,251.3	218.2	3,460.1	2,004.4	1,455.7	2,881.9	929.1	1,952.8	2,561.0
2024	29,298.0	22,537.7	22,321.9	215.8	3,700.2	2,148.6	1,551.6	3,060.1	986.8	2,073.3	2,753.0
2025 *p*	30,767.1	23,669.4	23,448.7	220.7	3,897.2	2,265.3	1,631.9	3,200.5	1,029.2	2,171.3	2,902.7
2022: I	25,250.3	19,509.3	19,284.1	225.2	3,079.5	1,748.2	1,331.3	2,661.5	854.8	1,806.7	2,225.3
II	25,861.3	20,024.0	19,772.7	251.3	3,151.1	1,796.3	1,354.9	2,686.2	865.4	1,820.8	2,284.9
III	26,336.3	20,373.2	20,119.6	253.5	3,238.4	1,845.7	1,392.7	2,724.7	878.7	1,846.1	2,349.4
IV	26,770.5	20,706.0	20,447.7	258.3	3,301.0	1,894.8	1,406.1	2,763.5	890.7	1,872.8	2,414.7
2023: I	27,216.4	21,032.8	20,781.2	251.6	3,368.6	1,945.8	1,422.8	2,815.1	907.4	1,907.7	2,482.1
II	27,530.1	21,247.0	21,022.1	224.8	3,429.2	1,984.5	1,444.7	2,853.9	920.8	1,933.1	2,534.8
III	28,074.8	21,675.7	21,467.3	208.5	3,491.3	2,024.1	1,467.3	2,907.8	937.6	1,970.2	2,587.3
IV	28,424.7	21,922.6	21,734.7	187.9	3,551.3	2,063.3	1,488.0	2,950.8	950.6	2,000.2	2,639.6
2024: I	28,708.2	22,093.5	21,891.2	202.3	3,613.1	2,099.2	1,513.9	3,001.5	967.4	2,034.1	2,687.9
II	29,147.0	22,435.0	22,228.3	206.7	3,671.0	2,133.0	1,538.0	3,041.1	980.0	2,061.0	2,732.8
III	29,511.7	22,703.9	22,488.3	215.6	3,729.0	2,166.0	1,563.1	3,078.7	993.3	2,085.4	2,776.3
IV	29,825.2	22,918.4	22,679.7	238.7	3,787.7	2,196.4	1,591.3	3,119.1	1,006.4	2,112.8	2,814.9
2025: I	30,042.1	23,049.4	22,809.6	239.9	3,835.7	2,227.4	1,608.4	3,157.0	1,020.2	2,136.7	2,855.7
II	30,485.7	23,417.4	23,202.8	214.7	3,879.0	2,256.3	1,622.8	3,189.3	1,028.1	2,161.2	2,891.5
III	31,098.0	23,960.8	23,745.2	215.6	3,916.2	2,279.9	1,636.3	3,221.0	1,038.1	2,182.9	2,921.0
IV *p*	31,442.5	24,250.0	24,037.4	212.6	3,957.8	2,297.5	1,660.3	3,234.7	1,030.5	2,204.2	2,942.6

[1] Gross domestic business value added equals gross domestic product excluding gross value added of households and institutions and of general government. Nonfarm value added equals gross domestic business value added excluding gross farm value added.

[2] Equals compensation of employees of nonprofit institutions, the rental value of nonresidential fixed assets owned and used by nonprofit institutions serving households, and rental income of persons for tenant-occupied housing owned by nonprofit institutions.

[3] Equals compensation of general government employees plus general government consumption of fixed capital.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–7. Real gross value added by sector, 1975–2025

[Billions of chained (2017) dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Business[1]			Households and institutions			General government[3]			Addendum: Gross housing value added
		Total	Nonfarm[1]	Farm	Total	House-holds	Nonprofit institu-tions serving house-holds[2]	Total	Federal	State and local	
1975	6,060.9	3,992.9	3,945.4	42.6	904.3	531.5	369.0	1,421.0	509.4	905.9	696.2
1976	6,387.4	4,262.7	4,227.8	40.7	916.0	538.4	373.8	1,433.1	510.6	917.9	703.1
1977	6,682.8	4,506.8	4,470.2	42.9	923.2	538.3	381.6	1,448.1	512.7	932.2	713.2
1978	7,052.7	4,794.2	4,770.3	40.8	957.8	564.2	389.4	1,475.7	519.5	954.1	738.8
1979	7,276.0	4,964.5	4,932.3	44.5	984.4	575.7	404.9	1,492.2	520.6	971.5	753.1
1980	7,257.3	4,919.7	4,890.7	43.1	1,014.0	592.1	418.2	1,514.4	529.0	985.1	779.7
1981	7,441.5	5,063.2	5,002.0	57.1	1,033.5	598.6	431.7	1,525.1	537.9	984.9	795.0
1982	7,307.3	4,917.8	4,848.9	59.8	1,064.8	606.7	456.5	1,543.2	547.8	991.6	813.5
1983	7,642.3	5,178.5	5,150.1	41.0	1,108.7	630.4	476.9	1,556.5	561.6	987.7	845.0
1984	8,195.3	5,637.8	5,585.3	55.1	1,134.2	642.3	491.0	1,579.4	576.2	993.9	861.2
1985	8,537.0	5,900.7	5,831.8	65.0	1,153.9	656.9	495.5	1,627.1	594.6	1,022.5	896.8
1986	8,832.6	6,115.1	6,051.8	62.5	1,190.0	670.0	519.6	1,670.9	608.9	1,052.3	921.2
1987	9,137.7	6,334.2	6,271.3	63.1	1,234.6	687.0	548.5	1,712.2	628.1	1,073.2	942.6
1988	9,519.4	6,605.5	6,556.6	56.3	1,298.0	715.5	584.6	1,760.2	640.2	1,110.0	973.7
1989	9,869.0	6,858.3	6,796.9	64.4	1,350.7	737.7	616.2	1,803.3	650.0	1,144.2	994.1
1990	10,055.1	6,968.2	6,899.1	69.1	1,394.0	752.0	646.9	1,848.3	661.3	1,178.4	1,014.0
1991	10,044.2	6,925.7	6,856.1	69.3	1,422.6	763.6	664.6	1,867.1	665.0	1,193.9	1,034.7
1992	10,398.0	7,218.9	7,134.5	80.2	1,458.6	780.9	683.8	1,875.1	654.2	1,214.3	1,059.9
1993	10,684.2	7,424.8	7,354.4	71.2	1,533.7	818.8	721.6	1,879.6	643.3	1,231.0	1,097.9
1994	11,114.6	7,782.8	7,693.2	85.9	1,585.5	860.3	730.1	1,881.4	625.5	1,252.5	1,144.8
1995	11,413.0	8,022.0	7,957.5	68.4	1,632.7	890.1	747.0	1,884.2	605.5	1,277.3	1,185.6
1996	11,843.6	8,394.4	8,315.0	79.5	1,665.2	908.3	761.4	1,887.8	591.1	1,297.1	1,206.1
1997	12,370.3	8,835.1	8,744.4	88.6	1,716.4	934.1	787.4	1,902.2	581.4	1,322.7	1,235.1
1998	12,924.9	9,321.2	9,234.3	86.7	1,738.7	958.3	783.9	1,923.0	575.1	1,350.9	1,264.0
1999	13,543.8	9,859.2	9,771.4	88.2	1,779.1	989.0	792.6	1,939.8	570.4	1,373.2	1,299.7
2000	14,096.0	10,301.6	10,198.8	103.0	1,847.6	1,032.8	816.8	1,971.2	573.4	1,402.2	1,344.3
2001	14,230.7	10,363.5	10,266.6	97.2	1,893.5	1,070.7	823.7	2,005.7	575.0	1,435.6	1,386.9
2002	14,472.7	10,540.7	10,439.8	101.1	1,920.8	1,076.3	846.3	2,043.9	585.2	1,463.8	1,385.5
2003	14,877.3	10,873.0	10,763.5	109.7	1,961.9	1,107.7	855.5	2,069.7	601.0	1,473.2	1,409.2
2004	15,449.8	11,350.4	11,228.2	121.5	2,034.1	1,148.5	887.0	2,084.2	609.7	1,478.6	1,459.1
2005	15,988.0	11,796.2	11,667.5	127.9	2,101.3	1,202.8	898.9	2,103.0	617.5	1,489.3	1,528.8
2006	16,433.1	12,182.9	12,056.6	125.1	2,135.6	1,234.6	900.8	2,120.3	622.2	1,502.0	1,558.9
2007	16,762.4	12,441.8	12,330.8	110.3	2,174.4	1,264.1	909.8	2,150.3	630.8	1,523.5	1,589.1
2008	16,781.5	12,332.0	12,221.0	110.1	2,269.8	1,333.7	935.0	2,194.9	654.2	1,543.9	1,672.1
2009	16,349.1	11,882.3	11,754.4	126.8	2,256.0	1,307.7	947.8	2,234.8	686.9	1,549.8	1,655.4
2010	16,789.8	12,264.0	12,139.2	123.3	2,301.5	1,335.3	965.6	2,245.5	710.0	1,536.1	1,700.6
2011	17,052.4	12,507.6	12,389.8	118.0	2,328.3	1,335.3	992.8	2,235.3	716.7	1,518.6	1,710.8
2012	17,442.8	12,911.8	12,803.2	112.4	2,327.9	1,315.4	1,012.5	2,215.2	716.1	1,498.8	1,702.4
2013	17,812.2	13,267.3	13,139.5	126.5	2,351.5	1,330.7	1,020.8	2,201.6	704.6	1,497.0	1,715.7
2014	18,261.7	13,709.7	13,586.7	124.5	2,356.9	1,333.2	1,023.8	2,198.7	699.9	1,498.8	1,719.5
2015	18,799.6	14,222.0	14,087.6	134.8	2,371.9	1,330.9	1,041.0	2,206.4	695.9	1,510.4	1,718.4
2016	19,141.7	14,515.7	14,372.3	143.9	2,397.3	1,341.3	1,056.0	2,228.8	700.1	1,528.7	1,727.4
2017	19,612.1	14,941.9	14,803.1	138.7	2,423.2	1,359.3	1,063.9	2,247.0	702.1	1,544.9	1,734.0
2018	20,193.9	15,456.6	15,312.5	144.1	2,472.1	1,379.5	1,092.6	2,265.6	706.9	1,558.7	1,756.9
2019	20,715.7	15,917.4	15,784.7	131.4	2,505.9	1,393.9	1,112.0	2,293.6	716.3	1,577.3	1,783.9
2020	20,284.5	15,494.3	15,359.3	134.4	2,515.1	1,426.1	1,089.1	2,272.6	738.7	1,534.5	1,811.2
2021	21,532.4	16,678.8	16,532.2	146.2	2,577.2	1,472.1	1,105.5	2,284.6	749.5	1,536.0	1,872.9
2022	22,075.9	17,086.2	16,939.1	147.2	2,680.3	1,549.8	1,131.5	2,317.5	750.7	1,567.5	1,961.0
2023	22,723.7	17,616.2	17,466.9	149.8	2,746.7	1,587.3	1,160.3	2,369.2	760.0	1,610.0	2,013.0
2024	23,358.4	18,137.2	17,978.5	158.5	2,806.7	1,617.5	1,190.3	2,423.9	774.2	1,650.6	2,058.3
2025 ^{p}	23,853.0	18,592.1	18,436.3	157.1	2,850.1	1,647.3	1,203.8	2,423.4	750.8	1,674.6	2,096.6
2022: I	21,932.7	16,997.4	16,848.2	148.2	2,641.8	1,524.6	1,118.1	2,301.9	751.7	1,551.0	1,932.4
II	21,967.0	16,992.4	16,845.4	146.7	2,673.6	1,546.0	1,128.7	2,308.9	749.0	1,560.7	1,955.6
III	22,125.6	17,112.5	16,967.0	146.3	2,695.4	1,559.5	1,136.8	2,325.6	750.2	1,576.1	1,971.9
IV	22,278.3	17,242.4	17,095.9	147.7	2,710.3	1,568.9	1,142.4	2,333.4	752.0	1,582.2	1,984.2
2023: I	22,439.6	17,376.0	17,216.9	157.2	2,723.1	1,576.3	1,147.7	2,348.5	755.1	1,594.1	1,995.3
II	22,580.5	17,492.1	17,342.0	150.8	2,736.3	1,582.5	1,154.7	2,360.1	757.0	1,604.0	2,006.5
III	22,841.0	17,719.4	17,574.4	146.8	2,754.1	1,590.2	1,164.9	2,376.1	762.0	1,614.9	2,018.1
IV	23,033.8	17,877.1	17,734.3	144.5	2,773.2	1,600.3	1,174.0	2,392.3	766.1	1,627.0	2,032.3
2024: I	23,082.1	17,896.0	17,743.3	153.2	2,787.7	1,605.3	1,183.5	2,406.8	768.9	1,638.7	2,041.4
II	23,286.5	18,079.7	17,917.4	161.9	2,799.5	1,613.0	1,187.5	2,416.6	771.4	1,646.0	2,052.4
III	23,478.6	18,247.4	18,087.9	159.1	2,812.0	1,621.5	1,191.6	2,429.3	775.4	1,654.7	2,063.8
IV	23,586.5	18,325.6	18,165.3	159.8	2,827.7	1,630.4	1,198.4	2,443.1	781.0	1,662.9	2,075.4
2025: I	23,548.2	18,274.6	18,124.4	151.5	2,837.5	1,639.2	1,199.3	2,444.9	776.5	1,669.3	2,087.0
II	23,771.0	18,505.2	18,354.8	152.0	2,844.2	1,643.3	1,202.0	2,432.9	760.4	1,673.9	2,091.9
III	24,026.8	18,753.9	18,597.6	157.6	2,853.0	1,649.8	1,204.3	2,433.9	758.5	1,676.9	2,099.4
IV ^{p}	24,066.0	18,834.6	18,668.5	167.1	2,865.6	1,656.9	1,209.8	2,381.9	707.8	1,678.4	2,108.1

[1] Gross domestic business value added equals gross domestic product excluding gross value added of households and institutions and of general government. Nonfarm value added equals gross domestic business value added excluding gross farm value added.

[2] Equals compensation of employees of nonprofit institutions, the rental value of nonresidential fixed assets owned and used by nonprofit institutions serving households, and rental income of persons for tenant-occupied housing owned by nonprofit institutions.

[3] Equals compensation of general government employees plus general government consumption of fixed capital.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–8. Gross domestic product (GDP) by industry, value added, in current dollars and as a percentage of GDP, 2014–2025

[Billions of dollars; except as noted]

Year	Gross domestic product	Private industries: Total private industries	Private industries: Agriculture, forestry, fishing, and hunting	Private industries: Mining	Private industries: Construction	Private industries: Manufacturing: Total manufacturing	Private industries: Manufacturing: Durable goods	Private industries: Manufacturing: Nondurable goods	Private industries: Utilities	Private industries: Wholesale trade	Private industries: Retail trade
	Value added										
2014	17,608.1	15,332.5	200.6	418.1	649.9	2,009.7	1,106.1	903.6	299.3	1,092.1	1,018.2
2015	18,295.0	15,951.0	182.1	262.3	715.3	2,071.1	1,144.5	926.7	300.5	1,148.6	1,081.2
2016	18,804.9	16,413.1	167.5	211.8	776.8	2,035.2	1,139.9	895.4	303.4	1,142.9	1,133.2
2017	19,612.1	17,156.3	176.8	267.3	840.2	2,109.7	1,178.3	931.4	313.7	1,176.1	1,178.9
2018	20,656.5	18,097.8	177.1	313.5	889.1	2,261.8	1,232.5	1,029.3	320.4	1,222.1	1,223.6
2019	21,540.0	18,909.8	164.2	294.0	953.0	2,268.8	1,262.5	1,006.2	331.6	1,296.8	1,277.6
2020	21,375.3	18,664.0	164.4	202.8	958.7	2,156.8	1,201.0	955.7	345.8	1,302.3	1,335.2
2021	23,725.6	20,917.7	230.7	336.1	1,012.1	2,416.3	1,283.0	1,133.4	392.9	1,414.9	1,537.4
2022	26,054.6	23,128.9	294.0	466.9	1,112.4	2,668.2	1,393.3	1,274.9	440.8	1,594.4	1,647.8
2023	27,811.5	24,712.8	270.4	411.8	1,224.6	2,816.5	1,492.5	1,323.9	457.8	1,652.8	1,779.6
2024	29,298.0	26,001.7	269.7	404.2	1,305.4	2,880.7	1,524.8	1,355.9	454.4	1,706.3	1,849.0
2022: I	25,250.3	22,370.4	271.6	420.9	1,076.3	2,591.2	1,353.2	1,238.0	391.7	1,548.7	1,596.2
II	25,861.3	22,958.3	296.6	513.6	1,088.4	2,666.9	1,378.0	1,289.0	452.4	1,586.8	1,626.5
III	26,336.3	23,394.5	300.8	496.3	1,116.2	2,671.0	1,404.6	1,266.4	464.9	1,610.5	1,659.3
IV	26,770.5	23,792.3	307.1	436.9	1,168.7	2,743.7	1,437.4	1,306.4	454.1	1,631.8	1,709.3
2023: I	27,216.4	24,186.8	302.0	403.6	1,186.0	2,742.0	1,441.6	1,300.4	460.1	1,636.8	1,740.0
II	27,530.1	24,462.4	276.7	386.4	1,205.7	2,766.4	1,483.1	1,283.3	463.0	1,638.9	1,754.0
III	28,074.8	24,949.5	261.0	424.0	1,237.4	2,868.3	1,510.9	1,357.3	464.1	1,661.8	1,802.6
IV	28,424.7	25,252.4	242.0	433.2	1,269.1	2,889.3	1,534.6	1,354.8	443.9	1,673.6	1,821.7
2024: I	28,708.2	25,477.1	256.8	406.2	1,287.5	2,851.8	1,502.4	1,349.4	452.5	1,681.0	1,828.7
II	29,147.0	25,871.3	261.2	418.3	1,299.8	2,884.7	1,523.3	1,361.3	459.8	1,689.8	1,838.9
III	29,511.7	26,193.4	268.6	403.3	1,312.2	2,897.7	1,543.4	1,354.3	450.7	1,717.5	1,865.5
IV	29,825.2	26,464.8	292.1	389.2	1,322.1	2,888.7	1,530.2	1,358.5	454.4	1,736.9	1,863.1
2025: I	30,042.1	26,639.9	293.2	411.1	1,336.3	2,813.7	1,526.2	1,287.5	460.1	1,761.7	1,877.1
II	30,485.7	27,051.6	266.9	376.0	1,340.2	2,859.7	1,534.3	1,325.4	460.8	1,895.9	1,906.9
III	31,098.0	27,629.2	266.0	379.1	1,344.1	2,951.1	1,576.1	1,374.9	478.3	1,955.0	1,943.2
	Percent	Industry value added as a percentage of GDP (percent)									
2014	100.0	87.1	1.1	2.4	3.7	11.4	6.3	5.1	1.7	6.2	5.8
2015	100.0	87.2	1.0	1.4	3.9	11.3	6.3	5.1	1.6	6.3	5.9
2016	100.0	87.3	.9	1.1	4.1	10.8	6.1	4.8	1.6	6.1	6.0
2017	100.0	87.5	.9	1.4	4.3	10.8	6.0	4.7	1.6	6.0	6.0
2018	100.0	87.6	.9	1.5	4.3	10.9	6.0	5.0	1.6	5.9	5.9
2019	100.0	87.8	.8	1.4	4.4	10.5	5.9	4.7	1.5	6.0	5.9
2020	100.0	87.3	.8	.9	4.5	10.1	5.6	4.5	1.6	6.1	6.2
2021	100.0	88.2	1.0	1.4	4.3	10.2	5.4	4.8	1.7	6.0	6.5
2022	100.0	88.8	1.1	1.8	4.3	10.2	5.3	4.9	1.7	6.1	6.3
2023	100.0	88.9	1.0	1.5	4.4	10.1	5.4	4.8	1.6	5.9	6.4
2024	100.0	88.7	.9	1.4	4.5	9.8	5.2	4.6	1.6	5.8	6.3
2022: I	100.0	88.6	1.1	1.7	4.3	10.3	5.4	4.9	1.6	6.1	6.3
II	100.0	88.8	1.1	2.0	4.2	10.3	5.3	5.0	1.7	6.1	6.3
III	100.0	88.8	1.1	1.9	4.2	10.1	5.3	4.8	1.8	6.1	6.3
IV	100.0	88.9	1.1	1.6	4.4	10.2	5.4	4.9	1.7	6.1	6.4
2023: I	100.0	88.9	1.1	1.5	4.4	10.1	5.3	4.8	1.7	6.0	6.4
II	100.0	88.9	1.0	1.4	4.4	10.0	5.4	4.7	1.7	6.0	6.4
III	100.0	88.9	.9	1.5	4.4	10.2	5.4	4.8	1.7	5.9	6.4
IV	100.0	88.8	.9	1.5	4.5	10.2	5.4	4.8	1.6	5.9	6.4
2024: I	100.0	88.7	.9	1.4	4.5	9.9	5.2	4.7	1.6	5.9	6.4
II	100.0	88.8	.9	1.4	4.5	9.9	5.2	4.7	1.6	5.8	6.3
III	100.0	88.8	.9	1.4	4.4	9.8	5.2	4.6	1.5	5.8	6.3
IV	100.0	88.7	1.0	1.3	4.4	9.7	5.1	4.6	1.5	5.8	6.2
2025: I	100.0	88.7	1.0	1.4	4.4	9.4	5.1	4.3	1.5	5.9	6.2
II	100.0	88.7	.9	1.2	4.4	9.4	5.0	4.3	1.5	6.2	6.3
III	100.0	88.8	.9	1.2	4.3	9.5	5.1	4.4	1.5	6.3	6.2

[1] Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

[2] Consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance, insurance, real estate, rental, and leasing; professional and business services; educational services, health care, and social assistance; arts, entertainment, recreation, accommodation, and food services; and other services, except government.

Note: Data shown in shown in Tables B–8 and B–9 are consistent with the annual revision of the industry accounts released in September 2025. For details see *Survey of Current Business*, November 2025.

See next page for continuation of table.

TABLE B–8. Gross domestic product (GDP) by industry, value added, in current dollars and as a percentage of GDP, 2014–2025—*Continued*

[Billions of dollars; except as noted]

Year	Private industries—Continued							Government	Private goods-producing industries[1]	Private services-producing industries[2]
	Transportation and warehousing	Information	Finance, insurance, real estate, rental, and leasing	Professional and business services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other services, except government			
	Value added									
2014	533.6	848.8	3,569.9	2,120.1	1,495.0	692.5	384.7	2,275.6	3,278.3	12,054.2
2015	583.9	913.1	3,728.6	2,237.0	1,574.9	748.8	403.5	2,344.0	3,230.9	12,720.1
2016	603.0	974.9	3,894.7	2,305.0	1,657.0	791.8	415.9	2,391.9	3,191.3	13,221.7
2017	635.5	1,010.0	4,033.0	2,433.6	1,716.9	831.2	433.2	2,455.8	3,394.1	13,762.2
2018	677.3	1,041.5	4,258.2	2,589.1	1,792.0	874.6	457.7	2,558.8	3,641.5	14,456.3
2019	710.0	1,142.6	4,458.1	2,728.9	1,884.2	922.2	477.9	2,630.2	3,680.0	15,229.8
2020	639.6	1,181.8	4,633.8	2,727.6	1,870.7	693.8	450.6	2,711.3	3,482.6	15,181.3
2021	779.3	1,312.6	5,014.6	3,071.1	2,004.1	911.0	484.5	2,807.9	3,995.3	16,922.5
2022	912.1	1,383.5	5,455.1	3,374.3	2,159.1	1,070.3	549.8	2,925.7	4,541.6	18,587.3
2023	946.1	1,491.3	5,883.4	3,609.8	2,360.1	1,219.5	589.2	3,098.7	4,723.3	19,989.5
2024	987.3	1,592.7	6,281.6	3,811.1	2,544.2	1,287.1	628.0	3,296.3	4,860.1	21,141.6
2022: I	879.6	1,350.8	5,314.8	3,293.0	2,104.8	1,004.1	526.7	2,879.9	4,360.1	18,010.3
II	905.8	1,370.7	5,399.2	3,333.8	2,125.2	1,053.6	538.6	2,903.0	4,565.7	18,392.6
III	929.9	1,394.0	5,512.3	3,406.3	2,180.6	1,095.6	556.9	2,941.8	4,584.3	18,810.3
IV	933.2	1,418.5	5,594.1	3,464.2	2,226.0	1,127.7	576.9	2,978.2	4,656.5	19,135.8
2023: I	942.9	1,439.8	5,745.5	3,533.3	2,291.7	1,181.7	581.6	3,029.6	4,633.6	19,553.2
II	949.8	1,472.7	5,822.0	3,595.7	2,337.2	1,208.0	586.0	3,067.6	4,635.1	19,827.3
III	938.5	1,516.7	5,937.2	3,632.8	2,381.2	1,234.4	589.4	3,125.3	4,790.8	20,158.7
IV	953.1	1,535.9	6,029.2	3,677.6	2,430.3	1,253.8	599.7	3,172.3	4,833.6	20,418.8
2024: I	965.4	1,553.3	6,124.9	3,716.3	2,476.9	1,266.0	609.8	3,231.0	4,802.3	20,674.8
II	984.6	1,580.9	6,248.5	3,776.2	2,520.8	1,284.5	623.3	3,275.7	4,863.9	21,007.4
III	996.9	1,610.2	6,330.7	3,844.5	2,567.3	1,293.1	635.1	3,318.3	4,881.9	21,311.5
IV	1,002.3	1,626.4	6,422.2	3,907.4	2,611.6	1,304.9	643.7	3,360.3	4,892.1	21,572.7
2025: I	1,011.7	1,633.8	6,511.4	3,933.4	2,651.4	1,306.2	638.9	3,402.2	4,854.2	21,785.7
II	1,016.1	1,666.3	6,620.9	3,980.2	2,697.4	1,324.5	639.7	3,434.1	4,842.9	22,208.7
III	1,033.7	1,718.8	6,755.0	4,068.5	2,741.0	1,339.8	655.8	3,468.8	4,940.3	22,689.0
	Industry value added as a percentage of GDP (percent)									
2014	3.0	4.8	20.3	12.0	8.5	3.9	2.2	12.9	18.6	68.5
2015	3.2	5.0	20.4	12.2	8.6	4.1	2.2	12.8	17.7	69.5
2016	3.2	5.2	20.7	12.3	8.8	4.2	2.2	12.7	17.0	70.3
2017	3.2	5.1	20.6	12.4	8.8	4.2	2.2	12.5	17.3	70.2
2018	3.3	5.0	20.6	12.5	8.7	4.2	2.2	12.4	17.6	70.0
2019	3.3	5.3	20.7	12.7	8.7	4.3	2.2	12.2	17.1	70.7
2020	3.0	5.5	21.7	12.8	8.8	3.2	2.1	12.7	16.3	71.0
2021	3.3	5.5	21.1	12.9	8.4	3.8	2.0	11.8	16.8	71.3
2022	3.5	5.3	20.9	13.0	8.3	4.1	2.1	11.2	17.4	71.3
2023	3.4	5.4	21.2	13.0	8.5	4.4	2.1	11.1	17.0	71.9
2024	3.4	5.4	21.4	13.0	8.7	4.4	2.1	11.3	16.6	72.2
2022: I	3.5	5.3	21.0	13.0	8.3	4.0	2.1	11.4	17.3	71.3
II	3.5	5.3	20.9	12.9	8.2	4.1	2.1	11.2	17.7	71.1
III	3.5	5.3	20.9	12.9	8.3	4.2	2.1	11.2	17.4	71.4
IV	3.5	5.3	20.9	12.9	8.3	4.2	2.2	11.1	17.4	71.5
2023: I	3.5	5.3	21.1	13.0	8.4	4.3	2.1	11.1	17.0	71.8
II	3.5	5.3	21.1	13.1	8.5	4.4	2.1	11.1	16.8	72.0
III	3.3	5.4	21.1	12.9	8.5	4.4	2.1	11.1	17.1	71.8
IV	3.4	5.4	21.2	12.9	8.5	4.4	2.1	11.2	17.0	71.8
2024: I	3.4	5.4	21.3	12.9	8.6	4.4	2.1	11.3	16.7	72.0
II	3.4	5.4	21.4	13.0	8.6	4.4	2.1	11.2	16.7	72.1
III	3.4	5.5	21.5	13.0	8.7	4.4	2.2	11.2	16.5	72.2
IV	3.4	5.5	21.5	13.1	8.8	4.4	2.2	11.3	16.4	72.3
2025: I	3.4	5.4	21.7	13.1	8.8	4.3	2.1	11.3	16.2	72.5
II	3.3	5.5	21.7	13.1	8.8	4.3	2.1	11.3	15.9	72.8
III	3.3	5.5	21.7	13.1	8.8	4.3	2.1	11.2	15.9	73.0

Note (cont'd): Value added is the contribution of each private industry and of government to GDP. Value added is equal to an industry's gross output minus its intermediate inputs. Current-dollar value added is calculated as the sum of distributions by an industry to its labor and capital, which are derived from the components of gross domestic income.

Value added industry data shown in Tables B–8 and B–9 are based on the 2017 North American Industry Classification System (NAICS).

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–9. Real gross domestic product by industry, value added, and percent changes, 2014–2025

Year	Gross domestic product	Private industries: Total private industries	Agriculture, forestry, fishing, and hunting	Mining	Construction	Manufacturing: Total manufacturing	Durable goods	Nondurable goods	Utilities	Wholesale trade	Retail trade
	Chain-type quantity indexes for value added (2017=100)										
2014	93.115	92.449	89.904	100.047	85.837	97.133	95.920	98.686	93.312	95.876	85.421
2015	95.857	95.558	97.033	106.970	90.977	97.870	96.741	99.316	94.652	100.243	89.904
2016	97.601	97.403	102.656	97.872	95.732	97.138	96.362	98.128	99.951	99.410	95.177
2017	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
2018	102.967	103.238	104.108	103.633	102.801	104.897	104.189	105.774	98.584	100.829	103.490
2019	105.627	106.179	97.534	116.893	105.007	105.456	105.402	105.523	99.620	101.872	106.343
2020	103.428	103.868	100.606	114.466	102.763	101.456	99.871	103.501	105.629	102.383	104.450
2021	109.791	111.058	106.807	104.651	105.337	109.010	107.229	111.334	103.147	101.375	105.075
2022	112.563	114.021	107.324	95.387	98.846	108.104	107.434	109.171	104.311	99.842	102.179
2023	115.866	117.695	110.268	132.013	98.912	108.642	107.305	110.460	110.212	98.377	112.941
2024	119.102	121.059	116.192	135.699	103.725	111.927	106.967	118.100	112.662	97.676	124.649
2022: I	111.833	113.234	107.139	91.742	103.853	109.292	108.133	110.918	106.290	100.127	99.213
II	112.008	113.388	106.668	88.499	99.644	107.796	108.032	107.877	105.139	98.593	100.746
III	112.816	114.271	107.217	94.604	95.923	107.512	106.839	108.570	102.052	99.915	102.615
IV	113.595	115.191	108.274	106.704	95.962	107.815	106.731	109.317	103.764	100.734	106.140
2023: I	114.417	116.119	113.983	116.647	96.497	105.438	105.518	105.612	105.502	99.997	109.306
II	115.136	116.917	110.707	133.454	97.476	107.282	107.146	107.689	117.000	98.168	109.675
III	116.464	118.375	108.509	138.780	100.249	110.148	107.784	113.154	107.228	97.862	114.822
IV	117.447	119.369	107.872	139.170	101.427	111.701	108.773	115.384	111.116	97.481	117.960
2024: I	117.693	119.567	113.821	135.241	102.737	109.689	105.395	115.033	111.012	97.106	122.546
II	118.735	120.706	118.717	135.608	103.539	112.284	106.868	119.019	112.793	97.338	122.915
III	119.715	121.715	115.909	136.901	103.838	113.237	108.201	119.502	112.311	98.085	126.899
IV	120.265	122.249	116.323	135.048	104.788	112.500	107.403	118.846	114.532	98.176	126.236
2025: I	120.070	122.004	111.058	128.386	105.011	110.804	106.852	115.703	113.084	97.449	124.854
II	121.206	123.416	110.860	136.816	106.035	113.996	109.142	120.043	108.584	98.418	122.198
III	122.510	124.922	113.478	138.255	105.814	115.399	111.882	119.774	112.698	99.683	124.391
	Percent change from year earlier; quarterly changes at seasonally adjusted annual rates										
2014	2.5	2.9	–0.9	10.6	3.4	0.9	0.9	1.0	–3.7	4.0	3.0
2015	2.9	3.4	7.9	6.9	6.0	.8	.9	.6	1.4	4.6	5.2
2016	1.8	1.9	5.8	–8.5	5.2	–.7	–.4	–1.2	5.6	–.8	5.9
2017	2.5	2.7	–2.6	2.2	4.5	2.9	3.8	1.9	.0	.6	5.1
2018	3.0	3.2	4.1	3.6	2.8	4.9	4.2	5.8	–1.4	.8	3.5
2019	2.6	2.8	–6.3	12.8	2.1	.5	1.2	–.2	1.1	1.0	2.8
2020	–2.1	–2.2	3.1	–2.1	–2.1	–3.8	–5.2	–1.9	6.0	.5	–1.8
2021	6.2	6.9	6.2	–8.6	2.5	7.4	7.4	7.6	–2.3	–1.0	.6
2022	2.5	2.7	.5	–8.9	–6.2	–.8	.2	–1.9	1.1	–1.5	–2.8
2023	2.9	3.2	2.7	38.4	.1	.5	–.1	1.2	5.7	–1.5	10.5
2024	2.8	2.9	5.4	2.8	4.9	3.0	–.3	6.9	2.2	–.7	10.4
2022: I	–1.0	–1.4	–8.6	–28.0	6.1	–7.8	–1.5	–14.2	.7	–1.9	–11.9
II	.6	.5	–1.7	–13.4	–15.3	–5.4	–.4	–10.5	–4.3	–6.0	6.3
III	2.9	3.2	2.1	30.6	–14.1	–1.0	–4.3	2.6	–11.2	5.5	7.6
IV	2.8	3.3	4.0	61.8	.2	1.1	–.4	2.8	6.9	3.3	14.5
2023: I	2.9	3.3	22.8	42.8	2.2	–8.5	–4.5	–12.9	6.9	–2.9	12.5
II	2.5	2.8	–11.0	71.3	4.1	7.2	6.3	8.1	51.3	–7.1	1.4
III	4.7	5.1	–7.7	16.9	11.9	11.1	2.4	21.9	–29.5	–1.2	20.1
IV	3.4	3.4	–2.3	1.1	4.8	5.8	3.7	8.1	15.3	–1.5	11.4
2024: I	.8	.7	24.0	–10.8	5.3	–7.0	–11.9	–1.2	–.4	–1.5	16.5
II	3.6	3.9	18.3	1.1	3.2	9.8	5.7	14.6	6.6	1.0	1.2
III	3.3	3.4	–9.1	3.9	1.2	3.4	5.1	1.6	–1.7	3.1	13.6
IV	1.9	1.8	1.4	–5.3	3.7	–2.6	–2.9	–2.2	8.1	.4	–2.1
2025: I	–.6	–.8	–16.9	–18.3	.9	–5.9	–2.0	–10.2	–5.0	–2.9	–4.3
II	3.8	4.7	–.7	29.0	4.0	12.0	8.9	15.9	–15.0	4.0	–8.2
III	4.4	5.0	9.8	4.3	–.8	5.0	10.4	–.9	16.0	5.2	7.4

[1] Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.
[2] Consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance, insurance, real estate, rental, and leasing; professional and business services; educational services, health care, and social assistance; arts, entertainment, recreation, accommodation, and food services; and other services, except government.

See next page for continuation of table.

Table B–9. Real gross domestic product by industry, value added, and percent changes, 2014–2025—*Continued*

Year	Private industries—Continued							Govern-ment	Private goods-producing industries[1]	Private services-producing industries[2]
	Transpor-tation and ware-housing	Information	Finance, insurance, real estate, rental, and leasing	Profes-sional and business services	Educational services, health care, and social assistance	Arts, entertain-ment, recreation, accommo-dation, and food services	Other services, except govern-ment			
	Chain-type quantity indexes for value added (2017=100)									
2014	89.654	77.904	97.903	90.213	91.582	92.798	96.172	98.349	94.046	92.052
2015	93.015	86.201	99.046	93.361	95.191	95.785	97.869	98.176	96.782	95.256
2016	95.017	93.855	99.735	95.354	97.998	97.476	97.946	98.986	97.124	97.471
2017	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
2018	103.487	105.547	101.493	106.203	102.806	101.915	103.209	101.110	104.232	102.991
2019	103.692	116.604	103.760	111.450	106.028	104.062	103.662	101.770	105.875	106.251
2020	95.112	121.442	105.323	110.990	102.707	76.421	93.451	100.442	102.773	104.130
2021	108.799	137.977	111.500	125.451	107.304	95.579	96.426	101.271	107.773	111.842
2022	109.369	148.150	115.693	135.795	113.121	103.921	100.903	102.679	104.723	116.352
2023	112.149	160.049	117.178	139.694	118.426	107.677	95.700	103.378	108.518	119.987
2024	115.570	168.743	118.732	142.542	123.450	108.017	94.643	105.616	112.447	123.204
2022: I	109.518	144.351	115.286	133.330	111.462	99.807	100.380	102.342	106.294	114.932
II	108.880	146.716	115.679	134.691	112.305	104.332	101.217	102.688	103.933	115.762
III	109.223	149.616	116.202	136.712	113.990	106.195	101.278	102.888	103.589	116.978
IV	109.855	151.915	115.605	138.449	114.729	105.350	100.737	102.795	105.075	117.736
2023: I	110.127	154.282	116.721	138.861	116.991	107.730	98.422	102.826	105.037	118.917
II	112.288	157.409	116.461	139.456	117.601	106.873	95.941	102.933	107.421	119.290
III	112.529	163.360	117.571	139.768	118.865	108.284	93.904	103.450	110.171	120.409
IV	113.652	165.144	117.959	140.690	120.248	107.823	94.532	104.302	111.441	121.331
2024: I	114.139	165.786	117.532	141.116	121.237	107.525	94.232	104.854	110.659	121.784
II	114.701	167.491	118.714	141.816	122.804	108.018	94.047	105.186	112.728	122.691
III	115.859	170.187	118.908	143.132	124.238	108.266	95.170	105.882	113.331	123.804
IV	117.582	171.508	119.776	144.103	125.520	108.259	95.123	106.543	113.070	124.538
2025: I	115.703	175.022	120.713	144.485	126.624	106.345	92.692	106.858	111.356	124.660
II	117.082	180.379	122.283	146.078	127.794	107.963	92.417	106.001	114.098	125.748
III	118.960	184.979	123.251	147.864	129.269	109.144	93.302	105.925	115.103	127.376
	Percent change from year earlier; quarterly changes at seasonally adjusted annual rates									
2014	4.0	3.2	2.3	4.5	2.1	3.8	4.6	–0.1	2.5	3.0
2015	3.7	10.7	1.2	3.5	3.9	3.2	1.8	–.2	2.9	3.5
2016	2.2	8.9	.7	2.1	2.9	1.8	.1	.8	.4	2.3
2017	5.2	6.5	.3	4.9	2.0	2.6	2.1	1.0	3.0	2.6
2018	3.5	5.5	1.5	6.2	2.8	1.9	3.2	1.1	4.2	3.0
2019	.2	10.5	2.2	4.9	3.1	2.1	.4	.7	1.6	3.2
2020	–8.3	4.1	1.5	–.4	–3.1	–26.6	–9.9	–1.3	–2.9	–2.0
2021	14.4	13.6	5.9	13.0	4.5	25.1	3.2	.8	4.9	7.4
2022	.5	7.4	3.8	8.2	5.4	8.7	4.6	1.4	–2.8	4.0
2023	2.5	8.0	1.3	2.9	4.7	3.6	–5.2	.7	3.6	3.1
2024	3.1	5.4	1.3	2.0	4.2	.3	–1.1	2.2	3.6	2.7
2022: I	–10.7	–3.0	1.6	5.2	7.4	–6.5	8.2	2.1	–7.0	.0
II	–2.3	6.7	1.4	4.1	3.1	19.4	3.4	1.4	–8.6	2.9
III	1.3	8.1	1.8	6.1	6.1	7.3	.2	.8	–1.3	4.3
IV	2.3	6.3	–2.0	5.2	2.6	–3.1	–2.1	–.4	5.9	2.6
2023: I	1.0	6.4	3.9	1.2	8.1	9.3	–8.9	.1	–.1	4.1
II	8.1	8.4	–.9	1.7	2.1	–3.1	–9.7	.4	9.4	1.3
III	.9	16.0	3.9	.9	4.4	5.4	–8.2	2.0	10.6	3.8
IV	4.1	4.4	1.3	2.7	4.7	–1.7	2.7	3.3	4.7	3.1
2024: I	1.7	1.6	–1.4	1.2	3.3	–1.1	–1.3	2.1	–2.8	1.5
II	2.0	4.2	4.1	2.0	5.3	1.8	–.8	1.3	7.7	3.0
III	4.1	6.6	.7	3.8	4.8	.9	4.9	2.7	2.2	3.7
IV	6.1	3.1	3.0	2.7	4.2	.0	–.2	2.5	–.9	2.4
2025: I	–6.2	8.5	3.2	1.1	3.6	–6.9	–9.8	1.2	–5.9	.4
II	4.9	12.8	5.3	4.5	3.7	6.2	–1.2	–3.2	10.2	3.5
III	6.6	10.6	3.2	5.0	4.7	4.4	3.9	–.3	3.6	5.3

Note: Data are based on the 2017 North American Industry Classification System (NAICS).

See Note, Table B–8.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–10. Personal consumption expenditures, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Personal consumption expenditures	Goods						Services					Addendum: Personal consumption expenditures excluding food and energy[2]
		Total	Durable		Nondurable			Total	Household consumption expenditures				
			Total[1]	Motor vehicles and parts	Total[1]	Food and beverages purchased for off-premises consumption	Gasoline and other energy goods		Total[1]	Housing and utilities	Health care	Financial services and insurance	
1975	1,030.5	491.3	142.2	52.6	349.2	156.6	48.0	539.2	522.2	176.5	89.0	51.8	797.3
1976	1,147.7	546.3	168.6	68.2	377.7	167.3	53.0	601.4	582.4	194.7	101.8	56.8	894.7
1977	1,274.0	600.4	192.0	79.8	408.4	179.8	57.8	673.6	653.0	217.8	115.7	65.1	998.6
1978	1,422.3	663.6	213.3	89.2	450.2	196.1	61.5	758.7	735.7	244.3	131.2	76.7	1,122.4
1979	1,585.4	737.9	226.3	90.2	511.6	218.4	80.4	847.5	821.4	273.4	148.8	83.6	1,239.7
1980	1,750.7	799.8	226.4	84.4	573.4	239.2	101.9	950.9	920.8	312.5	171.7	91.7	1,353.1
1981	1,934.0	869.4	243.9	93.0	625.4	255.3	113.4	1,064.6	1,030.4	352.1	201.9	98.5	1,501.5
1982	2,071.3	899.3	253.0	100.0	646.3	267.1	108.4	1,172.0	1,134.0	387.5	225.2	113.7	1,622.9
1983	2,281.6	973.8	295.0	122.9	678.8	277.0	106.5	1,307.8	1,267.1	421.2	253.1	141.0	1,817.2
1984	2,492.3	1,063.7	342.2	147.2	721.5	291.1	108.2	1,428.6	1,383.3	457.5	276.5	150.8	2,008.1
1985	2,712.8	1,137.6	380.4	170.1	757.2	303.0	110.5	1,575.2	1,527.3	500.6	302.2	178.2	2,210.3
1986	2,886.3	1,195.6	421.4	187.5	774.2	316.4	91.2	1,690.7	1,638.0	537.0	330.2	187.7	2,391.3
1987	3,076.3	1,256.3	442.0	188.2	814.3	324.3	96.4	1,820.0	1,764.3	571.6	366.0	189.5	2,566.6
1988	3,330.0	1,337.3	475.1	202.2	862.3	342.8	99.9	1,992.7	1,929.4	614.4	410.1	202.9	2,793.1
1989	3,576.8	1,423.8	494.3	207.8	929.5	365.4	110.4	2,153.0	2,084.9	655.2	451.2	222.3	3,002.1
1990	3,809.0	1,491.3	497.1	205.1	994.2	391.2	124.2	2,317.7	2,241.8	696.5	506.2	230.8	3,194.9
1991	3,943.4	1,497.4	477.2	185.7	1,020.3	403.0	121.1	2,446.0	2,365.9	735.2	555.8	250.1	3,314.4
1992	4,197.6	1,563.3	508.1	204.8	1,055.2	404.5	125.0	2,634.3	2,546.4	771.1	612.8	277.0	3,561.7
1993	4,452.0	1,642.3	551.5	224.7	1,090.8	413.5	126.9	2,809.6	2,719.6	814.9	648.8	314.0	3,796.6
1994	4,721.0	1,746.6	607.2	249.8	1,139.4	432.1	129.2	2,974.4	2,876.6	863.3	680.5	327.9	4,042.5
1995	4,962.6	1,815.5	635.7	255.7	1,179.8	443.7	133.4	3,147.1	3,044.7	913.7	719.9	347.0	4,267.2
1996	5,244.6	1,917.7	676.3	273.5	1,241.4	461.9	144.7	3,326.9	3,216.9	962.4	752.1	372.1	4,513.0
1997	5,536.8	2,006.5	715.5	293.1	1,291.0	474.8	147.7	3,530.3	3,424.7	1,009.8	790.9	408.9	4,787.8
1998	5,877.2	2,108.4	779.3	320.2	1,329.1	487.4	132.4	3,768.8	3,645.0	1,065.5	832.0	446.1	5,132.4
1999	6,283.8	2,287.1	855.6	350.7	1,431.5	515.5	146.5	3,996.7	3,858.5	1,123.1	863.6	484.6	5,495.9
2000	6,767.2	2,453.2	912.6	363.2	1,540.6	540.6	184.5	4,314.0	4,156.0	1,198.6	918.4	541.9	5,904.5
2001	7,073.8	2,525.6	941.5	383.3	1,584.1	564.0	178.0	4,548.2	4,369.1	1,287.5	996.6	529.3	6,182.2
2002	7,348.9	2,598.8	985.4	401.3	1,613.4	575.1	167.9	4,750.1	4,551.8	1,329.5	1,082.9	539.0	6,460.4
2003	7,740.7	2,722.6	1,017.8	401.5	1,704.8	599.6	196.4	5,018.2	4,812.6	1,391.1	1,154.0	574.2	6,784.4
2004	8,232.0	2,902.0	1,080.6	409.3	1,821.4	632.6	232.7	5,329.9	5,123.6	1,466.6	1,238.9	619.3	7,198.5
2005	8,769.1	3,082.9	1,128.6	410.0	1,954.3	668.2	283.8	5,686.1	5,475.9	1,580.1	1,320.5	676.8	7,627.2
2006	9,277.2	3,239.7	1,158.3	394.9	2,081.3	700.3	319.7	6,037.6	5,798.4	1,665.7	1,391.9	719.5	8,056.6
2007	9,746.6	3,367.0	1,188.0	400.6	2,179.0	737.3	345.5	6,379.6	6,130.8	1,759.6	1,478.2	762.7	8,453.5
2008	10,050.1	3,363.2	1,098.8	343.3	2,264.5	769.1	391.1	6,686.9	6,399.6	1,872.7	1,555.3	777.5	8,666.3
2009	9,891.2	3,180.0	1,012.1	318.6	2,167.9	772.9	287.0	6,711.2	6,422.0	1,900.0	1,632.7	720.5	8,616.1
2010	10,260.3	3,317.8	1,049.0	344.5	2,268.9	786.9	336.7	6,942.4	6,648.0	1,947.9	1,699.6	768.0	8,915.3
2011	10,698.9	3,518.1	1,093.5	365.2	2,424.6	819.5	413.8	7,180.7	6,868.9	1,983.3	1,757.1	811.1	9,246.6
2012	11,047.4	3,637.7	1,144.2	396.6	2,493.5	846.2	421.9	7,409.6	7,068.1	2,014.7	1,821.3	830.9	9,571.6
2013	11,388.2	3,742.2	1,191.8	422.1	2,550.4	870.5	421.6	7,646.1	7,298.7	2,085.7	1,863.8	870.8	9,876.2
2014	11,874.5	3,886.6	1,247.3	451.6	2,639.3	910.4	410.9	7,987.9	7,634.6	2,146.0	1,945.5	925.6	10,321.0
2015	12,297.4	3,955.1	1,315.8	490.7	2,639.3	942.0	318.8	8,342.3	7,978.5	2,196.1	2,059.8	976.8	10,811.0
2016	12,726.8	4,033.0	1,356.5	504.6	2,676.5	969.6	287.0	8,693.8	8,305.5	2,269.0	2,164.6	996.1	11,249.4
2017	13,290.6	4,212.2	1,415.9	529.4	2,796.3	1,010.4	324.0	9,078.4	8,682.0	2,350.2	2,245.3	1,073.2	11,730.3
2018	13,934.4	4,414.2	1,488.8	550.0	2,925.4	1,044.4	366.7	9,520.2	9,099.3	2,459.3	2,344.7	1,130.9	12,278.0
2019	14,437.5	4,532.8	1,523.6	545.0	3,009.2	1,083.2	352.5	9,904.7	9,487.0	2,562.0	2,472.4	1,135.0	12,760.4
2020	14,231.4	4,708.6	1,621.7	546.8	3,086.9	1,201.7	258.5	9,522.7	9,040.7	2,687.7	2,354.2	1,152.9	12,529.1
2021	16,119.7	5,499.4	1,991.9	697.0	3,507.6	1,291.5	385.7	10,620.2	10,179.9	2,842.8	2,642.1	1,264.4	14,182.3
2022	17,690.0	5,938.7	2,077.9	726.4	3,860.7	1,394.0	514.6	11,751.3	11,215.2	3,114.4	2,819.1	1,324.6	15,469.7
2023	18,833.2	6,115.7	2,141.0	750.4	3,974.6	1,438.3	464.9	12,717.5	12,163.4	3,375.5	3,060.4	1,425.8	16,626.6
2024	19,896.0	6,261.5	2,178.1	732.8	4,083.4	1,479.6	440.5	13,634.5	13,021.4	3,603.6	3,315.0	1,560.4	17,658.9
2025 p	20,956.0	6,508.2	2,265.2	758.8	4,243.0	1,530.0	422.3	14,447.8	13,839.6	3,801.7	3,551.6	1,690.2	18,659.8
2022: I	17,149.0	5,843.3	2,083.7	733.4	3,759.6	1,354.8	500.3	11,305.7	10,804.3	2,996.4	2,755.1	1,304.1	14,999.5
II	17,606.6	5,980.8	2,083.1	726.5	3,897.7	1,387.3	562.4	11,625.8	11,090.2	3,076.1	2,772.8	1,307.0	15,343.9
III	17,893.1	5,977.7	2,088.7	728.0	3,889.0	1,409.7	508.1	11,915.4	11,360.8	3,150.5	2,840.8	1,332.3	15,660.8
IV	18,111.4	5,952.8	2,056.3	717.8	3,896.6	1,424.3	487.6	12,158.5	11,605.5	3,234.8	2,907.6	1,355.0	15,874.6
2023: I	18,487.0	6,068.4	2,141.5	763.9	3,926.9	1,428.6	470.0	12,418.6	11,872.0	3,290.7	2,982.1	1,378.9	16,281.9
II	18,693.1	6,079.4	2,140.8	758.9	3,938.6	1,430.9	455.4	12,613.7	12,063.8	3,339.0	3,033.0	1,427.3	16,514.0
III	18,961.8	6,149.9	2,149.1	749.1	4,000.9	1,442.3	470.4	12,811.9	12,256.0	3,411.0	3,075.2	1,445.0	16,740.2
IV	19,190.6	6,165.0	2,132.8	729.7	4,032.2	1,451.3	463.9	13,025.6	12,461.8	3,461.4	3,151.6	1,452.0	16,970.5
2024: I	19,443.8	6,136.3	2,126.3	712.8	4,010.0	1,457.0	444.0	13,307.5	12,724.6	3,521.0	3,234.3	1,515.5	17,234.3
II	19,756.1	6,224.4	2,151.9	716.6	4,072.5	1,472.0	454.5	13,531.7	12,920.4	3,585.5	3,275.2	1,540.9	17,507.5
III	20,032.8	6,291.6	2,183.9	731.6	4,107.6	1,486.2	436.4	13,741.3	13,109.0	3,630.2	3,346.8	1,575.6	17,792.4
IV	20,351.3	6,393.9	2,250.2	770.2	4,143.7	1,503.0	427.2	13,957.4	13,331.4	3,677.9	3,403.7	1,609.7	18,101.2
2025: I	20,555.0	6,432.3	2,235.8	755.9	4,196.5	1,517.8	438.7	14,122.7	13,510.3	3,742.1	3,448.3	1,637.6	18,255.4
II	20,789.9	6,471.1	2,265.7	770.5	4,205.4	1,521.8	411.0	14,318.8	13,721.3	3,785.6	3,514.6	1,657.4	18,513.3
III	21,111.2	6,545.6	2,277.3	760.7	4,268.3	1,538.0	414.4	14,565.5	13,958.4	3,817.9	3,594.9	1,707.7	18,821.5
IV p	21,368.1	6,583.8	2,281.8	748.1	4,302.0	1,542.4	425.2	14,784.3	14,168.6	3,861.1	3,648.5	1,758.1	19,049.1

[1] Includes other items not shown separately.
[2] Food consists of food and beverages purchased for off-premises consumption; food services, which include purchased meals and beverages, are not classified as food.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–11. Real personal consumption expenditures, 2007–2025

[Billions of chained (2017) dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Personal consumption expenditures	Goods: Total	Goods: Durable: Total [1]	Goods: Durable: Motor vehicles and parts	Goods: Nondurable: Total [1]	Goods: Nondurable: Food and beverages purchased for off-premises consumption	Goods: Nondurable: Gasoline and other energy goods	Services: Total	Services: Household consumption expenditures: Total [1]	Services: Household consumption expenditures: Housing and utilities	Services: Household consumption expenditures: Health care	Services: Household consumption expenditures: Financial services and insurance	Addendum: Personal consumption expenditures excluding food and energy [2]
2007	11,253.9	3,415.7	985.4	424.3	2,434.5	869.7	314.1	7,838.5	7,571.1	2,193.9	1,754.0	1,013.6	9,829.5
2008	11,270.7	3,312.7	928.8	370.4	2,396.1	855.1	301.7	7,981.2	7,669.9	2,255.7	1,797.0	1,038.2	9,883.2
2009	11,123.6	3,209.4	871.9	344.2	2,356.4	849.3	303.5	7,948.6	7,624.8	2,263.0	1,836.4	1,028.0	9,735.4
2010	11,335.6	3,300.2	920.6	357.5	2,393.5	862.0	302.0	8,065.3	7,730.8	2,314.8	1,864.5	1,026.5	9,929.6
2011	11,528.5	3,372.3	967.5	367.5	2,414.6	863.3	295.0	8,183.9	7,833.3	2,323.8	1,893.1	1,053.2	10,137.8
2012	11,686.1	3,444.2	1,025.3	393.8	2,424.9	870.7	291.0	8,265.3	7,882.6	2,318.8	1,927.6	1,040.2	10,303.5
2013	11,889.9	3,562.3	1,087.9	415.2	2,478.6	887.0	298.8	8,341.9	7,956.1	2,343.2	1,945.6	1,037.2	10,474.9
2014	12,226.4	3,717.7	1,168.2	443.6	2,552.3	910.3	302.0	8,516.3	8,131.1	2,341.5	2,008.2	1,047.9	10,785.1
2015	12,638.8	3,902.5	1,257.7	481.3	2,646.3	931.4	318.8	8,738.9	8,355.1	2,336.7	2,114.2	1,073.6	11,159.9
2016	12,949.0	4,044.7	1,325.5	498.1	2,719.9	968.3	323.8	8,904.9	8,507.0	2,347.0	2,196.3	1,046.5	11,429.3
2017	13,290.6	4,212.2	1,415.9	529.4	2,796.3	1,010.4	324.0	9,078.4	8,682.0	2,350.2	2,245.3	1,073.2	11,730.3
2018	13,654.9	4,378.7	1,509.5	549.9	2,869.8	1,039.0	323.0	9,276.6	8,861.3	2,385.0	2,301.8	1,073.4	12,049.5
2019	13,948.1	4,513.6	1,559.7	540.4	2,954.6	1,066.9	321.8	9,436.2	9,034.6	2,411.2	2,384.5	1,051.1	12,320.2
2020	13,596.9	4,724.4	1,675.1	533.6	3,051.8	1,145.7	277.5	8,892.4	8,433.7	2,463.9	2,214.4	1,054.7	11,935.2
2021	14,792.4	5,257.7	1,949.3	610.4	3,314.4	1,194.0	311.2	9,564.0	9,175.7	2,531.6	2,415.2	1,092.3	13,046.6
2022	15,236.8	5,225.9	1,910.0	569.4	3,320.5	1,168.3	313.8	10,032.8	9,606.8	2,598.6	2,516.4	1,088.0	13,509.4
2023	15,627.8	5,316.3	1,982.8	587.4	3,341.3	1,147.6	315.7	10,331.8	9,930.4	2,631.8	2,669.4	1,122.9	13,938.1
2024	16,088.5	5,466.8	2,059.6	585.0	3,417.3	1,165.4	316.1	10,642.1	10,221.3	2,671.8	2,814.1	1,150.5	14,380.0
2025 p	16,511.1	5,643.1	2,133.3	598.1	3,521.0	1,182.4	318.7	10,892.1	10,489.1	2,706.4	2,936.0	1,177.6	14,778.8
2022: I	15,100.9	5,253.6	1,924.1	577.3	3,334.4	1,187.2	319.4	9,871.0	9,457.0	2,581.2	2,479.2	1,085.6	13,340.9
II	15,224.4	5,248.3	1,917.9	571.9	3,335.0	1,175.2	314.0	9,998.8	9,567.8	2,596.5	2,486.3	1,079.0	13,485.4
III	15,295.8	5,215.8	1,910.6	568.0	3,310.1	1,159.1	310.4	10,101.3	9,664.4	2,597.9	2,526.2	1,091.8	13,591.9
IV	15,326.2	5,185.9	1,887.3	560.6	3,302.6	1,151.8	311.5	10,159.9	9,737.9	2,618.7	2,574.0	1,095.6	13,619.4
2023: I	15,495.8	5,276.6	1,967.1	601.5	3,317.3	1,144.7	316.8	10,240.0	9,834.4	2,614.9	2,628.6	1,105.1	13,808.7
II	15,553.7	5,282.1	1,967.5	588.6	3,322.2	1,144.7	317.2	10,291.4	9,889.4	2,622.3	2,651.1	1,128.8	13,870.0
III	15,671.9	5,338.8	1,997.8	586.4	3,349.4	1,149.2	312.3	10,353.8	9,955.5	2,643.5	2,674.3	1,128.1	13,978.0
IV	15,789.7	5,367.6	1,998.9	573.2	3,376.1	1,151.8	316.6	10,441.9	10,042.3	2,646.6	2,723.6	1,129.8	14,095.7
2024: I	15,857.7	5,349.5	1,994.3	563.3	3,362.8	1,151.0	310.2	10,524.4	10,114.6	2,652.8	2,768.3	1,145.4	14,175.4
II	16,009.6	5,421.0	2,031.8	572.9	3,398.0	1,163.1	316.4	10,606.8	10,185.2	2,671.6	2,791.4	1,144.3	14,298.3
III	16,165.8	5,501.9	2,074.0	589.7	3,438.2	1,170.7	319.8	10,685.1	10,254.0	2,677.8	2,836.1	1,151.6	14,446.8
IV	16,320.9	5,594.7	2,138.4	614.3	3,470.2	1,176.9	318.1	10,752.1	10,331.2	2,685.0	2,860.6	1,160.9	14,599.4
2025: I	16,345.8	5,597.4	2,120.1	596.0	3,488.9	1,180.0	320.4	10,773.6	10,366.4	2,703.2	2,881.4	1,160.3	14,605.6
II	16,445.7	5,628.4	2,132.2	609.9	3,507.9	1,180.6	318.1	10,842.3	10,446.6	2,701.7	2,915.3	1,174.0	14,717.2
III	16,585.9	5,670.7	2,140.4	599.5	3,541.2	1,186.2	319.3	10,939.6	10,539.0	2,703.5	2,962.8	1,181.8	14,856.5
IV p	16,667.0	5,675.7	2,140.2	586.9	3,546.1	1,182.8	316.8	11,012.9	10,604.5	2,717.3	2,984.3	1,194.3	14,936.0

[1] Includes other items not shown separately.

[2] Food consists of food and beverages purchased for off-premises consumption; food services, which include purchased meals and beverages, are not classified as food.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–12. Private fixed investment by type, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Private fixed investment	Nonresidential: Total nonresidential	Nonresidential: Structures	Equipment: Total [1]	Information processing equipment: Total	Information processing equipment: Computers and peripheral equipment	Information processing equipment: Other	Industrial equipment	Transportation equipment	Intellectual property products: Total [1]	Intellectual property products: Software	Intellectual property products: Research and development [2]	Residential: Total residential [1]	Residential: Structures: Total [1]	Residential: Structures: Single family
1975	263.5	196.8	61.4	107.6	23.8	3.6	20.2	31.3	25.2	27.8	4.8	17.5	66.7	64.8	29.6
1976	306.1	219.3	65.9	121.2	27.5	4.4	23.1	34.1	30.0	32.2	5.2	19.6	86.8	84.6	43.9
1977	374.3	259.1	74.6	148.7	33.7	5.7	28.0	39.4	39.3	35.8	5.5	21.8	115.2	112.8	62.2
1978	452.6	314.6	93.6	180.6	42.3	7.6	34.8	47.7	47.3	40.4	6.3	24.9	138.0	135.3	72.8
1979	521.7	373.8	117.7	208.1	50.3	10.2	40.2	56.2	53.6	48.1	8.1	29.1	147.8	144.7	72.3
1980	536.4	406.9	136.2	216.4	58.9	12.5	46.4	60.7	48.4	54.4	9.8	34.2	129.5	126.1	52.9
1981	601.4	472.9	167.3	240.9	69.6	17.1	52.5	65.5	50.6	64.8	11.8	39.7	128.5	124.9	52.0
1982	595.9	485.1	177.6	234.9	74.2	18.9	55.3	62.7	46.8	72.7	14.0	44.8	110.8	107.2	41.5
1983	643.3	482.2	154.3	246.5	83.7	23.9	59.8	58.9	53.5	81.3	16.4	49.6	161.1	156.9	72.5
1984	754.7	564.3	177.4	291.9	101.2	31.6	69.6	68.1	64.4	95.0	20.4	56.9	190.4	185.6	86.4
1985	807.8	607.8	194.5	307.9	106.6	33.7	72.9	72.5	69.0	105.3	23.8	63.0	200.1	195.0	87.4
1986	842.6	607.8	176.5	317.7	111.1	33.4	77.7	75.4	70.5	113.5	25.6	66.5	234.8	229.3	104.1
1987	865.0	615.2	174.2	320.9	112.2	35.8	76.4	76.7	68.1	120.1	29.0	69.2	249.8	244.0	117.2
1988	918.5	662.3	182.8	346.8	120.8	38.0	82.8	84.2	72.9	132.7	33.3	76.4	256.2	250.1	120.1
1989	972.0	716.0	193.7	372.2	130.7	43.1	87.6	93.3	67.9	150.1	40.6	84.1	256.0	249.9	120.9
1990	978.9	739.2	202.9	371.9	129.6	38.6	90.9	92.1	70.0	164.4	45.4	91.5	239.7	233.7	112.9
1991	944.7	723.6	183.6	360.8	129.2	37.7	91.5	89.3	71.5	179.1	48.7	101.0	221.2	215.4	99.4
1992	996.7	741.9	172.6	381.7	142.1	44.0	98.1	93.0	74.7	187.7	51.1	105.4	254.7	248.8	122.0
1993	1,086.0	799.2	177.2	425.1	153.3	47.9	105.4	102.2	89.4	196.9	57.2	106.3	286.8	280.7	140.1
1994	1,192.7	868.9	186.8	476.4	167.0	52.4	114.6	113.6	107.7	205.7	60.4	109.2	323.8	317.6	162.3
1995	1,286.3	962.2	207.3	528.1	188.4	66.1	122.3	129.0	116.1	226.8	65.5	121.2	324.1	317.7	153.5
1996	1,401.3	1,043.2	224.6	565.3	204.7	72.8	131.9	136.5	123.2	253.3	74.5	134.5	358.1	351.7	170.8
1997	1,524.7	1,149.1	250.3	610.9	222.8	81.4	141.4	140.4	135.5	288.0	93.8	148.1	375.6	369.3	175.2
1998	1,673.0	1,254.1	276.0	660.0	240.1	87.9	152.2	147.4	147.1	318.1	109.2	160.6	418.8	412.1	199.4
1999	1,826.2	1,364.5	285.7	713.6	259.8	97.2	162.5	149.1	174.4	365.1	136.6	177.5	461.8	454.5	223.8
2000	1,983.9	1,498.4	321.0	766.1	293.8	103.2	190.6	162.9	170.8	411.3	156.8	199.0	485.4	477.7	236.8
2001	1,973.1	1,460.1	333.5	711.5	265.9	87.6	178.4	151.9	154.2	415.0	157.7	202.7	513.1	505.2	249.1
2002	1,910.4	1,352.8	287.0	659.6	236.7	79.7	157.0	141.7	141.6	406.2	152.5	196.1	557.6	549.6	265.9
2003	2,013.0	1,375.9	286.6	670.6	242.7	79.9	162.8	143.4	134.1	418.7	155.0	201.0	637.1	628.8	310.6
2004	2,217.2	1,467.4	307.7	721.9	255.8	84.2	171.6	144.2	159.2	437.8	166.3	207.4	749.8	740.8	377.6
2005	2,477.2	1,621.0	353.0	794.9	267.0	84.2	182.8	162.4	179.6	473.1	178.6	224.7	856.2	846.6	433.5
2006	2,632.0	1,793.8	425.2	862.3	288.5	92.6	195.9	181.6	194.3	506.3	189.5	245.6	838.2	828.1	416.0
2007	2,639.1	1,948.6	510.3	893.4	310.9	95.4	215.5	194.1	188.8	544.8	206.4	268.0	690.5	680.6	305.2
2008	2,506.9	1,990.9	571.1	845.4	306.3	93.9	212.4	194.3	148.7	574.4	223.8	284.2	516.0	506.4	185.8
2009	2,080.4	1,690.4	455.8	670.3	275.6	88.9	186.7	153.7	74.9	564.4	226.0	274.6	390.0	381.2	105.3
2010	2,111.6	1,735.0	379.8	777.0	307.5	99.6	207.9	155.2	135.8	578.2	226.4	282.4	376.6	367.4	112.6
2011	2,286.3	1,907.5	404.5	881.3	313.3	95.6	217.7	191.5	177.8	621.7	249.8	303.4	378.8	369.1	108.2
2012	2,550.5	2,118.5	479.4	983.4	331.2	103.5	227.7	211.2	215.3	655.7	272.1	313.4	432.0	421.5	132.0
2013	2,732.9	2,221.3	491.5	1,035.3	344.8	102.1	242.6	211.4	243.4	694.6	285.6	338.7	511.5	500.0	170.8
2014	2,989.2	2,425.2	574.6	1,109.1	352.2	101.9	250.2	223.4	274.9	741.5	303.7	364.4	564.0	551.7	193.6
2015	3,148.4	2,507.5	584.5	1,144.1	362.2	101.3	260.9	224.7	309.8	778.9	316.3	385.3	640.9	627.6	221.1
2016	3,239.2	2,529.0	566.2	1,119.8	365.2	99.5	265.8	222.9	297.8	843.0	347.9	413.2	710.2	696.0	242.5
2017	3,435.0	2,661.1	594.9	1,160.0	386.0	105.8	280.2	237.3	299.9	906.2	382.9	437.5	773.9	758.9	270.2
2018	3,668.4	2,856.5	636.6	1,227.6	406.6	120.4	286.2	253.6	319.3	992.2	422.8	479.5	811.9	796.2	289.6
2019	3,820.8	2,993.7	677.9	1,240.9	405.4	118.9	286.5	262.1	308.4	1,074.9	447.4	535.6	827.1	811.3	280.0
2020	3,793.9	2,873.3	624.6	1,112.5	400.2	126.5	273.6	242.1	219.9	1,136.2	478.2	568.7	920.5	903.4	309.4
2021	4,219.7	3,087.2	627.9	1,196.3	441.9	147.2	294.7	269.3	214.7	1,263.1	533.1	639.3	1,132.4	1,112.1	423.9
2022	4,663.1	3,484.6	755.1	1,305.8	478.4	160.3	318.1	295.2	227.9	1,423.7	601.0	720.0	1,178.5	1,157.0	453.2
2023	4,970.0	3,856.0	926.8	1,404.7	467.2	149.1	318.1	307.5	314.0	1,524.5	644.6	769.4	1,114.0	1,092.8	400.6
2024	5,205.8	4,022.9	934.8	1,484.3	501.1	178.7	322.4	319.0	339.3	1,603.9	693.0	796.5	1,182.8	1,161.4	433.5
2025 p	5,444.8	4,251.1	893.2	1,643.4	626.6	270.7	355.9	340.7	352.1	1,714.5	754.8	844.1	1,193.8	1,172.0	418.8
2022: I	4,531.1	3,315.0	688.1	1,262.7	481.6	162.6	319.0	293.1	193.1	1,364.2	575.9	692.1	1,216.2	1,194.8	476.4
II	4,660.9	3,438.7	732.7	1,292.2	479.7	159.5	320.2	294.5	214.5	1,413.8	595.6	716.2	1,222.2	1,200.3	489.6
III	4,712.7	3,547.6	780.9	1,320.6	483.9	163.7	320.2	292.7	236.6	1,446.0	611.1	728.8	1,165.1	1,143.6	444.0
IV	4,747.6	3,637.0	818.7	1,347.6	468.2	155.2	313.0	300.6	267.3	1,470.7	621.5	742.9	1,110.6	1,089.5	402.9
2023: I	4,837.9	3,756.6	885.8	1,369.4	467.9	148.1	319.8	304.9	286.0	1,501.4	636.1	757.0	1,081.4	1,059.7	376.0
II	4,943.5	3,854.3	925.2	1,411.6	463.4	147.5	315.9	309.4	324.2	1,517.5	638.4	768.1	1,089.2	1,068.1	382.5
III	5,006.3	3,871.6	931.3	1,411.2	461.3	145.6	315.7	306.6	327.3	1,529.1	645.4	772.7	1,134.7	1,113.6	415.3
IV	5,092.3	3,941.3	964.9	1,426.4	476.2	155.1	321.1	309.2	318.6	1,550.1	658.5	779.9	1,150.9	1,129.9	428.7
2024: I	5,139.6	3,963.8	946.9	1,440.6	479.7	165.5	314.2	315.0	317.8	1,576.3	671.4	790.6	1,175.8	1,154.7	439.8
II	5,192.5	4,012.4	941.7	1,478.5	494.2	175.6	318.6	316.0	341.5	1,592.2	687.4	790.8	1,180.1	1,158.7	440.0
III	5,247.0	4,069.2	934.7	1,515.7	513.9	187.7	326.2	321.7	354.8	1,618.8	702.9	801.4	1,177.8	1,156.2	425.3
IV	5,244.0	4,046.4	916.0	1,502.2	516.8	186.1	330.7	323.2	342.9	1,628.3	710.2	803.0	1,197.7	1,176.0	429.0
2025: I	5,344.0	4,137.8	911.2	1,579.1	585.2	222.8	362.3	329.1	344.6	1,647.5	726.0	806.3	1,206.2	1,184.7	435.0
II	5,404.4	4,207.5	891.3	1,625.0	606.5	253.8	352.7	338.0	366.7	1,691.2	745.9	829.8	1,196.9	1,175.2	423.0
III	5,478.7	4,293.5	887.3	1,669.4	630.0	280.9	349.0	346.8	362.6	1,736.7	765.5	855.6	1,185.2	1,163.4	410.0
IV p	5,552.2	4,365.5	883.0	1,700.0	684.7	325.3	359.3	349.0	334.5	1,782.5	781.6	884.7	1,186.7	1,164.7	407.1

[1] Includes other items not shown separately.
[2] Research and development investment includes expenditures for software.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–13. Real private fixed investment by type, 2007–2025

[Billions of chained (2017) dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Private fixed investment	Nonresidential: Total nonresidential	Nonresidential: Structures	Equipment: Total [2]	Information processing equipment: Total	Information processing equipment: Computers and peripheral equipment [1]	Information processing equipment: Other	Industrial equipment	Transportation equipment	Intellectual property products: Total [2]	Intellectual property products: Software	Intellectual property products: Research and development [3]	Residential: Total residential [2]	Residential structures: Total [2]	Residential structures: Single family
2007	2,782.2	1,996.1	625.5	839.9	204.5	72.2	134.2	219.6	212.9	552.7	173.3	316.0	821.9	818.3	356.6
2008	2,620.6	2,008.3	666.0	799.7	215.6	77.9	140.1	210.5	166.9	573.7	187.4	325.3	623.0	617.7	224.0
2009	2,201.6	1,716.4	541.4	630.2	204.8	79.2	128.9	164.4	78.1	570.8	193.1	317.3	487.9	482.1	132.4
2010	2,269.9	1,794.3	454.8	757.8	239.2	91.9	151.1	164.2	152.4	586.4	200.4	318.5	472.8	465.8	143.8
2011	2,432.5	1,951.3	469.0	859.6	250.8	91.8	162.1	197.0	195.8	622.9	222.3	331.8	472.2	464.1	137.2
2012	2,678.0	2,137.1	531.5	953.9	274.0	101.1	176.4	213.5	231.8	653.8	246.7	334.5	533.3	525.3	166.0
2013	2,842.0	2,238.6	537.3	1,006.5	293.9	100.6	195.5	212.8	257.7	695.0	264.3	357.7	601.1	592.1	203.6
2014	3,052.6	2,421.1	597.2	1,086.0	312.9	100.4	213.7	223.5	287.4	739.1	286.1	377.0	626.8	616.2	216.1
2015	3,193.6	2,498.9	598.2	1,127.2	336.7	100.4	236.7	225.7	318.7	774.0	304.6	390.3	693.2	681.1	240.8
2016	3,286.9	2,544.8	579.7	1,117.5	356.1	99.7	256.5	224.9	302.6	847.6	340.5	424.5	742.2	728.6	253.2
2017	3,435.0	2,661.1	594.9	1,160.0	386.0	105.8	280.2	237.3	299.9	906.2	382.9	437.5	773.9	758.9	270.2
2018	3,611.7	2,844.3	629.2	1,228.6	416.8	119.6	297.1	248.7	318.3	986.5	433.9	464.3	768.5	753.4	277.7
2019	3,710.9	2,952.2	644.0	1,241.1	428.9	121.1	307.8	253.2	304.9	1,067.0	466.5	510.8	761.6	746.5	260.1
2020	3,639.4	2,817.8	584.6	1,118.5	432.3	131.4	300.3	231.7	218.9	1,115.1	510.6	520.8	818.2	802.2	275.8
2021	3,905.7	2,993.0	568.6	1,197.4	478.5	150.5	327.0	247.2	226.8	1,230.9	586.8	565.4	904.8	887.4	338.1
2022	4,002.4	3,187.4	588.2	1,231.1	509.3	158.0	350.5	250.7	226.4	1,374.9	674.5	620.4	831.3	814.1	311.6
2023	4,140.4	3,418.6	686.4	1,267.0	490.1	146.4	343.5	251.5	284.6	1,460.0	723.2	657.0	766.1	748.5	266.5
2024	4,264.0	3,518.9	694.0	1,311.5	517.3	175.0	340.2	254.9	298.9	1,511.0	771.9	666.0	790.4	771.9	283.2
2025 p	4,377.7	3,662.7	657.3	1,420.1	630.8	260.9	364.1	262.6	309.5	1,596.6	857.3	680.8	773.7	754.9	267.4
2022: I	4,000.5	3,110.1	567.5	1,223.5	514.5	161.4	352.0	254.9	204.9	1,326.2	645.1	603.0	889.8	872.6	344.3
II	4,019.8	3,163.4	579.7	1,225.7	511.0	157.2	353.1	250.5	217.3	1,365.4	667.0	618.0	863.9	846.7	338.1
III	3,997.2	3,210.2	594.6	1,233.8	515.1	161.3	352.8	246.1	232.1	1,388.3	681.9	624.5	809.2	792.0	299.0
IV	3,992.1	3,266.0	611.0	1,241.4	496.7	152.0	344.1	251.4	251.4	1,419.5	704.0	636.0	762.1	745.3	265.2
2023: I	4,039.7	3,333.3	653.1	1,240.6	491.7	144.2	347.6	251.3	259.3	1,438.6	708.1	649.9	749.2	731.9	250.1
II	4,132.3	3,421.8	683.6	1,278.0	486.0	145.0	340.8	253.3	297.8	1,455.2	715.2	658.5	756.9	739.5	257.1
III	4,171.2	3,436.4	695.0	1,269.6	483.6	143.7	339.8	249.8	295.7	1,465.5	726.0	659.2	777.7	759.9	277.1
IV	4,218.5	3,483.0	713.8	1,279.9	498.9	152.7	345.6	251.6	285.7	1,480.7	743.5	660.5	780.6	762.6	281.6
2024: I	4,249.7	3,496.0	704.8	1,281.4	498.3	162.3	334.5	253.8	282.0	1,504.8	763.0	666.9	796.2	778.1	289.8
II	4,264.9	3,517.5	697.8	1,309.0	511.3	172.0	337.4	252.8	301.9	1,507.3	769.9	664.4	792.2	773.7	286.8
III	4,281.3	3,547.6	693.9	1,335.0	529.4	184.1	342.8	256.3	310.8	1,517.1	774.7	669.5	782.5	763.8	277.0
IV	4,260.3	3,514.4	679.5	1,320.6	530.2	181.7	346.2	256.8	301.0	1,515.0	780.1	663.4	790.7	771.8	279.2
2025: I	4,333.6	3,595.4	674.2	1,386.0	598.8	217.1	378.3	259.5	304.6	1,539.0	814.3	660.2	788.8	769.7	278.4
II	4,380.5	3,659.3	661.2	1,414.7	615.6	244.8	365.7	263.6	322.2	1,593.8	863.8	673.7	778.5	759.8	270.8
III	4,389.3	3,687.8	652.8	1,432.9	628.7	269.4	352.8	265.0	318.8	1,615.6	871.5	687.5	764.3	745.6	261.6
IV p	4,407.2	3,708.4	640.9	1,446.6	680.1	312.5	359.7	262.3	292.5	1,637.9	879.6	702.0	763.2	744.5	259.0

[1] Because computers exhibit rapid changes in prices relative to other prices in the economy, the chained-dollar estimates should not be used to measure the component's relative importance or its contribution to the growth rate of more aggregate series. The quantity index for computers can be used to accurately measure the real growth rate of this series. For information on this component, see *Survey of Current Business* Table 5.3.1 (for growth rates), Table 5.3.2 (for contributions), and Table 5.3.3 (for quantity indexes).

[2] Includes other items not shown separately.

[3] Research and development investment includes expenditures for software.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–14. Foreign transactions in the national income and product accounts, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Current receipts from rest of the world					Current payments to rest of the world									Balance on current account, NIPA [2]
	Total	Exports of goods and services			Income receipts	Total	Imports of goods and services			Income payments	Current taxes and transfer payments to rest of the world (net)				
		Total	Goods [1]	Services [1]			Total	Goods [1]	Services [1]		Total	From persons (net)	From government (net)	From business (net)	
1975	166.7	138.7	112.5	26.2	28.0	146.9	122.7	99.0	23.7	15.0	9.1	1.3	7.1	0.7	19.8
1976	181.9	149.5	121.5	28.0	32.4	174.8	151.1	124.6	26.5	15.5	8.1	1.4	5.7	1.1	7.1
1977	196.5	159.3	128.4	30.9	37.2	207.5	182.4	152.6	29.8	16.9	8.1	1.4	5.3	1.4	–10.9
1978	233.1	186.9	149.9	37.0	46.3	245.8	212.3	177.4	34.8	24.7	8.8	1.6	5.9	1.4	–12.6
1979	298.5	230.1	187.3	42.9	68.3	299.6	252.7	212.8	39.9	36.4	10.6	1.7	6.8	2.0	–1.2
1980	359.9	280.8	230.4	50.3	79.1	351.4	293.8	248.6	45.3	44.9	12.6	2.0	8.3	2.4	8.5
1981	397.3	305.2	245.2	60.0	92.0	393.9	317.8	267.8	49.9	59.1	17.0	5.6	8.3	3.2	3.4
1982	384.2	283.2	222.6	60.7	101.0	387.5	303.2	250.5	52.6	64.5	19.8	6.7	9.7	3.4	–3.3
1983	378.9	277.0	214.0	62.9	101.9	413.9	328.6	272.7	56.0	64.8	20.5	7.0	10.1	3.4	–35.1
1984	424.2	302.4	231.3	71.1	121.9	514.3	405.1	336.3	68.8	85.6	23.6	7.9	12.2	3.5	–90.1
1985	415.9	303.2	227.5	75.7	112.7	530.2	417.2	343.3	73.9	87.3	25.7	8.3	14.4	2.9	–114.3
1986	432.3	321.0	231.4	89.6	111.3	575.0	452.9	370.0	82.9	94.4	27.8	9.1	15.4	3.2	–142.7
1987	487.2	363.9	265.6	98.4	123.3	641.3	508.7	414.8	93.9	105.8	26.8	10.0	13.4	3.4	–154.1
1988	596.7	444.6	332.1	112.5	152.1	712.4	554.0	452.1	101.9	129.5	29.0	10.8	13.7	4.5	–115.7
1989	682.0	504.3	374.8	129.5	177.7	774.3	591.0	484.8	106.2	152.9	30.4	11.6	14.2	4.6	–92.4
1990	740.7	551.9	403.3	148.6	188.8	815.6	629.7	508.1	121.7	154.2	31.7	12.2	14.7	4.8	–74.9
1991	763.3	594.9	430.1	164.8	168.4	755.4	623.5	500.7	122.8	136.8	–4.9	14.1	–24.0	5.0	7.9
1992	785.1	633.1	455.3	177.7	152.1	830.7	667.8	544.9	122.9	121.0	41.9	14.5	22.0	5.4	–45.6
1993	810.4	654.8	467.7	187.1	155.6	889.8	720.0	592.8	127.2	124.4	45.4	17.1	22.9	5.4	–79.4
1994	905.5	720.9	518.4	202.6	184.5	1,021.1	813.4	676.8	136.6	161.6	46.1	18.9	21.1	6.0	–115.6
1995	1,042.6	812.8	592.4	220.4	229.8	1,148.5	902.6	757.4	145.1	201.9	44.1	20.3	15.6	8.2	–105.9
1996	1,114.0	867.6	628.8	238.8	246.4	1,229.0	964.0	807.4	156.5	215.5	49.5	22.6	20.0	6.9	–115.0
1997	1,233.9	953.8	699.9	253.9	280.1	1,364.0	1,055.8	885.7	170.1	256.8	51.4	25.7	16.7	9.1	–130.1
1998	1,239.8	953.0	692.6	260.4	286.8	1,445.1	1,115.7	930.8	184.9	269.4	60.0	29.7	17.4	13.0	–205.3
1999	1,355.2	992.9	711.7	281.2	324.6	1,631.9	1,252.5	1,051.2	201.3	293.7	85.7	36.3	25.0	24.4	–276.6
2000	1,527.8	1,096.1	795.1	301.1	390.6	1,924.7	1,477.2	1,251.2	226.0	352.2	95.4	38.6	26.8	29.9	–396.9
2001	1,411.6	1,026.8	739.6	287.2	339.6	1,803.0	1,403.6	1,176.2	227.4	289.3	110.2	42.5	26.7	41.1	–391.4
2002	1,390.6	998.0	706.6	291.4	335.8	1,846.0	1,437.7	1,198.9	238.9	290.0	118.3	44.4	29.3	44.6	–455.4
2003	1,478.5	1,035.2	733.9	301.3	377.4	2,006.2	1,557.1	1,299.0	258.1	318.9	130.1	46.1	32.0	52.0	–527.6
2004	1,705.6	1,176.4	828.0	348.4	464.7	2,343.4	1,810.5	1,513.6	296.9	388.0	144.9	49.5	34.0	61.4	–637.8
2005	1,940.9	1,301.6	919.3	382.2	569.3	2,692.0	2,041.5	1,722.8	318.7	494.5	156.1	54.4	39.9	61.8	–751.2
2006	2,247.7	1,470.2	1,043.1	427.1	702.6	3,067.0	2,256.6	1,900.6	356.0	656.2	154.2	57.1	41.7	55.3	–819.3
2007	2,584.4	1,659.3	1,159.7	499.6	850.2	3,325.2	2,395.2	2,002.7	392.5	754.5	175.5	65.3	49.1	61.0	–740.9
2008	2,779.9	1,835.3	1,291.0	544.3	855.2	3,484.1	2,576.2	2,148.7	427.5	710.0	198.0	71.1	54.3	72.5	–704.2
2009	2,362.1	1,582.8	1,057.4	525.4	689.3	2,745.3	2,001.9	1,588.1	413.8	539.0	204.3	69.8	62.9	71.6	–383.1
2010	2,714.1	1,857.2	1,272.9	584.3	760.0	3,153.8	2,389.6	1,947.0	442.5	554.3	209.9	72.1	63.3	74.6	–439.8
2011	3,049.8	2,115.9	1,468.5	647.4	827.9	3,510.1	2,695.5	2,231.1	464.3	589.9	224.7	74.7	66.8	83.2	–460.3
2012	3,161.8	2,217.7	1,529.6	688.1	827.4	3,585.8	2,769.3	2,293.3	476.1	594.7	221.8	75.7	67.3	78.7	–424.0
2013	3,266.0	2,287.9	1,563.9	724.1	847.2	3,617.2	2,766.4	2,293.9	472.5	616.9	233.9	77.8	66.6	89.6	–351.2
2014	3,405.9	2,378.5	1,617.0	761.6	881.5	3,781.0	2,887.4	2,389.3	498.1	646.4	247.2	83.7	65.3	98.1	–375.1
2015	3,269.3	2,270.6	1,496.7	773.9	860.6	3,692.4	2,794.9	2,289.6	505.4	640.5	257.0	89.5	65.2	102.4	–423.1
2016	3,275.1	2,235.6	1,447.6	788.0	892.9	3,676.5	2,738.8	2,218.7	520.1	661.5	276.1	90.6	69.2	116.3	–401.4
2017	3,585.1	2,388.3	1,546.7	841.6	1,031.1	3,963.1	2,931.6	2,369.9	561.7	738.2	293.4	95.7	67.8	129.8	–378.0
2018	3,830.7	2,538.1	1,669.3	868.8	1,138.7	4,271.8	3,131.2	2,559.1	572.1	848.4	292.3	98.7	74.3	119.3	–441.2
2019	3,876.1	2,539.4	1,644.8	894.6	1,174.7	4,323.4	3,116.7	2,516.7	600.0	892.8	313.9	102.3	74.4	137.2	–447.3
2020	3,325.5	2,163.8	1,421.6	742.2	989.1	3,890.1	2,782.4	2,305.1	477.3	777.5	330.2	102.3	87.2	140.8	–564.6
2021	3,833.0	2,568.7	1,747.2	821.5	1,083.3	4,702.2	3,417.9	2,839.6	578.3	932.5	351.8	111.3	94.8	145.7	–869.2
2022	4,448.8	3,036.4	2,070.3	966.1	1,219.8	5,450.0	3,974.3	3,256.9	717.4	1,067.7	407.9	127.6	121.6	158.7	–1,001.2
2023	4,671.6	3,073.4	2,024.4	1,049.0	1,397.9	5,609.5	3,859.9	3,092.6	767.3	1,312.2	437.4	136.8	121.7	178.9	–937.8
2024	4,895.3	3,215.4	2,058.0	1,157.4	1,485.6	6,075.2	4,113.8	3,267.3	846.5	1,493.9	467.5	143.5	122.1	201.9	–1,179.9
2025 [p]	....	3,319.7	2,112.7	1,206.9	....	....	4,245.8	3,350.0	895.9	....	437.6	148.7	91.7	197.2	....
2022: I	4,184.1	2,865.2	1,954.6	910.6	1,136.3	5,285.5	3,914.4	3,248.8	665.6	1,011.5	359.6	121.5	96.1	142.0	–1,101.4
II	4,475.2	3,093.7	2,138.3	955.4	1,195.3	5,506.6	4,089.9	3,374.6	715.3	1,030.1	386.5	126.9	109.1	150.6	–1,031.4
III	4,575.5	3,129.1	2,141.3	987.8	1,258.5	5,513.9	3,984.7	3,242.5	742.2	1,082.9	446.4	129.2	147.4	169.7	–938.4
IV	4,560.4	3,057.7	2,047.1	1,010.5	1,288.9	5,494.0	3,908.3	3,161.6	746.7	1,146.4	439.3	133.0	133.7	172.6	–933.6
2023: I	4,622.4	3,085.5	2,062.1	1,023.4	1,343.9	5,539.9	3,880.4	3,129.6	750.8	1,233.8	425.6	134.4	126.8	164.3	–917.5
II	4,592.7	3,016.2	1,973.4	1,042.8	1,375.0	5,519.4	3,813.7	3,049.8	763.9	1,271.9	433.8	135.7	129.5	168.6	–926.7
III	4,715.0	3,082.1	2,024.8	1,057.3	1,439.3	5,631.8	3,847.6	3,084.0	763.6	1,341.5	442.7	137.7	124.9	180.0	–916.8
IV	4,756.4	3,109.6	2,037.1	1,072.6	1,433.4	5,746.9	3,897.7	3,106.9	790.8	1,401.6	447.6	139.3	105.5	202.8	–990.4
2024: I	4,814.6	3,164.1	2,041.0	1,123.1	1,452.3	5,880.1	3,986.6	3,175.7	810.9	1,460.3	433.2	141.0	100.2	192.0	–1,065.6
II	4,883.8	3,192.6	2,055.9	1,136.7	1,498.6	6,036.6	4,087.0	3,259.9	827.1	1,510.6	438.9	142.2	96.9	199.9	–1,152.8
III	4,892.5	3,256.5	2,082.1	1,174.4	1,444.9	6,210.9	4,194.8	3,330.9	863.9	1,497.1	519.0	144.3	154.9	219.9	–1,318.4
IV	4,990.4	3,248.3	2,052.9	1,195.4	1,546.5	6,173.0	4,186.9	3,302.7	884.2	1,507.4	478.7	146.5	136.3	195.9	–1,182.6
2025: I	4,953.5	3,293.7	2,116.0	1,177.7	1,454.8	6,456.1	4,558.3	3,681.4	876.8	1,452.7	445.1	148.5	98.4	198.1	–1,502.6
II	4,988.2	3,267.5	2,081.3	1,186.2	1,525.8	6,155.3	4,167.3	3,279.3	888.0	1,544.2	443.8	149.9	97.8	196.2	–1,167.2
III	5,144.9	3,366.9	2,133.7	1,233.2	1,591.0	6,124.0	4,123.4	3,223.0	900.5	1,565.5	435.1	148.9	86.7	199.5	–979.1
IV [p]	....	3,350.6	2,119.9	1,230.7	....	....	4,134.3	3,216.1	918.2	....	426.3	147.7	83.8	194.9	....

[1] Certain goods, primarily military equipment purchased and sold by the Federal Government, are included in services. Beginning with 1986, repairs and alterations of equipment were reclassified from goods to services.

[2] National income and product accounts (NIPA).

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–15. Real exports and imports of goods and services, 2007–2025

[Billions of chained (2017) dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Exports of goods and services						Imports of goods and services					
	Total	Goods[1]				Services[1]	Total	Goods[1]				Services[1]
		Total	Durable goods	Nondurable goods	Nonagricultural goods			Total	Durable goods	Nondurable goods	Nonpetroleum goods	
2007	1,745.5	1,146.7	764.1	382.9	1,040.1	595.2	2,376.4	1,927.5	1,050.8	866.7	1,602.4	446.7
2008	1,846.6	1,214.0	801.1	413.0	1,101.0	628.5	2,325.4	1,864.5	1,017.4	837.3	1,550.6	463.5
2009	1,693.1	1,070.0	666.5	402.6	960.6	628.3	2,031.8	1,576.0	811.2	760.6	1,284.3	468.2
2010	1,907.3	1,232.4	786.3	445.1	1,111.0	675.6	2,295.3	1,818.3	1,002.3	802.9	1,526.0	485.1
2011	2,044.2	1,324.5	861.8	463.3	1,204.9	719.7	2,405.8	1,918.6	1,096.9	808.8	1,638.7	493.1
2012	2,126.3	1,376.9	905.0	474.0	1,256.4	749.6	2,464.7	1,969.5	1,186.2	776.0	1,729.5	500.4
2013	2,190.3	1,417.3	924.9	493.5	1,295.3	773.5	2,494.6	2,009.0	1,242.0	763.1	1,795.5	487.7
2014	2,275.8	1,480.6	963.5	517.9	1,348.8	794.3	2,623.4	2,120.8	1,352.1	769.3	1,929.5	503.4
2015	2,283.1	1,475.7	942.5	532.6	1,341.3	807.5	2,759.5	2,243.5	1,442.2	802.7	2,052.5	515.8
2016	2,293.9	1,485.2	932.7	552.3	1,343.6	808.7	2,799.7	2,268.4	1,459.7	810.0	2,069.6	531.4
2017	2,388.3	1,546.7	962.5	584.1	1,402.8	841.6	2,931.6	2,369.9	1,562.3	807.6	2,172.5	561.7
2018	2,456.4	1,612.1	996.5	615.4	1,467.7	844.2	3,050.0	2,491.6	1,650.9	841.0	2,305.0	558.4
2019	2,469.5	1,614.9	974.2	639.6	1,471.7	854.5	3,085.9	2,504.8	1,656.3	848.6	2,331.7	580.8
2020	2,157.8	1,452.6	819.6	633.7	1,302.0	706.9	2,813.6	2,357.8	1,534.9	822.4	2,209.6	458.8
2021	2,297.2	1,564.2	917.7	648.6	1,422.9	735.5	3,223.5	2,699.0	1,807.0	893.8	2,539.5	527.8
2022	2,472.1	1,659.9	967.1	693.8	1,524.6	815.5	3,496.4	2,880.5	1,950.3	935.4	2,729.9	618.0
2023	2,541.0	1,696.0	992.8	705.0	1,571.9	848.6	3,466.2	2,825.4	1,929.3	903.8	2,667.4	641.1
2024	2,633.6	1,730.6	1,003.1	728.2	1,594.1	905.3	3,666.2	2,971.0	2,040.2	940.6	2,821.3	693.9
2025 p	2,675.4	1,762.4	1,026.6	737.2	1,629.4	915.7	3,766.0	3,044.9	2,106.8	949.8	2,911.0	718.3
2022: I	2,377.5	1,596.8	940.8	659.8	1,462.2	783.9	3,484.4	2,897.6	1,965.7	938.1	2,748.1	589.2
II	2,451.7	1,645.5	957.7	688.7	1,499.1	809.6	3,544.7	2,926.6	1,983.3	948.8	2,783.6	620.4
III	2,538.9	1,710.9	980.4	727.4	1,575.5	831.2	3,492.0	2,859.3	1,945.9	920.3	2,705.0	634.5
IV	2,520.1	1,686.5	989.4	699.1	1,561.9	837.2	3,464.6	2,838.6	1,906.3	934.5	2,682.8	627.7
2023: I	2,543.5	1,711.9	994.4	718.0	1,585.2	835.5	3,455.7	2,829.5	1,917.5	917.4	2,666.0	627.7
II	2,509.3	1,665.6	981.2	686.9	1,545.5	846.9	3,437.4	2,798.7	1,919.4	888.1	2,647.7	638.7
III	2,536.7	1,690.0	1,002.7	690.9	1,569.7	850.2	3,462.9	2,826.9	1,928.4	906.2	2,669.3	636.6
IV	2,574.6	1,716.5	992.9	724.0	1,587.2	861.7	3,508.8	2,846.3	1,951.9	903.6	2,686.5	661.5
2024: I	2,603.6	1,716.2	991.8	724.7	1,579.3	890.1	3,567.8	2,897.7	1,995.6	912.7	2,747.6	669.5
II	2,608.0	1,717.7	1,001.2	717.7	1,585.7	892.8	3,640.2	2,960.9	2,033.6	937.1	2,804.5	679.1
III	2,664.3	1,752.8	1,024.8	729.5	1,616.8	913.9	3,729.2	3,024.4	2,086.7	949.1	2,877.9	703.8
IV	2,658.5	1,735.5	994.5	741.0	1,594.6	924.3	3,727.4	3,000.9	2,044.8	963.7	2,855.3	723.2
2025: I	2,659.5	1,762.1	1,039.7	724.6	1,629.6	901.0	4,040.2	3,332.2	2,220.7	1,112.5	3,203.8	712.5
II	2,647.3	1,741.0	1,013.8	728.5	1,608.7	908.7	3,705.3	2,991.8	2,066.0	937.2	2,859.2	710.4
III	2,708.8	1,777.1	1,031.9	746.3	1,642.6	933.8	3,664.3	2,937.0	2,048.5	902.4	2,798.7	721.5
IV p	2,685.9	1,769.2	1,020.8	749.3	1,636.8	919.5	3,654.1	2,918.5	2,092.2	847.0	2,782.2	728.6

[1] Certain goods, primarily military equipment purchased and sold by the Federal Government, are included in services. Repairs and alterations of equipment are also included in services.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–16. Sources of personal income, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Personal income	Compensation of employees							Proprietors' income with inventory valuation and capital consumption adjustments			Rental income of persons with capital consumption adjustment
		Total	Wages and salaries			Supplements to wages and salaries			Total	Farm	Nonfarm	
			Total	Private industries	Government	Total	Employer contributions for employee pension and insurance funds	Employer contributions for government social insurance				
1975	1,369.4	947.2	814.8	638.6	176.2	132.4	85.7	46.7	118.2	22.0	96.2	22.3
1976	1,502.6	1,048.3	899.7	710.8	188.9	148.6	94.2	54.4	131.0	17.2	113.8	20.3
1977	1,659.2	1,165.8	994.2	791.6	202.6	171.7	110.6	61.1	144.5	16.0	128.5	15.9
1978	1,863.7	1,316.8	1,120.6	900.6	220.0	196.2	124.7	71.5	166.0	19.9	146.1	16.5
1979	2,082.7	1,477.2	1,253.3	1,016.2	237.1	223.9	141.3	82.6	179.4	22.2	157.3	16.1
1980	2,324.5	1,622.2	1,373.4	1,112.0	261.5	248.8	159.9	88.9	171.6	11.7	159.9	19.0
1981	2,603.2	1,792.5	1,511.4	1,225.5	285.8	281.2	177.5	103.6	179.7	19.0	160.7	23.8
1982	2,789.5	1,893.0	1,587.5	1,280.0	307.5	305.5	195.7	109.8	171.2	13.3	157.9	23.8
1983	2,981.7	2,012.5	1,677.5	1,352.7	324.8	335.0	215.1	119.9	186.3	6.2	180.1	24.4
1984	3,288.7	2,215.9	1,844.9	1,496.8	348.1	371.0	231.9	139.0	228.2	20.9	207.3	24.7
1985	3,522.9	2,387.3	1,982.6	1,608.7	373.9	404.8	257.0	147.7	241.1	21.0	220.1	26.2
1986	3,731.2	2,542.1	2,102.3	1,705.1	397.2	439.7	281.9	157.9	256.5	22.8	233.7	18.3
1987	3,946.8	2,722.4	2,256.3	1,833.2	423.1	466.1	299.9	166.3	286.5	28.9	257.6	16.6
1988	4,280.0	2,948.0	2,439.8	1,987.7	452.0	508.2	323.6	184.6	325.5	26.8	298.7	22.5
1989	4,621.0	3,139.6	2,583.1	2,101.9	481.1	556.6	362.9	193.7	341.1	33.0	308.1	21.5
1990	4,913.3	3,340.4	2,741.2	2,222.2	519.0	599.2	392.7	206.5	353.2	32.2	321.0	28.2
1991	5,089.9	3,450.5	2,814.5	2,265.7	548.8	636.0	420.9	215.1	354.2	26.8	327.4	38.6
1992	5,417.5	3,668.2	2,965.5	2,393.5	572.0	702.7	474.3	228.4	400.2	34.8	365.4	60.6
1993	5,652.9	3,817.3	3,079.3	2,490.3	589.0	737.9	498.3	239.7	428.0	31.4	396.6	90.1
1994	5,940.9	4,006.2	3,236.6	2,627.1	609.5	769.6	515.5	254.1	456.6	34.7	422.0	113.7
1995	6,283.4	4,198.1	3,418.0	2,789.0	629.0	780.1	515.9	264.1	481.2	22.0	459.2	124.9
1996	6,666.2	4,416.9	3,616.5	2,968.4	648.1	800.5	525.7	274.8	543.8	37.3	506.4	142.5
1997	7,074.0	4,708.8	3,876.8	3,205.0	671.9	832.0	542.4	289.6	584.0	32.4	551.6	147.1
1998	7,588.4	5,071.1	4,181.6	3,480.3	701.3	889.5	582.3	307.2	640.3	28.6	611.7	165.2
1999	7,978.6	5,402.7	4,457.9	3,724.2	733.8	944.8	621.4	323.3	696.4	28.0	668.3	178.5
2000	8,621.3	5,847.1	4,824.9	4,045.2	779.8	1,022.2	677.0	345.2	753.6	31.2	722.4	183.5
2001	8,993.1	6,038.3	4,953.6	4,131.6	822.0	1,084.7	726.7	358.0	831.1	32.1	798.9	202.4
2002	9,150.0	6,135.1	4,995.8	4,123.0	872.9	1,139.3	773.2	366.0	870.1	20.3	849.8	208.4
2003	9,481.8	6,353.6	5,138.3	4,224.3	914.0	1,215.3	832.8	382.5	897.5	37.1	860.4	227.1
2004	10,015.9	6,719.5	5,421.0	4,468.7	952.3	1,298.5	889.7	408.8	962.9	52.4	910.5	242.8
2005	10,546.1	7,066.1	5,691.4	4,700.1	991.3	1,374.7	946.7	428.1	979.1	47.9	931.2	221.1
2006	11,302.0	7,479.7	6,056.7	5,022.2	1,034.5	1,422.9	975.6	447.3	1,050.9	34.3	1,016.6	181.1
2007	11,932.1	7,878.5	6,396.4	5,307.8	1,088.5	1,482.1	1,020.4	461.7	995.4	41.5	953.9	186.3
2008	12,425.7	8,056.8	6,534.1	5,390.2	1,143.9	1,522.7	1,051.3	471.4	960.3	39.5	920.8	290.3
2009	12,065.7	7,759.0	6,249.1	5,073.9	1,175.2	1,509.9	1,051.8	458.1	938.1	27.6	910.5	347.6
2010	12,556.6	7,925.4	6,372.5	5,181.3	1,191.2	1,552.9	1,083.9	469.0	1,108.5	38.7	1,069.8	433.7
2011	13,309.6	8,226.2	6,626.2	5,431.3	1,194.9	1,600.0	1,107.3	492.7	1,228.3	63.9	1,164.4	506.5
2012	13,917.8	8,567.4	6,928.1	5,729.8	1,198.3	1,639.2	1,125.9	513.3	1,299.9	61.0	1,238.9	534.5
2013	14,068.8	8,835.0	7,114.0	5,906.0	1,208.0	1,721.0	1,194.7	526.3	1,351.7	87.5	1,264.2	578.7
2014	14,784.1	9,250.2	7,476.3	6,239.4	1,236.9	1,773.9	1,227.5	546.4	1,370.0	68.5	1,301.5	598.5
2015	15,473.7	9,699.4	7,859.5	6,583.7	1,275.8	1,839.9	1,270.6	569.4	1,347.7	55.5	1,292.3	601.4
2016	15,887.7	9,966.1	8,091.2	6,783.2	1,308.0	1,874.9	1,293.9	580.9	1,349.2	36.0	1,313.2	618.7
2017	16,662.8	10,424.4	8,474.4	7,126.2	1,348.2	1,950.0	1,345.3	604.7	1,428.6	41.0	1,387.6	642.0
2018	17,528.2	10,957.4	8,899.8	7,498.0	1,401.9	2,057.6	1,432.8	624.8	1,495.3	32.1	1,463.2	671.5
2019	18,363.2	11,446.6	9,325.1	7,874.8	1,450.3	2,121.5	1,470.8	650.6	1,555.8	33.8	1,522.0	688.4
2020	19,631.7	11,598.1	9,465.3	7,971.1	1,494.3	2,132.8	1,474.0	658.8	1,599.5	51.1	1,548.5	743.4
2021	21,498.9	12,558.4	10,315.0	8,770.6	1,544.4	2,243.4	1,536.5	706.9	1,818.7	74.5	1,744.2	776.7
2022	22,153.8	13,443.4	11,122.8	9,501.5	1,621.3	2,320.6	1,555.0	765.6	1,868.9	95.1	1,773.8	871.1
2023	23,585.0	14,207.4	11,732.4	10,000.5	1,731.9	2,475.0	1,660.1	814.9	1,942.0	71.4	1,870.6	1,002.5
2024	24,905.9	15,027.1	12,387.9	10,538.8	1,849.1	2,639.1	1,772.7	866.4	2,023.1	57.8	1,965.2	1,078.1
2025 *p*	26,119.0	15,745.0	12,975.6	11,045.3	1,930.2	2,769.4	1,859.3	910.1	2,109.4	75.8	2,033.6	1,114.6
2022: I	21,633.5	13,178.9	10,892.0	9,299.9	1,592.1	2,286.9	1,540.8	746.2	1,836.0	83.4	1,752.6	818.6
II	21,913.3	13,293.8	10,994.8	9,389.4	1,605.4	2,299.0	1,543.2	755.8	1,849.5	98.9	1,750.6	860.4
III	22,354.2	13,611.6	11,278.1	9,647.1	1,631.0	2,333.6	1,555.9	777.6	1,889.1	98.6	1,790.4	887.2
IV	22,714.2	13,689.2	11,326.2	9,669.6	1,656.7	2,362.9	1,579.9	783.0	1,901.1	99.4	1,801.7	918.3
2023: I	23,108.7	13,888.3	11,479.2	9,792.4	1,686.8	2,409.1	1,614.6	794.5	1,933.8	96.9	1,836.9	965.5
II	23,461.5	14,092.5	11,641.6	9,930.2	1,711.3	2,450.9	1,643.3	807.6	1,931.7	77.1	1,854.5	998.0
III	23,735.3	14,334.5	11,836.2	10,085.7	1,750.5	2,498.3	1,675.4	822.9	1,943.1	63.6	1,879.5	1,012.9
IV	24,034.6	14,514.3	11,972.7	10,193.7	1,779.0	2,541.6	1,707.2	834.4	1,959.3	47.8	1,911.4	1,033.6
2024: I	24,478.7	14,739.7	12,149.5	10,337.6	1,811.9	2,590.2	1,741.1	849.1	1,982.9	51.6	1,931.3	1,069.0
II	24,800.8	14,943.7	12,317.2	10,479.8	1,837.4	2,626.5	1,764.8	861.7	2,013.2	52.5	1,960.8	1,069.7
III	25,021.7	15,115.7	12,458.4	10,598.5	1,859.9	2,657.3	1,785.5	871.9	2,031.7	56.3	1,975.4	1,077.3
IV	25,322.4	15,309.1	12,626.6	10,739.4	1,887.2	2,682.5	1,799.4	883.1	2,064.5	71.0	1,993.4	1,096.7
2025: I	25,717.7	15,510.9	12,788.7	10,879.0	1,909.7	2,722.2	1,823.8	898.4	2,103.3	84.2	2,019.1	1,115.6
II	25,987.5	15,610.3	12,860.0	10,930.3	1,929.7	2,750.3	1,848.0	902.3	2,105.2	78.2	2,027.0	1,119.2
III	26,269.6	15,836.9	13,049.3	11,106.0	1,943.3	2,787.5	1,872.7	914.8	2,117.7	81.2	2,036.5	1,112.2
IV *p*	26,501.2	16,021.8	13,204.2	11,266.0	1,938.3	2,817.6	1,892.5	925.1	2,111.4	59.5	2,051.9	1,111.4

See next page for continuation of table.

Table B–16. Sources of personal income, 1975–2025—*Continued*

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Personal income receipts on assets			Personal current transfer receipts								Less: Contributions for government social insurance, domestic
					Government social benefits to persons						Other current transfer receipts, from business (net)	
	Total	Personal interest income	Personal dividend income	Total	Total [1]	Social security [2]	Medicare [3]	Medicaid	Unemployment insurance	Other		
1975	201.0	168.0	32.9	170.0	163.1	65.9	15.6	13.9	18.1	35.7	6.8	89.3
1976	220.0	181.0	39.0	184.3	177.6	74.5	18.8	15.5	16.4	38.7	6.7	101.3
1977	251.6	206.9	44.7	194.6	189.5	83.2	22.1	16.7	13.1	40.9	5.1	113.1
1978	285.8	235.1	50.7	209.9	203.4	91.4	25.5	18.6	9.4	44.9	6.5	131.3
1979	327.1	269.5	57.7	235.6	227.3	102.6	29.9	21.1	9.7	49.9	8.2	152.7
1980	397.7	333.5	64.2	280.1	271.5	118.6	36.2	23.9	16.1	62.1	8.6	166.2
1981	483.9	414.2	69.7	319.0	307.8	138.6	43.5	27.7	15.9	66.3	11.2	195.7
1982	554.9	481.8	73.1	355.5	343.1	153.7	50.9	30.2	25.2	66.8	12.4	208.9
1983	600.2	518.2	82.0	384.3	370.5	164.4	57.8	33.9	26.4	71.5	13.8	226.0
1984	676.7	590.9	85.8	400.6	380.9	173.0	64.7	36.6	16.0	74.3	19.7	257.5
1985	724.3	630.5	93.8	425.4	403.1	183.3	69.7	39.7	15.9	78.0	22.3	281.4
1986	766.3	663.1	103.1	451.6	428.6	193.6	75.3	43.6	16.5	83.0	22.9	303.4
1987	776.3	674.3	102.0	468.1	447.9	201.0	81.6	47.8	14.6	86.4	20.2	323.1
1988	848.0	720.1	128.0	497.5	476.9	213.9	86.3	53.0	13.3	93.6	20.6	361.5
1989	959.7	802.3	157.5	544.2	521.1	227.4	98.2	60.8	14.4	103.1	23.2	385.2
1990	1,004.8	835.1	169.7	596.9	574.7	244.1	107.6	73.1	18.2	113.9	22.2	410.1
1991	1,008.7	827.7	181.0	668.1	650.5	264.2	117.5	96.9	26.8	127.0	17.6	430.2
1992	995.4	806.2	189.3	748.0	731.8	281.8	132.6	116.2	39.6	142.9	16.3	455.0
1993	1,001.9	796.8	205.1	793.0	778.9	297.9	146.8	130.1	34.8	150.0	14.1	477.4
1994	1,043.6	806.3	237.3	829.0	815.7	312.2	164.4	139.4	23.9	156.1	13.3	508.2
1995	1,128.5	869.4	259.2	883.5	864.7	327.7	181.2	149.6	21.7	164.0	18.7	532.8
1996	1,188.8	886.4	302.4	929.2	906.3	342.0	194.9	158.2	22.3	167.6	22.9	555.1
1997	1,266.5	928.8	337.8	954.9	935.4	356.6	206.9	163.1	20.1	166.4	19.4	587.2
1998	1,352.5	994.0	358.4	983.9	957.9	369.2	205.6	170.2	19.7	170.0	26.0	624.7
1999	1,336.2	987.7	348.5	1,026.2	992.2	379.9	208.7	184.6	20.5	174.4	34.0	661.3
2000	1,455.6	1,069.3	386.4	1,087.3	1,044.9	401.4	219.1	199.5	20.7	179.1	42.4	705.8
2001	1,461.9	1,087.5	374.4	1,192.6	1,145.8	425.1	242.6	227.3	31.9	192.4	46.8	733.2
2002	1,402.6	1,001.2	401.5	1,285.2	1,251.0	446.9	259.7	250.0	53.5	211.3	34.2	751.5
2003	1,435.6	1,004.4	431.2	1,347.3	1,321.0	463.5	276.7	264.5	53.2	231.2	26.3	779.3
2004	1,498.7	939.3	559.4	1,421.2	1,404.5	485.5	304.4	289.8	36.4	254.3	16.8	829.2
2005	1,636.4	1,081.3	555.0	1,516.7	1,490.9	512.7	332.1	304.4	31.8	273.5	25.8	873.3
2006	1,899.0	1,215.4	683.6	1,613.8	1,593.0	544.1	399.1	299.1	30.4	281.5	20.8	922.5
2007	2,105.3	1,325.2	780.1	1,728.1	1,697.3	575.7	428.2	324.2	32.7	294.9	30.8	961.4
2008	2,151.5	1,345.8	805.7	1,955.1	1,919.3	605.5	461.6	338.3	51.1	417.7	35.8	988.4
2009	1,838.5	1,272.8	565.6	2,146.7	2,107.7	664.5	493.0	369.6	131.2	398.0	39.0	964.3
2010	1,747.7	1,211.1	536.6	2,325.2	2,281.4	690.2	513.4	396.9	138.9	484.2	43.7	983.7
2011	1,906.5	1,216.1	690.4	2,358.7	2,310.1	713.3	535.6	406.0	107.2	484.8	48.5	916.7
2012	2,103.6	1,271.8	831.7	2,363.0	2,322.6	762.1	554.7	417.5	83.6	434.4	40.4	950.5
2013	1,983.2	1,201.6	781.6	2,424.3	2,385.9	799.0	572.8	440.0	62.5	432.5	38.4	1,104.3
2014	2,177.4	1,260.4	917.0	2,541.6	2,498.6	834.6	600.0	490.9	35.5	453.5	42.9	1,153.6
2015	2,344.6	1,347.7	996.9	2,685.4	2,635.1	871.8	634.9	535.9	32.5	467.4	50.3	1,204.7
2016	2,415.4	1,388.0	1,027.4	2,777.0	2,717.3	896.5	662.1	562.8	32.0	467.1	59.7	1,238.8
2017	2,611.0	1,466.7	1,144.3	2,855.7	2,807.4	926.1	691.8	573.7	30.2	474.2	48.3	1,298.9
2018	2,789.4	1,554.5	1,234.9	2,976.3	2,926.0	972.4	733.6	589.8	27.6	482.9	50.3	1,361.7
2019	2,950.0	1,603.5	1,346.5	3,147.1	3,090.8	1,030.7	790.5	614.0	27.5	498.2	56.3	1,424.8
2020	2,905.0	1,505.9	1,399.1	4,235.2	4,187.5	1,077.9	827.4	657.6	528.0	951.8	47.7	1,449.6
2021	3,244.3	1,472.8	1,771.4	4,660.2	4,566.7	1,114.6	886.3	736.5	314.9	1,361.8	93.5	1,559.3
2022	3,534.6	1,572.9	1,961.7	4,139.6	4,013.0	1,211.5	942.4	814.3	23.8	852.6	126.6	1,703.8
2023	3,977.1	1,829.7	2,147.4	4,256.7	4,150.6	1,357.0	1,024.8	878.2	33.3	660.7	106.1	1,800.6
2024	4,145.3	1,926.6	2,218.7	4,555.4	4,455.7	1,448.0	1,102.4	938.2	36.5	700.7	99.7	1,923.2
2025 ^{p}	4,216.4	1,968.0	2,248.4	4,955.0	4,848.2	1,572.8	1,221.3	1,013.3	38.0	712.2	106.8	2,021.3
2022: I	3,393.6	1,488.3	1,905.3	4,069.3	3,947.8	1,199.2	923.7	792.1	24.4	848.5	121.5	1,662.9
II	3,475.9	1,537.6	1,938.3	4,118.8	3,987.0	1,206.8	933.0	819.3	21.8	841.4	131.7	1,685.0
III	3,566.0	1,592.0	1,974.0	4,128.9	3,999.9	1,214.2	945.0	818.9	23.2	827.9	129.0	1,728.6
IV	3,702.9	1,673.5	2,029.4	4,241.7	4,117.3	1,225.8	968.0	827.1	25.8	892.7	124.3	1,738.9
2023: I	3,843.3	1,750.7	2,092.7	4,238.2	4,123.3	1,340.9	993.1	876.8	30.0	696.8	114.8	1,760.4
II	3,955.7	1,808.1	2,147.6	4,268.9	4,161.6	1,352.6	1,016.2	910.9	32.8	655.7	107.3	1,785.4
III	4,007.6	1,850.8	2,156.9	4,253.3	4,150.3	1,359.9	1,036.4	867.3	34.9	651.4	103.0	1,816.0
IV	4,101.8	1,909.4	2,192.4	4,266.4	4,167.0	1,374.5	1,053.6	857.7	35.5	638.9	99.4	1,840.8
2024: I	4,124.5	1,906.7	2,217.8	4,447.6	4,346.5	1,427.6	1,069.1	909.4	35.5	692.2	101.1	1,884.9
II	4,153.6	1,928.0	2,225.6	4,533.5	4,424.9	1,441.0	1,088.2	934.7	36.1	703.0	108.7	1,912.9
III	4,144.7	1,930.2	2,214.6	4,587.6	4,492.8	1,454.2	1,111.9	947.9	37.0	707.3	94.8	1,935.4
IV	4,158.5	1,941.7	2,216.8	4,653.0	4,558.7	1,469.1	1,140.3	960.7	37.3	700.4	94.4	1,959.4
2025: I	4,195.9	1,954.5	2,241.3	4,788.0	4,685.0	1,529.8	1,172.6	955.2	37.1	720.3	103.0	1,995.9
II	4,205.7	1,960.6	2,245.0	4,952.3	4,852.0	1,607.5	1,205.3	991.5	38.0	723.4	100.3	2,005.1
III	4,220.1	1,971.1	2,249.0	5,013.9	4,901.6	1,575.4	1,237.6	1,045.6	38.5	705.6	112.3	2,031.3
IV ^{p}	4,243.8	1,985.6	2,258.2	5,065.9	4,954.2	1,578.3	1,269.5	1,060.8	38.3	699.6	111.6	2,053.0

[1] Includes Veterans' benefits, not shown seperately.
[2] Includes old-age, survivors, and disability insurance benefits that are distributed from the federal old-age and survivors insurance trust fund and the disability insurance trust fund.
[3] Includes hospital and supplementary medical insurance benefits that are distributed from the federal hospital insurance trust fund and the supplementary medical insurance trust fund.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–17. Disposition of personal income, 1975–2025

[Billions of dollars, except as noted; quarterly data at seasonally adjusted annual rates]

Year or quarter	Personal income	Less: Personal current taxes	Equals: Disposable personal income	Less: Personal outlays				Equals: Personal saving	Percent of disposable personal income [2]		
				Total	Personal consumption expenditures	Personal interest payments [1]	Personal current transfer payments		Personal outlays: Total	Personal outlays: Personal consumption expenditures	Personal saving
1975	1,369.4	147.6	1,221.8	1,057.8	1,030.5	23.4	3.8	164.0	86.6	84.3	13.4
1976	1,502.6	172.7	1,330.0	1,175.6	1,147.7	23.5	4.4	154.4	88.4	86.3	11.6
1977	1,659.2	197.9	1,461.4	1,305.4	1,274.0	26.6	4.8	155.9	89.3	87.2	10.7
1978	1,863.7	229.6	1,634.1	1,459.0	1,422.3	31.3	5.4	175.1	89.3	87.0	10.7
1979	2,082.7	268.9	1,813.8	1,627.0	1,585.4	35.5	6.0	186.8	89.7	87.4	10.3
1980	2,324.5	299.5	2,024.9	1,800.1	1,750.7	42.5	6.9	224.9	88.9	86.5	11.1
1981	2,603.2	345.8	2,257.4	1,993.9	1,934.0	48.4	11.5	263.6	88.3	85.7	11.7
1982	2,789.5	354.7	2,434.7	2,143.5	2,071.3	58.5	13.8	291.2	88.0	85.1	12.0
1983	2,981.7	352.9	2,628.8	2,364.2	2,281.6	67.4	15.1	264.7	89.9	86.8	10.1
1984	3,288.7	377.9	2,910.8	2,584.5	2,492.3	75.0	17.1	326.3	88.8	85.6	11.2
1985	3,522.9	417.8	3,105.1	2,822.1	2,712.8	90.6	18.8	282.9	90.9	87.4	9.1
1986	3,731.2	437.8	3,293.4	3,004.7	2,886.3	97.3	21.1	288.7	91.2	87.6	8.8
1987	3,946.8	489.6	3,457.2	3,196.6	3,076.3	97.1	23.2	260.6	92.5	89.0	7.5
1988	4,280.0	505.9	3,774.1	3,457.0	3,330.0	101.3	25.6	317.1	91.6	88.2	8.4
1989	4,621.0	567.7	4,053.3	3,717.9	3,576.8	113.1	28.0	335.4	91.7	88.2	8.3
1990	4,913.3	594.7	4,318.6	3,958.0	3,809.0	118.4	30.6	360.6	91.7	88.2	8.4
1991	5,089.9	588.9	4,501.0	4,100.0	3,943.4	119.9	36.7	401.0	91.1	87.6	8.9
1992	5,417.5	612.8	4,804.7	4,354.2	4,197.6	116.1	40.5	450.5	90.6	87.4	9.4
1993	5,652.9	648.8	5,004.1	4,611.5	4,452.0	113.9	45.6	392.6	92.2	89.0	7.8
1994	5,940.9	693.1	5,247.8	4,890.6	4,721.0	119.9	49.8	357.2	93.2	90.0	6.8
1995	6,283.4	748.4	5,535.0	5,155.9	4,962.6	140.4	52.9	379.0	93.2	89.7	6.8
1996	6,666.2	837.1	5,829.1	5,459.2	5,244.6	157.0	57.6	369.9	93.7	90.0	6.3
1997	7,074.0	931.8	6,142.2	5,770.4	5,536.8	169.7	63.9	371.8	93.9	90.1	6.1
1998	7,588.4	1,032.4	6,555.9	6,131.3	5,877.2	184.6	69.5	424.6	93.5	89.6	6.5
1999	7,978.6	1,111.9	6,866.7	6,550.9	6,283.8	190.8	76.3	315.8	95.4	91.5	4.6
2000	8,621.3	1,236.3	7,385.0	7,068.1	6,767.2	217.7	83.2	316.8	95.7	91.6	4.3
2001	8,993.1	1,239.0	7,754.1	7,390.9	7,073.8	225.6	91.5	363.2	95.3	91.2	4.7
2002	9,150.0	1,052.2	8,097.9	7,646.3	7,348.9	200.6	96.7	451.6	94.4	90.8	5.6
2003	9,481.8	1,003.5	8,478.2	8,038.3	7,740.7	196.5	101.1	439.9	94.8	91.3	5.2
2004	10,015.9	1,048.7	8,967.1	8,550.1	8,232.0	207.3	110.9	417.0	95.3	91.8	4.7
2005	10,546.1	1,212.5	9,333.6	9,124.5	8,769.1	237.3	118.1	209.2	97.8	94.0	2.2
2006	11,302.0	1,357.0	9,945.0	9,669.1	9,277.2	266.9	124.9	276.0	97.2	93.3	2.8
2007	11,932.1	1,492.5	10,439.6	10,176.2	9,746.6	291.2	138.4	263.4	97.5	93.4	2.5
2008	12,425.7	1,507.5	10,918.2	10,466.7	10,050.1	272.0	144.6	451.5	95.9	92.0	4.1
2009	12,065.7	1,152.4	10,913.3	10,288.4	9,891.2	252.8	144.3	624.9	94.3	90.6	5.7
2010	12,556.6	1,237.6	11,319.0	10,647.6	10,260.3	242.3	145.0	671.4	94.1	90.6	5.9
2011	13,309.6	1,453.7	11,855.9	11,079.6	10,698.9	229.9	150.8	776.3	93.5	90.2	6.5
2012	13,917.8	1,509.5	12,408.3	11,431.8	11,047.4	229.6	154.8	976.5	92.1	89.0	7.9
2013	14,068.8	1,677.5	12,391.2	11,775.5	11,388.2	229.5	157.8	615.7	95.0	91.9	5.0
2014	14,784.1	1,785.7	12,998.4	12,286.4	11,874.5	243.7	168.2	712.0	94.5	91.4	5.5
2015	15,473.7	1,940.9	13,532.9	12,742.3	12,297.4	263.5	181.4	790.6	94.2	90.9	5.8
2016	15,887.7	1,958.8	13,928.9	13,182.7	12,726.8	272.8	183.1	746.2	94.6	91.4	5.4
2017	16,662.8	2,048.8	14,613.9	13,772.3	13,290.6	290.4	191.3	841.6	94.2	90.9	5.8
2018	17,528.2	2,074.2	15,454.0	14,457.4	13,934.4	321.3	201.6	996.7	93.6	90.2	6.4
2019	18,363.2	2,198.7	16,164.5	14,986.3	14,437.5	341.2	207.6	1,178.2	92.7	89.3	7.3
2020	19,631.7	2,248.2	17,383.4	14,721.7	14,231.4	287.7	202.7	2,661.8	84.7	81.9	15.3
2021	21,498.9	2,698.0	18,800.9	16,623.7	16,119.7	278.5	225.6	2,177.2	88.4	85.7	11.6
2022	22,153.8	3,243.3	18,910.5	18,277.6	17,690.0	334.2	253.4	632.9	96.7	93.5	3.3
2023	23,585.0	2,835.7	20,749.3	19,590.0	18,833.2	491.6	265.3	1,159.2	94.4	90.8	5.6
2024	24,905.9	2,988.2	21,917.7	20,724.4	19,896.0	551.0	277.4	1,193.2	94.6	90.8	5.4
2025 [p]	26,119.0	3,236.6	22,882.4	21,821.0	20,956.0	578.1	286.8	1,061.5	95.4	91.6	4.6
2022: I	21,633.5	3,259.2	18,374.4	17,673.6	17,149.0	280.7	243.9	700.8	96.2	93.3	3.8
II	21,913.3	3,297.6	18,615.8	18,157.4	17,606.6	298.3	252.5	458.4	97.5	94.6	2.5
III	22,354.2	3,223.3	19,130.9	18,500.2	17,893.1	351.2	255.9	630.7	96.7	93.5	3.3
IV	22,714.2	3,193.1	19,521.1	18,779.2	18,111.4	406.5	261.3	741.9	96.2	92.8	3.8
2023: I	23,108.7	2,825.3	20,283.4	19,175.8	18,487.0	427.1	261.8	1,107.5	94.5	91.1	5.5
II	23,461.5	2,810.5	20,651.0	19,431.5	18,693.1	475.3	263.1	1,219.5	94.1	90.5	5.9
III	23,735.3	2,840.7	20,894.6	19,756.7	18,961.8	528.1	266.8	1,137.9	94.6	90.7	5.4
IV	24,034.6	2,866.5	21,168.0	19,996.1	19,190.6	535.9	269.6	1,172.0	94.5	90.7	5.5
2024: I	24,478.7	2,903.4	21,575.4	20,244.7	19,443.8	528.1	272.7	1,330.7	93.8	90.1	6.2
II	24,800.8	2,957.6	21,843.2	20,580.6	19,756.1	549.2	275.4	1,262.6	94.2	90.4	5.8
III	25,021.7	3,019.1	22,002.6	20,875.3	20,032.8	563.3	279.2	1,127.2	94.9	91.0	5.1
IV	25,322.4	3,072.9	22,249.5	21,197.1	20,351.3	563.5	282.3	1,052.4	95.3	91.5	4.7
2025: I	25,717.7	3,154.0	22,563.7	21,400.4	20,555.0	568.0	277.4	1,163.3	94.8	91.1	5.2
II	25,987.5	3,200.9	22,786.6	21,646.3	20,789.9	567.5	288.8	1,140.3	95.0	91.2	5.0
III	26,269.6	3,268.4	23,001.2	21,988.1	21,111.2	585.9	291.0	1,013.1	95.6	91.8	4.4
IV [p]	26,501.2	3,323.0	23,178.2	22,249.1	21,368.1	591.0	290.0	929.2	96.0	92.2	4.0

[1] Consists of nonmortgage interest paid by households.
[2] Percents based on data in millions of dollars.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–18. Total and per capita disposable personal income and personal consumption expenditures, and per capita gross domestic product, in current and real dollars, 1975–2025

[Quarterly data at seasonally adjusted annual rates, except as noted]

Year or quarter	Disposable personal income				Personal consumption expenditures				Gross domestic product per capita (dollars)		Population (thousands)[1]
	Total (billions of dollars)		Per capita (dollars)		Total (billions of dollars)		Per capita (dollars)				
	Current dollars	Chained (2017) dollars	Current dollars	Chained (2017) dollars	Current dollars	Chained (2017) dollars	Current dollars	Chained (2017) dollars	Current dollars	Chained (2017) dollars	
1975	1,221.8	4,548.7	5,657	21,061	1,030.5	3,836.7	4,771	17,764	7,801	28,062	215,981
1976	1,330.0	4,694.0	6,098	21,524	1,147.7	4,050.6	5,262	18,573	8,590	29,289	218,086
1977	1,461.4	4,842.7	6,634	21,984	1,274.0	4,221.8	5,783	19,165	9,450	30,337	220,289
1978	1,634.1	5,062.8	7,340	22,741	1,422.3	4,406.5	6,388	19,793	10,563	31,679	222,629
1979	1,813.8	5,161.1	8,058	22,928	1,585.4	4,511.3	7,043	20,041	11,672	32,323	225,106
1980	2,024.9	5,201.8	8,892	22,842	1,750.7	4,497.2	7,688	19,748	12,547	31,869	227,726
1981	2,257.4	5,322.2	9,815	23,139	1,934.0	4,559.6	8,408	19,823	13,943	32,353	230,008
1982	2,434.7	5,438.1	10,485	23,418	2,071.3	4,626.3	8,919	19,922	14,399	31,467	232,218
1983	2,628.8	5,632.1	11,218	24,035	2,281.6	4,888.2	9,737	20,860	15,508	32,613	234,333
1984	2,910.8	6,009.2	12,313	25,420	2,492.3	5,145.4	10,543	21,766	17,080	34,668	236,394
1985	3,105.1	6,194.3	13,019	25,971	2,712.8	5,411.8	11,374	22,690	18,192	35,794	238,506
1986	3,293.4	6,430.0	13,684	26,716	2,886.3	5,635.2	11,992	23,413	19,028	36,698	240,683
1987	3,457.2	6,547.5	14,236	26,962	3,076.3	5,826.1	12,668	23,991	19,993	37,628	242,843
1988	3,774.1	6,878.8	15,401	28,070	3,330.0	6,069.4	13,589	24,767	21,368	38,845	245,061
1989	4,053.3	7,078.6	16,384	28,613	3,576.8	6,246.4	14,458	25,249	22,805	39,893	247,387
1990	4,318.6	7,224.8	17,262	28,878	3,809.0	6,372.2	15,225	25,470	23,835	40,191	250,181
1991	4,501.0	7,286.3	17,753	28,739	3,943.4	6,383.7	15,554	25,179	24,290	39,618	253,530
1992	4,804.7	7,575.9	18,701	29,487	4,197.6	6,618.6	16,338	25,761	25,379	40,472	256,922
1993	5,004.1	7,698.6	19,226	29,578	4,452.0	6,849.2	17,104	26,314	26,350	41,048	260,282
1994	5,247.8	7,908.6	19,919	30,019	4,721.0	7,114.5	17,919	27,005	27,660	42,188	263,455
1995	5,535.0	8,169.2	20,762	30,644	4,962.6	7,324.5	18,615	27,475	28,658	42,811	266,588
1996	5,829.1	8,423.3	21,612	31,230	5,244.6	7,578.6	19,445	28,099	29,932	43,912	269,714
1997	6,142.2	8,723.8	22,502	31,960	5,536.8	7,864.0	20,284	28,810	31,424	45,319	272,958
1998	6,555.9	9,238.0	23,740	33,452	5,877.2	8,281.7	21,283	29,989	32,818	46,803	276,154
1999	6,866.7	9,536.9	24,583	34,142	6,283.8	8,727.3	22,496	31,244	34,480	48,487	279,328
2000	7,385.0	10,003.7	26,151	35,424	6,767.2	9,166.9	23,963	32,461	36,300	49,915	282,398
2001	7,754.1	10,297.3	27,186	36,102	7,073.8	9,393.9	24,801	32,935	37,100	49,893	285,225
2002	8,097.9	10,614.4	28,122	36,861	7,348.9	9,632.8	25,521	33,452	37,954	50,260	287,955
2003	8,478.2	10,884.3	29,172	37,451	7,740.7	9,937.6	26,635	34,194	39,420	51,191	290,626
2004	8,967.1	11,233.2	30,577	38,304	8,232.0	10,312.2	28,070	35,164	41,660	52,682	293,262
2005	9,333.6	11,364.9	31,533	38,396	8,769.1	10,677.4	29,626	36,073	44,052	54,015	295,993
2006	9,945.0	11,777.6	33,281	39,414	9,277.2	10,986.8	31,046	36,767	46,234	54,994	298,818
2007	10,439.6	12,054.1	34,603	39,954	9,746.6	11,253.9	32,306	37,302	47,976	55,561	301,696
2008	10,918.2	12,244.3	35,851	40,205	10,050.1	11,270.7	33,001	37,009	48,498	55,104	304,543
2009	10,913.3	12,273.0	35,520	39,946	9,891.2	11,123.6	32,194	36,205	47,123	53,213	307,240
2010	11,319.0	12,505.3	36,532	40,361	10,260.3	11,335.6	33,115	36,586	48,570	54,189	309,839
2011	11,855.9	12,775.2	37,964	40,908	10,698.9	11,528.5	34,259	36,915	49,952	54,604	312,295
2012	12,408.3	13,125.7	39,426	41,705	11,047.4	11,686.1	35,102	37,131	51,645	55,422	314,725
2013	12,391.2	12,937.1	39,077	40,798	11,388.2	11,889.9	35,914	37,496	53,235	56,172	317,099
2014	12,998.4	13,383.7	40,671	41,876	11,874.5	12,226.4	37,154	38,255	55,094	57,139	319,601
2015	13,532.9	13,908.5	42,013	43,179	12,297.4	12,638.8	38,177	39,237	56,797	58,364	322,113
2016	13,928.9	14,172.0	42,910	43,659	12,726.8	12,949.0	39,207	39,891	57,931	58,968	324,609
2017	14,613.9	14,613.9	44,710	44,710	13,290.6	13,290.6	40,662	40,662	60,002	60,002	326,860
2018	15,454.0	15,144.0	47,002	46,059	13,934.4	13,654.9	42,380	41,530	62,825	61,418	328,794
2019	16,164.5	15,616.5	48,907	47,249	14,437.5	13,948.1	43,682	42,202	65,171	62,677	330,513
2020	17,383.4	16,608.4	52,385	50,049	14,231.4	13,596.9	42,886	40,974	64,414	61,127	331,840
2021	18,800.9	17,252.9	56,544	51,888	16,119.7	14,792.4	48,480	44,488	71,355	64,759	332,503
2022	18,910.5	16,288.1	56,559	48,716	17,690.0	15,236.8	52,909	45,571	77,926	66,026	334,350
2023	20,749.3	17,217.8	61,555	51,078	18,833.2	15,627.8	55,870	46,361	82,506	67,412	337,087
2024	21,917.7	17,723.3	64,446	52,113	19,896.0	16,088.5	58,501	47,306	86,146	68,682	340,095
2025 p	22,882.4	18,028.9	66,919	52,725	20,956.0	16,511.1	61,285	48,286	89,977	69,757	341,944
2022: I	18,374.4	16,179.9	55,102	48,521	17,149.0	15,100.9	51,427	45,285	75,722	65,773	333,463
II	18,615.8	16,097.0	55,742	48,200	17,606.6	15,224.4	52,721	45,587	77,438	65,777	333,960
III	19,130.9	16,353.9	57,171	48,872	17,893.1	15,295.8	53,472	45,710	78,703	66,120	334,628
IV	19,521.1	16,519.2	58,211	49,260	18,111.4	15,326.2	54,007	45,702	79,829	66,433	335,349
2023: I	20,283.4	17,001.5	60,371	50,603	18,487.0	15,495.8	55,025	46,121	81,007	66,789	335,978
II	20,651.0	17,182.8	61,345	51,042	18,693.1	15,553.7	55,529	46,203	81,779	67,077	336,638
III	20,894.6	17,269.4	61,921	51,177	18,961.8	15,671.9	56,193	46,443	83,199	67,689	337,443
IV	21,168.0	17,416.7	62,574	51,485	19,190.6	15,789.7	56,728	46,675	84,025	68,089	338,289
2024: I	21,575.4	17,596.1	63,638	51,901	19,443.8	15,857.7	57,351	46,773	84,676	68,082	339,035
II	21,843.2	17,701.0	64,277	52,088	19,756.1	16,009.6	58,135	47,111	85,770	68,524	339,830
III	22,002.6	17,755.3	64,616	52,143	20,032.8	16,165.8	58,832	47,475	86,669	68,951	340,512
IV	22,249.5	17,843.2	65,247	52,325	20,351.3	16,320.9	59,680	47,861	87,463	69,168	341,005
2025: I	22,563.7	17,943.2	66,095	52,561	20,555.0	16,345.8	60,211	47,881	88,002	68,979	341,381
II	22,786.6	18,025.1	66,669	52,738	20,789.9	16,445.7	60,827	48,117	89,195	69,549	341,787
III	23,001.2	18,070.8	67,220	52,811	21,111.2	16,585.9	61,697	48,472	90,883	70,218	342,177
IV p	23,178.2	18,079.0	67,687	52,796	21,368.1	16,667.0	62,401	48,672	91,821	70,279	342,433

[1] Population of the United States including Armed Forces overseas. Annual data are averages of quarterly data. Quarterly data are averages for the period.

Source: Department of Commerce (Bureau of Economic Analysis and Bureau of the Census).

Table B–19. Gross saving and investment, 1975–2025

[Billions of dollars, except as noted; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross saving: Total gross saving	Net saving: Total net saving	Net private saving: Total	Net private saving: Personal saving	Net private saving: Undistributed corporate profits [1]	Net government saving: Total	Net government saving: Federal	Net government saving: State and local	Consumption of fixed capital: Total	Consumption of fixed capital: Private	Consumption of fixed capital: Government
1975	348.1	109.6	218.3	164.0	54.3	–108.6	–97.9	–10.7	238.5	178.8	59.7
1976	399.3	139.1	224.4	154.4	70.0	–85.3	–80.9	–4.4	260.2	196.5	63.7
1977	459.4	169.6	242.5	155.9	86.6	–72.9	–73.4	.5	289.8	221.1	68.7
1978	548.0	220.8	278.0	175.1	102.9	–57.2	–62.0	4.9	327.2	252.1	75.1
1979	613.6	239.7	288.3	186.8	101.5	–48.6	–47.4	–1.2	373.9	290.7	83.1
1980	630.3	201.9	296.5	224.9	71.6	–94.7	–88.8	–5.9	428.4	335.0	93.5
1981	744.2	257.0	355.3	263.6	91.7	–98.2	–88.1	–10.2	487.2	381.9	105.3
1982	726.0	189.1	379.2	291.2	88.0	–190.1	–167.4	–22.8	537.0	420.4	116.6
1983	716.8	154.2	379.8	264.7	115.1	–225.6	–207.2	–18.4	562.6	438.8	123.8
1984	881.8	283.4	480.1	326.3	153.8	–196.7	–196.5	–.2	598.4	463.5	134.9
1985	881.2	241.0	442.7	282.9	159.7	–201.7	–199.2	–2.4	640.1	496.4	143.7
1986	864.7	179.4	399.3	288.7	110.6	–219.9	–215.9	–4.0	685.3	531.6	153.7
1987	949.1	218.7	398.8	260.6	138.2	–180.1	–165.7	–14.4	730.4	566.3	164.1
1988	1,076.8	292.3	463.6	317.1	146.5	–171.3	–160.0	–11.3	784.5	607.9	176.6
1989	1,110.0	271.7	450.4	335.4	115.0	–178.7	–159.4	–19.3	838.3	649.6	188.6
1990	1,113.6	225.0	464.6	360.6	104.0	–239.5	–203.3	–36.3	888.5	688.4	200.1
1991	1,153.6	221.2	529.8	401.0	128.8	–308.5	–248.4	–60.1	932.4	721.5	210.9
1992	1,148.0	187.8	593.4	450.5	142.9	–405.6	–334.5	–71.1	960.2	742.9	217.4
1993	1,163.9	160.4	546.6	392.6	154.0	–386.2	–313.5	–72.6	1,003.5	778.2	225.3
1994	1,295.8	240.2	560.1	357.2	202.9	–319.9	–255.6	–64.2	1,055.6	822.5	233.1
1995	1,427.2	304.8	617.7	379.0	238.7	–312.9	–242.1	–70.8	1,122.4	880.7	241.7
1996	1,580.0	404.7	638.3	369.9	268.3	–233.6	–179.4	–54.2	1,175.3	929.1	246.2
1997	1,781.9	542.5	676.9	371.8	305.2	–134.4	–92.0	–42.4	1,239.3	987.8	251.6
1998	1,931.7	622.0	651.3	424.6	226.7	–29.3	1.4	–30.7	1,309.7	1,052.2	257.6
1999	2,008.2	609.3	579.8	315.8	264.0	29.5	69.1	–39.7	1,398.9	1,132.2	266.7
2000	2,126.2	614.9	496.7	316.8	179.9	118.2	159.7	–41.5	1,511.2	1,231.5	279.7
2001	2,072.0	472.5	577.3	363.2	214.1	–104.7	15.0	–119.8	1,599.5	1,311.7	287.8
2002	2,000.3	342.3	793.8	451.6	342.2	–451.4	–267.8	–183.6	1,658.0	1,361.8	296.2
2003	1,987.8	268.7	848.2	439.9	408.3	–579.4	–397.4	–182.0	1,719.1	1,412.0	307.1
2004	2,157.8	336.0	879.2	417.0	462.2	–543.3	–393.5	–149.8	1,821.8	1,497.1	324.7
2005	2,353.8	382.8	780.2	209.2	571.0	–397.4	–293.8	–103.7	1,971.1	1,622.6	348.4
2006	2,642.3	518.2	826.1	276.0	550.1	–307.9	–221.9	–86.0	2,124.2	1,751.8	372.3
2007	2,511.9	259.1	649.2	263.4	385.7	–390.0	–259.7	–130.4	2,252.8	1,852.4	400.3
2008	2,211.8	–147.2	699.8	451.5	248.3	–847.0	–624.9	–222.1	2,359.0	1,931.9	427.0
2009	1,997.7	–373.5	1,211.9	624.9	587.0	–1,585.5	–1,243.2	–342.3	2,371.3	1,928.5	442.8
2010	2,300.7	–89.6	1,537.7	671.4	866.2	–1,627.3	–1,318.4	–309.0	2,390.4	1,933.2	457.2
2011	2,533.1	58.8	1,570.0	776.3	793.7	–1,511.2	–1,234.1	–277.0	2,474.4	1,997.2	477.2
2012	2,972.4	396.9	1,754.4	976.5	777.8	–1,357.5	–1,072.7	–284.8	2,575.5	2,081.9	493.6
2013	3,118.8	437.2	1,337.1	615.7	721.4	–899.9	–633.9	–266.0	2,681.6	2,176.6	505.0
2014	3,446.2	626.5	1,458.0	712.0	746.0	–831.6	–594.0	–237.6	2,819.7	2,301.4	518.3
2015	3,587.8	664.9	1,438.9	790.6	648.3	–774.0	–557.4	–216.6	2,922.9	2,397.9	525.1
2016	3,473.7	465.6	1,375.1	746.2	628.9	–909.5	–667.3	–242.2	3,008.1	2,475.6	532.5
2017	3,703.2	554.2	1,515.9	841.6	674.2	–961.6	–736.8	–224.8	3,149.0	2,599.1	549.9
2018	3,950.8	638.2	1,744.5	996.7	747.8	–1,106.2	–906.4	–199.9	3,312.6	2,737.3	575.3
2019	4,163.4	685.9	1,935.4	1,178.2	757.3	–1,249.6	–1,043.8	–205.8	3,477.5	2,879.7	597.8
2020	3,897.2	274.3	3,269.9	2,661.8	608.1	–2,995.6	–2,948.4	–47.1	3,622.9	3,005.7	617.1
2021	4,171.7	300.9	2,919.3	2,177.2	742.1	–2,618.4	–2,855.0	236.6	3,870.8	3,211.9	658.9
2022	4,738.2	430.8	1,367.1	632.9	734.1	–936.2	–1,029.4	93.1	4,307.4	3,578.4	729.0
2023	4,735.3	164.6	2,009.1	1,159.2	849.9	–1,844.5	–1,717.1	–127.4	4,570.7	3,800.4	770.3
2024	4,832.5	35.8	2,088.9	1,193.2	895.7	–2,053.2	–1,874.5	–178.7	4,796.7	3,992.9	803.8
2025 ^{p}	....	....	....	1,061.5	....	....	....	....	5,065.8	4,216.5	849.3
2022: I	4,686.4	535.4	1,278.3	700.8	577.5	–742.9	–927.7	184.8	4,151.0	3,448.2	702.8
II	4,717.7	444.8	1,217.1	458.4	758.7	–772.3	–944.9	172.6	4,272.9	3,549.3	723.6
III	4,866.2	494.2	1,479.8	630.7	849.1	–985.6	–1,029.3	43.7	4,372.0	3,632.4	739.6
IV	4,682.6	249.0	1,493.0	741.9	751.1	–1,244.0	–1,215.6	–28.4	4,433.6	3,683.6	750.0
2023: I	4,670.1	172.3	1,923.8	1,107.5	816.3	–1,751.6	–1,681.6	–70.0	4,497.8	3,737.3	760.5
II	4,700.6	157.8	1,996.2	1,219.5	776.7	–1,838.4	–1,722.3	–116.1	4,542.8	3,775.9	766.9
III	4,694.2	101.4	2,010.9	1,137.9	873.0	–1,909.4	–1,723.1	–186.4	4,592.8	3,819.3	773.5
IV	4,876.3	226.8	2,105.5	1,172.0	933.5	–1,878.7	–1,741.6	–137.2	4,649.5	3,869.0	780.5
2024: I	4,866.9	172.2	2,131.7	1,330.7	801.0	–1,959.5	–1,800.3	–159.2	4,694.7	3,906.0	788.7
II	4,887.1	125.0	2,140.6	1,262.6	878.0	–2,015.6	–1,807.5	–208.1	4,762.1	3,964.2	797.9
III	4,682.5	–151.7	1,984.3	1,127.2	857.1	–2,136.0	–1,955.5	–180.4	4,834.1	4,025.2	808.9
IV	4,893.4	–2.4	2,099.2	1,052.4	1,046.8	–2,101.6	–1,934.5	–167.1	4,895.8	4,076.1	819.7
2025: I	4,997.8	54.6	2,160.0	1,163.3	996.8	–2,105.4	–1,920.9	–184.6	4,943.2	4,112.4	830.8
II	5,055.6	60.8	2,142.0	1,140.3	1,001.7	–2,081.2	–1,892.6	–188.6	4,994.8	4,154.2	840.6
III	5,247.3	135.2	2,164.0	1,013.1	1,150.9	–2,028.8	–1,786.6	–242.2	5,112.1	4,256.8	855.3
IV ^{p}	....	....	....	929.2	....	....	....	....	5,213.3	4,342.7	870.6

[1] With inventory valuation and capital consumption adjustments.

See next page for continuation of table.

Table B–19. Gross saving and investment, 1975–2025—*Continued*

[Billions of dollars, except as noted; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic investment, capital account transactions, and net lending, NIPA [2]						Statistical discrepancy	Addenda:						
	Total	Gross domestic investment			Capital account transactions (net) [3]	Net lending or net borrowing (–), NIPA [2, 4]		Gross private saving	Gross government saving			Net domestic investment	Gross saving as a percent of gross national income	Net saving as a percent of gross national income
		Total	Gross private domestic investment	Gross government investment					Total	Federal	State and local			
1975	361.5	341.7	257.3	84.4	0.1	19.8	13.3	397.1	–48.9	–59.2	10.3	103.1	20.7	6.5
1976	420.0	412.9	323.2	89.6	.1	7.0	20.7	420.9	–21.6	–39.2	17.6	152.6	21.4	7.4
1977	478.9	489.8	396.6	93.2	.1	–11.0	19.4	463.6	–4.2	–28.2	24.0	199.9	22.1	8.1
1978	571.3	583.9	478.4	105.6	.1	–12.7	23.3	530.1	17.9	–12.4	30.3	256.7	23.3	9.4
1979	658.6	659.8	539.7	120.1	.1	–1.3	45.0	579.0	34.6	7.2	27.3	285.9	23.5	9.2
1980	674.6	666.0	530.1	135.9	.1	8.4	44.3	631.5	–1.2	–28.4	27.1	237.6	22.1	7.1
1981	781.9	778.6	631.2	147.3	.1	3.3	37.7	737.2	7.1	–20.6	27.6	291.3	23.2	8.0
1982	734.7	738.0	581.0	156.9	.1	–3.4	8.6	799.6	–73.5	–92.0	18.4	201.0	21.5	5.6
1983	773.6	808.7	637.5	171.2	.1	–35.2	56.9	818.6	–101.8	–126.1	24.3	246.1	19.8	4.3
1984	923.2	1,013.3	820.1	193.2	.1	–90.2	41.4	943.6	–61.8	–105.9	44.1	414.9	21.9	7.0
1985	935.2	1,049.5	829.7	219.9	.1	–114.4	54.1	939.1	–57.9	–102.3	44.4	409.4	20.4	5.6
1986	944.6	1,087.2	849.1	238.1	.1	–142.8	79.8	930.9	–66.2	–112.4	46.2	401.9	19.1	4.0
1987	992.7	1,146.8	892.2	254.6	.1	–154.2	43.6	965.1	–16.0	–55.6	39.6	416.4	19.7	4.5
1988	1,079.6	1,195.4	937.0	258.4	.1	–115.9	2.8	1,071.5	5.3	–41.0	46.4	410.9	20.5	5.6
1989	1,177.8	1,270.1	999.7	270.4	.3	–92.7	67.8	1,100.0	9.9	–32.5	42.4	431.9	19.8	4.9
1990	1,208.9	1,283.8	993.4	290.4	7.4	–82.3	95.4	1,153.0	–39.4	–69.8	30.4	395.3	18.9	3.8
1991	1,246.3	1,238.4	944.3	294.1	5.3	2.6	92.7	1,251.2	–97.6	–108.3	10.7	306.0	18.9	3.6
1992	1,263.6	1,309.1	1,013.0	296.1	–1.3	–44.3	115.5	1,336.3	–188.2	–191.2	3.0	348.9	17.8	2.9
1993	1,319.3	1,398.7	1,106.8	291.9	.9	–80.2	155.4	1,324.8	–160.9	–166.5	5.6	395.2	17.3	2.4
1994	1,435.1	1,550.7	1,256.5	294.2	1.3	–116.9	139.2	1,382.6	–86.8	–105.3	18.5	495.0	18.1	3.3
1995	1,519.3	1,625.2	1,317.5	307.7	.4	–106.3	92.2	1,498.5	–71.3	–88.6	17.3	502.8	18.8	4.0
1996	1,637.0	1,752.0	1,432.1	320.0	.2	–115.2	57.0	1,567.4	12.6	–25.7	38.3	576.7	19.6	5.0
1997	1,792.1	1,922.2	1,595.6	326.6	.5	–130.6	10.3	1,664.7	117.2	62.3	54.8	682.9	20.7	6.3
1998	1,875.3	2,080.7	1,736.7	344.0	.2	–205.6	–56.4	1,703.5	228.2	156.8	71.4	770.9	21.1	6.8
1999	1,978.9	2,255.5	1,887.1	368.5	6.7	–283.3	–29.3	1,712.0	296.2	227.3	68.9	856.6	20.7	6.3
2000	2,030.4	2,427.3	2,038.4	388.9	4.6	–401.4	–95.8	1,728.2	397.9	322.8	75.1	916.0	20.5	5.9
2001	1,955.3	2,346.7	1,934.8	411.9	–11.9	–379.5	–116.7	1,889.0	183.1	179.5	3.6	747.2	19.3	4.4
2002	1,918.7	2,374.1	1,930.4	443.7	4.2	–459.6	–81.7	2,155.6	–155.3	–101.0	–54.3	716.1	18.1	3.1
2003	1,963.6	2,491.3	2,027.1	464.2	8.8	–536.4	–24.2	2,260.1	–272.3	–225.1	–47.1	772.2	17.2	2.3
2004	2,129.7	2,767.5	2,281.3	486.2	4.6	–642.4	–28.1	2,376.4	–218.6	–213.0	–5.6	945.6	17.5	2.7
2005	2,296.8	3,048.0	2,534.7	513.3	–.7	–750.5	–57.0	2,402.8	–49.0	–103.2	54.2	1,077.0	17.9	2.9
2006	2,432.5	3,251.8	2,701.0	550.9	7.7	–827.0	–209.8	2,577.9	64.4	–20.7	85.1	1,127.7	18.8	3.7
2007	2,524.2	3,265.0	2,673.0	592.0	6.4	–747.2	12.3	2,501.6	10.3	–46.9	57.2	1,012.3	17.3	1.8
2008	2,403.0	3,107.2	2,477.6	629.6	.8	–705.0	191.2	2,631.8	–420.0	–399.1	–20.9	748.2	15.0	–1.0
2009	2,189.5	2,572.6	1,929.7	642.9	6.3	–389.4	191.7	3,140.4	–1,142.7	–1,009.5	–133.2	201.3	13.8	–2.6
2010	2,370.2	2,810.0	2,165.5	644.5	7.4	–447.2	69.4	3,470.9	–1,170.2	–1,074.6	–95.5	419.6	15.2	–.6
2011	2,508.8	2,969.2	2,332.6	636.6	9.5	–469.8	–24.3	3,567.2	–1,034.0	–979.2	–54.8	494.8	16.0	.4
2012	2,818.8	3,242.8	2,621.8	621.0	–.5	–423.5	–153.6	3,836.3	–863.9	–811.0	–52.8	667.2	17.9	2.4
2013	3,089.0	3,440.2	2,838.3	601.8	7.0	–358.2	–29.8	3,513.7	–394.9	–367.9	–27.1	758.6	18.2	2.6
2014	3,305.2	3,680.3	3,074.0	606.3	6.9	–382.0	–140.9	3,759.4	–313.2	–322.7	9.5	860.6	19.2	3.5
2015	3,494.8	3,917.9	3,288.5	629.4	8.3	–431.4	–93.0	3,836.7	–248.9	–285.0	36.1	995.0	19.3	3.6
2016	3,526.6	3,928.0	3,278.3	649.7	7.0	–408.4	52.9	3,850.6	–376.9	–393.6	16.7	919.9	18.3	2.5
2017	3,771.1	4,149.1	3,467.7	681.4	16.0	–394.0	67.9	4,114.9	–411.8	–456.6	44.9	1,000.1	18.7	2.8
2018	4,014.3	4,455.4	3,724.8	730.6	4.7	–445.8	63.4	4,481.8	–530.9	–616.2	85.3	1,142.8	18.9	3.1
2019	4,220.4	4,667.7	3,893.7	773.9	6.9	–454.1	57.0	4,815.2	–651.8	–744.9	93.2	1,190.2	19.1	3.2
2020	4,017.8	4,582.4	3,763.4	819.0	6.1	–570.7	120.6	6,275.6	–2,378.5	–2,638.5	260.1	959.5	18.2	1.3
2021	4,209.6	5,078.8	4,246.5	832.3	7.3	–876.5	37.8	6,131.2	–1,959.4	–2,527.0	567.6	1,208.0	17.5	1.3
2022	4,737.8	5,739.0	4,844.3	894.7	1.0	–1,002.2	–.4	4,945.4	–207.2	–672.4	465.2	1,431.6	18.1	1.6
2023	5,061.1	5,999.0	5,023.7	975.3	7.5	–945.3	325.9	5,809.5	–1,074.2	–1,342.0	267.8	1,428.3	17.2	.6
2024	5,128.8	6,308.6	5,259.3	1,049.3	–2.7	–1,177.1	296.3	6,081.9	–1,249.4	–1,481.1	231.7	1,511.9	16.7	.1
2025 [p]	....	6,572.0	5,462.7	1,109.3	....	....	....	....	....	....	....	1,506.2	....	....
2022: I	4,581.2	5,682.6	4,814.3	868.3	6.0	–1,107.4	–105.2	4,726.5	–40.2	–581.4	541.3	1,531.6	18.4	2.1
II	4,667.9	5,699.3	4,811.5	887.8	10.3	–1,041.7	–49.7	4,766.4	–48.7	–590.2	541.5	1,426.4	18.1	1.7
III	4,773.8	5,712.2	4,812.3	899.9	–24.3	–914.1	–92.4	5,112.2	–246.0	–667.8	421.8	1,340.2	18.3	1.9
IV	4,928.3	5,861.9	4,939.2	922.7	12.2	–945.8	245.7	5,176.6	–494.0	–850.1	356.1	1,428.3	17.6	.9
2023: I	4,906.0	5,823.5	4,883.8	939.6	12.0	–929.5	235.9	5,661.1	–991.1	–1,311.9	320.8	1,325.7	17.2	.6
II	5,001.6	5,928.3	4,961.1	967.2	4.9	–931.6	301.0	5,772.0	–1,071.5	–1,349.4	278.0	1,385.5	17.2	.6
III	5,153.4	6,070.2	5,088.8	981.4	4.9	–921.7	459.2	5,830.2	–1,136.0	–1,346.0	210.0	1,477.4	16.9	.4
IV	5,183.6	6,174.0	5,161.2	1,012.9	8.2	–998.6	307.3	5,974.5	–1,098.2	–1,360.6	262.4	1,524.5	17.3	.8
2024: I	5,106.7	6,172.2	5,155.0	1,017.2	8.6	–1,074.2	239.7	6,037.7	–1,170.7	–1,415.2	244.5	1,477.5	17.1	.6
II	5,173.0	6,325.8	5,290.2	1,035.6	8.7	–1,161.5	285.9	6,104.8	–1,217.7	–1,417.4	199.7	1,563.7	16.9	.4
III	5,076.9	6,395.3	5,330.2	1,065.0	9.7	–1,328.1	394.4	6,009.6	–1,327.1	–1,559.6	232.5	1,561.2	16.1	–.5
IV	5,158.5	6,341.1	5,261.8	1,079.3	–37.9	–1,144.7	265.2	6,175.3	–1,281.9	–1,532.1	250.2	1,445.3	16.5	.0
2025: I	5,144.2	6,646.9	5,556.2	1,090.6	–27.1	–1,475.5	146.5	6,272.5	–1,274.7	–1,512.5	237.9	1,703.7	16.7	.2
II	5,296.5	6,463.6	5,358.6	1,105.0	8.2	–1,175.3	240.9	6,296.2	–1,240.5	–1,479.8	239.3	1,468.8	16.7	.2
III	5,555.9	6,535.0	5,419.0	1,115.9	4.8	–983.9	308.6	6,420.8	–1,173.5	–1,365.9	192.4	1,422.9	17.0	.4
IV [p]	....	6,642.5	5,517.0	1,125.5	....	....	....	....	....	....	....	1,429.2	....	....

[2] National income and product accounts (NIPA).
[3] Consists of capital transfers and the acquisition and disposal of nonproduced nonfinancial assets.
[4] Prior to 1982, equals the balance on current account, NIPA.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–20. Median money income (in 2024 dollars) and poverty status of families and people, by race, 2016–2024

Race, Hispanic origin, and year	Families [1]						People below poverty level [2]		Median money income (in 2024 dollars) of people 15 years old and over with income [3]			
	Number (millions)	Median money income (in 2024 dollars) [3]	Below poverty level [2]				Number (millions)	Percent	Males		Females	
			Total		Female householder, no husband present							
			Number (millions)	Percent	Number (millions)	Percent			All people	Year-round full-time workers	All people	Year-round full-time workers
TOTAL (all races) [4]												
2016	82.9	$92,830	8.1	9.8	4.1	26.6	40.6	12.7	$49,620	$68,270	$31,780	$55,150
2017	83.1	95,280	7.8	9.3	4.0	25.7	39.7	12.3	50,680	70,050	31,980	55,680
2017 [5]	83.5	95,520	7.8	9.3	4.0	26.2	39.6	12.3	50,680	69,640	32,490	57,500
2018	83.5	96,730	7.5	9.0	3.7	24.9	38.2	11.8	51,180	70,370	33,300	57,220
2019	83.7	104,200	6.6	7.8	3.3	22.2	34.0	10.5	53,700	73,780	35,640	60,750
2020 [6]	83.7	101,200	7.3	8.7	3.6	23.5	37.6	11.5	51,210	77,890	35,280	63,100
2021	84.3	101,700	7.4	8.8	3.6	23.0	37.9	11.6	52,720	73,190	35,520	60,830
2022	84.4	98,870	7.4	8.8	3.5	23.0	37.9	11.5	51,650	70,550	34,950	59,230
2023	84.7	103,400	7.0	8.3	3.3	21.8	36.8	11.1	52,680	72,620	36,330	59,260
2024	86.0	105,800	6.9	8.1	3.4	21.8	35.9	10.6	52,480	75,440	36,910	61,020
WHITE, non-Hispanic [7]												
2016	54.1	104,800	3.4	6.3	1.6	21.1	17.3	8.8	55,410	78,130	33,830	60,400
2017	53.9	107,700	3.2	6.0	1.4	19.8	17.0	8.7	57,510	78,320	34,020	61,430
2017 [5]	54.2	109,100	3.2	5.9	1.4	20.2	16.6	8.5	57,960	78,190	34,890	63,430
2018	54.2	110,000	3.2	5.8	1.4	19.7	15.7	8.1	58,810	80,290	36,240	62,350
2019	54.3	117,700	2.7	5.0	1.1	17.1	14.2	7.3	61,280	85,200	37,980	65,120
2020 [6]	53.5	115,900	3.1	5.8	1.3	18.8	16.0	8.2	60,200	86,700	37,770	68,690
2021	53.5	115,900	3.0	5.6	1.2	17.3	15.8	8.1	59,060	83,420	37,480	66,370
2022	53.0	110,300	3.2	6.1	1.3	18.9	16.7	8.6	56,200	80,630	37,500	64,550
2023	52.8	116,100	2.8	5.3	1.1	16.7	14.9	7.7	59,510	83,050	38,410	64,750
2024	53.2	120,300	2.8	5.3	1.1	15.7	14.6	7.6	61,040	85,240	39,810	65,440
BLACK [7]												
2016	10.0	63,030	1.9	19.0	1.3	31.6	9.2	22.0	37,840	53,600	29,150	47,670
2017	10.0	63,480	1.8	18.2	1.3	30.8	9.0	21.2	37,780	54,830	29,660	47,110
2017 [5]	10.0	63,550	1.9	18.9	1.4	31.9	9.2	21.7	36,860	53,220	30,020	48,380
2018	9.8	65,310	1.7	17.7	1.2	29.4	8.9	20.8	38,280	56,070	31,320	49,460
2019	10.0	70,920	1.6	16.3	1.1	27.3	8.1	18.8	37,890	56,650	32,750	50,890
2020 [6]	10.2	69,050	1.7	16.8	1.2	28.2	8.6	19.6	37,510	61,720	32,060	55,230
2021	10.3	68,360	1.8	17.4	1.3	29.3	8.6	19.5	38,920	58,710	32,700	55,320
2022	10.4	71,170	1.5	14.3	1.0	24.5	7.6	17.1	39,770	55,860	34,510	53,850
2023	10.4	73,240	1.6	15.4	1.1	25.9	8.0	17.9	41,260	57,990	33,290	52,640
2024	10.6	71,870	1.7	16.1	1.2	27.3	8.4	18.4	41,000	56,850	34,370	53,940
ASIAN [7]												
2016	4.7	119,400	.3	7.2	.1	19.4	1.9	10.1	59,480	85,840	34,180	65,600
2017	4.9	116,400	.4	7.8	.1	15.5	2.0	10.0	61,280	88,850	35,460	65,530
2017 [5]	4.9	118,800	.4	7.4	.1	16.3	1.9	9.7	61,710	88,600	34,630	67,310
2018	5.1	124,500	.4	7.6	.1	19.6	2.0	10.1	63,690	88,260	38,360	71,400
2019	5.1	136,000	.3	5.7	.1	14.4	1.5	7.3	65,050	94,960	38,900	73,050
2020 [6]	5.2	131,500	.3	6.4	.1	15.4	1.6	8.1	62,160	106,600	38,680	86,260
2021	5.3	135,900	.4	7.1	.1	14.7	1.9	9.3	65,080	98,970	39,350	79,030
2022	5.5	134,600	.3	6.3	.1	15.0	1.9	8.6	65,150	96,800	43,320	76,150
2023	5.6	135,200	.4	6.4	.1	13.7	2.0	9.1	66,030	99,220	41,900	76,210
2024	5.9	150,100	.3	4.8	.1	16.2	1.8	7.5	67,240	101,200	43,620	80,180
HISPANIC (any race) [7]												
2016	13.0	65,250	2.3	17.3	1.1	32.7	11.1	19.4	38,960	48,750	25,410	40,900
2017	13.2	67,270	2.2	16.3	1.1	32.7	10.8	18.3	38,510	50,060	25,480	40,700
2017 [5]	13.3	67,240	2.2	16.4	1.1	33.4	10.8	18.3	38,260	48,360	25,730	41,220
2018	13.3	67,760	2.1	15.5	1.0	30.8	10.5	17.6	38,640	49,640	26,670	43,250
2019	13.2	73,840	1.8	13.9	.9	26.8	9.5	15.7	39,130	50,890	28,380	44,730
2020 [6]	13.7	72,040	2.0	14.8	1.0	28.6	10.5	17.0	38,470	54,990	27,480	48,350
2021	14.1	71,530	2.1	15.0	1.0	28.2	10.7	17.1	41,720	53,240	29,080	46,590
2022	14.2	72,360	2.2	15.2	1.0	29.6	10.8	16.9	39,720	51,620	28,570	44,570
2023	14.7	72,990	2.1	14.4	1.0	27.4	10.9	16.6	40,290	51,840	29,090	46,750
2024	15.3	77,420	2.0	13.0	1.0	26.9	10.3	15.0	41,210	52,270	30,860	47,220

[1] The term "family" refers to a group of two or more persons related by birth, marriage, or adoption and residing together. Every family must include a reference person.
[2] Poverty thresholds are updated each year to reflect changes in the consumer price index for all urban consumers (CPI-U).
[3] Adjusted by the chained consumer price index for all urban consumers (C-CPI-U).
[4] Data for American Indians and Alaska natives, native Hawaiians and other Pacific Islanders, and those reporting two or more races are included in the total but not shown separately.
[5] Reflects implementation of an updated data processing system.
[6] Reflects implementation of Census 2020-based population controls comparable to succeeding years.
[7] The CPS allows respondents to choose more than one race. Data shown are for "white alone, non-Hispanic," "black alone," and "Asian alone" race categories. ("Black" is also "black or African American.") Family race and Hispanic origin are based on the reference person.

Note: For details see *Income and Poverty in the United States* in publication Series P–60 on the CPS ASEC.

Source: Department of Commerce (Bureau of the Census).

TABLE B–21. Real farm income, 1960–2026

[Billions of chained (2026) dollars]

Year	Income of farm operators from farming [1]							
	Gross farm income						Production expenses	Net farm income
	Total	Value of agricultural sector production				Direct Federal Government payments		
		Total	Crops [2, 3]	Animals and animal products [3]	Farm-related income [4]			
1960	326.4	320.5	132.6	168.1	19.8	5.9	231.6	94.8
1961	339.4	326.9	132.4	174.0	20.5	12.5	239.3	100.1
1962	350.1	335.7	137.8	177.1	20.8	14.4	250.4	99.8
1963	354.6	340.7	146.6	172.5	21.6	13.9	258.3	96.2
1964	340.7	323.1	135.9	164.8	22.4	17.6	256.2	84.5
1965	368.1	348.6	150.4	175.5	22.7	19.5	266.1	102.0
1966	388.2	363.0	140.9	198.9	23.2	25.2	280.8	107.4
1967	377.7	354.6	143.7	186.8	24.2	23.0	285.4	92.2
1968	371.8	346.9	135.7	187.2	24.1	24.8	283.4	88.4
1969	385.5	359.6	134.5	200.4	24.6	25.9	287.8	97.7
1970	381.9	357.8	133.2	199.8	24.7	24.1	288.6	93.3
1971	383.8	364.4	144.8	194.4	25.2	19.4	291.1	92.8
1972	421.4	397.9	153.7	218.6	25.6	23.5	306.1	115.2
1973	555.4	540.8	241.7	271.5	27.5	14.6	362.5	192.9
1974	506.2	503.5	253.3	220.6	29.6	2.7	365.7	140.5
1975	474.1	470.3	237.7	202.7	30.0	3.8	353.8	120.3
1976	459.9	456.6	216.1	208.4	32.1	3.3	369.8	90.2
1977	457.6	450.0	215.2	199.1	35.6	7.7	374.0	83.7
1978	504.9	493.0	222.5	231.4	39.1	11.9	405.9	99.1
1979	547.1	542.1	242.0	258.4	41.7	5.0	447.6	99.5
1980	496.9	492.6	214.2	234.1	44.3	4.3	443.1	53.7
1981	505.8	500.0	240.0	214.1	45.8	5.9	424.1	81.7
1982	470.2	460.2	205.7	201.9	52.5	10.0	401.9	68.3
1983	424.1	398.5	156.8	193.1	48.7	25.6	384.8	39.3
1984	446.9	424.5	206.8	191.6	26.0	22.4	377.8	69.1
1985	415.4	395.5	190.0	177.9	27.7	19.9	341.9	73.5
1986	394.6	364.8	160.0	178.8	25.9	29.9	316.0	78.7
1987	415.5	374.1	159.1	186.9	28.2	41.3	321.7	93.8
1988	423.9	389.4	165.0	187.4	37.0	34.5	329.5	94.4
1989	439.3	414.4	186.9	191.4	36.1	25.0	332.7	106.6
1990	437.1	416.5	183.9	199.0	33.7	20.5	334.9	102.2
1991	410.6	393.0	173.6	186.5	32.9	17.6	324.6	86.0
1992	419.2	400.0	186.2	182.1	31.7	19.2	314.3	104.9
1993	418.6	391.2	168.8	187.8	34.7	27.4	323.2	95.4
1994	432.0	416.3	200.9	179.4	36.0	15.8	326.9	105.1
1995	412.8	398.6	187.8	171.8	38.9	14.3	334.9	77.9
1996	453.4	439.3	222.5	177.0	39.9	14.1	340.1	113.3
1997	449.9	435.7	212.6	182.1	41.0	14.2	352.9	97.0
1998	434.8	411.7	190.9	176.0	44.7	23.1	346.7	88.1
1999	433.1	393.5	171.0	175.5	46.9	39.7	345.2	87.9
2000	435.6	393.8	171.2	178.6	44.0	41.9	344.2	91.4
2001	440.3	400.8	167.4	187.4	45.9	39.5	343.6	96.7
2002	400.2	378.7	170.0	162.2	46.5	21.6	332.3	68.0
2003	440.3	412.2	184.8	178.7	48.7	28.1	336.5	103.8
2004	488.8	467.3	207.4	206.0	53.9	21.5	343.9	144.9
2005	479.8	440.6	183.8	203.3	53.4	39.2	353.2	126.6
2006	452.3	427.7	185.0	186.0	56.7	24.6	362.8	89.5
2007	515.4	497.3	229.3	210.1	57.9	18.1	409.1	106.3
2008	543.0	524.7	258.8	207.6	58.3	18.2	426.8	116.2
2009	498.1	480.1	243.6	177.0	59.4	18.0	406.1	92.0
2010	521.4	503.2	245.8	205.1	52.3	18.1	408.6	112.7
2011	602.4	587.4	285.6	234.6	67.3	14.9	439.7	162.7
2012	632.6	617.6	299.4	237.9	80.4	15.0	497.0	135.6
2013	669.3	654.1	323.2	250.4	80.5	15.2	498.3	171.0
2014	656.8	643.5	280.4	291.3	71.8	13.3	531.4	125.4
2015	593.9	579.3	248.3	261.6	69.4	14.6	483.8	110.0
2016	550.1	532.8	252.6	220.8	59.4	17.3	467.0	83.2
2017	557.5	542.4	246.3	231.8	64.3	15.1	458.3	99.2
2018	545.2	527.6	239.6	226.8	61.3	17.5	439.6	105.6
2019	541.7	513.4	226.3	220.8	66.3	28.3	438.4	103.4
2020	567.1	510.5	240.1	205.4	65.0	56.7	444.2	122.9
2021	616.4	585.5	291.7	231.5	62.3	30.9	442.4	174.0
2022	685.9	668.6	301.8	285.1	81.6	17.3	483.8	202.0
2023	652.4	639.2	292.5	266.0	80.7	13.1	494.9	157.5
2024	609.5	599.0	244.4	280.2	74.4	10.5	476.3	133.3
2025 p	639.6	608.5	243.1	297.4	67.9	31.1	482.1	157.5
2026 p	631.1	586.7	234.4	276.2	76.2	44.3	477.7	153.4

[1] The GDP chain-type price index is used to convert the current-dollar statistics to 2026=100 equivalents.
[2] Crop receipts include proceeds received from commodities placed under Commodity Credit Corporation loans.
[3] The value of production equates to the sum of cash receipts, home consumption, and the value of the change in inventories.
[4] Includes income from forest products sold, the gross imputed rental value of farm dwellings, machine hire and custom work, and other sources of farm income such as commodity insurance indemnities.

Note: Data for 2025 and 2026 are forecasts.

Source: Department of Agriculture (Economic Research Service).

Table B–22. Civilian labor force, 1929–2025

[Monthly data seasonally adjusted, except as noted]

Year or month	Civilian noninstitutional population[1]	Civilian labor force: Total	Employment: Total	Employment: Agricultural	Employment: Nonagricultural	Unemployment	Not in labor force	Civilian labor force participation rate[2]	Civilian employment/population ratio[3]	Unemployment rate, civilian workers[4]
	Thousands of persons 14 years of age and over							Percent		
1929	....	49,180	47,630	10,450	37,180	1,550	....	....	....	3.2
1930	....	49,820	45,480	10,340	35,140	4,340	....	....	....	8.7
1931	....	50,420	42,400	10,290	32,110	8,020	....	....	....	15.9
1932	....	51,000	38,940	10,170	28,770	12,060	....	....	....	23.6
1933	....	51,590	38,760	10,090	28,670	12,830	....	....	....	24.9
1934	....	52,230	40,890	9,900	30,990	11,340	....	....	....	21.7
1935	....	52,870	42,260	10,110	32,150	10,610	....	....	....	20.1
1936	....	53,440	44,410	10,000	34,410	9,030	....	....	....	16.9
1937	....	54,000	46,300	9,820	36,480	7,700	....	....	....	14.3
1938	....	54,610	44,220	9,690	34,530	10,390	....	....	....	19.0
1939	....	55,230	45,750	9,610	36,140	9,480	....	....	....	17.2
1940	99,840	55,640	47,520	9,540	37,980	8,120	44,200	55.7	47.6	14.6
1941	99,900	55,910	50,350	9,100	41,250	5,560	43,990	56.0	50.4	9.9
1942	98,640	56,410	53,750	9,250	44,500	2,660	42,230	57.2	54.5	4.7
1943	94,640	55,540	54,470	9,080	45,390	1,070	39,100	58.7	57.6	1.9
1944	93,220	54,630	53,960	8,950	45,010	670	38,590	58.6	57.9	1.2
1945	94,090	53,860	52,820	8,580	44,240	1,040	40,230	57.2	56.1	1.9
1946	103,070	57,520	55,250	8,320	46,930	2,270	45,550	55.8	53.6	3.9
1947	106,018	60,168	57,812	8,256	49,557	2,356	45,850	56.8	54.5	3.9
	Thousands of persons 16 years of age and over									
1947	101,827	59,350	57,038	7,890	49,148	2,311	42,477	58.3	56.0	3.9
1948	103,068	60,621	58,343	7,629	50,714	2,276	42,447	58.8	56.6	3.8
1949	103,994	61,286	57,651	7,658	49,993	3,637	42,708	58.9	55.4	5.9
1950	104,995	62,208	58,918	7,160	51,758	3,288	42,787	59.2	56.1	5.3
1951	104,621	62,017	59,961	6,726	53,235	2,055	42,604	59.2	57.3	3.3
1952	105,231	62,138	60,250	6,500	53,749	1,883	43,093	59.0	57.3	3.0
1953	107,056	63,015	61,179	6,260	54,919	1,834	44,041	58.9	57.1	2.9
1954	108,321	63,643	60,109	6,205	53,904	3,532	44,678	58.8	55.5	5.5
1955	109,683	65,023	62,170	6,450	55,722	2,852	44,660	59.3	56.7	4.4
1956	110,954	66,552	63,799	6,283	57,514	2,750	44,402	60.0	57.5	4.1
1957	112,265	66,929	64,071	5,947	58,123	2,859	45,336	59.6	57.1	4.3
1958	113,727	67,639	63,036	5,586	57,450	4,602	46,088	59.5	55.4	6.8
1959	115,329	68,369	64,630	5,565	59,065	3,740	46,960	59.3	56.0	5.5
1960	117,245	69,628	65,778	5,458	60,318	3,852	47,617	59.4	56.1	5.5
1961	118,771	70,459	65,746	5,200	60,546	4,714	48,312	59.3	55.4	6.7
1962	120,153	70,614	66,702	4,944	61,759	3,911	49,539	58.8	55.5	5.5
1963	122,416	71,833	67,762	4,687	63,076	4,070	50,583	58.7	55.4	5.7
1964	124,485	73,091	69,305	4,523	64,782	3,786	51,394	58.7	55.7	5.2
1965	126,513	74,455	71,088	4,361	66,726	3,366	52,058	58.9	56.2	4.5
1966	128,058	75,770	72,895	3,979	68,915	2,875	52,288	59.2	56.9	3.8
1967	129,874	77,347	74,372	3,844	70,527	2,975	52,527	59.6	57.3	3.8
1968	132,028	78,737	75,920	3,817	72,103	2,817	53,291	59.6	57.5	3.6
1969	134,335	80,734	77,902	3,606	74,296	2,832	53,602	60.1	58.0	3.5
1970	137,085	82,771	78,678	3,463	75,215	4,093	54,315	60.4	57.4	4.9
1971	140,216	84,382	79,367	3,394	75,972	5,016	55,834	60.2	56.6	5.9
1972	144,126	87,034	82,153	3,484	78,669	4,882	57,091	60.4	57.0	5.6
1973	147,096	89,429	85,064	3,470	81,594	4,365	57,667	60.8	57.8	4.9
1974	150,120	91,949	86,794	3,515	83,279	5,156	58,171	61.3	57.8	5.6
1975	153,153	93,775	85,846	3,408	82,438	7,929	59,377	61.2	56.1	8.5
1976	156,150	96,158	88,752	3,331	85,421	7,406	59,991	61.6	56.8	7.7
1977	159,033	99,009	92,017	3,283	88,734	6,991	60,025	62.3	57.9	7.1
1978	161,910	102,251	96,048	3,387	92,661	6,202	59,659	63.2	59.3	6.1
1979	164,863	104,962	98,824	3,347	95,477	6,137	59,900	63.7	59.9	5.8
1980	167,745	106,940	99,303	3,364	95,938	7,637	60,806	63.8	59.2	7.1
1981	170,130	108,670	100,397	3,368	97,030	8,273	61,460	63.9	59.0	7.6
1982	172,271	110,204	99,526	3,401	96,125	10,678	62,067	64.0	57.8	9.7
1983	174,215	111,550	100,834	3,383	97,450	10,717	62,665	64.0	57.9	9.6
1984	176,383	113,544	105,005	3,321	101,685	8,539	62,839	64.4	59.5	7.5
1985	178,206	115,461	107,150	3,179	103,971	8,312	62,744	64.8	60.1	7.2
1986	180,587	117,834	109,597	3,163	106,434	8,237	62,752	65.3	60.7	7.0
1987	182,753	119,865	112,440	3,208	109,232	7,425	62,888	65.6	61.5	6.2
1988	184,613	121,669	114,968	3,169	111,800	6,701	62,944	65.9	62.3	5.5
1989	186,393	123,869	117,342	3,199	114,142	6,528	62,523	66.5	63.0	5.3

[1] Not seasonally adjusted.
[2] Civilian labor force as percent of civilian noninstitutional population.
[3] Civilian employment as percent of civilian noninstitutional population.
[4] Unemployed as percent of civilian labor force.

See next page for continuation of table.

TABLE B–22. Civilian labor force, 1929–2025—*Continued*

[Monthly data seasonally adjusted, except as noted]

Year or month	Civilian noninstitutional population [1]	Civilian labor force: Total	Civilian labor force: Employment: Total	Civilian labor force: Employment: Agricultural	Civilian labor force: Employment: Non-agricultural	Civilian labor force: Unemployment	Not in labor force	Civilian labor force participation rate [2]	Civilian employment/population ratio [3]	Unemployment rate, civilian workers [4]
	Thousands of persons 16 years of age and over							Percent		
1990	189,164	125,840	118,793	3,223	115,570	7,047	63,324	66.5	62.8	5.6
1991	190,925	126,346	117,718	3,269	114,449	8,628	64,578	66.2	61.7	6.8
1992	192,805	128,105	118,492	3,247	115,245	9,613	64,700	66.4	61.5	7.5
1993	194,838	129,200	120,259	3,115	117,144	8,940	65,638	66.3	61.7	6.9
1994	196,814	131,056	123,060	3,409	119,651	7,996	65,758	66.6	62.5	6.1
1995	198,584	132,304	124,900	3,440	121,460	7,404	66,280	66.6	62.9	5.6
1996	200,591	133,943	126,708	3,443	123,264	7,236	66,647	66.8	63.2	5.4
1997	203,133	136,297	129,558	3,399	126,159	6,739	66,837	67.1	63.8	4.9
1998	205,220	137,673	131,463	3,378	128,085	6,210	67,547	67.1	64.1	4.5
1999	207,753	139,368	133,488	3,281	130,207	5,880	68,385	67.1	64.3	4.2
2000 [5]	212,577	142,583	136,891	2,464	134,427	5,692	69,994	67.1	64.4	4.0
2001	215,092	143,734	136,933	2,299	134,635	6,801	71,359	66.8	63.7	4.7
2002	217,570	144,863	136,485	2,311	134,174	8,378	72,707	66.6	62.7	5.8
2003	221,168	146,510	137,736	2,275	135,461	8,774	74,658	66.2	62.3	6.0
2004	223,357	147,401	139,252	2,232	137,020	8,149	75,956	66.0	62.3	5.5
2005	226,082	149,320	141,730	2,197	139,532	7,591	76,762	66.0	62.7	5.1
2006	228,815	151,428	144,427	2,206	142,221	7,001	77,387	66.2	63.1	4.6
2007	231,867	153,124	146,047	2,095	143,952	7,078	78,743	66.0	63.0	4.6
2008	233,788	154,287	145,362	2,168	143,194	8,924	79,501	66.0	62.2	5.8
2009	235,801	154,142	139,877	2,103	137,775	14,265	81,659	65.4	59.3	9.3
2010	237,830	153,889	139,064	2,206	136,858	14,825	83,941	64.7	58.5	9.6
2011	239,618	153,617	139,869	2,254	137,615	13,747	86,001	64.1	58.4	8.9
2012	243,284	154,975	142,469	2,186	140,283	12,506	88,310	63.7	58.6	8.1
2013	245,679	155,389	143,929	2,130	141,799	11,460	90,290	63.2	58.6	7.4
2014	247,947	155,922	146,305	2,237	144,068	9,617	92,025	62.9	59.0	6.2
2015	250,801	157,130	148,834	2,422	146,411	8,296	93,671	62.7	59.3	5.3
2016	253,538	159,187	151,436	2,460	148,976	7,751	94,351	62.8	59.7	4.9
2017	255,079	160,320	153,337	2,454	150,883	6,982	94,759	62.9	60.1	4.4
2018	257,791	162,075	155,761	2,425	153,336	6,314	95,716	62.9	60.4	3.9
2019	259,175	163,539	157,538	2,425	155,113	6,001	95,636	63.1	60.8	3.7
2020	260,329	160,742	147,795	2,349	145,446	12,947	99,587	61.7	56.8	8.1
2021	261,445	161,204	152,581	2,291	150,290	8,623	100,241	61.7	58.4	5.3
2022	263,973	164,287	158,291	2,290	156,001	5,996	99,686	62.2	60.0	3.6
2023	266,942	167,116	161,037	2,264	158,772	6,080	99,826	62.6	60.3	3.6
2024	268,571	168,106	161,346	2,254	159,091	6,761	100,465	62.6	60.1	4.0
2025	273,653	170,807	163,493	2,225	161,268	7,314	102,846	62.4	59.7	4.3
2024: Jan	267,540	167,308	161,133	2,176	158,730	6,175	100,232	62.5	60.2	3.7
Feb	267,711	167,569	161,083	2,206	158,751	6,486	100,142	62.6	60.2	3.9
Mar	267,884	167,983	161,462	2,198	159,039	6,521	99,902	62.7	60.3	3.9
Apr	268,066	167,923	161,438	2,251	159,020	6,486	100,142	62.6	60.2	3.9
May	268,248	167,807	161,180	2,260	158,957	6,627	100,441	62.6	60.1	3.9
June	268,438	168,034	161,152	2,387	158,990	6,881	100,405	62.6	60.0	4.1
July	268,644	168,395	161,297	2,273	159,198	7,098	100,250	62.7	60.0	4.2
Aug	268,856	168,492	161,429	2,319	159,175	7,063	100,364	62.7	60.0	4.2
Sept	269,080	168,662	161,813	2,269	159,518	6,849	100,418	62.7	60.1	4.1
Oct	269,289	168,395	161,444	2,249	159,305	6,951	100,894	62.5	60.0	4.1
Nov	269,463	168,248	161,159	2,212	159,006	7,089	101,215	62.4	59.8	4.2
Dec	269,638	168,506	161,586	2,246	159,387	6,920	101,132	62.5	59.9	4.1
2025: Jan	272,685	170,696	163,831	2,307	161,279	6,865	101,989	62.6	60.1	4.0
Feb	272,847	170,441	163,338	2,249	160,966	7,104	102,405	62.5	59.9	4.2
Mar	273,023	170,641	163,509	2,353	160,964	7,132	102,382	62.5	59.9	4.2
Apr	273,197	171,054	163,898	2,237	161,472	7,155	102,143	62.6	60.0	4.2
May	273,385	170,492	163,244	2,073	161,214	7,248	102,893	62.4	59.7	4.3
June	273,585	170,380	163,327	2,170	161,325	7,054	103,205	62.3	59.7	4.1
July	273,785	170,412	163,140	2,220	161,053	7,272	103,373	62.2	59.6	4.3
Aug	274,001	170,750	163,370	2,242	161,219	7,380	103,251	62.3	59.6	4.3
Sept	274,226	171,261	163,656	2,206	161,423	7,605	102,964	62.5	59.7	4.4
Oct	....	....	....	....	....	....	....	....	....	....
Nov	274,633	171,541	163,760	2,200	161,635	7,781	103,092	62.5	59.6	4.5
Dec	274,816	171,495	163,992	2,332	161,716	7,503	103,321	62.4	59.7	4.4

[5] Beginning in 2000, data for agricultural employment are for agricultural and related industries; data for this series and for nonagricultural employment are not strictly comparable with data for earlier years. Because of independent seasonal adjustment for these two series, monthly data will not add to total civilian employment.

Note: Labor force data in Tables B–22 through B–28 are based on household interviews and usually relate to the calendar week that includes the 12th of the month. Historical comparability is affected by revisions to population controls, changes in occupational and industry classification, and other changes to the survey. In recent years, updated population controls have been introduced annually with the release of January data, so data are not strictly comparable with earlier periods. Particularly notable changes were introduced for data in the years 1953, 1960, 1962, 1972, 1973, 1978, 1980, 1990, 1994, 1997, 1998, 2000, 2003, 2008 and 2012. For definitions of terms, area samples used, historical comparability of the data, comparability with other series, etc., see *Employment and Earnings* or concepts and methodology of the CPS at http://www.bls.gov/cps/documentation.htm#concepts.

Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–23. Civilian employment by sex, age, and demographic characteristic, 1980–2025

[Thousands of persons 16 years of age and over, except as noted; monthly data seasonally adjusted]

Year or month	All civilian workers	By sex and age			By race or ethnicity[1]									
					White			Black or African American			Asian	Hispanic or Latino ethnicity		
		Men 20 years and over	Women 20 years and over	Both sexes 16–19	Total	Men 20 years and over	Women 20 years and over	Total	Men 20 years and over	Women 20 years and over	Total	Total	Men 20 years and over	Women 20 years and over
1980	99,303	53,101	38,492	7,710	87,715	47,419	33,275	9,313	4,498	4,267	....	5,527	3,142	1,886
1981	100,397	53,582	39,590	7,225	88,709	47,846	34,275	9,355	4,520	4,329	....	5,813	3,325	2,029
1982	99,526	52,891	40,086	6,549	87,903	47,209	34,710	9,189	4,414	4,347	....	5,805	3,354	2,040
1983	100,834	53,487	41,004	6,342	88,893	47,618	35,476	9,375	4,531	4,428	....	6,072	3,523	2,127
1984	105,005	55,769	42,793	6,444	92,120	49,461	36,823	10,119	4,871	4,773	....	6,651	3,825	2,357
1985	107,150	56,562	44,154	6,434	93,736	50,061	37,907	10,501	4,992	4,977	....	6,888	3,994	2,456
1986	109,597	57,569	45,556	6,472	95,660	50,818	39,050	10,814	5,150	5,128	....	7,219	4,174	2,615
1987	112,440	58,726	47,074	6,640	97,789	51,649	40,242	11,309	5,357	5,365	....	7,790	4,444	2,872
1988	114,968	59,781	48,383	6,805	99,812	52,466	41,316	11,658	5,509	5,548	....	8,250	4,680	3,047
1989	117,342	60,837	49,745	6,759	101,584	53,292	42,346	11,953	5,602	5,727	....	8,573	4,853	3,172
1990	118,793	61,678	50,535	6,581	102,261	53,685	42,796	12,175	5,692	5,884	....	9,845	5,609	3,567
1991	117,718	61,178	50,634	5,906	101,182	53,103	42,862	12,074	5,706	5,874	....	9,828	5,623	3,603
1992	118,492	61,496	51,328	5,669	101,669	53,357	43,327	12,151	5,681	5,978	....	10,027	5,757	3,693
1993	120,259	62,355	52,099	5,805	103,045	54,021	43,910	12,382	5,793	6,095	....	10,361	5,992	3,800
1994	123,060	63,294	53,606	6,161	105,190	54,676	45,116	12,835	5,964	6,320	....	10,788	6,189	3,989
1995	124,900	64,085	54,396	6,419	106,490	55,254	45,643	13,279	6,137	6,556	....	11,127	6,367	4,116
1996	126,708	64,897	55,311	6,500	107,808	55,977	46,164	13,542	6,167	6,762	....	11,642	6,655	4,341
1997	129,558	66,284	56,613	6,661	109,856	56,986	47,063	13,969	6,325	7,013	....	12,726	7,307	4,705
1998	131,463	67,135	57,278	7,051	110,931	57,500	47,342	14,556	6,530	7,290	....	13,291	7,570	4,928
1999	133,488	67,761	58,555	7,172	112,235	57,934	48,098	15,056	6,702	7,663	....	13,720	7,576	5,290
2000	136,891	69,634	60,067	7,189	114,424	59,119	49,145	15,156	6,741	7,703	6,043	15,735	8,859	5,903
2001	136,933	69,776	60,417	6,740	114,430	59,245	49,369	15,006	6,627	7,741	6,180	16,190	9,100	6,121
2002	136,485	69,734	60,420	6,332	114,013	59,124	49,448	14,872	6,652	7,610	6,215	16,590	9,341	6,367
2003	137,736	70,415	61,402	5,919	114,235	59,348	49,823	14,739	6,586	7,636	5,756	17,372	10,063	6,541
2004	139,252	71,572	61,773	5,907	115,239	60,159	50,040	14,909	6,681	7,707	5,994	17,930	10,385	6,752
2005	141,730	73,050	62,702	5,978	116,949	61,255	50,589	15,313	6,901	7,876	6,244	18,632	10,872	6,913
2006	144,427	74,431	63,834	6,162	118,833	62,259	51,359	15,765	7,079	8,068	6,522	19,613	11,391	7,321
2007	146,047	75,337	64,799	5,911	119,792	62,806	51,996	16,051	7,245	8,240	6,839	20,382	11,827	7,662
2008	145,362	74,750	65,039	5,573	119,126	62,304	52,124	15,953	7,151	8,260	6,917	20,346	11,769	7,707
2009	139,877	71,341	63,699	4,837	114,996	59,626	51,231	15,025	6,628	7,956	6,635	19,647	11,256	7,649
2010	139,064	71,230	63,456	4,378	114,168	59,438	50,997	15,010	6,680	7,944	6,705	19,906	11,438	7,788
2011	139,869	72,182	63,360	4,327	114,690	60,118	50,881	15,051	6,765	7,906	6,867	20,269	11,685	7,918
2012	142,469	73,403	64,640	4,426	114,769	60,193	50,911	15,856	7,104	8,313	7,705	21,878	12,212	8,858
2013	143,929	74,176	65,295	4,458	115,379	60,511	51,198	16,151	7,304	8,408	8,136	22,514	12,638	9,056
2014	146,305	75,471	66,287	4,548	116,788	61,289	51,798	16,732	7,613	8,663	8,325	23,492	13,202	9,431
2015	148,834	76,776	67,323	4,734	117,944	61,959	52,161	17,472	7,938	9,032	8,706	24,400	13,624	9,853
2016	151,436	78,084	68,387	4,965	119,313	62,575	52,771	17,982	8,228	9,219	9,213	25,249	14,055	10,217
2017	153,337	78,919	69,344	5,074	120,176	63,009	53,179	18,587	8,500	9,514	9,448	25,938	14,355	10,543
2018	155,761	80,211	70,424	5,126	121,461	63,719	53,682	19,091	8,745	9,751	9,832	27,012	14,873	11,045
2019	157,538	80,917	71,470	5,150	122,441	64,070	54,304	19,381	8,883	9,910	10,179	27,805	15,204	11,516
2020	147,795	76,227	66,873	4,695	115,341	60,570	51,048	17,873	8,150	9,176	9,437	25,952	14,333	10,593
2021	152,581	78,216	69,099	5,266	118,291	61,737	52,389	18,726	8,597	9,525	10,016	27,429	15,138	11,165
2022	158,291	81,409	71,283	5,600	121,908	63,743	53,767	19,937	9,294	10,034	10,615	29,299	15,997	12,049
2023	161,037	82,698	72,692	5,647	123,165	64,316	54,441	20,674	9,617	10,420	11,096	30,343	16,386	12,649
2024	161,346	82,514	73,170	5,661	123,033	63,918	54,678	20,728	9,664	10,409	11,271	31,227	16,887	13,029
2025	163,493	83,806	74,135	5,551	123,766	64,317	55,120	20,823	9,835	10,343	12,238	32,743	17,617	13,815
2024: Jan	161,133	82,311	73,125	5,697	122,679	63,720	54,594	20,861	9,712	10,423	11,229	30,698	16,499	12,772
Feb	161,083	82,311	73,179	5,593	122,698	63,716	54,625	20,902	9,697	10,537	11,110	30,867	16,724	12,844
Mar	161,462	82,561	73,065	5,835	123,197	64,001	54,633	20,726	9,659	10,388	11,113	30,977	16,787	12,870
Apr	161,438	82,322	73,302	5,813	123,145	63,811	54,779	20,791	9,645	10,439	11,203	31,163	16,766	12,993
May	161,180	82,085	73,235	5,860	122,977	63,651	54,756	20,633	9,496	10,417	11,391	31,162	16,762	13,019
June	161,152	82,583	72,810	5,759	123,063	63,980	54,506	20,595	9,653	10,306	11,395	31,348	17,002	12,939
July	161,297	82,607	73,083	5,607	122,996	63,981	54,572	20,764	9,702	10,437	11,389	31,205	16,925	12,974
Aug	161,429	82,409	73,605	5,414	123,059	63,894	54,884	20,650	9,556	10,479	11,271	31,469	16,993	13,251
Sept	161,813	82,784	73,423	5,606	123,451	64,096	54,941	20,806	9,811	10,368	11,206	31,457	16,990	13,233
Oct	161,444	82,842	73,151	5,451	122,944	64,085	54,611	20,821	9,746	10,442	11,379	31,349	17,064	13,063
Nov	161,159	82,627	72,960	5,572	122,937	63,984	54,592	20,544	9,655	10,290	11,310	31,293	16,956	13,133
Dec	161,586	82,707	73,099	5,781	123,262	64,091	54,644	20,639	9,636	10,383	11,250	31,769	17,179	13,286
2025: Jan	163,831	83,776	74,354	5,701	124,409	64,741	55,157	20,858	9,731	10,516	11,903	32,351	17,486	13,568
Feb	163,338	83,366	74,199	5,773	123,657	64,028	55,085	20,982	9,777	10,544	12,114	32,299	17,298	13,630
Mar	163,509	83,594	74,156	5,759	123,896	64,181	55,265	20,824	9,871	10,297	12,210	32,573	17,455	13,746
Apr	163,898	83,835	74,360	5,704	124,094	64,245	55,393	20,779	9,912	10,257	12,323	32,635	17,483	13,835
May	163,244	83,705	73,970	5,569	123,567	64,193	55,034	20,833	9,865	10,328	12,246	32,649	17,600	13,721
June	163,327	83,862	74,110	5,355	123,844	64,387	55,230	20,653	9,751	10,251	12,186	32,687	17,678	13,687
July	163,140	83,696	74,150	5,294	123,821	64,398	55,243	20,495	9,630	10,252	12,043	32,769	17,658	13,792
Aug	163,370	84,129	73,895	5,346	123,565	64,468	54,920	20,749	9,893	10,265	12,172	32,777	17,639	13,814
Sept	163,656	83,945	74,102	5,609	123,739	64,369	55,082	20,892	9,889	10,275	12,197	32,928	17,731	13,875
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	163,760	84,043	74,302	5,415	123,517	64,311	55,051	21,065	9,969	10,440	12,617	33,262	17,856	14,186
Dec	163,992	84,199	74,306	5,486	123,778	64,411	55,178	21,024	9,938	10,403	12,565	33,286	17,935	14,140

[1] Beginning in 2003, persons who selected this race group only. Persons whose ethnicity is identified as Hispanic or Latino may be of any race. Prior to 2003, persons who selected more than one race were included in the group they identified as the main race. Data for "black or African American" were for "black" prior to 2003. See *Employment and Earnings* or concepts and methodology of the Current Population Survey (CPS) at http://www.bls.gov/cps/documentation.htm#concepts for details.

Note: Detail will not sum to total because data for all race groups are not shown here.

See footnote 5 and Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–24. Unemployment by sex, age, and demographic characteristic, 1980–2025

[Thousands of persons 16 years of age and over, except as noted; monthly data seasonally adjusted]

Year or month	All civilian workers	By sex and age			By race or ethnicity [1]									
					White			Black or African American			Asian	Hispanic or Latino ethnicity		
		Men 20 years and over	Women 20 years and over	Both sexes 16–19	Total	Men 20 years and over	Women 20 years and over	Total	Men 20 years and over	Women 20 years and over	Total	Total	Men 20 years and over	Women 20 years and over
1980	7,637	3,353	2,615	1,669	5,884	2,629	1,964	1,553	636	574	....	620	284	190
1981	8,273	3,615	2,895	1,763	6,343	2,825	2,143	1,731	703	671	....	678	321	212
1982	10,678	5,089	3,613	1,977	8,241	3,991	2,715	2,142	954	793	....	929	461	293
1983	10,717	5,257	3,632	1,829	8,128	4,098	2,643	2,272	1,002	878	....	961	491	302
1984	8,539	3,932	3,107	1,499	6,372	2,992	2,264	1,914	815	747	....	800	393	258
1985	8,312	3,715	3,129	1,468	6,191	2,834	2,283	1,864	757	750	....	811	401	269
1986	8,237	3,751	3,032	1,454	6,140	2,857	2,213	1,840	765	728	....	857	438	278
1987	7,425	3,369	2,709	1,347	5,501	2,584	1,922	1,684	666	706	....	751	374	241
1988	6,701	2,987	2,487	1,226	4,944	2,268	1,766	1,547	617	642	....	732	351	234
1989	6,528	2,867	2,467	1,194	4,770	2,149	1,758	1,544	619	625	....	750	342	276
1990	7,047	3,239	2,596	1,212	5,186	2,431	1,852	1,565	664	633	....	876	425	289
1991	8,628	4,195	3,074	1,359	6,560	3,284	2,248	1,723	745	698	....	1,092	575	339
1992	9,613	4,717	3,469	1,427	7,169	3,620	2,512	2,011	886	800	....	1,311	675	418
1993	8,940	4,287	3,288	1,365	6,655	3,263	2,400	1,844	801	729	....	1,248	629	418
1994	7,996	3,627	3,049	1,320	5,892	2,735	2,197	1,666	682	685	....	1,187	558	431
1995	7,404	3,239	2,819	1,346	5,459	2,465	2,042	1,538	593	620	....	1,140	530	404
1996	7,236	3,146	2,783	1,306	5,300	2,363	1,998	1,592	639	643	....	1,132	495	438
1997	6,739	2,882	2,585	1,271	4,836	2,140	1,784	1,560	585	673	....	1,069	471	401
1998	6,210	2,580	2,424	1,205	4,484	1,920	1,688	1,426	524	622	....	1,026	436	376
1999	5,880	2,433	2,285	1,162	4,273	1,813	1,616	1,309	480	561	....	945	374	376
2000	5,692	2,376	2,235	1,081	4,121	1,731	1,595	1,241	499	512	227	954	388	371
2001	6,801	3,040	2,599	1,162	4,969	2,275	1,849	1,416	573	582	288	1,138	495	436
2002	8,378	3,896	3,228	1,253	6,137	2,943	2,269	1,693	695	738	389	1,353	636	496
2003	8,774	4,209	3,314	1,251	6,311	3,125	2,276	1,787	760	772	366	1,441	693	555
2004	8,149	3,791	3,150	1,208	5,847	2,785	2,172	1,729	733	755	277	1,342	635	504
2005	7,591	3,392	3,013	1,186	5,350	2,450	2,054	1,700	699	734	259	1,191	536	464
2006	7,001	3,131	2,751	1,119	5,002	2,281	1,927	1,549	640	656	205	1,081	497	414
2007	7,078	3,259	2,718	1,101	5,143	2,408	1,930	1,445	622	588	229	1,220	576	446
2008	8,924	4,297	3,342	1,285	6,509	3,179	2,384	1,788	811	732	285	1,678	860	567
2009	14,265	7,555	5,157	1,552	10,648	5,746	3,745	2,606	1,286	1,032	522	2,706	1,474	911
2010	14,825	7,763	5,534	1,528	10,916	5,828	3,960	2,852	1,396	1,165	543	2,843	1,519	1,001
2011	13,747	6,898	5,450	1,400	9,889	5,046	3,818	2,831	1,360	1,204	518	2,629	1,345	984
2012	12,506	5,984	5,125	1,397	8,915	4,347	3,564	2,544	1,152	1,119	483	2,514	1,195	995
2013	11,460	5,568	4,565	1,327	8,033	3,994	3,102	2,429	1,082	1,069	448	2,257	1,090	855
2014	9,617	4,585	3,926	1,106	6,540	3,141	2,623	2,141	973	943	436	1,878	864	764
2015	8,296	3,959	3,371	966	5,662	2,751	2,249	1,846	835	811	347	1,726	820	686
2016	7,751	3,675	3,151	925	5,345	2,594	2,100	1,655	737	724	349	1,548	720	627
2017	6,982	3,287	2,868	827	4,765	2,288	1,923	1,501	663	657	333	1,401	632	585
2018	6,314	2,976	2,578	759	4,354	2,094	1,743	1,322	582	573	304	1,323	591	547
2019	6,001	2,819	2,435	746	4,159	1,967	1,664	1,251	571	527	280	1,248	553	497
2020	12,947	6,118	5,804	1,025	9,090	4,334	4,013	2,304	1,069	1,062	894	3,018	1,451	1,291
2021	8,623	4,302	3,625	696	5,854	2,957	2,411	1,756	845	791	529	1,995	986	812
2022	5,996	2,867	2,453	675	4,049	1,995	1,585	1,300	572	596	306	1,302	626	513
2023	6,080	2,985	2,382	713	4,162	2,091	1,580	1,212	542	538	344	1,475	730	557
2024	6,761	3,206	2,731	823	4,599	2,212	1,809	1,318	603	583	410	1,663	758	662
2025	7,314	3,463	2,947	905	4,840	2,348	1,868	1,545	684	698	458	1,766	832	692
2024: Jan	6,175	3,089	2,400	686	4,339	2,225	1,606	1,167	543	525	335	1,618	843	586
Feb	6,486	3,023	2,656	808	4,378	2,045	1,803	1,252	638	493	397	1,647	720	681
Mar	6,521	2,956	2,728	837	4,344	1,976	1,806	1,436	635	630	296	1,457	659	617
Apr	6,486	3,061	2,649	776	4,450	2,165	1,769	1,244	541	547	335	1,567	740	623
May	6,627	3,216	2,587	824	4,442	2,197	1,690	1,360	663	576	366	1,630	822	550
June	6,881	3,258	2,825	798	4,490	2,156	1,780	1,386	621	632	487	1,647	763	619
July	7,098	3,403	2,898	798	4,854	2,305	1,954	1,381	681	605	429	1,759	790	744
Aug	7,063	3,337	2,825	901	4,881	2,349	1,915	1,339	594	609	485	1,793	824	697
Sept	6,849	3,240	2,672	938	4,677	2,270	1,735	1,249	535	571	470	1,678	718	655
Oct	6,951	3,320	2,759	872	4,847	2,350	1,843	1,261	585	546	464	1,687	709	709
Nov	7,089	3,339	2,915	835	4,848	2,326	1,907	1,384	608	649	442	1,746	780	723
Dec	6,920	3,247	2,859	814	4,626	2,174	1,900	1,341	583	595	413	1,725	736	744
2025: Jan	6,865	3,289	2,812	763	4,577	2,102	1,859	1,378	713	599	454	1,634	741	641
Feb	7,104	3,327	2,915	862	4,843	2,337	1,944	1,348	577	611	400	1,787	839	728
Mar	7,132	3,371	2,841	920	4,798	2,263	1,885	1,382	642	566	442	1,753	828	667
Apr	7,155	3,446	2,859	850	4,926	2,465	1,878	1,419	593	671	388	1,782	910	665
May	7,248	3,395	2,989	864	4,923	2,388	1,871	1,351	546	694	463	1,769	821	730
June	7,054	3,394	2,753	906	4,630	2,259	1,763	1,528	722	647	450	1,642	770	638
July	7,272	3,464	2,857	950	4,775	2,331	1,759	1,601	723	706	495	1,734	789	654
Aug	7,380	3,557	2,959	864	4,808	2,438	1,805	1,697	751	750	453	1,817	882	711
Sept	7,605	3,546	3,201	858	4,821	2,356	1,921	1,706	705	831	553	1,912	855	810
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	7,781	3,585	3,140	1,056	4,960	2,371	1,943	1,884	807	798	466	1,763	844	659
Dec	7,503	3,439	3,044	1,020	4,838	2,289	1,831	1,704	731	820	471	1,728	809	672

[1] See footnote 1 and Note, Table B–23.

Note: See footnote 5 and Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

TABLE B–25. Civilian labor force participation rate, 1980–2025

[Percent [1]; monthly data seasonally adjusted]

Year or month	All civilian workers	Men: 20 years and over	Men: 20–24 years	Men: 25–54 years	Men: 55 years and over	Women: 20 years and over	Women: 20–24 years	Women: 25–54 years	Women: 55 years and over	Both sexes 16–19 years	By race or ethnicity [2]: White	Black or African American	Asian	Hispanic or Latino ethnicity
1980	63.8	79.4	85.9	94.2	45.6	51.3	68.9	64.0	22.8	56.7	64.1	61.0	....	64.0
1981	63.9	79.0	85.5	94.1	44.5	52.1	69.6	65.3	22.7	55.4	64.3	60.8	....	64.1
1982	64.0	78.7	84.9	94.0	43.8	52.7	69.8	66.3	22.7	54.1	64.3	61.0	....	63.6
1983	64.0	78.5	84.8	93.8	43.0	53.1	69.9	67.1	22.4	53.5	64.3	61.5	....	63.8
1984	64.4	78.3	85.0	93.9	41.8	53.7	70.4	68.2	22.2	53.9	64.6	62.2	....	64.9
1985	64.8	78.1	85.0	93.9	41.0	54.7	71.8	69.6	22.0	54.5	65.0	62.9	....	64.6
1986	65.3	78.1	85.8	93.8	40.4	55.5	72.4	70.8	22.1	54.7	65.5	63.3	....	65.4
1987	65.6	78.0	85.2	93.7	40.4	56.2	73.0	71.9	22.0	54.7	65.8	63.8	....	66.4
1988	65.9	77.9	85.0	93.6	39.9	56.8	72.7	72.7	22.3	55.3	66.2	63.8	....	67.4
1989	66.5	78.1	85.3	93.7	39.6	57.7	72.4	73.6	23.0	55.9	66.7	64.2	....	67.6
1990	66.5	78.2	84.4	93.4	39.4	58.0	71.3	74.0	22.9	53.7	66.9	64.0	....	67.4
1991	66.2	77.7	83.5	93.1	38.5	57.9	70.1	74.1	22.6	51.6	66.6	63.3	....	66.5
1992	66.4	77.7	83.3	93.0	38.4	58.5	70.9	74.6	22.8	51.3	66.8	63.9	....	66.8
1993	66.3	77.3	83.2	92.6	37.7	58.5	70.9	74.6	22.8	51.5	66.8	63.2	....	66.2
1994	66.6	76.8	83.1	91.7	37.8	59.3	71.0	75.3	24.0	52.7	67.1	63.4	....	66.1
1995	66.6	76.7	83.1	91.6	37.9	59.4	70.3	75.6	23.9	53.5	67.1	63.7	....	65.8
1996	66.8	76.8	82.5	91.8	38.3	59.9	71.3	76.1	23.9	52.3	67.2	64.1	....	66.5
1997	67.1	77.0	82.5	91.8	38.9	60.5	72.7	76.7	24.6	51.6	67.5	64.7	....	67.9
1998	67.1	76.8	82.0	91.8	39.1	60.4	73.0	76.5	25.0	52.8	67.3	65.6	....	67.9
1999	67.1	76.7	81.9	91.7	39.6	60.7	73.2	76.8	25.6	52.0	67.3	65.8	....	67.7
2000	67.1	76.7	82.6	91.6	40.1	60.6	73.1	76.7	26.1	52.0	67.3	65.8	67.2	69.7
2001	66.8	76.5	81.6	91.3	40.9	60.6	72.7	76.4	27.0	49.6	67.0	65.3	67.2	69.5
2002	66.6	76.3	80.7	91.0	42.0	60.5	72.1	75.9	28.5	47.4	66.8	64.8	67.2	69.1
2003	66.2	75.9	80.0	90.6	42.6	60.6	70.8	75.6	30.0	44.5	66.5	64.3	66.4	68.3
2004	66.0	75.8	79.6	90.5	43.2	60.3	70.5	75.3	30.5	43.9	66.3	63.8	65.9	68.6
2005	66.0	75.8	79.1	90.5	44.2	60.4	70.1	75.3	31.4	43.7	66.3	64.2	66.1	68.0
2006	66.2	75.9	79.6	90.6	44.9	60.5	69.5	75.5	32.3	43.7	66.5	64.1	66.2	68.7
2007	66.0	75.9	78.7	90.9	45.2	60.6	70.1	75.4	33.2	41.3	66.4	63.7	66.5	68.8
2008	66.0	75.7	78.7	90.5	46.0	60.9	70.0	75.8	33.9	40.2	66.3	63.7	67.0	68.5
2009	65.4	74.8	76.2	89.7	46.3	60.8	69.6	75.6	34.7	37.5	65.8	62.4	66.0	68.0
2010	64.7	74.1	74.5	89.3	46.4	60.3	68.3	75.2	35.1	34.9	65.1	62.2	64.7	67.5
2011	64.1	73.4	74.7	88.7	46.3	59.8	67.8	74.7	35.1	34.1	64.5	61.4	64.6	66.5
2012	63.7	73.0	74.5	88.7	46.8	59.3	67.4	74.5	35.1	34.3	64.0	61.5	63.9	66.4
2013	63.2	72.5	73.9	88.4	46.5	58.8	67.5	73.9	35.1	34.5	63.5	61.2	64.6	66.0
2014	62.9	71.9	73.9	88.2	45.9	58.5	67.7	73.9	34.9	34.0	63.1	61.2	63.6	66.1
2015	62.7	71.7	73.0	88.3	45.9	58.2	68.3	73.7	34.7	34.3	62.8	61.5	62.8	65.9
2016	62.8	71.7	73.0	88.5	46.2	58.3	68.0	74.3	34.7	35.2	62.9	61.6	63.2	65.8
2017	62.9	71.6	74.1	88.6	46.1	58.5	68.5	75.0	34.7	35.2	62.8	62.3	63.6	66.1
2018	62.9	71.6	73.2	89.0	46.2	58.5	69.0	75.3	34.7	35.1	62.8	62.3	63.5	66.3
2019	63.1	71.6	74.0	89.1	46.3	58.9	70.4	76.0	35.0	35.3	63.0	62.5	64.0	66.8
2020	61.7	70.1	71.0	87.9	45.1	57.6	67.5	75.1	34.0	34.5	61.8	60.5	62.7	65.6
2021	61.7	69.8	73.0	88.0	44.2	57.3	68.6	75.3	33.3	36.2	61.5	60.9	63.8	65.5
2022	62.2	70.3	73.2	88.6	44.7	58.1	68.7	76.4	33.6	36.8	62.0	62.2	64.5	66.3
2023	62.6	70.4	72.5	89.1	44.2	58.6	70.1	77.4	33.6	36.9	62.3	63.1	65.0	66.9
2024	62.6	70.3	73.1	89.3	43.9	58.8	69.9	77.9	33.6	36.9	62.2	63.0	65.0	67.2
2025	62.4	70.2	73.2	89.4	43.5	58.7	69.5	77.8	33.3	36.2	62.0	62.5	65.5	67.1
2024: Jan	62.5	70.3	73.6	89.2	44.1	58.8	71.1	77.4	33.5	36.5	62.1	63.3	64.5	66.8
Feb	62.6	70.2	72.2	89.3	44.0	59.0	70.9	77.7	33.8	36.5	62.1	63.6	64.7	67.1
Mar	62.7	70.3	72.6	89.1	44.2	58.9	71.0	77.7	33.7	38.0	62.3	63.5	64.2	66.8
Apr	62.6	70.1	73.7	89.0	43.7	59.0	70.5	78.0	33.7	37.5	62.3	63.1	64.8	67.3
May	62.6	70.0	72.4	89.2	43.5	58.9	69.2	78.1	33.6	38.0	62.2	62.9	65.3	67.2
June	62.6	70.4	73.2	89.6	43.7	58.7	69.0	77.9	33.5	37.3	62.2	62.8	65.8	67.5
July	62.7	70.5	72.9	90.0	43.7	58.9	70.0	78.1	33.5	36.4	62.3	63.2	65.8	67.3
Aug	62.7	70.2	72.4	89.4	43.8	59.2	69.4	78.4	33.9	35.9	62.3	62.7	65.4	67.8
Sept	62.7	70.4	72.8	89.5	44.0	58.9	68.8	78.1	33.7	37.1	62.4	62.8	65.2	67.4
Oct	62.5	70.4	73.7	89.3	44.4	58.7	70.1	77.8	33.5	35.9	62.2	62.9	65.4	67.0
Nov	62.4	70.2	73.4	89.3	44.0	58.6	69.7	77.7	33.5	36.3	62.2	62.4	64.5	66.9
Dec	62.5	70.2	74.3	89.0	43.9	58.6	69.5	77.9	33.4	37.4	62.2	62.5	64.2	67.7
2025: Jan	62.6	70.3	73.9	89.3	43.8	58.9	70.6	77.7	33.7	36.2	62.3	62.4	64.7	66.8
Feb	62.5	69.9	72.8	89.1	43.3	58.9	69.7	77.9	33.5	37.1	62.0	62.6	65.5	66.9
Mar	62.5	70.1	73.2	89.2	43.6	58.7	70.7	77.6	33.4	37.4	62.1	62.2	65.8	67.2
Apr	62.6	70.3	73.8	89.5	43.6	58.9	70.1	77.7	33.7	36.7	62.2	62.1	66.0	67.2
May	62.4	70.1	73.0	89.2	43.5	58.6	69.5	77.8	33.4	36.0	62.0	62.1	65.9	67.1
June	62.3	70.2	73.7	89.4	43.2	58.5	68.3	77.7	33.4	35.1	61.9	62.0	65.5	66.8
July	62.2	70.0	72.2	89.2	43.6	58.6	69.7	77.7	33.2	35.0	62.0	61.7	64.9	67.0
Aug	62.3	70.4	72.3	89.8	43.8	58.4	68.2	77.8	33.1	34.8	61.8	62.6	65.0	67.0
Sept	62.5	70.2	73.3	89.5	43.4	58.7	69.0	78.0	33.3	36.3	61.9	63.0	65.3	67.3
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	62.5	70.2	73.7	89.6	43.4	58.7	69.8	78.2	33.1	36.3	61.8	63.8	66.0	67.4
Dec	62.4	70.1	73.2	89.5	43.4	58.6	69.5	78.1	33.0	36.6	61.8	63.1	65.9	67.2

[1] Civilian labor force as percent of civilian noninstitutional population in group specified.
[2] See footnote 1, Table B–23.

Note: Data relate to persons 16 years of age and over, except as noted.
See footnote 5 and Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–26. Civilian employment/population ratio, 1980–2025

[Percent [1]; monthly data seasonally adjusted]

Year or month	All civilian workers	Men				Women				Both sexes 16–19 years	By race or ethnicity [2]			
		20 years and over	20–24 years	25–54 years	55 years and over	20 years and over	20–24 years	25–54 years	55 years and over		White	Black or African American	Asian	Hispanic or Latino ethnicity
1980	59.2	74.6	75.1	89.4	44.1	48.1	61.8	60.1	22.1	46.6	60.0	52.3	....	57.6
1981	59.0	74.0	74.2	89.0	42.9	48.6	61.8	61.2	21.9	44.6	60.0	51.3	....	57.4
1982	57.8	71.8	71.0	86.5	41.6	48.4	60.6	61.2	21.6	41.5	58.8	49.4	....	54.9
1983	57.9	71.4	71.3	86.1	40.6	48.8	60.9	62.0	21.4	41.5	58.9	49.5	....	55.1
1984	59.5	73.2	74.9	88.4	39.8	50.1	62.7	63.9	21.3	43.7	60.5	52.3	....	57.9
1985	60.1	73.3	75.3	88.7	39.3	51.0	64.1	65.3	21.1	44.4	61.0	53.4	....	57.8
1986	60.7	73.3	76.3	88.5	38.8	52.0	64.9	66.6	21.3	44.6	61.5	54.1	....	58.5
1987	61.5	73.8	76.8	89.0	39.0	53.1	66.1	68.2	21.3	45.5	62.3	55.6	....	60.5
1988	62.3	74.2	77.5	89.5	38.6	54.0	66.6	69.3	21.7	46.8	63.1	56.3	....	61.9
1989	63.0	74.5	77.8	89.9	38.3	54.9	66.4	70.4	22.4	47.5	63.8	56.9	....	62.2
1990	62.8	74.3	76.7	89.1	38.0	55.2	65.2	70.6	22.2	45.3	63.7	56.7	....	61.9
1991	61.7	72.7	73.8	87.5	36.8	54.6	63.2	70.1	21.9	42.0	62.6	55.4	....	59.8
1992	61.5	72.1	73.1	86.8	36.4	54.8	63.6	70.1	21.8	41.0	62.4	54.9	....	59.1
1993	61.7	72.3	73.8	87.0	35.9	55.0	64.0	70.4	22.0	41.7	62.7	55.0	....	59.1
1994	62.5	72.6	74.6	87.2	36.2	56.2	64.5	71.5	23.1	43.4	63.5	56.1	....	59.5
1995	62.9	73.0	75.4	87.6	36.5	56.5	64.0	72.2	23.0	44.2	63.8	57.1	....	59.7
1996	63.2	73.2	74.7	87.9	37.0	57.0	64.9	72.8	23.1	43.5	64.1	57.4	....	60.6
1997	63.8	73.7	75.2	88.4	37.7	57.8	66.8	73.5	23.8	43.4	64.6	58.2	....	62.6
1998	64.1	73.9	75.4	88.8	38.0	58.0	67.3	73.6	24.4	45.1	64.7	59.7	....	63.1
1999	64.3	74.0	75.6	89.0	38.5	58.5	68.0	74.1	24.9	44.7	64.8	60.6	....	63.4
2000	64.4	74.2	76.6	89.0	39.1	58.4	67.9	74.2	25.5	45.2	64.9	60.9	64.8	65.7
2001	63.7	73.3	74.2	87.9	39.6	58.1	67.3	73.4	26.3	42.3	64.2	59.7	64.2	64.9
2002	62.7	72.3	72.5	86.6	40.3	57.5	65.6	72.3	27.5	39.6	63.4	58.1	63.2	63.9
2003	62.3	71.7	71.5	85.9	40.7	57.5	64.2	72.0	28.9	36.8	63.0	57.4	62.4	63.1
2004	62.3	71.9	71.6	86.3	41.5	57.4	64.3	71.8	29.4	36.4	63.1	57.2	63.0	63.8
2005	62.7	72.4	71.5	86.9	42.7	57.6	64.5	72.0	30.4	36.5	63.4	57.7	63.4	64.0
2006	63.1	72.9	72.7	87.3	43.5	58.0	64.2	72.5	31.4	36.9	63.8	58.4	64.2	65.2
2007	63.0	72.8	71.7	87.5	43.7	58.2	65.0	72.5	32.2	34.8	63.6	58.4	64.3	64.9
2008	62.2	71.6	69.7	86.0	44.2	57.9	63.8	72.3	32.7	32.6	62.8	57.3	64.3	63.3
2009	59.3	67.6	63.3	81.5	43.0	56.2	61.1	70.2	32.6	28.4	60.2	53.2	61.2	59.7
2010	58.5	66.8	61.3	81.0	42.8	55.5	59.4	69.3	32.9	25.9	59.4	52.3	59.9	59.0
2011	58.4	67.0	63.0	81.4	43.1	55.0	58.7	69.0	32.9	25.8	59.4	51.7	60.0	58.9
2012	58.6	67.5	63.8	82.5	43.8	55.0	59.2	69.2	33.1	26.1	59.4	53.0	60.1	59.5
2013	58.6	67.4	63.5	82.8	43.8	54.9	59.8	69.3	33.3	26.6	59.4	53.2	61.2	60.0
2014	59.0	67.8	64.9	83.6	43.9	55.2	60.9	70.0	33.4	27.3	59.7	54.3	60.4	61.2
2015	59.3	68.1	65.1	84.4	44.1	55.4	62.5	70.3	33.5	28.5	59.9	55.7	60.4	61.6
2016	59.7	68.5	66.2	85.0	44.4	55.7	63.0	71.1	33.5	29.7	60.2	56.4	60.9	62.0
2017	60.1	68.8	67.9	85.4	44.6	56.1	64.2	72.1	33.6	30.3	60.4	57.6	61.5	62.7
2018	60.4	69.0	67.6	86.2	44.7	56.4	64.7	72.8	33.7	30.6	60.7	58.3	61.6	63.2
2019	60.8	69.2	68.3	86.4	45.1	56.9	66.4	73.7	34.0	30.9	61.0	58.7	62.3	63.9
2020	56.8	64.8	61.3	81.8	42.2	53.0	58.2	69.6	31.5	28.3	57.3	53.6	57.3	58.7
2021	58.4	66.2	65.9	83.6	42.3	54.5	63.0	71.7	31.9	32.0	58.6	55.7	60.6	61.1
2022	60.0	67.9	67.5	85.9	43.5	56.2	64.4	74.0	32.7	32.8	60.0	58.4	62.7	63.5
2023	60.3	67.9	67.2	86.3	43.0	56.8	66.0	75.1	32.8	32.8	60.2	59.6	63.1	63.8
2024	60.1	67.6	67.3	86.3	42.6	56.7	65.2	75.2	32.7	32.2	60.0	59.2	62.7	63.8
2025	59.7	67.4	66.5	86.2	42.1	56.4	64.4	75.0	32.3	31.1	59.6	58.2	63.1	63.7
2024: Jan	60.2	67.7	68.4	86.2	42.6	56.9	67.6	75.0	32.7	32.6	60.0	59.9	62.6	63.5
Feb	60.2	67.7	66.6	86.3	42.7	56.9	66.3	75.2	32.8	31.9	59.9	60.0	62.5	63.7
Mar	60.3	67.8	67.4	86.4	43.0	56.8	65.9	75.1	32.8	33.3	60.2	59.4	62.5	63.8
Apr	60.2	67.6	68.8	86.1	42.4	56.9	65.8	75.5	32.7	33.1	60.1	59.5	62.9	64.0
May	60.1	67.4	66.3	86.0	42.3	56.8	64.1	75.7	32.7	33.3	60.0	59.0	63.3	63.9
June	60.0	67.7	67.3	86.5	42.4	56.5	64.2	75.1	32.6	32.7	60.0	58.9	63.1	64.2
July	60.0	67.7	67.0	86.7	42.3	56.6	64.8	75.3	32.6	31.9	60.0	59.3	63.4	63.7
Aug	60.0	67.5	66.4	86.3	42.3	57.0	64.4	75.6	33.0	30.7	60.0	58.9	62.7	64.1
Sept	60.1	67.7	67.4	86.4	42.7	56.8	64.3	75.5	32.8	31.8	60.1	59.3	62.6	64.0
Oct	60.0	67.7	67.0	86.3	42.9	56.6	65.7	75.0	32.6	30.9	59.8	59.3	62.8	63.6
Nov	59.8	67.5	66.7	86.2	42.6	56.4	65.1	74.8	32.5	31.6	59.8	58.4	62.1	63.4
Dec	59.9	67.5	68.2	86.0	42.6	56.4	64.8	75.1	32.4	32.8	60.0	58.6	61.9	64.2
2025: Jan	60.1	67.6	67.0	86.3	42.5	56.8	65.9	75.1	32.6	31.9	60.1	58.6	62.3	63.6
Feb	59.9	67.2	65.7	86.1	42.1	56.6	64.9	75.1	32.5	32.3	59.7	58.8	63.4	63.4
Mar	59.9	67.4	67.0	86.0	42.3	56.6	66.0	74.9	32.4	32.2	59.8	58.4	63.5	63.8
Apr	60.0	67.5	66.7	86.4	42.2	56.7	65.4	75.0	32.7	31.9	59.9	58.2	63.9	63.8
May	59.7	67.4	66.6	86.1	42.2	56.4	64.2	74.9	32.4	31.2	59.6	58.3	63.5	63.6
June	59.7	67.4	67.1	86.3	41.9	56.4	63.4	75.2	32.4	30.0	59.7	57.7	63.2	63.6
July	59.6	67.2	66.1	85.9	42.3	56.4	64.6	75.0	32.3	29.7	59.7	57.2	62.4	63.6
Aug	59.6	67.5	65.2	86.5	42.4	56.2	62.4	75.0	32.1	30.0	59.5	57.9	62.7	63.5
Sept	59.7	67.3	66.5	86.3	41.9	56.3	62.8	75.1	32.3	31.5	59.6	58.2	62.5	63.6
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	59.6	67.3	67.0	86.2	42.0	56.3	64.6	75.1	32.2	30.4	59.4	58.6	63.6	64.0
Dec	59.7	67.4	66.3	86.4	42.1	56.3	64.7	75.1	32.1	30.8	59.5	58.4	63.5	63.9

[1] Civilian employment as percent of civilian noninstitutional population in group specified.
[2] See footnote 1, Table B–23.

Note: Data relate to persons 16 years of age and over, except as noted.
See footnote 5 and Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–27. Civilian unemployment rate, 1980–2025

[Percent [1]; monthly data seasonally adjusted]

Year or month	All civilian workers	By sex and age: Men 20 years and over	By sex and age: Women 20 years and over	By sex and age: Both sexes 16–19	By race or ethnicity [2]: White	By race or ethnicity [2]: Black or African American	By race or ethnicity [2]: Asian	By race or ethnicity [2]: Hispanic or Latino ethnicity	U-6 measure of labor underutilization [3]	By educational attainment (25 years & over): Less than a high school diploma	By educational attainment (25 years & over): High school graduates, no college	By educational attainment (25 years & over): Some college or associate degree	By educational attainment (25 years & over): Bachelor's degree and higher [4]
1980	7.1	5.9	6.4	17.8	6.3	14.3	....	10.1	....	....	....	....	....
1981	7.6	6.3	6.8	19.6	6.7	15.6	....	10.4	....	....	....	....	....
1982	9.7	8.8	8.3	23.2	8.6	18.9	....	13.8	....	....	....	....	....
1983	9.6	8.9	8.1	22.4	8.4	19.5	....	13.7	....	....	....	....	....
1984	7.5	6.6	6.8	18.9	6.5	15.9	....	10.7	....	....	....	....	....
1985	7.2	6.2	6.6	18.6	6.2	15.1	....	10.5	....	....	....	....	....
1986	7.0	6.1	6.2	18.3	6.0	14.5	....	10.6	....	....	....	....	....
1987	6.2	5.4	5.4	16.9	5.3	13.0	....	8.8	....	....	....	....	....
1988	5.5	4.8	4.9	15.3	4.7	11.7	....	8.2	....	....	....	....	....
1989	5.3	4.5	4.7	15.0	4.5	11.4	....	8.0	....	....	....	....	....
1990	5.6	5.0	4.9	15.5	4.8	11.4	....	8.2	....	....	....	....	....
1991	6.8	6.4	5.7	18.7	6.1	12.5	....	10.0	....	....	....	....	....
1992	7.5	7.1	6.3	20.1	6.6	14.2	....	11.6	....	11.5	6.8	5.6	3.2
1993	6.9	6.4	5.9	19.0	6.1	13.0	....	10.8	....	10.8	6.3	5.2	2.9
1994	6.1	5.4	5.4	17.6	5.3	11.5	....	9.9	10.9	9.8	5.4	4.5	2.6
1995	5.6	4.8	4.9	17.3	4.9	10.4	....	9.3	10.1	9.0	4.8	4.0	2.4
1996	5.4	4.6	4.8	16.7	4.7	10.5	....	8.9	9.7	8.7	4.7	3.7	2.2
1997	4.9	4.2	4.4	16.0	4.2	10.0	....	7.7	8.9	8.1	4.3	3.3	2.0
1998	4.5	3.7	4.1	14.6	3.9	8.9	....	7.2	8.0	7.1	4.0	3.0	1.8
1999	4.2	3.5	3.8	13.9	3.7	8.0	....	6.4	7.4	6.7	3.5	2.8	1.8
2000	4.0	3.3	3.6	13.1	3.5	7.6	3.6	5.7	7.0	6.3	3.4	2.7	1.7
2001	4.7	4.2	4.1	14.7	4.2	8.6	4.5	6.6	8.1	7.2	4.2	3.3	2.3
2002	5.8	5.3	5.1	16.5	5.1	10.2	5.9	7.5	9.6	8.4	5.3	4.5	2.9
2003	6.0	5.6	5.1	17.5	5.2	10.8	6.0	7.7	10.1	8.8	5.5	4.8	3.1
2004	5.5	5.0	4.9	17.0	4.8	10.4	4.4	7.0	9.6	8.5	5.0	4.2	2.7
2005	5.1	4.4	4.6	16.6	4.4	10.0	4.0	6.0	8.9	7.6	4.7	3.9	2.3
2006	4.6	4.0	4.1	15.4	4.0	8.9	3.0	5.2	8.2	6.8	4.3	3.6	2.0
2007	4.6	4.1	4.0	15.7	4.1	8.3	3.2	5.6	8.3	7.1	4.4	3.6	2.0
2008	5.8	5.4	4.9	18.7	5.2	10.1	4.0	7.6	10.5	9.0	5.7	4.6	2.6
2009	9.3	9.6	7.5	24.3	8.5	14.8	7.3	12.1	16.2	14.6	9.7	8.0	4.6
2010	9.6	9.8	8.0	25.9	8.7	16.0	7.5	12.5	16.7	14.9	10.3	8.4	4.7
2011	8.9	8.7	7.9	24.4	7.9	15.8	7.0	11.5	15.9	14.1	9.4	8.0	4.3
2012	8.1	7.5	7.3	24.0	7.2	13.8	5.9	10.3	14.7	12.4	8.3	7.1	4.0
2013	7.4	7.0	6.5	22.9	6.5	13.1	5.2	9.1	13.8	11.0	7.5	6.4	3.7
2014	6.2	5.7	5.6	19.6	5.3	11.3	5.0	7.4	12.0	9.0	6.0	5.4	3.2
2015	5.3	4.9	4.8	16.9	4.6	9.6	3.8	6.6	10.4	8.0	5.4	4.5	2.6
2016	4.9	4.5	4.4	15.7	4.3	8.4	3.6	5.8	9.6	7.4	5.2	4.1	2.5
2017	4.4	4.0	4.0	14.0	3.8	7.5	3.4	5.1	8.5	6.5	4.6	3.8	2.3
2018	3.9	3.6	3.5	12.9	3.5	6.5	3.0	4.7	7.7	5.6	4.1	3.3	2.1
2019	3.7	3.4	3.3	12.7	3.3	6.1	2.7	4.3	7.2	5.4	3.7	3.0	2.1
2020	8.1	7.4	8.0	17.9	7.3	11.4	8.7	10.4	13.6	11.7	9.0	7.8	4.8
2021	5.3	5.2	5.0	11.7	4.7	8.6	5.0	6.8	9.4	8.3	6.2	5.1	3.1
2022	3.6	3.4	3.3	10.8	3.2	6.1	2.8	4.3	6.9	5.5	4.0	3.1	2.0
2023	3.6	3.5	3.2	11.2	3.3	5.5	3.0	4.6	6.9	5.6	3.9	3.0	2.1
2024	4.0	3.7	3.6	12.7	3.6	6.0	3.5	5.1	7.5	6.2	4.2	3.4	2.3
2025	4.3	4.0	3.8	14.0	3.8	6.9	3.6	5.1	8.0	6.1	4.3	3.4	2.6
2024: Jan	3.7	3.6	3.2	10.7	3.4	5.3	2.9	5.0	7.2	6.1	4.3	3.2	2.2
Feb	3.9	3.5	3.5	12.6	3.4	5.7	3.5	5.1	7.3	6.2	4.2	3.2	2.3
Mar	3.9	3.5	3.6	12.5	3.4	6.5	2.6	4.5	7.3	5.0	4.2	3.4	2.1
Apr	3.9	3.6	3.5	11.8	3.5	5.6	2.9	4.8	7.4	6.0	4.1	3.3	2.2
May	3.9	3.8	3.4	12.3	3.5	6.2	3.1	5.0	7.4	6.0	4.3	3.1	2.1
June	4.1	3.8	3.7	12.2	3.5	6.3	4.1	5.0	7.4	6.0	4.2	3.5	2.4
July	4.2	4.0	3.8	12.5	3.8	6.2	3.6	5.3	7.8	6.8	4.6	3.6	2.3
Aug	4.2	3.9	3.7	14.3	3.8	6.1	4.1	5.4	7.8	7.0	4.0	3.5	2.5
Sept	4.1	3.8	3.5	14.3	3.6	5.7	4.0	5.1	7.7	6.7	4.0	3.4	2.3
Oct	4.1	3.9	3.6	13.8	3.8	5.7	3.9	5.1	7.7	6.5	4.0	3.4	2.5
Nov	4.2	3.9	3.8	13.0	3.8	6.3	3.8	5.3	7.7	5.9	4.5	3.6	2.4
Dec	4.1	3.8	3.8	12.3	3.6	6.1	3.5	5.1	7.6	5.7	4.4	3.4	2.5
2025: Jan	4.0	3.8	3.6	11.8	3.5	6.2	3.7	4.8	7.5	5.2	4.4	3.5	2.3
Feb	4.2	3.8	3.8	13.0	3.8	6.0	3.2	5.2	8.0	6.0	4.3	3.5	2.5
Mar	4.2	3.9	3.7	13.8	3.7	6.2	3.5	5.1	7.9	5.8	4.2	3.5	2.6
Apr	4.2	3.9	3.7	13.0	3.8	6.4	3.1	5.2	7.8	6.2	4.0	3.6	2.5
May	4.3	3.9	3.9	13.4	3.8	6.1	3.6	5.1	7.8	5.6	4.4	3.3	2.6
June	4.1	3.9	3.6	14.5	3.6	6.9	3.6	4.8	7.7	5.8	4.0	3.2	2.5
July	4.3	4.0	3.7	15.2	3.7	7.2	3.9	5.0	7.9	5.6	4.4	3.0	2.7
Aug	4.3	4.1	3.9	13.9	3.7	7.6	3.6	5.3	8.1	6.7	4.3	3.2	2.7
Sept	4.4	4.1	4.1	13.3	3.7	7.6	4.3	5.5	8.1	6.8	4.2	3.4	2.8
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	4.5	4.1	4.1	16.3	3.9	8.2	3.6	5.0	8.7	6.8	4.4	3.5	2.9
Dec	4.4	3.9	3.9	15.7	3.8	7.5	3.6	4.9	8.4	5.6	4.0	3.8	2.8

[1] Unemployed as percent of civilian labor force in group specified.
[2] See footnote 1, Table B–23.
[3] Total unemployed, plus all persons marginally attached to the labor force, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all persons marginally attached to the labor force.
[4] Includes persons with bachelor's, master's, professional, and doctoral degrees.

Note: Data relate to persons 16 years of age and over, except as noted.
See Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–28. Unemployment by duration and reason, 1980–2025

[Thousands of persons, except as noted; monthly data seasonally adjusted [1]]

Year or month	Un-employ-ment	Duration of unemployment						Reason for unemployment					
		Less than 5 weeks	5–14 weeks	15–26 weeks	27 weeks and over	Average (mean) duration (weeks) [2]	Median duration (weeks)	Job losers [3]: Total	Job losers [3]: On layoff	Job losers [3]: Other	Job leavers	Re-entrants	New entrants
1980	7,637	3,295	2,470	1,052	820	11.9	6.5	3,947	1,488	2,459	891	1,927	872
1981	8,273	3,449	2,539	1,122	1,162	13.7	6.9	4,267	1,430	2,837	923	2,102	981
1982	10,678	3,883	3,311	1,708	1,776	15.6	8.7	6,268	2,127	4,141	840	2,384	1,185
1983	10,717	3,570	2,937	1,652	2,559	20.0	10.1	6,258	1,780	4,478	830	2,412	1,216
1984	8,539	3,350	2,451	1,104	1,634	18.2	7.9	4,421	1,171	3,250	823	2,184	1,110
1985	8,312	3,498	2,509	1,025	1,280	15.6	6.8	4,139	1,157	2,982	877	2,256	1,039
1986	8,237	3,448	2,557	1,045	1,187	15.0	6.9	4,033	1,090	2,943	1,015	2,160	1,029
1987	7,425	3,246	2,196	943	1,040	14.5	6.5	3,566	943	2,623	965	1,974	920
1988	6,701	3,084	2,007	801	809	13.5	5.9	3,092	851	2,241	983	1,809	816
1989	6,528	3,174	1,978	730	646	11.9	4.8	2,983	850	2,133	1,024	1,843	677
1990	7,047	3,265	2,257	822	703	12.0	5.3	3,387	1,028	2,359	1,041	1,930	688
1991	8,628	3,480	2,791	1,246	1,111	13.7	6.8	4,694	1,292	3,402	1,004	2,139	792
1992	9,613	3,376	2,830	1,453	1,954	17.7	8.7	5,389	1,260	4,129	1,002	2,285	937
1993	8,940	3,262	2,584	1,297	1,798	18.0	8.3	4,848	1,115	3,733	976	2,198	919
1994	7,996	2,728	2,408	1,237	1,623	18.8	9.2	3,815	977	2,838	791	2,786	604
1995	7,404	2,700	2,342	1,085	1,278	16.6	8.3	3,476	1,030	2,446	824	2,525	579
1996	7,236	2,633	2,287	1,053	1,262	16.7	8.3	3,370	1,021	2,349	774	2,512	580
1997	6,739	2,538	2,138	995	1,067	15.8	8.0	3,037	931	2,106	795	2,338	569
1998	6,210	2,622	1,950	763	875	14.5	6.7	2,822	866	1,957	734	2,132	520
1999	5,880	2,568	1,832	755	725	13.4	6.4	2,622	848	1,774	783	2,005	469
2000	5,692	2,558	1,815	669	649	12.6	5.9	2,517	852	1,664	780	1,961	434
2001	6,801	2,853	2,196	951	801	13.1	6.8	3,476	1,067	2,409	835	2,031	459
2002	8,378	2,893	2,580	1,369	1,535	16.6	9.1	4,607	1,124	3,483	866	2,368	536
2003	8,774	2,785	2,612	1,442	1,936	19.2	10.1	4,838	1,121	3,717	818	2,477	641
2004	8,149	2,696	2,382	1,293	1,779	19.6	9.8	4,197	998	3,199	858	2,408	686
2005	7,591	2,667	2,304	1,130	1,490	18.4	8.9	3,667	933	2,734	872	2,386	666
2006	7,001	2,614	2,121	1,031	1,235	16.8	8.3	3,321	921	2,400	827	2,237	616
2007	7,078	2,542	2,232	1,061	1,243	16.8	8.5	3,515	976	2,539	793	2,142	627
2008	8,924	2,932	2,804	1,427	1,761	17.9	9.4	4,789	1,176	3,614	896	2,472	766
2009	14,265	3,165	3,828	2,775	4,496	24.4	15.1	9,160	1,630	7,530	882	3,187	1,035
2010	14,825	2,771	3,267	2,371	6,415	33.0	21.4	9,250	1,431	7,819	889	3,466	1,220
2011	13,747	2,677	2,993	2,061	6,016	39.3	21.4	8,106	1,230	6,876	956	3,401	1,284
2012	12,506	2,644	2,866	1,859	5,136	39.4	19.3	6,877	1,183	5,694	967	3,345	1,316
2013	11,460	2,584	2,759	1,807	4,310	36.5	17.0	6,073	1,136	4,937	932	3,207	1,247
2014	9,617	2,471	2,432	1,497	3,218	33.7	14.0	4,878	1,007	3,871	824	2,829	1,086
2015	8,296	2,399	2,302	1,267	2,328	29.2	11.6	4,063	974	3,089	819	2,535	879
2016	7,751	2,362	2,226	1,158	2,005	27.5	10.6	3,740	966	2,774	858	2,330	823
2017	6,982	2,270	2,008	1,017	1,687	25.0	10.0	3,434	956	2,479	778	2,079	690
2018	6,314	2,170	1,876	917	1,350	22.7	9.3	2,990	852	2,138	794	1,928	602
2019	6,001	2,086	1,789	860	1,266	21.6	9.1	2,786	823	1,963	814	1,810	591
2020	12,947	3,708	4,728	2,516	1,995	16.5	9.7	9,770	6,371	3,399	683	1,969	526
2021	8,623	2,140	1,981	1,164	3,337	28.7	16.5	5,099	1,582	3,516	803	2,204	518
2022	5,996	2,216	1,711	756	1,314	22.6	8.7	2,767	830	1,936	857	1,891	482
2023	6,080	2,112	1,866	925	1,177	20.6	8.9	2,870	811	2,059	822	1,831	556
2024	6,761	2,235	2,012	1,064	1,449	21.6	9.6	3,253	859	2,393	810	2,052	647
2025	7,314	2,357	2,150	1,113	1,696	23.0	9.9	3,443	910	2,534	835	2,267	770
2024: Jan	6,175	2,135	1,878	874	1,279	20.9	9.4	3,047	865	2,182	791	1,858	566
Feb	6,486	2,317	1,932	974	1,219	20.9	9.2	3,222	827	2,395	710	1,954	639
Mar	6,521	2,186	1,973	985	1,259	21.6	9.5	3,061	793	2,268	822	1,938	659
Apr	6,486	2,287	1,968	886	1,249	20.0	8.8	3,211	857	2,354	785	1,944	586
May	6,627	2,302	1,910	969	1,356	21.3	9.1	3,201	833	2,368	725	2,049	645
June	6,881	2,155	2,111	1,069	1,534	20.7	9.8	3,192	821	2,371	754	2,123	709
July	7,098	2,353	2,180	1,076	1,537	20.6	9.5	3,529	1,091	2,438	857	2,180	646
Aug	7,063	2,443	2,044	1,156	1,536	21.0	9.6	3,323	868	2,454	848	2,136	698
Sept	6,849	2,165	1,958	1,125	1,612	22.6	10.0	3,236	902	2,335	818	2,053	643
Oct	6,951	2,118	2,081	1,226	1,604	22.9	10.2	3,360	818	2,542	802	2,145	608
Nov	7,089	2,192	2,060	1,231	1,651	23.7	10.7	3,383	769	2,615	852	2,149	706
Dec	6,920	2,175	2,014	1,202	1,551	23.7	10.2	3,261	865	2,396	945	2,050	649
2025: Jan	6,865	2,292	1,956	1,158	1,449	22.0	10.1	3,254	837	2,417	910	2,132	668
Feb	7,104	2,334	2,161	1,033	1,461	21.4	9.9	3,327	819	2,508	915	2,212	673
Mar	7,132	2,362	2,154	1,010	1,499	22.9	9.7	3,322	818	2,503	869	2,182	743
Apr	7,155	2,194	2,262	993	1,672	23.2	10.2	3,455	873	2,582	854	2,240	709
May	7,248	2,456	2,203	1,042	1,464	21.9	9.5	3,459	879	2,580	706	2,291	734
June	7,054	2,254	2,129	1,064	1,651	23.1	10.1	3,306	867	2,438	825	2,160	723
July	7,272	2,304	2,041	1,166	1,822	24.0	10.2	3,412	940	2,472	785	2,199	982
Aug	7,380	2,475	2,058	1,051	1,924	24.5	9.9	3,447	890	2,558	785	2,302	792
Sept	7,605	2,232	2,356	1,286	1,815	24.1	10.1	3,524	844	2,680	860	2,336	813
Oct	....	....	....	....	....	....	....	....	....	....	....	....	....
Nov	7,781	2,540	2,190	1,190	1,910	23.1	9.8	3,560	1,002	2,558	861	2,600	774
Dec	7,503	2,289	2,069	1,195	1,948	24.4	11.4	3,473	929	2,544	832	2,337	840

[1] Because of independent seasonal adjustment of the various series, detail will not sum to totals.
[2] Beginning with 2011, includes unemployment durations of up to 5 years; prior data are for up to 2 years.
[3] Beginning with 1994, job losers and persons who completed temporary jobs.

Note: Data relate to persons 16 years of age and over.
See Note, Table B–22. Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–29. Employees on nonagricultural payrolls, by major industry, 1980–2025

[Thousands of jobs; monthly data seasonally adjusted]

Year or month	Total non-agricultural employ-ment	Private industries									
		Total private	Goods-producing industries						Private service-providing industries		
			Total	Mining and logging	Construc-tion	Manufacturing			Total	Trade, transportation, and utilities[1]	
						Total	Durable goods	Non-durable goods		Total	Retail trade
1980	90,533	74,158	24,263	1,077	4,454	18,733	11,679	7,054	49,895	18,387	10,249
1981	91,297	75,117	24,118	1,180	4,304	18,634	11,611	7,023	50,999	18,577	10,369
1982	89,689	73,706	22,550	1,163	4,024	17,363	10,610	6,753	51,156	18,430	10,377
1983	90,295	74,284	22,110	997	4,065	17,048	10,326	6,722	52,174	18,642	10,640
1984	94,548	78,389	23,435	1,014	4,501	17,920	11,050	6,870	54,954	19,624	11,227
1985	97,532	81,000	23,585	974	4,793	17,819	11,034	6,784	57,415	20,350	11,738
1986	99,500	82,661	23,318	829	4,937	17,552	10,795	6,757	59,343	20,765	12,082
1987	102,116	84,960	23,470	771	5,090	17,609	10,767	6,842	61,490	21,271	12,422
1988	105,378	87,838	23,909	770	5,233	17,906	10,969	6,938	63,929	21,942	12,812
1989	108,051	90,124	24,045	750	5,309	17,985	11,004	6,981	66,079	22,477	13,112
1990	109,527	91,112	23,723	765	5,263	17,695	10,737	6,958	67,389	22,632	13,185
1991	108,425	89,879	22,588	739	4,780	17,068	10,220	6,848	67,292	22,243	12,896
1992	108,799	90,012	22,095	689	4,608	16,799	9,946	6,853	67,917	22,086	12,826
1993	110,931	91,942	22,219	666	4,779	16,773	9,901	6,872	69,723	22,335	13,016
1994	114,393	95,118	22,774	659	5,095	17,020	10,132	6,889	72,344	23,081	13,485
1995	117,401	97,968	23,156	641	5,274	17,241	10,373	6,868	74,813	23,782	13,889
1996	119,828	100,289	23,409	637	5,536	17,237	10,486	6,751	76,880	24,183	14,133
1997	122,941	103,278	23,886	654	5,813	17,419	10,705	6,714	79,392	24,640	14,377
1998	126,146	106,237	24,354	645	6,149	17,560	10,911	6,649	81,883	25,122	14,596
1999	129,228	108,921	24,465	598	6,545	17,322	10,831	6,490	84,456	25,703	14,955
2000	132,011	111,222	24,649	599	6,787	17,263	10,877	6,386	86,572	26,153	15,262
2001	132,073	110,954	23,873	606	6,826	16,441	10,336	6,105	87,081	25,907	15,219
2002	130,634	109,121	22,557	583	6,716	15,259	9,485	5,774	86,564	25,417	15,003
2003	130,331	108,748	21,816	572	6,735	14,510	8,964	5,546	86,931	25,200	14,894
2004	131,769	110,148	21,882	591	6,976	14,315	8,925	5,390	88,266	25,440	15,033
2005	134,033	112,229	22,189	628	7,336	14,225	8,954	5,271	90,040	25,860	15,253
2006	136,436	114,462	22,527	684	7,691	14,152	8,978	5,174	91,935	26,172	15,325
2007	137,981	115,763	22,226	724	7,630	13,872	8,802	5,071	93,537	26,520	15,490
2008	137,223	114,714	21,325	766	7,162	13,397	8,454	4,943	93,389	26,181	15,251
2009	131,296	108,741	18,546	694	6,016	11,836	7,272	4,563	90,195	24,794	14,488
2010	130,345	107,854	17,737	705	5,518	11,514	7,050	4,464	90,118	24,523	14,404
2011	131,914	109,828	18,031	788	5,533	11,710	7,256	4,453	91,797	24,946	14,630
2012	134,157	112,237	18,401	848	5,646	11,907	7,450	4,457	93,836	25,353	14,801
2013	136,363	114,511	18,716	863	5,856	11,998	7,526	4,472	95,795	25,735	15,037
2014	138,940	117,058	19,202	891	6,151	12,161	7,649	4,512	97,856	26,253	15,313
2015	141,825	119,796	19,583	813	6,461	12,309	7,738	4,571	100,213	26,754	15,559
2016	144,335	122,111	19,719	668	6,728	12,324	7,684	4,640	102,392	27,124	15,777
2017	146,606	124,257	20,051	676	6,969	12,407	7,708	4,699	104,206	27,336	15,789
2018	148,909	126,454	20,669	727	7,288	12,653	7,911	4,742	105,785	27,549	15,728
2019	150,905	128,292	21,000	727	7,493	12,780	8,002	4,778	107,292	27,662	15,560
2020	142,186	120,200	19,983	600	7,257	12,127	7,533	4,594	100,217	26,624	14,809
2021	146,285	124,312	20,307	560	7,436	12,311	7,638	4,673	104,004	27,653	15,253
2022	152,520	130,330	21,134	605	7,763	12,767	7,923	4,844	109,196	28,633	15,489
2023	155,868	133,074	21,518	637	8,009	12,873	8,023	4,849	111,556	28,820	15,551
2024	157,693	134,324	21,619	625	8,205	12,789	7,951	4,838	112,704	28,828	15,493
2025	158,457	134,948	21,514	614	8,267	12,633	7,832	4,802	113,434	28,742	15,441
2024: Jan	157,032	133,892	21,631	633	8,123	12,875	8,023	4,852	112,261	28,799	15,524
Feb	157,238	134,027	21,617	633	8,132	12,852	8,004	4,848	112,410	28,839	15,529
Mar	157,466	134,170	21,636	636	8,164	12,836	7,993	4,843	112,534	28,855	15,529
Apr	157,530	134,233	21,631	628	8,170	12,833	7,988	4,845	112,602	28,880	15,531
May	157,608	134,278	21,625	624	8,176	12,825	7,981	4,844	112,653	28,880	15,536
June	157,695	134,356	21,630	620	8,196	12,814	7,968	4,846	112,726	28,851	15,500
July	157,748	134,348	21,636	622	8,208	12,806	7,960	4,846	112,712	28,830	15,481
Aug	157,757	134,321	21,628	620	8,236	12,772	7,930	4,842	112,693	28,802	15,458
Sept	157,912	134,463	21,634	622	8,254	12,758	7,921	4,837	112,829	28,813	15,457
Oct	157,945	134,459	21,581	622	8,262	12,697	7,870	4,827	112,878	28,794	15,452
Nov	158,079	134,575	21,602	624	8,267	12,711	7,895	4,816	112,973	28,755	15,410
Dec	158,316	134,787	21,591	622	8,276	12,693	7,875	4,818	113,196	28,811	15,460
2025: Jan	158,268	134,711	21,559	622	8,264	12,673	7,858	4,815	113,152	28,795	15,459
Feb	158,310	134,751	21,560	622	8,267	12,671	7,859	4,812	113,191	28,806	15,442
Mar	158,377	134,818	21,559	620	8,273	12,666	7,854	4,812	113,259	28,792	15,458
Apr	158,485	134,917	21,555	622	8,271	12,662	7,853	4,809	113,362	28,783	15,462
May	158,498	134,937	21,538	618	8,269	12,651	7,845	4,806	113,399	28,765	15,440
June	158,478	134,892	21,519	616	8,267	12,636	7,833	4,803	113,373	28,741	15,426
July	158,542	134,957	21,496	610	8,261	12,625	7,834	4,791	113,461	28,744	15,430
Aug	158,472	134,937	21,461	607	8,239	12,615	7,819	4,796	113,476	28,743	15,440
Sept	158,548	135,005	21,472	605	8,255	12,612	7,814	4,798	113,533	28,725	15,453
Oct	158,408	135,018	21,452	606	8,243	12,603	7,805	4,798	113,566	28,714	15,438
Nov	158,449	135,090	21,477	605	8,279	12,593	7,802	4,791	113,613	28,649	15,437
Dec	158,432	135,083	21,456	604	8,272	12,580	7,797	4,783	113,627	28,616	15,414

[1] Includes wholesale trade, transportation and warehousing, and utilities, not shown separately.

Note: Data in Tables B–29 and B–30 are based on reports from employing establishments and relate to full- and part-time wage and salary workers in nonagricultural establishments who received pay for any part of the pay period that includes the 12th of the month. Not comparable with labor force data (Tables B–22 through B–28), which include proprietors, self-employed persons, unpaid family workers, and private household workers; which count persons as

See next page for continuation of table.

Table B–29. Employees on nonagricultural payrolls, by major industry, 1980–2025—*Continued*

[Thousands of jobs; monthly data seasonally adjusted]

Year or month	Private industries—Continued						Government			
	Private service-providing industries—Continued									
	Information	Financial activities	Professional and business services	Education and health services	Leisure and hospitality	Other services	Total	Federal	State	Local
1980	2,361	5,025	7,571	7,077	6,721	2,755	16,375	3,000	3,610	9,765
1981	2,382	5,163	7,809	7,364	6,840	2,865	16,180	2,922	3,640	9,619
1982	2,317	5,209	7,875	7,526	6,874	2,924	15,982	2,884	3,640	9,458
1983	2,253	5,334	8,065	7,781	7,078	3,021	16,011	2,915	3,662	9,434
1984	2,398	5,553	8,493	8,211	7,489	3,186	16,159	2,943	3,734	9,482
1985	2,437	5,815	8,900	8,679	7,869	3,366	16,533	3,014	3,832	9,687
1986	2,445	6,128	9,241	9,086	8,156	3,523	16,838	3,044	3,893	9,901
1987	2,507	6,385	9,639	9,543	8,446	3,699	17,156	3,089	3,967	10,100
1988	2,585	6,500	10,121	10,096	8,778	3,907	17,540	3,124	4,076	10,339
1989	2,622	6,562	10,588	10,652	9,062	4,116	17,927	3,136	4,182	10,609
1990	2,688	6,614	10,882	11,024	9,288	4,261	18,415	3,196	4,305	10,914
1991	2,678	6,561	10,750	11,556	9,256	4,249	18,545	3,110	4,355	11,081
1992	2,641	6,559	11,007	11,948	9,437	4,240	18,787	3,111	4,408	11,267
1993	2,668	6,742	11,534	12,362	9,732	4,350	18,989	3,063	4,488	11,438
1994	2,738	6,910	12,216	12,872	10,100	4,428	19,275	3,018	4,576	11,682
1995	2,844	6,866	12,889	13,360	10,501	4,572	19,432	2,949	4,635	11,849
1996	2,940	7,018	13,510	13,761	10,777	4,690	19,539	2,877	4,606	12,056
1997	3,084	7,255	14,386	14,185	11,018	4,825	19,664	2,806	4,582	12,276
1998	3,218	7,566	15,200	14,570	11,232	4,976	19,909	2,772	4,612	12,525
1999	3,419	7,753	16,013	14,939	11,543	5,087	20,307	2,769	4,709	12,829
2000	3,630	7,783	16,725	15,252	11,862	5,168	20,790	2,865	4,786	13,139
2001	3,629	7,900	16,537	15,814	12,036	5,258	21,118	2,764	4,905	13,449
2002	3,395	7,956	16,041	16,398	11,986	5,372	21,513	2,766	5,029	13,718
2003	3,188	8,078	16,057	16,835	12,173	5,401	21,583	2,761	5,002	13,820
2004	3,118	8,105	16,470	17,231	12,493	5,409	21,621	2,730	4,982	13,909
2005	3,061	8,196	17,036	17,676	12,816	5,395	21,804	2,732	5,032	14,041
2006	3,038	8,367	17,656	18,154	13,110	5,438	21,974	2,732	5,075	14,167
2007	3,032	8,348	18,040	18,676	13,427	5,494	22,218	2,734	5,122	14,362
2008	2,984	8,206	17,839	19,228	13,436	5,515	22,509	2,762	5,177	14,571
2009	2,804	7,838	16,685	19,630	13,077	5,367	22,555	2,832	5,169	14,554
2010	2,707	7,695	16,839	19,975	13,049	5,330	22,490	2,977	5,137	14,376
2011	2,674	7,697	17,450	20,318	13,353	5,360	22,086	2,859	5,078	14,150
2012	2,676	7,783	18,057	20,769	13,768	5,430	21,920	2,820	5,055	14,045
2013	2,706	7,886	18,645	21,086	14,254	5,483	21,853	2,769	5,046	14,037
2014	2,726	7,977	19,198	21,439	14,696	5,567	21,882	2,733	5,050	14,098
2015	2,750	8,123	19,774	22,029	15,160	5,622	22,029	2,757	5,077	14,195
2016	2,794	8,287	20,197	22,639	15,660	5,691	22,224	2,795	5,110	14,319
2017	2,814	8,451	20,596	23,188	16,051	5,770	22,350	2,805	5,165	14,379
2018	2,839	8,591	21,043	23,638	16,295	5,831	22,455	2,800	5,173	14,481
2019	2,864	8,754	21,372	24,163	16,586	5,891	22,613	2,831	5,206	14,576
2020	2,721	8,704	20,416	23,275	13,148	5,329	21,986	2,930	5,135	13,921
2021	2,856	8,806	21,429	23,652	14,151	5,457	21,973	2,886	5,156	13,931
2022	3,063	9,062	22,582	24,336	15,827	5,694	22,191	2,867	5,111	14,213
2023	3,007	9,174	22,769	25,387	16,557	5,842	22,794	2,927	5,296	14,571
2024	2,923	9,158	22,580	26,493	16,771	5,952	23,370	3,000	5,449	14,921
2025	2,862	9,196	22,416	27,338	16,884	5,997	23,509	2,904	5,505	15,100
2024: Jan	2,963	9,165	22,668	26,033	16,716	5,917	23,140	2,971	5,388	14,781
Feb	2,958	9,151	22,658	26,130	16,744	5,930	23,211	2,980	5,405	14,826
Mar	2,951	9,149	22,631	26,225	16,780	5,943	23,296	2,989	5,413	14,894
Apr	2,940	9,144	22,616	26,313	16,762	5,947	23,297	2,992	5,421	14,884
May	2,930	9,147	22,633	26,383	16,731	5,949	23,330	3,001	5,420	14,909
June	2,930	9,159	22,606	26,474	16,744	5,962	23,339	3,005	5,423	14,911
July	2,917	9,154	22,584	26,515	16,751	5,961	23,400	3,007	5,443	14,950
Aug	2,909	9,162	22,544	26,573	16,746	5,957	23,436	3,011	5,468	14,957
Sept	2,903	9,162	22,525	26,691	16,776	5,959	23,449	3,012	5,479	14,958
Oct	2,887	9,164	22,486	26,786	16,799	5,962	23,486	3,013	5,492	14,981
Nov	2,885	9,173	22,499	26,870	16,823	5,968	23,504	3,009	5,502	14,993
Dec	2,895	9,179	22,532	26,945	16,862	5,972	23,529	3,009	5,515	15,005
2025: Jan	2,877	9,187	22,480	27,006	16,832	5,975	23,557	3,010	5,525	15,022
Feb	2,876	9,199	22,473	27,064	16,796	5,977	23,559	2,997	5,525	15,037
Mar	2,867	9,201	22,457	27,132	16,823	5,987	23,559	2,988	5,523	15,048
Apr	2,865	9,205	22,470	27,216	16,836	5,987	23,568	2,976	5,522	15,070
May	2,864	9,211	22,450	27,276	16,839	5,994	23,561	2,952	5,515	15,094
June	2,863	9,204	22,419	27,325	16,837	5,984	23,586	2,944	5,516	15,126
July	2,861	9,204	22,403	27,412	16,848	5,989	23,585	2,935	5,504	15,146
Aug	2,860	9,185	22,375	27,435	16,870	6,008	23,535	2,916	5,487	15,132
Sept	2,859	9,189	22,359	27,489	16,907	6,005	23,543	2,914	5,497	15,132
Oct	2,853	9,184	22,335	27,533	16,948	5,999	23,390	2,748	5,493	15,149
Nov	2,848	9,185	22,391	27,589	16,936	6,015	23,359	2,733	5,481	15,145
Dec	2,842	9,186	22,372	27,627	16,961	6,023	23,349	2,722	5,476	15,151

Note (cont'd): employed when they are not at work because of industrial disputes, bad weather, etc., even if they are not paid for the time off; which are based on a sample of the working-age population; and which count persons only once—as employed, unemployed, or not in the labor force. In the data shown here, persons who work at more than one job are counted each time they appear on a payroll.

Establishment data for employment, hours, and earnings are classified based on the 2022 North American Industry Classification System (NAICS). For further description and details see *Employment and Earnings*.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–30. Hours and earnings in private nonagricultural industries, 1980–2025

[Monthly data seasonally adjusted]

Year or month	All employees							Production and nonsupervisory employees [1]						
	Average weekly hours	Average hourly earnings		Average weekly earnings				Average weekly hours	Average hourly earnings		Average weekly earnings			
				Level		Percent change from year earlier					Level		Percent change from year earlier	
		Current dollars	1982–84 dollars [2]	Current dollars	1982–84 dollars [2]	Current dollars	1982–84 dollars [2]		Current dollars	1982–84 dollars [3]	Current dollars	1982–84 dollars [3]	Current dollars	1982–84 dollars [3]
1980	....	....	....	....	....	....	....	35.2	$6.84	$8.25	$240.83	$290.51	6.8	–5.8
1981	....	....	....	....	....	....	....	35.2	7.43	8.13	261.29	285.88	8.5	–1.6
1982	....	....	....	....	....	....	....	34.7	7.86	8.11	272.98	281.71	4.5	–1.5
1983	....	....	....	....	....	....	....	34.9	8.20	8.22	286.34	286.91	4.9	1.8
1984	....	....	....	....	....	....	....	35.1	8.49	8.22	298.08	288.56	4.1	.6
1985	....	....	....	....	....	....	....	34.9	8.73	8.17	304.37	284.72	2.1	–1.3
1986	....	....	....	....	....	....	....	34.7	8.92	8.21	309.69	285.17	1.7	.2
1987	....	....	....	....	....	....	....	34.7	9.14	8.12	317.33	282.07	2.5	–1.1
1988	....	....	....	....	....	....	....	34.6	9.44	8.07	326.50	279.06	2.9	–1.1
1989	....	....	....	....	....	....	....	34.5	9.81	8.00	338.42	276.04	3.7	–1.1
1990	....	....	....	....	....	....	....	34.3	10.20	7.91	349.63	271.03	3.3	–1.8
1991	....	....	....	....	....	....	....	34.1	10.51	7.83	358.46	266.91	2.5	–1.5
1992	....	....	....	....	....	....	....	34.2	10.77	7.79	368.17	266.40	2.7	–.2
1993	....	....	....	....	....	....	....	34.3	11.04	7.77	378.80	266.57	2.9	.1
1994	....	....	....	....	....	....	....	34.5	11.33	7.78	391.11	268.62	3.2	.8
1995	....	....	....	....	....	....	....	34.3	11.65	7.78	399.93	266.98	2.3	–.6
1996	....	....	....	....	....	....	....	34.3	12.04	7.81	413.17	268.12	3.3	.4
1997	....	....	....	....	....	....	....	34.5	12.51	7.94	431.67	273.90	4.5	2.2
1998	....	....	....	....	....	....	....	34.5	13.01	8.15	448.47	280.82	3.9	2.5
1999	....	....	....	....	....	....	....	34.3	13.48	8.26	463.07	283.74	3.3	1.0
2000	....	....	....	....	....	....	....	34.3	14.01	8.29	480.90	284.72	3.9	.3
2001	....	....	....	....	....	....	....	33.9	14.54	8.38	493.56	284.47	2.6	–.1
2002	....	....	....	....	....	....	....	33.9	14.96	8.50	506.51	287.95	2.6	1.2
2003	....	....	....	....	....	....	....	33.7	15.36	8.54	517.68	287.92	2.2	.0
2004	....	....	....	....	....	....	....	33.7	15.68	8.50	528.65	286.53	2.1	–.5
2005	....	....	....	....	....	....	....	33.8	16.11	8.43	543.91	284.77	2.9	–.6
2006	....	....	....	....	....	....	....	33.9	16.75	8.50	567.00	287.67	4.2	1.0
2007	34.4	$20.92	$10.09	$719.74	$347.13	....	....	33.8	17.41	8.59	589.09	290.53	3.9	1.0
2008	34.3	21.56	10.01	738.99	343.23	2.7	–1.1	33.6	18.06	8.56	607.10	287.65	3.1	–1.0
2009	33.8	22.17	10.33	749.92	349.55	1.5	1.8	33.1	18.61	8.88	615.87	293.79	1.4	2.1
2010	34.1	22.56	10.35	769.57	352.92	2.6	1.0	33.4	19.04	8.90	635.89	297.19	3.3	1.2
2011	34.3	23.03	10.24	790.79	351.56	2.8	–.4	33.6	19.44	8.77	652.78	294.61	2.7	–.9
2012	34.5	23.49	10.23	809.46	352.56	2.4	.3	33.7	19.73	8.72	665.59	294.21	2.0	–.1
2013	34.4	23.95	10.28	825.08	354.18	1.9	.5	33.7	20.13	8.78	677.62	295.49	1.8	.4
2014	34.5	24.46	10.33	844.82	356.86	2.4	.8	33.7	20.60	8.85	694.74	298.47	2.5	1.0
2015	34.5	25.02	10.56	864.10	364.57	2.3	2.2	33.7	21.03	9.07	708.73	305.74	2.0	2.4
2016	34.4	25.64	10.68	881.09	367.11	2.0	.7	33.6	21.53	9.20	723.22	308.97	2.0	1.1
2017	34.4	26.32	10.74	906.19	369.69	2.8	.7	33.7	22.05	9.22	742.45	310.58	2.7	.5
2018	34.5	27.11	10.80	936.37	372.90	3.3	.9	33.8	22.71	9.26	766.99	312.87	3.3	.7
2019	34.4	27.99	10.95	963.06	376.70	2.9	1.0	33.6	23.51	9.43	790.64	317.24	3.1	1.4
2020	34.6	29.35	11.34	1,014.41	391.95	5.3	4.0	33.9	24.68	9.78	837.42	331.98	5.9	4.6
2021	34.7	30.60	11.29	1,063.08	392.32	4.8	.1	34.2	25.90	9.75	886.54	333.90	5.9	.6
2022	34.5	32.26	11.02	1,114.33	380.77	4.8	–2.9	34.0	27.57	9.57	937.47	325.53	5.7	–2.5
2023	34.4	33.72	11.07	1,160.49	380.86	4.1	.0	33.9	28.93	9.68	979.62	327.64	4.5	.6
2024	34.3	35.06	11.18	1,201.36	382.98	3.5	.6	33.7	30.13	9.80	1,015.60	330.22	3.7	.8
2025	34.3	36.45	11.31	1,248.86	387.63	4.0	1.2	33.7	31.35	9.93	1,055.51	334.41	3.9	1.3
2024: Jan	34.2	34.47	11.13	1,178.87	380.65	3.2	.1	33.6	29.61	9.75	994.90	327.68	3.1	.1
Feb	34.4	34.52	11.10	1,187.49	381.87	3.8	.7	33.8	29.66	9.72	1,002.51	328.61	4.1	.9
Mar	34.4	34.65	11.09	1,191.96	381.62	4.1	.6	33.8	29.78	9.71	1,006.56	328.29	4.3	.7
Apr	34.2	34.76	11.10	1,188.79	379.78	3.4	.0	33.7	29.85	9.72	1,005.95	327.42	3.7	.3
May	34.3	34.89	11.14	1,196.73	382.13	3.8	.6	33.7	29.97	9.75	1,009.99	328.71	3.8	.5
June	34.3	35.01	11.18	1,200.84	383.60	3.6	.6	33.8	30.07	9.80	1,016.37	331.19	4.1	1.1
July	34.2	35.08	11.19	1,199.74	382.61	3.3	.4	33.7	30.16	9.81	1,016.39	330.60	3.7	.7
Aug	34.3	35.22	11.21	1,208.05	384.65	3.6	1.0	33.7	30.27	9.84	1,020.10	331.45	3.9	1.4
Sept	34.3	35.34	11.23	1,212.16	385.14	3.6	1.2	33.7	30.39	9.85	1,024.14	332.08	3.8	1.6
Oct	34.2	35.46	11.23	1,212.73	384.22	3.7	1.1	33.7	30.48	9.86	1,027.18	332.18	3.9	1.4
Nov	34.3	35.60	11.25	1,221.08	385.77	3.9	1.1	33.7	30.56	9.86	1,029.87	332.18	3.7	1.2
Dec	34.3	35.69	11.24	1,224.17	385.44	3.8	.9	33.7	30.66	9.85	1,033.24	332.03	4.0	1.3
2025: Jan	34.1	35.84	11.24	1,222.14	383.16	3.7	.7	33.6	30.79	9.85	1,034.54	330.91	4.0	1.0
Feb	34.2	35.94	11.24	1,229.15	384.50	3.5	.7	33.6	30.89	9.86	1,037.90	331.35	3.5	.8
Mar	34.2	36.11	11.29	1,234.96	386.18	3.6	1.2	33.7	31.02	9.90	1,045.37	333.62	3.9	1.6
Apr	34.3	36.12	11.28	1,238.92	386.80	4.2	1.8	33.7	31.09	9.91	1,047.73	333.96	4.2	2.0
May	34.2	36.28	11.32	1,240.78	386.99	3.7	1.3	33.6	31.20	9.94	1,048.32	333.85	3.8	1.6
June	34.2	36.36	11.31	1,243.51	386.86	3.6	.8	33.6	31.31	9.95	1,052.02	334.22	3.5	.9
July	34.2	36.47	11.32	1,247.27	387.15	4.0	1.2	33.7	31.39	9.95	1,057.84	335.45	4.1	1.5
Aug	34.2	36.62	11.33	1,252.40	387.39	3.7	.7	33.7	31.49	9.95	1,061.21	335.35	4.0	1.2
Sept	34.2	36.70	11.32	1,255.14	387.10	3.5	.5	33.7	31.56	9.94	1,063.57	335.01	3.9	.9
Oct	34.2	36.85	....	1,260.27	....	3.9	....	33.7	31.70	....	1,068.29	....	4.0	....
Nov	34.3	37.00	11.38	1,269.10	390.42	3.9	1.2	33.8	31.79	9.98	1,074.50	337.45	4.3	1.6
Dec	34.2	37.02	11.35	1,266.08	388.33	3.4	.7	33.7	31.83	9.97	1,072.67	336.11	3.8	1.2

[1] Production employees in goods-producing industries and nonsupervisory employees in service-providing industries. These groups account for four-fifths of the total employment on private nonfarm payrolls.
[2] Current dollars divided by the consumer price index for all urban consumers (CPI-U) on a 1982–84=100 base.
[3] Current dollars divided by the consumer price index for urban wage earners and clerical workers (CPI-W) on a 1982–84=100 base.

Note: See Note, Table B–29. Data for October 2025 on a constant dollar basis are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–31. Employment cost index, private industry, 2008–2025

Year and month	Total private			Goods-producing			Service-providing [1]			Manufacturing		
	Total compensation	Wages and salaries	Benefits [2]	Total compensation	Wages and salaries	Benefits [2]	Total compensation	Wages and salaries	Benefits [2]	Total compensation	Wages and salaries	Benefits [2]
	Indexes on NAICS basis, December 2005=100; not seasonally adjusted											
December:												
2008	108.9	109.4	107.7	107.5	109.0	104.7	109.4	109.6	108.9	105.9	107.7	102.5
2009	110.2	110.8	108.7	108.6	110.0	105.8	110.8	111.1	109.9	107.0	108.9	103.6
2010	112.5	112.8	111.9	111.1	111.6	110.1	113.0	113.1	112.6	110.0	110.7	108.8
2011	115.0	114.6	115.9	113.8	113.5	114.4	115.3	114.9	116.4	113.1	112.7	113.9
2012	117.1	116.6	118.2	115.6	115.4	116.0	117.6	117.0	119.1	114.9	114.8	115.0
2013	119.4	119.0	120.5	117.7	117.6	118.0	120.0	119.4	121.5	117.0	117.2	116.6
2014	122.2	121.6	123.5	120.3	120.1	120.7	122.8	122.1	124.6	119.8	119.8	119.8
2015	124.5	124.2	125.1	123.2	123.2	123.1	124.9	124.5	125.9	122.8	123.0	122.5
2016	127.2	127.1	127.3	125.8	126.2	124.9	127.7	127.4	128.3	125.5	126.2	124.3
2017	130.5	130.6	130.2	128.9	129.3	128.0	131.0	131.0	131.2	128.9	129.3	128.0
2018	134.4	134.7	133.6	131.9	133.0	129.6	135.2	135.2	135.1	131.6	132.9	129.1
2019	138.0	138.7	136.2	135.8	137.5	132.5	138.7	139.1	137.6	135.3	137.1	131.9
2020	141.6	142.6	139.1	138.9	141.0	134.9	142.4	143.1	140.6	138.5	140.7	134.3
2021	147.8	149.7	143.2	144.0	146.6	138.7	148.9	150.5	144.8	143.5	146.4	138.2
2022	155.3	157.4	150.1	150.6	153.9	143.9	156.6	158.3	152.3	150.3	153.9	143.5
2023	161.6	164.1	155.5	156.3	160.2	148.6	163.1	165.2	157.9	155.8	159.7	148.3
2024	167.4	170.2	160.7	161.4	165.6	153.0	169.0	171.3	163.3	161.4	165.8	153.1
2025	173.017	175.885	166.191	166.974	171.824	157.285	174.692	176.948	169.121	166.456	171.475	157.027
2025: Mar	169.4	171.9	163.5	163.3	167.7	154.7	171.1	173.0	166.4	163.1	167.6	154.5
June	171.181	173.849	164.815	165.122	169.627	156.113	172.856	174.944	167.688	164.922	169.615	156.095
Sept	172.307	175.109	165.630	166.232	170.921	156.862	173.987	176.198	168.523	165.853	170.727	156.694
Dec	173.017	175.885	166.191	166.974	171.824	157.285	174.692	176.948	169.121	166.456	171.475	157.027
	Indexes on NAICS basis, December 2005=100; seasonally adjusted											
2024: Mar	163.6	166.2	157.6	158.3	162.3	150.2	165.1	167.2	160.1	158.0	162.2	150.0
June	165.0	167.6	159.0	159.1	162.9	151.5	166.6	168.8	161.5	159.3	163.4	151.5
Sept	166.3	168.9	160.1	160.6	164.6	152.4	167.9	170.0	162.7	160.6	164.8	152.5
Dec	167.8	170.5	161.3	161.7	165.9	153.4	169.4	171.7	164.0	161.9	166.2	153.5
2025: Mar	169.2	171.8	163.2	163.3	167.6	154.6	170.8	172.8	166.0	163.0	167.5	154.4
June	170.832	173.566	164.367	164.784	169.261	155.698	172.479	174.668	167.181	164.634	169.337	155.631
Sept	172.191	174.954	165.658	166.363	171.018	156.910	173.793	175.982	168.497	166.032	170.810	156.882
Dec	173.452	176.233	166.877	167.379	172.147	157.692	175.109	177.293	169.826	166.965	171.920	157.470
	Percent change from 12 months earlier, not seasonally adjusted											
December:												
2008	2.4	2.6	2.0	2.4	2.8	1.5	2.5	2.6	2.2	2.0	2.7	0.8
2009	1.2	1.3	.9	1.0	.9	1.1	1.3	1.4	.9	1.0	1.1	1.1
2010	2.1	1.8	2.9	2.3	1.5	4.1	2.0	1.8	2.5	2.8	1.7	5.0
2011	2.2	1.6	3.6	2.4	1.7	3.9	2.0	1.6	3.4	2.8	1.8	4.7
2012	1.8	1.7	2.0	1.6	1.7	1.4	2.0	1.8	2.3	1.6	1.9	1.0
2013	2.0	2.1	1.9	1.8	1.9	1.7	2.0	2.1	2.0	1.8	2.1	1.4
2014	2.3	2.2	2.5	2.2	2.1	2.3	2.3	2.3	2.6	2.4	2.2	2.7
2015	1.9	2.1	1.3	2.4	2.6	2.0	1.7	2.0	1.0	2.5	2.7	2.3
2016	2.2	2.3	1.8	2.1	2.4	1.5	2.2	2.3	1.9	2.2	2.6	1.5
2017	2.6	2.8	2.3	2.5	2.5	2.5	2.6	2.8	2.3	2.7	2.5	3.0
2018	3.0	3.1	2.6	2.3	2.9	1.3	3.2	3.2	3.0	2.1	2.8	.9
2019	2.7	3.0	1.9	3.0	3.4	2.2	2.6	2.9	1.9	2.8	3.2	2.2
2020	2.6	2.8	2.1	2.3	2.5	1.8	2.7	2.9	2.2	2.4	2.6	1.8
2021	4.4	5.0	2.9	3.7	4.0	2.8	4.6	5.2	3.0	3.6	4.1	2.9
2022	5.1	5.1	4.8	4.6	5.0	3.7	5.2	5.2	5.2	4.7	5.1	3.8
2023	4.1	4.3	3.6	3.8	4.1	3.3	4.2	4.4	3.7	3.7	3.8	3.3
2024	3.6	3.7	3.3	3.3	3.4	3.0	3.6	3.7	3.4	3.6	3.8	3.2
2025	3.4	3.3	3.4	3.5	3.8	2.8	3.4	3.3	3.6	3.1	3.4	2.6
2025: Mar	3.4	3.4	3.5	3.2	3.3	2.9	3.4	3.3	3.7	3.2	3.3	2.9
June	3.5	3.5	3.4	3.5	3.9	2.8	3.5	3.5	3.6	3.3	3.6	2.8
Sept	3.5	3.6	3.5	3.6	3.9	2.9	3.5	3.5	3.6	3.4	3.6	2.9
Dec	3.4	3.3	3.4	3.5	3.8	2.8	3.4	3.3	3.6	3.1	3.4	2.6
	Percent change from 3 months earlier, seasonally adjusted											
2024: Mar	1.0	1.1	0.9	1.1	1.2	0.8	1.0	1.0	0.9	1.2	1.3	0.9
June	.9	.8	.9	.5	.4	.9	.9	1.0	.9	.8	.7	1.0
Sept	.8	.8	.7	.9	1.0	.6	.8	.7	.7	.8	.9	.7
Dec	.9	.9	.7	.7	.8	.7	.9	1.0	.8	.8	.8	.7
2025: Mar	.8	.8	1.2	1.0	1.0	.8	.8	.6	1.2	.7	.8	.6
June	1.0	1.0	.7	.9	1.0	.7	1.0	1.1	.7	1.0	1.1	.8
Sept	.8	.8	.8	1.0	1.0	.8	.8	.8	.8	.8	.9	.8
Dec	.7	.7	.7	.6	.7	.5	.8	.7	.8	.6	.6	.4

[1] On Standard Industrial Classification (SIC) basis, data are for service-producing industries.
[2] Employer costs for employee benefits.

Note: Changes effective with the release of March 2006 data (in April 2006) include changing industry classification to NAICS from SIC and rebasing data to December 2005=100. Historical SIC data are available through December 2005.

Data exclude farm and household workers.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–32. Productivity and related data, business and nonfarm business sectors, 1975–2025

[Index numbers, 2017=100; quarterly data seasonally adjusted]

Year or quarter	Labor productivity (output per hour): Business sector	Labor productivity (output per hour): Nonfarm business sector	Output [1]: Business sector	Output [1]: Nonfarm business sector	Hours of all persons [2]: Business sector	Hours of all persons [2]: Nonfarm business sector	Compensation per hour [3]: Business sector	Compensation per hour [3]: Nonfarm business sector	Real compensation per hour [4]: Business sector	Real compensation per hour [4]: Nonfarm business sector	Unit labor costs: Business sector	Unit labor costs: Nonfarm business sector	Value-added output price deflator [5]: Business sector	Value-added output price deflator [5]: Nonfarm business sector
1975	45.258	46.328	26.723	26.653	59.046	57.531	15.891	16.018	66.105	66.630	35.113	34.575	32.178	31.408
1976	46.765	47.940	28.529	28.560	61.006	59.574	17.161	17.264	67.495	67.903	36.696	36.012	33.857	33.120
1977	47.616	48.770	30.162	30.198	63.344	61.920	18.534	18.681	68.448	68.989	38.925	38.305	35.862	35.181
1978	48.185	49.466	32.086	32.225	66.589	65.146	20.093	20.281	69.345	69.994	41.700	41.001	38.342	37.471
1979	48.244	49.360	33.226	33.319	68.871	67.502	22.034	22.209	69.457	70.008	45.672	44.994	41.550	40.603
1980	48.224	49.338	32.925	33.038	68.275	66.962	24.391	24.591	69.143	69.711	50.578	49.843	45.243	44.461
1981	49.250	50.058	33.886	33.790	68.804	67.502	26.682	26.949	69.114	69.805	54.178	53.836	49.415	48.721
1982	48.971	49.647	32.913	32.756	67.209	65.978	28.658	28.913	70.003	70.627	58.520	58.238	52.231	51.728
1983	50.639	51.684	34.658	34.791	68.441	67.314	29.917	30.203	70.085	70.755	59.078	58.438	54.106	53.531
1984	52.084	52.838	37.732	37.731	72.444	71.409	31.240	31.504	70.261	70.855	59.980	59.625	55.636	55.011
1985	53.273	53.754	39.491	39.395	74.130	73.287	32.831	33.037	71.432	71.880	61.629	61.460	57.106	56.689
1986	54.772	55.352	40.926	40.882	74.720	73.858	34.685	34.940	74.210	74.756	63.325	63.123	57.878	57.494
1987	55.069	55.654	42.392	42.365	76.980	76.122	35.984	36.256	74.469	75.032	65.344	65.145	58.970	58.571
1988	55.898	56.569	44.208	44.292	79.087	78.297	37.893	38.117	75.639	76.087	67.790	67.381	60.847	60.365
1989	56.536	57.069	45.900	45.915	81.188	80.455	39.031	39.221	74.684	75.047	69.039	68.726	63.087	62.569
1990	57.647	58.026	46.635	46.606	80.897	80.319	41.458	41.560	75.594	75.779	71.916	71.622	65.182	64.706
1991	58.565	58.975	46.351	46.316	79.145	78.536	43.376	43.533	76.310	76.587	74.064	73.817	67.070	66.723
1992	61.279	61.605	48.313	48.196	78.841	78.233	46.037	46.234	79.025	79.363	75.127	75.049	68.158	67.845
1993	61.340	61.677	49.691	49.682	81.010	80.553	46.712	46.802	78.208	78.359	76.153	75.883	69.732	69.429
1994	61.691	62.103	52.087	51.970	84.432	83.683	47.052	47.260	77.164	77.505	76.271	76.100	70.974	70.714
1995	62.121	62.772	53.688	53.756	86.424	85.637	48.190	48.429	77.169	77.551	77.575	77.150	72.240	71.965
1996	63.641	64.092	56.181	56.171	88.278	87.641	49.911	50.103	77.849	78.147	78.426	78.173	73.376	72.963
1997	65.011	65.329	59.130	59.071	90.954	90.421	51.909	52.050	79.250	79.465	79.848	79.674	74.462	74.227
1998	67.233	67.516	62.383	62.381	92.787	92.394	54.971	55.060	82.801	82.936	81.762	81.551	74.660	74.496
1999	69.971	70.162	65.984	66.009	94.301	94.081	57.627	57.614	85.024	85.006	82.358	82.116	75.075	75.017
2000	72.171	72.256	68.945	68.896	95.530	95.349	61.638	61.656	87.953	87.978	85.405	85.329	76.453	76.473
2001	74.070	74.115	69.359	69.354	93.640	93.577	64.445	64.330	89.409	89.250	87.006	86.799	77.750	77.715
2002	77.206	77.292	70.545	70.524	91.372	91.243	65.881	65.811	89.981	89.885	85.331	85.146	78.325	78.364
2003	80.147	80.143	72.768	72.711	90.793	90.727	68.354	68.261	91.283	91.158	85.286	85.174	79.490	79.439
2004	82.668	82.528	75.964	75.850	91.891	91.908	71.551	71.374	93.068	92.837	86.553	86.484	81.489	81.299
2005	84.514	84.332	78.948	78.818	93.414	93.461	74.140	73.979	93.270	93.068	87.724	87.724	84.018	84.034
2006	85.350	85.163	81.535	81.446	95.531	95.635	76.972	76.814	93.788	93.596	90.185	90.197	86.390	86.479
2007	86.750	86.642	83.268	83.298	95.986	96.141	80.412	80.150	95.272	94.962	92.693	92.507	88.394	88.235
2008	87.941	87.891	82.533	82.557	93.850	93.931	82.906	82.713	94.589	94.368	94.274	94.108	89.700	89.543
2009	91.538	91.425	79.524	79.405	86.875	86.853	83.902	83.752	96.059	95.888	91.657	91.608	89.709	89.814
2010	94.509	94.428	82.078	82.004	86.847	86.843	85.395	85.304	96.209	96.107	90.357	90.338	90.818	90.787
2011	94.340	94.303	83.709	83.697	88.731	88.753	87.047	86.995	95.039	94.982	92.269	92.250	92.862	92.526
2012	95.001	95.075	86.413	86.490	90.960	90.970	89.168	89.043	95.361	95.227	93.860	93.655	94.538	94.177
2013	96.020	95.790	88.793	88.762	92.473	92.663	90.461	90.160	95.301	94.984	94.210	94.122	95.903	95.432
2014	96.754	96.685	91.754	91.783	94.832	94.930	92.682	92.533	96.041	95.886	95.791	95.706	97.307	96.958
2015	97.923	97.930	95.182	95.166	97.200	97.177	95.368	95.393	98.654	98.680	97.390	97.410	97.743	97.637
2016	98.687	98.685	97.148	97.089	98.440	98.383	96.641	96.682	98.696	98.738	97.927	97.971	98.394	98.471
2017	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
2018	101.478	101.372	103.445	103.441	101.938	102.041	103.389	103.362	100.924	100.898	101.883	101.964	102.071	102.138
2019	103.655	103.631	106.529	106.630	102.773	102.894	107.336	107.315	102.909	102.889	103.551	103.556	103.467	103.561
2020	109.102	109.188	103.698	103.757	95.047	95.026	116.019	116.118	109.773	109.867	106.340	106.347	103.870	103.999
2021	111.522	111.460	111.624	111.680	100.091	100.197	121.932	121.927	110.050	110.046	109.334	109.391	109.192	109.036
2022	109.932	109.764	114.351	114.429	104.020	104.250	126.517	126.291	105.641	105.452	115.087	115.057	117.950	117.516
2023	112.193	111.985	117.898	117.995	105.085	105.366	131.715	131.377	105.625	105.353	117.400	117.316	121.874	121.666
2024	115.543	115.320	121.385	121.450	105.056	105.316	138.857	138.553	108.173	107.936	120.178	120.147	124.262	124.159
2025 p	118.055	117.734	124.429	124.543	105.399	105.783	145.252	144.768	110.248	109.880	123.037	122.962	127.310	127.188
2022: I	110.279	110.183	113.757	113.815	103.154	103.296	125.098	125.004	107.359	107.278	113.438	113.451	114.778	114.458
II	109.514	109.366	113.723	113.796	103.843	104.050	125.375	125.162	105.052	104.874	114.483	114.442	117.841	117.378
III	109.600	109.422	114.527	114.617	104.495	104.747	127.623	127.376	105.529	105.325	116.444	116.407	119.055	118.582
IV	110.282	110.035	115.396	115.488	104.637	104.956	127.877	127.528	104.682	104.396	115.954	115.898	120.088	119.607
2023: I	110.591	110.269	116.291	116.306	105.154	105.475	128.904	128.509	104.581	104.260	116.560	116.541	121.045	120.702
II	111.535	111.362	117.068	117.151	104.960	105.198	130.814	130.547	105.354	105.140	117.284	117.228	121.466	121.221
III	112.900	112.738	118.589	118.721	105.039	105.307	132.867	132.542	106.092	105.832	117.686	117.567	122.328	122.151
IV	114.002	113.832	119.644	119.801	104.949	105.244	134.600	134.237	106.734	106.446	118.069	117.926	122.630	122.557
2024: I	114.131	113.902	119.771	119.862	104.942	105.232	136.487	136.144	107.247	106.977	119.588	119.527	123.455	123.377
II	115.208	114.947	121.000	121.038	105.028	105.299	138.073	137.752	107.764	107.514	119.847	119.840	124.090	124.060
III	116.115	115.989	122.123	122.190	105.174	105.346	139.564	139.381	108.552	108.410	120.195	120.168	124.422	124.328
IV	116.671	116.394	122.646	122.712	105.121	105.428	141.242	140.869	109.034	108.745	121.060	121.028	125.062	124.852
2025: I	116.377	116.127	122.305	122.436	105.094	105.433	143.454	143.029	109.724	109.399	123.267	123.166	126.128	125.850
II	117.655	117.319	123.848	123.993	105.264	105.689	143.975	143.440	109.673	109.265	122.371	122.265	126.545	126.412
III	119.153	118.814	125.513	125.633	105.338	105.739	146.114	145.624	110.459	110.088	122.628	122.564	127.764	127.678
IV p	119.690	119.338	126.053	126.112	105.316	105.677	148.329	147.855	111.439	111.082	123.927	123.896	128.752	128.759

[1] Output refers to real gross domestic product in the sector.
[2] Hours at work of all persons engaged in sector, including hours of employees, proprietors, and unpaid family workers. Estimates based primarily on establishment data.
[3] Wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. Also includes an estimate of wages, salaries, and supplemental payments for the self-employed.
[4] Hourly compensation divided by consumer price series. The trend for 1978-2024 is based on the consumer price index retroactive series (CPI-U-RS). The change for prior years and recent quarters is based on the consumer price index for all urban consumers (CPI-U).
[5] Current dollar output divided by the output index.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–33. Changes in productivity and related data, business and nonfarm business sectors, 1975–2025

[Percent change from preceding period; quarterly data at seasonally adjusted annual rates]

Year or quarter	Labor productivity (output per hour)		Output [1]		Hours of all persons [2]		Compensation per hour [3]		Real compensation per hour [4]		Unit labor costs		Value-added output price deflator [5]	
	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector	Business sector	Nonfarm business sector
1975	3.5	2.7	–0.9	–1.6	–4.3	–4.2	10.6	10.4	1.4	1.2	6.9	7.6	9.7	10.7
1976	3.3	3.5	6.8	7.2	3.3	3.6	8.0	7.8	2.1	1.9	4.5	4.2	5.2	5.5
1977	1.8	1.7	5.7	5.7	3.8	3.9	8.0	8.2	1.4	1.6	6.1	6.4	5.9	6.2
1978	1.2	1.4	6.4	6.7	5.1	5.2	8.4	8.6	1.3	1.5	7.1	7.0	6.9	6.5
1979	.1	–.2	3.6	3.4	3.4	3.6	9.7	9.5	.2	.0	9.5	9.7	8.4	8.4
1980	.0	.0	–.9	–.8	–.9	–.8	10.7	10.7	–.5	–.4	10.7	10.8	8.9	9.5
1981	2.1	1.5	2.9	2.3	.8	.8	9.4	9.6	.0	.1	7.1	8.0	9.2	9.6
1982	–.6	–.8	–2.9	–3.1	–2.3	–2.3	7.4	7.3	1.3	1.2	8.0	8.2	5.7	6.2
1983	3.4	4.1	5.3	6.2	1.8	2.0	4.4	4.5	.1	.2	1.0	.3	3.6	3.5
1984	2.9	2.2	8.9	8.5	5.8	6.1	4.4	4.3	.3	.1	1.5	2.0	2.8	2.8
1985	2.3	1.7	4.7	4.4	2.3	2.6	5.1	4.9	1.7	1.4	2.7	3.1	2.6	3.1
1986	2.8	3.0	3.6	3.8	.8	.8	5.6	5.8	3.9	4.0	2.8	2.7	1.4	1.4
1987	.5	.5	3.6	3.6	3.0	3.1	3.7	3.8	.3	.4	3.2	3.2	1.9	1.9
1988	1.5	1.6	4.3	4.5	2.7	2.9	5.3	5.1	1.6	1.4	3.7	3.4	3.2	3.1
1989	1.1	.9	3.8	3.7	2.7	2.8	3.0	2.9	–1.3	–1.4	1.8	2.0	3.7	3.7
1990	2.0	1.7	1.6	1.5	–.4	–.2	6.2	6.0	1.2	1.0	4.2	4.2	3.3	3.4
1991	1.6	1.6	–.6	–.6	–2.2	–2.2	4.6	4.7	.9	1.1	3.0	3.1	2.9	3.1
1992	4.6	4.5	4.2	4.1	–.4	–.4	6.1	6.2	3.6	3.6	1.4	1.7	1.6	1.7
1993	.1	.1	2.9	3.1	2.8	3.0	1.5	1.2	–1.0	–1.3	1.4	1.1	2.3	2.3
1994	.6	.7	4.8	4.6	4.2	3.9	.7	1.0	–1.3	–1.1	.2	.3	1.8	1.9
1995	.7	1.1	3.1	3.4	2.4	2.3	2.4	2.5	.0	.1	1.7	1.4	1.8	1.8
1996	2.4	2.1	4.6	4.5	2.1	2.3	3.6	3.5	.9	.8	1.1	1.3	1.6	1.4
1997	2.2	1.9	5.2	5.2	3.0	3.2	4.0	3.9	1.8	1.7	1.8	1.9	1.5	1.7
1998	3.4	3.3	5.5	5.6	2.0	2.2	5.9	5.8	4.5	4.4	2.4	2.4	.3	.4
1999	4.1	3.9	5.8	5.8	1.6	1.8	4.8	4.6	2.7	2.5	.7	.7	.6	.7
2000	3.1	3.0	4.5	4.4	1.3	1.3	7.0	7.0	3.4	3.5	3.7	3.9	1.8	1.9
2001	2.6	2.6	.6	.7	–2.0	–1.9	4.6	4.3	1.7	1.4	1.9	1.7	1.7	1.6
2002	4.2	4.3	1.7	1.7	–2.4	–2.5	2.2	2.3	.6	.7	–1.9	–1.9	.7	.8
2003	3.8	3.7	3.2	3.1	–.6	–.6	3.8	3.7	1.4	1.4	–.1	.0	1.5	1.4
2004	3.1	3.0	4.4	4.3	1.2	1.3	4.7	4.6	2.0	1.8	1.5	1.5	2.5	2.3
2005	2.2	2.2	3.9	3.9	1.7	1.7	3.6	3.6	.2	.2	1.4	1.4	3.1	3.4
2006	1.0	1.0	3.3	3.3	2.3	2.3	3.8	3.8	.6	.6	2.8	2.8	2.8	2.9
2007	1.6	1.7	2.1	2.3	.5	.5	4.5	4.3	1.6	1.5	2.8	2.6	2.3	2.0
2008	1.4	1.4	–.9	–.9	–2.2	–2.3	3.1	3.2	–.7	–.6	1.7	1.7	1.5	1.5
2009	4.1	4.0	–3.6	–3.8	–7.4	–7.5	1.2	1.3	1.6	1.6	–2.8	–2.7	.0	.3
2010	3.2	3.3	3.2	3.3	.0	.0	1.8	1.9	.2	.2	–1.4	–1.4	1.2	1.1
2011	–.2	–.1	2.0	2.1	2.2	2.2	1.9	2.0	–1.2	–1.2	2.1	2.1	2.3	1.9
2012	.7	.8	3.2	3.3	2.5	2.5	2.4	2.4	.3	.3	1.7	1.5	1.8	1.8
2013	1.1	.8	2.8	2.6	1.7	1.9	1.5	1.3	–.1	–.3	.4	.5	1.4	1.3
2014	.8	.9	3.3	3.4	2.6	2.4	2.5	2.6	.8	.9	1.7	1.7	1.5	1.6
2015	1.2	1.3	3.7	3.7	2.5	2.4	2.9	3.1	2.7	2.9	1.7	1.8	.4	.7
2016	.8	.8	2.1	2.0	1.3	1.2	1.3	1.4	.0	.1	.6	.6	.7	.9
2017	1.3	1.3	2.9	3.0	1.6	1.6	3.5	3.4	1.3	1.3	2.1	2.1	1.6	1.6
2018	1.5	1.4	3.4	3.4	1.9	2.0	3.4	3.4	.9	.9	1.9	2.0	2.1	2.1
2019	2.1	2.2	3.0	3.1	.8	.8	3.8	3.8	2.0	2.0	1.6	1.6	1.4	1.4
2020	5.3	5.4	–2.7	–2.7	–7.5	–7.6	8.1	8.2	6.7	6.8	2.7	2.7	.4	.4
2021	2.2	2.1	7.6	7.6	5.3	5.4	5.1	5.0	.3	.2	2.8	2.9	5.1	4.8
2022	–1.4	–1.5	2.4	2.5	3.9	4.0	3.8	3.6	–4.0	–4.2	5.3	5.2	8.0	7.8
2023	2.1	2.0	3.1	3.1	1.0	1.1	4.1	4.0	.0	–.1	2.0	2.0	3.3	3.5
2024	3.0	3.0	3.0	2.9	.0	.0	5.4	5.5	2.4	2.5	2.4	2.4	2.0	2.0
2025 p	2.2	2.1	2.5	2.5	.3	.4	4.6	4.5	1.9	1.8	2.4	2.3	2.5	2.4
2022: I	–5.3	–4.9	–2.2	–2.2	3.2	2.8	1.7	1.9	–6.9	–6.7	7.3	7.2	9.8	9.2
II	–2.7	–2.9	–.1	–.1	2.7	3.0	.9	.5	–8.3	–8.7	3.7	3.5	11.1	10.6
III	.3	.2	2.9	2.9	2.5	2.7	7.4	7.3	1.8	1.7	7.0	7.0	4.2	4.2
IV	2.5	2.3	3.1	3.1	.5	.8	.8	.5	–3.2	–3.5	–1.7	–1.7	3.5	3.5
2023: I	1.1	.9	3.1	2.9	2.0	2.0	3.3	3.1	–.4	–.5	2.1	2.2	3.2	3.7
II	3.5	4.0	2.7	2.9	–.7	–1.0	6.1	6.5	3.0	3.4	2.5	2.4	1.4	1.7
III	5.0	5.0	5.3	5.5	.3	.4	6.4	6.3	2.8	2.7	1.4	1.2	2.9	3.1
IV	4.0	3.9	3.6	3.7	–.3	–.2	5.3	5.2	2.4	2.3	1.3	1.2	1.0	1.3
2024: I	.5	.2	.4	.2	.0	.0	5.7	5.8	1.9	2.0	5.2	5.5	2.7	2.7
II	3.8	3.7	4.2	4.0	.3	.3	4.7	4.8	1.9	2.0	.9	1.1	2.1	2.2
III	3.2	3.7	3.8	3.9	.6	.2	4.4	4.8	3.0	3.4	1.2	1.1	1.1	.9
IV	1.9	1.4	1.7	1.7	–.2	.3	4.9	4.3	1.8	1.2	2.9	2.9	2.1	1.7
2025: I	–1.0	–.9	–1.1	–.9	–.1	.0	6.4	6.3	2.6	2.4	7.5	7.3	3.5	3.2
II	4.5	4.2	5.1	5.2	.6	1.0	1.5	1.2	–.2	–.5	–2.9	–2.9	1.3	1.8
III	5.2	5.2	5.5	5.4	.3	.2	6.1	6.2	2.9	3.0	.8	1.0	3.9	4.1
IV p	1.8	1.8	1.7	1.5	–.1	–.2	6.2	6.3	3.6	3.7	4.3	4.4	3.1	3.4

[1] Output refers to real gross domestic product in the sector.
[2] Hours at work of all persons engaged in the sector. See footnote 2, Table B–32.
[3] Wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. Also includes an estimate of wages, salaries, and supplemental payments for the self-employed.
[4] Hourly compensation divided by a consumer price index. See footnote 4, Table B–32.
[5] Current dollar output divided by the output index.

Note: Percent changes are calculated using index numbers to three decimal places.

Source: Department of Labor (Bureau of Labor Statistics).

Table B–34. Industrial production indexes, major industry divisions, 1980–2025

[2017=100, except as noted; monthly data seasonally adjusted]

Year or month	Total industrial production[1]		Manufacturing					Mining	Utilities
	Index, 2017=100	Percent change from year earlier[2]	Total[1]	Percent change from year earlier[2]	Durable	Nondurable	Other (non-NAICS)[1]		
1980	50.4	–2.6	48.3	–3.5	31.2	73.7	167.6	93.5	57.3
1981	51.0	1.3	48.8	1.0	31.5	74.4	171.6	96.1	58.1
1982	48.4	–5.2	46.1	–5.5	28.7	73.3	173.6	91.4	56.1
1983	49.7	2.7	48.3	4.8	30.2	76.7	178.6	86.6	56.5
1984	54.2	8.9	53.0	9.8	34.4	80.2	186.9	92.2	59.9
1985	54.8	1.2	53.9	1.6	35.2	80.7	194.3	90.4	61.4
1986	55.4	1.0	55.1	2.2	35.8	83.0	198.3	83.8	61.9
1987	58.3	5.2	58.2	5.7	37.9	87.4	209.7	84.7	64.9
1988	61.3	5.2	61.3	5.3	40.7	90.4	208.8	86.9	68.9
1989	61.8	.9	61.8	.8	41.1	91.0	205.8	86.0	71.0
1990	62.4	.9	62.3	.8	41.3	92.5	203.4	87.1	72.4
1991	61.4	–1.6	61.0	–2.0	39.9	92.1	195.1	85.3	74.2
1992	63.2	2.9	63.2	3.7	42.0	94.6	191.1	83.7	74.2
1993	65.3	3.3	65.5	3.6	44.3	95.9	192.5	83.5	76.7
1994	68.7	5.3	69.4	5.9	48.1	99.2	190.8	85.0	78.3
1995	71.9	4.7	72.9	5.2	52.2	101.0	190.8	85.0	81.1
1996	75.3	4.6	76.6	5.0	57.0	101.3	189.0	86.5	83.4
1997	80.7	7.3	83.1	8.5	64.0	105.1	205.1	88.1	83.2
1998	85.5	5.9	88.7	6.7	70.7	106.7	217.3	86.5	85.5
1999	89.3	4.5	93.3	5.2	76.9	107.4	223.6	82.1	88.1
2000	92.5	3.6	96.8	3.7	81.9	107.9	223.0	83.9	90.7
2001	89.8	–3.0	93.3	–3.5	78.8	104.8	208.5	84.1	90.3
2002	90.0	.3	93.8	.4	79.0	106.0	201.5	80.2	93.0
2003	91.3	1.4	95.1	1.4	81.3	106.2	195.7	80.4	94.5
2004	93.6	2.6	97.9	3.0	85.0	107.9	196.6	80.3	95.9
2005	96.7	3.4	102.0	4.1	90.0	110.6	196.0	79.3	98.0
2006	99.0	2.3	104.7	2.6	94.4	111.2	193.5	81.2	97.7
2007	101.6	2.6	107.6	2.8	99.2	112.6	182.7	81.9	100.8
2008	98.1	–3.4	102.6	–4.7	96.0	105.9	166.8	83.0	100.4
2009	86.9	–11.4	88.4	–13.8	77.9	97.7	139.6	78.7	97.5
2010	91.7	5.6	93.7	6.0	86.4	99.9	129.1	82.5	101.2
2011	94.6	3.2	96.4	2.9	91.8	100.0	123.3	87.7	100.8
2012	97.5	3.1	98.9	2.6	96.9	100.1	116.4	94.7	98.5
2013	99.5	2.0	99.8	.9	99.0	100.0	110.6	100.6	100.7
2014	102.4	3.0	100.9	1.1	101.8	99.4	109.4	111.2	102.0
2015	101.0	–1.4	100.4	–.6	100.7	99.7	105.4	104.6	101.2
2016	98.8	–2.2	99.6	–.8	98.6	100.5	102.6	91.5	100.8
2017	100.0	1.2	100.0	.4	100.0	100.0	100.0	100.0	100.0
2018	103.2	3.2	101.3	1.3	103.1	99.6	96.7	113.3	104.9
2019	102.3	–.8	99.3	–2.0	100.1	98.7	92.5	120.7	104.0
2020	95.1	–7.1	92.8	–6.5	91.2	94.9	85.3	102.8	101.0
2021	99.3	4.4	97.3	4.9	96.7	98.6	87.8	106.4	103.0
2022	101.0	1.7	97.7	.4	99.6	96.4	88.4	114.6	106.2
2023	100.8	–.2	96.8	–.9	99.1	95.4	81.1	119.9	104.5
2024	100.1	–.7	95.8	–1.0	97.0	95.8	77.0	118.7	106.6
2025 p	101.3	1.2	96.7	.9	98.5	96.3	72.5	120.3	109.5
2024: Jan	99.2	–1.3	95.2	–2.0	96.8	94.7	77.6	114.8	106.7
Feb	100.3	–.4	96.5	–.7	98.2	95.8	79.3	120.1	102.5
Mar	100.5	–.6	96.6	.1	98.3	95.9	78.8	118.9	104.4
Apr	100.2	–1.0	96.0	–1.3	97.7	95.4	77.9	119.2	105.9
May	100.9	–.1	96.6	–.6	98.0	96.2	78.6	118.6	108.2
June	100.9	.8	96.4	–.0	97.7	96.2	78.4	119.4	108.9
July	100.0	–.9	95.6	–1.2	96.4	96.0	76.7	118.5	107.1
Aug	100.4	–.4	96.1	–.7	97.4	95.8	76.8	119.6	107.0
Sept	99.8	–1.2	95.6	–1.3	96.3	95.9	77.3	118.3	106.2
Oct	99.5	–1.0	94.9	–1.5	95.1	95.9	76.5	119.0	107.1
Nov	99.3	–1.6	95.1	–1.7	95.6	95.9	73.7	118.1	105.0
Dec	100.3	–.3	95.5	–1.2	96.0	96.4	71.8	119.8	110.0
2025: Jan	100.1	.8	95.1	–.1	96.1	95.5	73.0	117.2	112.6
Feb	101.1	.8	96.4	–.1	97.7	96.3	75.2	119.2	111.4
Mar	101.0	.6	96.8	.2	98.2	96.6	75.0	120.3	107.0
Apr	101.1	.9	96.7	.6	98.1	96.5	72.9	120.0	108.8
May	101.0	.1	96.5	–.0	98.6	95.9	71.6	120.5	107.8
June	101.5	.6	96.9	.5	98.6	96.6	71.1	121.4	109.3
July	101.9	1.9	97.3	1.8	99.3	96.8	70.2	121.3	109.9
Aug	101.6	1.2	97.3	1.3	99.4	96.7	70.4	122.4	106.4
Sept p	101.7	1.9	97.3	1.9	99.4	96.7	72.2	121.1	107.8
Oct p	101.2	1.7	96.6	1.8	98.6	95.8	74.6	120.1	109.9
Nov p	101.4	2.1	96.9	1.8	98.7	96.4	72.9	121.2	108.3
Dec p	101.7	1.3	96.6	1.2	98.8	95.9	70.9	118.8	114.8

[1] Total industry and total manufacturing series include manufacturing as defined in the North American Industry Classification System (NAICS) plus those industries—logging and newspaper, periodical, book, and directory publishing—that have traditionally been considered to be manufacturing and included in the industrial sector.

[2] Percent changes based on unrounded indexes.

Note: Data based on NAICS; see footnote 1.

Source: Board of Governors of the Federal Reserve System.

Table B–35. Capacity utilization rates, 1980–2025

[Percent [1]; monthly data seasonally adjusted]

Year or month	Total industry [2]	Manufacturing				Mining	Utilities	Stage-of-process		
		Total [2]	Durable goods	Nondurable goods	Other (non-NAICS) [2]			Crude	Primary and semi-finished	Finished
1980	80.8	78.7	77.6	79.8	86.9	91.3	85.5	89.3	78.9	79.3
1981	79.6	77.1	75.3	78.9	86.6	90.9	84.4	89.3	77.4	77.5
1982	73.6	71.0	66.6	76.4	86.7	84.1	80.0	82.3	70.6	73.1
1983	75.0	73.6	68.9	79.4	87.9	79.9	79.3	80.0	74.6	73.0
1984	80.5	79.4	77.1	82.1	89.6	86.0	81.9	85.9	81.2	77.2
1985	79.3	78.1	75.8	80.5	89.2	84.7	81.8	84.1	79.8	76.7
1986	78.5	78.4	75.4	81.8	88.1	76.5	80.9	78.5	79.7	77.1
1987	81.1	80.9	77.6	84.8	90.0	80.3	83.5	82.9	82.7	78.7
1988	84.2	83.9	81.9	86.2	87.9	84.1	86.8	86.4	85.7	81.7
1989	83.7	83.3	81.6	85.0	87.0	85.1	86.9	86.8	84.7	81.6
1990	82.4	81.5	79.2	84.3	84.6	87.0	86.6	88.0	82.5	80.5
1991	79.9	78.5	75.3	82.4	81.0	85.4	87.9	85.7	79.8	78.4
1992	80.6	79.6	77.1	82.8	79.6	85.3	86.4	86.0	81.2	78.4
1993	81.5	80.4	78.6	82.8	81.0	85.8	88.2	85.9	83.1	78.5
1994	83.5	82.7	81.5	84.6	81.6	86.8	88.3	87.9	86.2	79.3
1995	83.9	83.1	82.1	84.5	83.1	87.7	89.4	89.1	86.3	79.8
1996	83.3	82.1	81.3	83.1	83.0	90.5	90.8	89.1	85.4	79.4
1997	84.2	83.1	82.4	83.7	86.8	91.8	90.1	90.4	85.9	80.6
1998	82.9	81.7	80.8	82.2	86.9	89.3	92.6	87.0	84.2	80.4
1999	82.0	80.8	80.7	80.0	86.7	86.2	94.2	86.2	84.5	78.3
2000	81.6	79.9	80.1	78.9	86.4	90.5	94.3	88.6	84.2	77.0
2001	76.3	74.0	72.1	75.7	81.6	89.8	90.1	85.4	77.6	72.8
2002	75.1	73.2	70.4	76.0	80.5	85.9	87.6	83.1	77.7	70.5
2003	76.2	74.3	71.7	76.9	80.4	87.7	85.6	84.9	78.7	71.4
2004	78.3	76.7	74.4	79.0	82.0	88.3	84.4	86.6	80.7	73.3
2005	80.3	78.8	76.8	80.7	82.1	88.2	84.9	86.4	82.1	75.9
2006	80.6	78.9	77.7	80.2	81.0	89.6	83.6	87.7	81.5	76.6
2007	80.8	79.1	78.7	79.9	76.2	88.9	85.7	88.3	81.2	77.5
2008	77.7	74.6	75.1	74.5	71.1	89.4	84.1	87.2	76.7	74.1
2009	68.4	65.3	61.6	69.8	62.6	80.3	80.5	78.0	65.5	67.9
2010	73.4	70.5	69.0	73.1	61.6	83.3	82.9	82.9	71.8	70.9
2011	76.1	73.3	73.0	74.7	62.8	85.9	81.4	84.8	74.4	73.3
2012	77.0	74.6	75.5	74.6	62.5	87.3	78.4	85.7	74.9	74.5
2013	77.2	74.9	75.7	75.1	63.2	85.0	80.0	84.5	76.2	73.8
2014	78.6	76.3	77.6	75.7	66.4	86.4	80.9	85.3	77.9	75.3
2015	77.1	76.8	77.0	77.3	68.1	76.7	80.1	76.9	77.9	76.3
2016	75.4	76.2	75.3	77.6	70.2	66.8	79.0	70.9	77.2	75.2
2017	76.4	77.0	76.2	78.3	72.6	71.7	77.4	74.1	77.8	75.7
2018	79.2	78.8	78.7	79.1	74.1	80.6	80.7	81.0	80.5	76.9
2019	77.9	77.4	76.6	78.4	75.3	79.8	79.2	79.4	79.1	75.9
2020	72.3	73.0	69.7	76.6	73.7	64.4	75.3	67.4	74.1	72.1
2021	76.9	77.3	74.2	80.7	80.4	75.9	75.4	77.1	78.1	75.5
2022	78.5	77.7	76.0	79.3	85.2	83.6	76.6	82.4	79.3	75.4
2023	77.3	76.8	75.4	78.1	81.8	85.0	73.3	82.9	77.1	75.2
2024	76.1	75.5	73.3	77.8	81.6	83.4	72.7	82.1	76.1	73.7
2025 p	76.0	75.5	73.6	77.4	80.9	84.3	71.7	82.8	75.8	73.5
2024: Jan	75.8	75.3	73.5	77.1	80.4	81.1	73.8	79.7	76.0	73.9
Feb	76.5	76.2	74.5	77.9	82.6	84.7	70.7	82.5	76.0	74.8
Mar	76.6	76.3	74.5	78.0	82.4	83.8	71.9	82.2	76.3	74.7
Apr	76.4	75.8	74.0	77.6	81.8	83.9	72.7	82.2	76.2	74.3
May	76.8	76.2	74.2	78.2	82.9	83.4	74.1	82.3	76.9	74.5
June	76.8	76.0	73.9	78.1	83.0	83.9	74.4	82.8	76.7	74.3
July	76.0	75.3	72.8	78.0	81.5	83.2	73.0	81.8	76.0	73.6
Aug	76.3	75.6	73.5	77.8	82.0	83.9	72.7	82.2	76.3	73.8
Sept	75.7	75.2	72.6	77.9	82.9	83.0	72.0	82.0	75.8	73.1
Oct	75.4	74.6	71.6	77.8	82.3	83.4	72.3	82.4	75.8	72.0
Nov	75.2	74.7	71.9	77.8	79.7	82.7	70.6	82.2	75.2	72.3
Dec	75.9	75.0	72.2	78.1	78.0	83.9	73.8	83.1	76.2	72.6
2025: Jan	75.6	74.6	72.2	77.2	79.5	82.0	75.2	81.5	76.3	72.3
Feb	76.3	75.5	73.3	77.8	82.3	83.4	74.2	82.2	76.6	73.5
Mar	76.1	75.8	73.6	78.0	82.5	84.2	71.0	82.4	76.0	73.9
Apr	76.1	75.6	73.5	77.9	80.5	84.0	71.9	82.7	76.0	73.7
May	75.9	75.5	73.8	77.2	79.4	84.4	71.0	82.7	75.7	73.5
June	76.2	75.6	73.7	77.7	79.2	85.1	71.7	83.4	76.0	73.7
July	76.4	75.9	74.2	77.8	78.5	85.0	71.8	83.6	75.9	74.2
Aug	76.1	75.9	74.2	77.6	79.0	85.9	69.3	84.2	75.3	74.0
Sept p	76.0	75.8	74.1	77.5	81.4	85.0	70.0	83.5	75.4	73.9
Oct p	75.6	75.1	73.5	76.6	84.5	84.3	71.1	82.6	75.4	73.2
Nov p	75.6	75.3	73.5	77.0	82.9	85.2	69.8	83.0	75.3	73.2
Dec p	75.8	75.0	73.5	76.5	81.0	83.5	73.8	81.8	76.0	73.2

[1] Output as percent of capacity.
[2] See footnote 1 and Note, Table B–34.

Source: Board of Governors of the Federal Reserve System.

Table B–36. New private housing units started, authorized, and completed and houses sold, 1980–2025

[Thousands; monthly data at seasonally adjusted annual rates]

Year or month	New housing units started				New housing units authorized [1]				New housing units completed	New houses sold
	Type of structure				Type of structure					
	Total	1 unit	2 to 4 units [2]	5 units or more	Total	1 unit	2 to 4 units	5 units or more		
1980	1,292.2	852.2	109.5	330.5	1,190.6	710.4	114.5	365.7	1,501.6	545
1981	1,084.2	705.4	91.2	287.7	985.5	564.3	101.8	319.4	1,265.7	436
1982	1,062.2	662.6	80.1	319.6	1,000.5	546.4	88.3	365.8	1,005.5	412
1983	1,703.0	1,067.6	113.5	522.0	1,605.2	901.5	133.7	570.1	1,390.3	623
1984	1,749.5	1,084.2	121.4	543.9	1,681.8	922.4	142.6	616.8	1,652.2	639
1985	1,741.8	1,072.4	93.5	576.0	1,733.3	956.6	120.1	656.6	1,703.3	688
1986	1,805.4	1,179.4	84.0	542.0	1,769.4	1,077.6	108.4	583.5	1,756.4	750
1987	1,620.5	1,146.4	65.1	408.7	1,534.8	1,024.4	89.3	421.1	1,668.8	671
1988	1,488.1	1,081.3	58.7	348.0	1,455.6	993.8	75.7	386.1	1,529.8	676
1989	1,376.1	1,003.3	55.3	317.6	1,338.4	931.7	66.9	339.8	1,422.8	650
1990	1,192.7	894.8	37.6	260.4	1,110.8	793.9	54.3	262.6	1,308.0	534
1991	1,013.9	840.4	35.6	137.9	948.8	753.5	43.1	152.1	1,090.8	509
1992	1,199.7	1,029.9	30.9	139.0	1,094.9	910.7	45.8	138.4	1,157.5	610
1993	1,287.6	1,125.7	29.4	132.6	1,199.1	986.5	52.4	160.2	1,192.7	666
1994	1,457.0	1,198.4	35.2	223.5	1,371.6	1,068.5	62.2	241.0	1,346.9	670
1995	1,354.1	1,076.2	33.8	244.1	1,332.5	997.3	63.8	271.5	1,312.6	667
1996	1,476.8	1,160.9	45.3	270.8	1,425.6	1,069.5	65.8	290.3	1,412.9	757
1997	1,474.0	1,133.7	44.5	295.8	1,441.1	1,062.4	68.4	310.3	1,400.5	804
1998	1,616.9	1,271.4	42.6	302.9	1,612.3	1,187.6	69.2	355.5	1,474.2	886
1999	1,640.9	1,302.4	31.9	306.6	1,663.5	1,246.7	65.8	351.1	1,604.9	880
2000	1,568.7	1,230.9	38.7	299.1	1,592.3	1,198.1	64.9	329.3	1,573.7	877
2001	1,602.7	1,273.3	36.6	292.8	1,636.7	1,235.6	66.0	335.2	1,570.8	908
2002	1,704.9	1,358.6	38.5	307.9	1,747.7	1,332.6	73.7	341.4	1,648.4	973
2003	1,847.7	1,499.0	33.5	315.2	1,889.2	1,460.9	82.5	345.8	1,678.7	1,086
2004	1,955.8	1,610.5	42.3	303.0	2,070.1	1,613.4	90.4	366.2	1,841.9	1,203
2005	2,068.3	1,715.8	41.1	311.4	2,155.3	1,682.0	84.0	389.3	1,931.4	1,283
2006	1,800.9	1,465.4	42.7	292.8	1,838.9	1,378.2	76.6	384.1	1,979.4	1,051
2007	1,355.0	1,046.0	31.7	277.3	1,398.4	979.9	59.6	359.0	1,502.8	776
2008	905.5	622.0	17.5	266.0	905.4	575.6	34.4	295.4	1,119.7	485
2009	554.0	445.1	11.6	97.3	583.0	441.1	20.7	121.1	794.4	375
2010	586.9	471.2	11.4	104.3	604.6	447.3	22.0	135.3	651.7	323
2011	608.8	430.6	10.9	167.3	624.1	418.5	21.6	184.0	584.9	306
2012	780.6	535.3	11.4	233.9	829.7	518.7	25.9	285.1	649.2	368
2013	924.9	617.6	13.6	293.7	990.8	620.8	29.0	341.1	764.4	429
2014	1,003.3	647.9	13.7	341.7	1,052.1	640.3	29.9	382.0	883.8	437
2015	1,111.8	714.5	11.5	385.8	1,182.6	696.0	32.1	454.5	968.2	501
2016	1,173.8	781.5	11.5	380.8	1,206.6	750.8	34.8	421.1	1,059.7	561
2017	1,203.0	848.9	11.4	342.7	1,282.0	820.0	37.2	424.8	1,152.9	613
2018	1,249.9	875.8	13.9	360.3	1,328.8	855.3	39.7	433.8	1,184.9	617
2019	1,290.0	887.7	13.4	388.9	1,386.0	862.1	42.6	481.4	1,255.1	683
2020	1,379.6	990.5	12.3	376.8	1,471.1	979.4	47.2	444.5	1,286.9	822
2021	1,601.0	1,127.2	11.7	462.1	1,737.0	1,115.4	52.9	568.8	1,341.0	771
2022	1,552.6	1,005.2	16.4	531.0	1,680.4	973.9	55.2	651.3	1,390.5	641
2023	1,420.0	947.7	13.4	458.8	1,511.1	920.0	54.7	536.4	1,448.8	666
2024	1,367.1	1,012.9	18.0	336.2	1,478.0	981.9	54.5	441.6	1,626.9	686
2025 p	1,356.9	940.6	19.1	397.3	1,426.2	909.3	55.1	461.8	1,488.0	677
2024: Jan	1,381	1,013	....	350	1,545	1,039	52	454	1,500	681
Feb	1,552	1,140	....	396	1,577	1,032	58	487	1,674	658
Mar	1,312	1,045	....	260	1,476	986	51	439	1,487	692
Apr	1,385	1,053	....	326	1,459	983	56	420	1,662	719
May	1,316	997	....	301	1,407	959	55	393	1,561	665
June	1,327	981	....	329	1,461	945	48	468	1,731	671
July	1,265	871	....	369	1,436	945	53	438	1,635	710
Aug	1,391	1,008	....	348	1,476	967	57	452	1,755	693
Sept	1,357	1,043	....	299	1,434	962	60	412	1,671	717
Oct	1,352	948	....	389	1,428	967	53	408	1,636	621
Nov	1,295	1,014	....	266	1,508	973	51	484	1,618	675
Dec	1,514	1,078	....	406	1,480	989	57	434	1,527	718
2025: Jan	1,358	1,000	....	334	1,460	988	56	416	1,651	662
Feb	1,490	1,098	....	364	1,454	992	58	404	1,565	642
Mar	1,355	948	....	393	1,481	972	58	451	1,566	660
Apr	1,398	948	....	432	1,422	923	61	438	1,475	706
May	1,282	949	....	313	1,394	899	53	442	1,542	627
June	1,382	925	....	433	1,393	866	50	477	1,385	662
July	1,420	951	....	449	1,362	875	55	432	1,455	639
Aug	1,291	869	....	411	1,330	858	52	420	1,556	706
Sept	1,328	836	....	481	1,415	880	56	479	1,372	719
Oct p	1,272	894	....	353	1,411	878	55	478	1,430	650
Nov p	1,324	931	....	378	1,388	896	56	436	1,463	764
Dec p	1,387	962	....	406	1,455	881	51	523	1,457	712

[1] Authorized by issuance of local and building permits in permit-issuing places: beginning with 2023, annually updated universe of approximately 20,000 places; 20,100 for 2014–2022; 19,300 for 2004–2013; 19,000 for 1994–2003; 17,000 for 1984–93; and 16,000 for 1980–83.

[2] Monthly data do not meet publication standards because tests for identifiable and stable seasonality do not meet reliability standards.

Note: One-unit estimates prior to 1999, for new housing units started and completed and for new houses sold, include an upward adjustment of 3.3 percent to account for structures in permit-issuing areas that did not have permit authorization.

Source: Department of Commerce (Bureau of the Census).

Table B–37. Manufacturing and trade sales and inventories, 1983–2025

[Amounts in millions of dollars; monthly data seasonally adjusted]

Year or month	Total manufacturing and trade			Manufacturing			Merchant wholesalers [1]			Retail trade			Retail and food services sales
	Sales [2]	Inventories [3]	Ratio [4]	Sales [2]	Inventories [3]	Ratio [4]	Sales [2]	Inventories [3]	Ratio [4]	Sales [2, 5]	Inventories [3]	Ratio [4]	
SIC: [6]													
1983	369,286	590,287	1.56	172,547	312,379	1.78	99,225	130,075	1.28	97,514	147,833	1.44	....
1984	410,124	649,780	1.53	190,682	339,516	1.73	112,199	142,452	1.23	107,243	167,812	1.49	....
1985	422,583	664,039	1.56	194,538	334,749	1.73	113,459	147,409	1.28	114,586	181,881	1.52	....
1986	430,419	662,738	1.55	194,657	322,654	1.68	114,960	153,574	1.32	120,803	186,510	1.56	....
1987	457,735	709,848	1.50	206,326	338,109	1.59	122,968	163,903	1.29	128,442	207,836	1.55	....
1988	497,157	767,222	1.49	224,619	369,374	1.57	134,521	178,801	1.30	138,017	219,047	1.54	....
1989	527,039	815,455	1.52	236,698	391,212	1.63	143,760	187,009	1.28	146,581	237,234	1.58	....
1990	545,909	840,594	1.52	242,686	405,073	1.65	149,506	195,833	1.29	153,718	239,688	1.56	....
1991	542,815	834,609	1.53	239,847	390,950	1.65	148,306	200,448	1.33	154,661	243,211	1.54	....
1992	567,176	842,809	1.48	250,394	382,510	1.54	154,150	208,302	1.32	162,632	251,997	1.52	....
NAICS: [6]													
1992	535,620	828,308	1.53	242,002	378,609	1.57	147,261	196,914	1.31	146,357	252,785	1.67	162,878
1993	562,472	855,017	1.50	251,708	379,806	1.50	154,018	204,842	1.30	156,746	270,369	1.68	174,309
1994	604,942	918,423	1.46	269,843	399,934	1.44	164,575	221,978	1.29	170,524	296,511	1.66	188,867
1995	649,685	977,873	1.48	289,973	424,802	1.44	179,915	238,392	1.29	179,797	314,679	1.72	198,809
1996	681,680	996,068	1.45	299,766	430,366	1.44	190,362	241,058	1.27	191,553	324,644	1.67	211,305
1997	718,094	1,036,516	1.41	319,558	443,227	1.37	198,154	258,454	1.26	200,382	334,835	1.64	221,377
1998	736,922	1,067,789	1.43	324,984	448,373	1.39	202,260	272,297	1.32	209,678	347,119	1.62	231,643
1999	780,524	1,127,309	1.40	335,991	463,004	1.35	216,597	290,182	1.30	227,937	374,123	1.59	250,909
2000	828,174	1,187,650	1.40	350,715	480,748	1.35	234,546	309,191	1.29	242,912	397,711	1.59	267,536
2001	812,475	1,109,842	1.42	330,875	427,353	1.38	232,096	297,536	1.32	249,504	384,953	1.58	275,156
2002	817,223	1,129,900	1.36	326,227	423,028	1.29	236,294	301,310	1.26	254,702	405,562	1.55	281,475
2003	848,484	1,137,790	1.34	334,616	408,302	1.25	248,190	308,274	1.22	265,678	421,214	1.56	293,994
2004	919,603	1,230,005	1.30	359,081	441,222	1.19	277,501	340,128	1.17	283,021	448,655	1.56	313,296
2005	999,369	1,303,339	1.27	395,173	474,639	1.17	303,208	367,815	1.17	300,988	460,885	1.51	333,173
2006	1,062,553	1,399,095	1.28	417,963	523,476	1.20	328,438	398,773	1.17	316,152	476,846	1.49	350,490
2007	1,121,377	1,477,562	1.28	443,288	563,043	1.22	351,956	424,631	1.17	326,132	489,888	1.49	362,249
2008	1,154,300	1,455,315	1.31	455,750	543,273	1.26	377,085	445,779	1.20	321,465	466,263	1.51	358,548
2009	982,705	1,321,703	1.38	368,648	505,025	1.39	319,217	398,096	1.29	294,839	418,582	1.46	331,574
2010	1,082,737	1,440,606	1.27	409,273	553,726	1.28	361,600	443,292	1.15	311,864	443,588	1.39	349,820
2011	1,200,233	1,556,708	1.26	457,658	607,035	1.29	407,302	488,877	1.15	335,272	460,796	1.35	375,565
2012	1,260,673	1,647,563	1.28	474,727	625,232	1.30	434,294	525,627	1.18	351,652	496,704	1.37	394,342
2013	1,299,350	1,717,040	1.29	484,511	632,374	1.30	450,122	550,413	1.19	364,717	534,253	1.41	409,008
2014	1,339,013	1,779,016	1.31	490,751	643,319	1.31	468,666	585,484	1.22	379,597	550,213	1.43	426,599
2015	1,295,889	1,811,571	1.39	461,086	638,420	1.40	448,277	596,850	1.33	386,526	576,301	1.46	437,418
2016	1,288,274	1,845,368	1.42	446,966	635,625	1.42	444,712	611,347	1.35	396,596	598,396	1.49	450,280
2017	1,349,947	1,904,773	1.39	462,400	658,658	1.39	475,081	632,638	1.31	412,467	613,477	1.47	468,979
2018	1,432,231	1,995,882	1.36	493,366	683,417	1.37	508,768	671,324	1.28	430,097	641,141	1.45	489,840
2019	1,432,378	2,040,343	1.42	483,122	717,140	1.45	506,978	680,111	1.35	442,278	643,092	1.46	505,390
2020	1,381,399	1,992,588	1.44	441,524	715,771	1.61	484,270	666,216	1.37	455,606	610,601	1.34	508,980
2021	1,634,649	2,265,965	1.29	517,867	832,745	1.49	583,475	785,918	1.24	533,307	647,302	1.14	602,116
2022	1,835,072	2,593,136	1.36	587,389	939,060	1.53	671,342	924,269	1.31	576,342	729,807	1.23	656,129
2023	1,834,886	2,591,108	1.41	587,115	933,564	1.59	658,323	895,920	1.37	589,448	761,624	1.27	678,289
2024	1,870,421	2,638,369	1.40	593,498	941,027	1.58	671,533	891,703	1.34	605,391	805,639	1.31	698,831
2025 *p*	1,933,542	2,676,625	1.38	603,486	949,081	1.57	703,492	914,350	1.29	626,564	813,194	1.29	725,000
2024: Jan	1,829,619	2,585,336	1.41	584,255	932,239	1.60	656,420	889,437	1.35	588,944	763,660	1.30	680,456
Feb	1,847,926	2,594,839	1.40	587,042	933,569	1.59	667,678	892,709	1.34	593,206	768,561	1.30	685,280
Mar	1,844,217	2,590,962	1.40	590,400	934,012	1.58	657,848	887,937	1.35	595,969	769,013	1.29	687,641
Apr	1,851,860	2,599,646	1.40	595,413	935,587	1.57	660,771	888,010	1.34	595,676	776,049	1.30	687,602
May	1,855,956	2,611,183	1.41	590,334	936,426	1.59	665,250	893,110	1.34	600,372	781,647	1.30	692,774
June	1,854,041	2,618,815	1.41	591,770	935,183	1.58	662,292	894,462	1.35	599,979	789,170	1.32	692,449
July	1,872,821	2,628,273	1.40	597,331	934,978	1.57	669,676	896,740	1.34	605,814	796,555	1.31	698,835
Aug	1,867,808	2,635,958	1.41	593,766	935,844	1.58	670,441	898,441	1.34	603,601	801,673	1.33	697,039
Sept	1,877,494	2,637,086	1.40	592,881	934,025	1.58	675,839	895,719	1.33	608,774	807,342	1.33	703,055
Oct	1,877,521	2,640,959	1.41	590,720	934,085	1.58	674,029	898,061	1.33	612,772	808,813	1.32	708,290
Nov	1,888,646	2,646,596	1.40	593,730	938,291	1.58	678,572	898,579	1.32	616,344	809,726	1.31	711,853
Dec	1,904,133	2,638,369	1.39	596,142	941,027	1.58	686,278	891,703	1.30	621,713	805,639	1.30	717,265
2025: Jan	1,889,885	2,649,456	1.40	598,328	941,981	1.57	676,577	900,015	1.33	614,980	807,460	1.31	711,095
Feb	1,912,617	2,653,551	1.39	602,132	943,013	1.57	693,771	903,934	1.30	616,714	806,604	1.31	711,757
Mar	1,924,921	2,655,706	1.38	600,663	944,064	1.57	699,137	907,090	1.30	625,121	804,552	1.29	722,572
Apr	1,921,556	2,656,059	1.38	598,633	943,249	1.58	699,402	908,309	1.30	623,521	804,501	1.29	721,789
May	1,914,247	2,655,931	1.39	599,560	944,036	1.57	696,650	905,458	1.30	618,037	806,437	1.30	716,101
June	1,928,435	2,660,978	1.38	602,992	946,202	1.57	701,297	906,960	1.29	624,146	807,816	1.29	723,033
July	1,947,836	2,664,749	1.37	608,530	948,226	1.56	710,559	908,006	1.28	628,747	808,517	1.29	727,727
Aug	1,948,357	2,663,591	1.37	606,847	947,640	1.56	709,361	907,383	1.28	632,149	808,568	1.28	731,700
Sept	1,946,691	2,670,511	1.37	606,522	946,694	1.56	707,774	911,532	1.29	632,395	812,285	1.28	732,192
Oct	1,943,249	2,676,595	1.38	607,176	947,012	1.56	704,727	913,477	1.30	631,346	816,106	1.29	731,051
Nov *p*	1,955,217	2,677,084	1.37	606,008	948,592	1.57	714,732	915,713	1.28	634,477	812,779	1.28	734,718
Dec *p*	1,968,599	2,676,625	1.36	610,055	949,081	1.56	723,871	914,350	1.26	634,673	813,194	1.28	734,685

[1] Excludes manufacturers' sales branches and offices.
[2] Annual data are averages of monthly not seasonally adjusted figures.
[3] Seasonally adjusted, end of period.
[4] Inventory/sales ratio. Monthly inventories are inventories at the end of the month to sales for the month. Annual data are the average of monthly ratios for the year.
[5] Food services included on Standard Industrial Classification (SIC) basis and excluded on North American Industry Classification System (NAICS) basis. See last column for retail and food services sales.
[6] Effective in 2001, data classified based on NAICS. Data on NAICS basis available beginning with 1992. Earlier data based on SIC. Data on both NAICS and SIC basis include semiconductors.

Source: Department of Commerce (Bureau of the Census).

Prices

Table B–38. Changes in consumer price indexes, 1984–2025

[For all urban consumers; percent change]

Year or month	All items	All items less food and energy					Food			Energy [4]		C-CPI-U [5]
		Total [1]	Shelter [2]	Medical care [3]	Apparel	New vehicles	Total [1]	At home	Away from home	Total [1, 3]	Gasoline	
	December to December, NSA											
1984	3.9	4.7	5.2	6.1	2.0	2.5	3.8	3.6	4.2	0.2	–2.5	....
1985	3.8	4.3	6.0	6.8	2.8	3.6	2.6	2.0	3.8	1.8	3.0	....
1986	1.1	3.8	4.6	7.7	.9	5.6	3.8	3.7	4.3	–19.7	–30.7	....
1987	4.4	4.2	4.8	5.8	4.8	1.8	3.5	3.5	3.7	8.2	18.6	....
1988	4.4	4.7	4.5	6.9	4.7	2.2	5.2	5.6	4.4	.5	–1.8	....
1989	4.6	4.4	4.9	8.5	1.0	2.4	5.6	6.2	4.6	5.1	6.5	....
1990	6.1	5.2	5.2	9.6	5.1	2.0	5.3	5.8	4.5	18.1	36.8	....
1991	3.1	4.4	3.9	7.9	3.4	3.2	1.9	1.3	2.9	–7.4	–16.2	....
1992	2.9	3.3	2.9	6.6	1.4	2.3	1.5	1.5	1.4	2.0	2.0	....
1993	2.7	3.2	3.0	5.4	.9	3.3	2.9	3.5	1.9	–1.4	–5.9	....
1994	2.7	2.6	3.0	4.9	–1.6	3.3	2.9	3.5	1.9	2.2	6.4	....
1995	2.5	3.0	3.5	3.9	.1	1.9	2.1	2.0	2.2	–1.3	–4.2	....
1996	3.3	2.6	2.9	3.0	–.2	1.8	4.3	4.9	3.1	8.6	12.4	....
1997	1.7	2.2	3.4	2.8	1.0	–.9	1.5	1.0	2.6	–3.4	–6.1	....
1998	1.6	2.4	3.3	3.4	–.7	.0	2.3	2.1	2.5	–8.8	–15.4	....
1999	2.7	1.9	2.5	3.7	–.5	–.3	1.9	1.7	2.3	13.4	30.1	....
2000	3.4	2.6	3.4	4.2	–1.8	.0	2.8	2.9	2.4	14.2	13.9	2.6
2001	1.6	2.7	4.2	4.7	–3.2	–.1	2.8	2.6	3.0	–13.0	–24.9	1.3
2002	2.4	1.9	3.1	5.0	–1.8	–2.0	1.5	.8	2.3	10.7	24.8	2.0
2003	1.9	1.1	2.2	3.7	–2.1	–1.8	3.6	4.5	2.3	6.9	6.8	1.7
2004	3.3	2.2	2.7	4.2	–.2	.6	2.7	2.4	3.0	16.6	26.1	3.2
2005	3.4	2.2	2.6	4.3	–1.1	–.4	2.3	1.7	3.2	17.1	16.1	2.9
2006	2.5	2.6	4.2	3.6	.9	–.9	2.1	1.4	3.2	2.9	6.4	2.3
2007	4.1	2.4	3.1	5.2	–.3	–.3	4.9	5.6	4.0	17.4	29.6	3.7
2008	.1	1.8	1.9	2.6	–1.0	–3.2	5.9	6.6	5.0	–21.3	–43.1	.2
2009	2.7	1.8	.3	3.4	1.9	4.9	–.5	–2.4	1.9	18.2	53.5	2.5
2010	1.5	.8	.4	3.3	–1.1	–.2	1.5	1.7	1.3	7.7	13.8	1.3
2011	3.0	2.2	1.9	3.5	4.6	3.2	4.7	6.0	2.9	6.6	9.9	2.9
2012	1.7	1.9	2.2	3.2	1.8	1.6	1.8	1.3	2.5	.5	1.7	1.5
2013	1.5	1.7	2.5	2.0	.6	.4	1.1	.4	2.1	.5	–1.0	1.3
2014	.8	1.6	2.9	3.0	–2.0	.5	3.4	3.7	3.0	–10.6	–21.0	.5
2015	.7	2.1	3.2	2.6	–.9	.2	.8	–.4	2.6	–12.6	–19.7	.4
2016	2.1	2.2	3.6	4.1	–.1	.3	–.2	–2.0	2.3	5.4	9.1	1.8
2017	2.1	1.8	3.2	1.8	–1.6	–.5	1.6	.9	2.5	6.9	10.7	1.7
2018	1.9	2.2	3.2	2.0	–.1	–.3	1.6	.6	2.8	–.3	–2.1	1.5
2019	2.3	2.3	3.2	4.6	–1.2	.1	1.8	.7	3.1	3.4	7.9	1.8
2020	1.4	1.6	1.8	1.8	–3.9	2.0	3.9	3.9	3.9	–7.0	–15.2	1.5
2021	7.0	5.5	4.1	2.2	5.8	11.8	6.3	6.5	6.0	29.3	49.6	6.5
2022	6.5	5.7	7.5	4.0	2.9	5.9	10.4	11.8	8.3	7.3	–1.5	6.4
2023	3.4	3.9	6.2	.5	1.0	1.0	2.7	1.3	5.2	–2.0	–1.9	2.9
2024	2.9	3.2	4.6	2.8	1.2	–.4	2.5	1.8	3.6	–.5	–3.4	2.6
2025	2.7	2.6	3.2	3.2	.6	.3	3.1	2.4	4.1	2.3	–3.4	2.5
	Change from year earlier, NSA											
2024: Jan	3.1	3.9	6.0	1.1	0.1	0.7	2.6	1.2	5.1	–4.6	–6.4	2.6
Feb	3.2	3.8	5.7	1.4	.0	.4	2.2	1.0	4.5	–1.9	–3.9	2.8
Mar	3.5	3.8	5.7	2.2	.4	–.1	2.2	1.2	4.2	2.1	1.3	3.1
Apr	3.4	3.6	5.5	2.6	1.3	–.4	2.2	1.1	4.1	2.6	1.2	3.0
May	3.3	3.4	5.4	3.1	.8	–.8	2.1	1.0	4.0	3.7	2.2	2.9
June	3.0	3.3	5.2	3.3	.8	–.9	2.2	1.1	4.1	1.0	–2.5	2.6
July	2.9	3.2	5.1	3.2	.2	–1.0	2.2	1.1	4.1	1.1	–2.2	2.5
Aug	2.5	3.2	5.2	3.0	.3	–1.2	2.1	.9	4.0	–4.0	–10.3	2.2
Sept	2.4	3.3	4.9	3.3	1.8	–1.3	2.3	1.3	3.9	–6.8	–15.3	2.1
Oct	2.6	3.3	4.9	3.3	.3	–1.3	2.1	1.1	3.8	–4.9	–12.2	2.3
Nov	2.7	3.3	4.7	3.1	1.1	–.7	2.4	1.6	3.6	–3.2	–8.1	2.5
Dec	2.9	3.2	4.6	2.8	1.2	–.4	2.5	1.8	3.6	–.5	–3.4	2.6
2025: Jan	3.0	3.3	4.4	2.6	.4	–.3	2.5	1.9	3.4	1.0	–.2	2.7
Feb	2.8	3.1	4.2	2.9	.6	–.3	2.6	1.9	3.7	–.2	–3.1	2.6
Mar	2.4	2.8	4.0	2.6	.3	.0	3.0	2.4	3.8	–3.3	–9.8	2.1
Apr	2.3	2.8	4.0	2.7	–.7	.3	2.8	2.0	3.9	–3.7	–11.8	2.1
May	2.4	2.8	3.9	2.5	–.9	.4	2.9	2.2	3.8	–3.5	–12.0	2.1
June	2.7	2.9	3.8	2.8	–.5	.2	3.0	2.4	3.8	–.8	–8.3	2.5
July	2.7	3.1	3.7	3.5	–.2	.4	2.9	2.2	3.9	–1.6	–9.5	2.6
Aug	2.9	3.1	3.6	3.4	.2	.7	3.2	2.7	3.9	.2	–6.6	2.8
Sept	3.0	3.0	3.6	3.3	–.1	.8	3.1	2.7	3.7	2.8	–.5	2.9
Oct	....	....	....	....	....	.9	....	....	....	....	–1.7	....
Nov	2.7	2.6	3.0	2.9	.2	.6	2.6	1.9	3.7	4.2	.9	2.6
Dec	2.7	2.6	3.2	3.2	.6	.3	3.1	2.4	4.1	2.3	–3.4	2.5

[1] Includes other items not shown separately.
[2] Data beginning with 1983 incorporate a rental equivalence measure for homeowners' costs.
[3] Commodities and services.
[4] Household energy--electricity, utility (piped) gas service, fuel oil, etc.--and motor fuel.
[5] Chained consumer price index (C-CPI-U) introduced in 2002. Reflects the effect of substitution that consumers make across item categories in response to changes in relative prices. Data for 2025 are subject to revision.

Note: Data for October 2025 are unavailable due to the 2025 lapse in appropriations.

Source: Department of Labor (Bureau of Labor Statistics).

TABLE B–39. Price indexes for personal consumption expenditures, and percent changes, 1975–2025

[Chain-type price index numbers, 2017=100; monthly data seasonally adjusted]

Year or month	Personal consumption expenditures (PCE)						Percent change from year earlier					
	Total	Goods	Services	Food [1]	Energy goods and services [2]	PCE less food and energy	Total	Goods	Services	Food [1]	Energy goods and services [2]	PCE less food and energy
1975	26.860	46.159	19.302	30.338	20.507	26.899	8.3	8.1	8.6	7.5	9.9	8.4
1976	28.333	47.966	20.641	30.902	21.883	28.534	5.5	3.9	6.9	1.9	6.7	6.1
1977	30.176	50.526	22.203	32.722	23.732	30.369	6.5	5.3	7.6	5.9	8.4	6.4
1978	32.276	53.626	23.910	35.853	25.068	32.382	7.0	6.1	7.7	9.6	5.6	6.6
1979	35.143	58.698	25.915	39.374	31.260	34.743	8.9	9.5	8.4	9.8	24.7	7.3
1980	38.928	65.271	28.610	42.685	40.840	37.936	10.8	11.2	10.4	8.4	30.6	9.2
1981	42.415	70.120	31.541	45.726	46.332	41.260	9.0	7.4	10.2	7.1	13.4	8.8
1982	44.771	72.031	34.017	46.929	47.141	43.942	5.6	2.7	7.9	2.6	1.7	6.5
1983	46.676	73.331	36.106	47.468	47.582	46.191	4.3	1.8	6.1	1.1	.9	5.1
1984	48.439	74.718	37.985	48.894	48.182	48.106	3.8	1.9	5.2	3.0	1.3	4.1
1985	50.128	75.917	39.843	49.426	48.690	50.060	3.5	1.6	4.9	1.1	1.1	4.1
1986	51.219	75.562	41.480	50.589	42.663	51.788	2.2	–.5	4.1	2.4	–12.4	3.5
1987	52.802	77.992	42.726	52.186	43.135	53.460	3.1	3.2	3.0	3.2	1.1	3.2
1988	54.865	80.048	44.769	53.742	43.465	55.732	3.9	2.6	4.8	3.0	.8	4.2
1989	57.261	83.128	46.880	56.576	46.033	58.045	4.4	3.8	4.7	5.3	5.9	4.2
1990	59.775	86.532	49.029	59.340	49.925	60.397	4.4	4.1	4.6	4.9	8.5	4.1
1991	61.774	88.647	50.946	61.203	50.146	62.554	3.3	2.4	3.9	3.1	.4	3.6
1992	63.420	89.717	52.758	61.673	50.380	64.456	2.7	1.2	3.6	.8	.5	3.0
1993	65.000	90.496	54.582	62.535	50.838	66.206	2.5	.9	3.5	1.4	.9	2.7
1994	66.356	91.417	56.066	63.582	51.036	67.688	2.1	1.0	2.7	1.7	.4	2.2
1995	67.754	92.271	57.632	64.960	51.438	69.163	2.1	.9	2.8	2.2	.8	2.2
1996	69.203	93.285	59.214	66.942	53.846	70.474	2.1	1.1	2.7	3.1	4.7	1.9
1997	70.407	93.177	60.883	68.218	54.411	71.718	1.7	–.1	2.8	1.9	1.0	1.8
1998	70.967	91.777	62.172	69.075	49.818	72.630	.8	–1.5	2.1	1.3	–8.4	1.3
1999	72.001	92.258	63.409	70.206	51.836	73.583	1.5	.5	2.0	1.6	4.1	1.3
2000	73.822	94.089	65.210	71.850	61.307	74.898	2.5	2.0	2.8	2.3	18.3	1.8
2001	75.302	94.018	67.292	73.946	62.839	76.317	2.0	–.1	3.2	2.9	2.5	1.9
2002	76.291	93.122	69.033	75.063	59.176	77.593	1.3	–1.0	2.6	1.5	–5.8	1.7
2003	77.894	93.003	71.336	76.484	66.654	78.845	2.1	–.1	3.3	1.9	12.6	1.6
2004	79.827	94.311	73.528	78.870	74.217	80.396	2.5	1.4	3.1	3.1	11.3	2.0
2005	82.127	96.203	75.998	80.248	87.026	82.158	2.9	2.0	3.4	1.7	17.3	2.2
2006	84.440	97.494	78.750	81.597	96.940	84.126	2.8	1.3	3.6	1.7	11.4	2.4
2007	86.607	98.576	81.388	84.781	102.776	86.001	2.6	1.1	3.3	3.9	6.0	2.2
2008	89.170	101.524	83.783	89.944	117.422	87.688	3.0	3.0	2.9	6.1	14.3	2.0
2009	88.921	99.084	84.432	91.013	95.195	88.503	–.3	–2.4	.8	1.2	–18.9	.9
2010	90.514	100.533	86.077	91.285	104.698	89.785	1.8	1.5	1.9	.3	10.0	1.4
2011	92.804	104.325	87.742	94.930	121.281	91.209	2.5	3.8	1.9	4.0	15.8	1.6
2012	94.534	105.620	89.648	97.183	123.001	92.897	1.9	1.2	2.2	2.4	1.4	1.9
2013	95.781	105.049	91.659	98.140	121.900	94.285	1.3	–.5	2.2	1.0	–.9	1.5
2014	97.121	104.542	93.795	100.016	120.890	95.697	1.4	–.5	2.3	1.9	–.8	1.5
2015	97.299	101.350	95.462	101.141	99.190	96.874	.2	–3.1	1.8	1.1	–18.0	1.2
2016	98.284	99.710	97.629	100.130	91.982	98.426	1.0	–1.6	2.3	–1.0	–7.3	1.6
2017	100.000	100.000	100.000	100.000	100.000	100.000	1.7	.3	2.4	–.1	8.7	1.6
2018	102.047	100.811	102.626	100.517	108.054	101.897	2.0	.8	2.6	.5	8.1	1.9
2019	103.509	100.426	104.965	101.528	105.725	103.573	1.4	–.4	2.3	1.0	–2.2	1.6
2020	104.666	99.666	107.088	104.888	96.836	104.976	1.1	–.8	2.0	3.3	–8.4	1.4
2021	108.972	104.599	111.044	108.159	116.901	108.705	4.1	4.9	3.7	3.1	20.7	3.6
2022	116.100	113.639	117.130	119.318	146.948	114.511	6.5	8.6	5.5	10.3	25.7	5.3
2023	120.511	115.037	123.091	125.328	138.936	119.289	3.8	1.2	5.1	5.0	–5.5	4.2
2024	123.666	114.538	128.119	126.956	136.077	122.802	2.6	–.4	4.1	1.3	–2.1	2.9
2025 p	126.923	115.325	132.646	129.400	135.684	126.263	2.6	.7	3.5	1.9	–.3	2.8
2024: Jan	122.230	114.373	126.033	126.458	136.559	121.217	2.7	–.5	4.3	1.5	–4.6	3.2
Feb	122.598	114.822	126.359	126.694	138.406	121.537	2.7	–.3	4.2	1.4	–2.2	3.1
Mar	123.038	114.925	126.970	126.607	139.117	122.009	2.9	.0	4.3	1.5	1.4	3.1
Apr	123.341	115.106	127.335	126.490	140.490	122.304	2.8	.0	4.2	1.3	1.8	3.0
May	123.348	114.759	127.522	126.553	138.523	122.383	2.7	–.3	4.1	1.2	3.0	2.8
June	123.539	114.585	127.901	126.667	136.253	122.677	2.5	–.4	4.0	1.3	.4	2.8
July	123.736	114.500	128.242	126.803	135.620	122.911	2.6	–.2	3.9	1.2	.4	2.8
Aug	123.889	114.313	128.569	126.878	134.268	123.128	2.4	–.9	4.0	1.1	–5.0	2.9
Sept	124.164	114.234	129.027	127.183	132.850	123.466	2.3	–1.2	3.9	1.2	–8.1	2.8
Oct	124.494	114.248	129.521	127.389	132.505	123.832	2.5	–1.0	4.1	1.0	–6.0	3.0
Nov	124.637	114.233	129.744	127.716	132.566	123.962	2.6	–.4	4.0	1.4	–4.0	3.0
Dec	124.979	114.360	130.198	128.032	135.766	124.196	2.7	–.1	4.0	1.6	–1.0	3.0
2025: Jan	125.417	114.921	130.571	128.440	137.457	124.587	2.6	.5	3.6	1.6	.7	2.8
Feb	125.921	115.184	131.198	128.425	137.635	125.145	2.7	.3	3.8	1.4	–.6	3.0
Mar	125.941	114.627	131.519	129.005	133.876	125.267	2.4	–.3	3.6	1.9	–3.8	2.7
Apr	126.150	114.762	131.767	128.647	134.607	125.502	2.3	–.3	3.5	1.7	–4.2	2.6
May	126.380	114.844	132.071	128.870	133.307	125.790	2.5	.1	3.6	1.8	–3.8	2.8
June	126.743	115.300	132.386	129.209	134.540	126.121	2.6	.6	3.5	2.0	–1.3	2.8
July	126.960	115.147	132.795	129.072	133.085	126.430	2.6	.6	3.6	1.8	–1.9	2.9
Aug	127.293	115.299	133.220	129.672	134.128	126.714	2.7	.9	3.6	2.2	–.1	2.9
Sept	127.625	115.825	133.452	130.252	136.389	126.954	2.8	1.4	3.4	2.4	2.7	2.8
Oct p	127.873	115.738	133.872	130.236	136.030	127.245	2.7	1.3	3.4	2.2	2.7	2.8
Nov p	128.155	115.903	134.215	130.218	138.402	127.473	2.8	1.5	3.4	2.0	4.4	2.8
Dec p	128.615	116.346	134.681	130.758	138.750	127.929	2.9	1.7	3.4	2.1	2.2	3.0

[1] Food consists of food and beverages purchased for off-premises consumption; food services, which include purchased meals and beverages, are not classified as food.
[2] Consists of gasoline and other energy goods and of electricity and gas services.

Source: Department of Commerce (Bureau of Economic Analysis).

Money Stock, Credit, and Finance

Table B–40. Money stock and debt measures, 1990–2025

[Averages of daily figures, except debt end-of-period basis; billions of dollars, seasonally adjusted]

Year and month	M1	M2	Debt	Percent change		
	Sum of currency, demand deposits, travelers checks, and other checkable deposits; includes savings deposits beginning May 2020 [1]	M1 plus savings deposits, retail MMMF balances, and small time deposits [2]	Debt of domestic nonfinancial sectors [3]	From year or 6 months earlier [4]		From previous period [5]
				M1	M2	Debt
December:						
1990	824.7	3,271.8	11,299.8	4.0	3.8	6.5
1991	897.0	3,372.2	11,827.5	8.8	3.1	4.7
1992	1,024.9	3,424.7	12,377.3	14.3	1.6	4.6
1993	1,129.6	3,474.5	13,103.1	10.2	1.5	5.7
1994	1,150.7	3,486.4	13,798.0	1.9	.3	5.3
1995	1,127.5	3,629.5	14,491.5	–2.0	4.1	4.9
1996	1,081.3	3,818.6	15,259.4	–4.1	5.2	5.3
1997	1,072.3	4,032.9	16,138.9	–.8	5.6	5.8
1998	1,095.0	4,375.6	17,278.6	2.1	8.5	7.1
1999	1,122.2	4,639.3	18,460.6	2.5	6.0	6.6
2000	1,088.6	4,927.6	19,317.6	–3.0	6.2	4.7
2001	1,183.2	5,440.5	20,428.6	8.7	10.4	5.8
2002	1,220.2	5,779.4	21,805.0	3.1	6.2	6.7
2003	1,306.2	6,073.8	23,540.1	7.0	5.1	7.8
2004	1,376.0	6,424.5	26,478.8	5.3	5.8	9.2
2005	1,374.3	6,687.8	28,773.7	–.1	4.1	8.7
2006	1,366.6	7,080.1	31,235.3	–.6	5.9	8.5
2007	1,373.4	7,483.9	33,738.8	.5	5.7	8.1
2008	1,601.7	8,204.7	35,605.6	16.6	9.6	5.9
2009	1,692.8	8,512.2	36,546.2	5.7	3.7	3.5
2010	1,837.2	8,823.2	37,928.0	8.5	3.7	4.2
2011	2,172.5	9,683.9	39,207.2	18.3	9.8	3.8
2012	2,470.7	10,484.1	40,876.6	13.7	8.3	4.7
2013	2,687.4	11,060.1	42,520.6	8.8	5.5	4.3
2014	2,972.3	11,717.6	44,123.5	10.6	5.9	3.9
2015	3,126.1	12,387.9	45,947.2	5.2	5.7	4.6
2016	3,370.6	13,234.9	47,920.7	7.8	6.8	4.4
2017	3,637.1	13,881.7	50,093.9	7.9	4.9	4.3
2018	3,780.7	14,386.8	52,772.4	3.9	3.6	4.7
2019	4,020.3	15,347.5	55,241.1	6.3	6.7	4.7
2020	17,809.3	19,115.7	62,063.4	...	24.6	12.4
2021	20,424.7	21,498.5	66,523.7	14.7	12.5	6.3
2022	19,738.2	21,290.9	70,218.4	–3.4	–1.0	5.6
2023	17,979.2	20,777.8	73,778.9	–8.9	–2.4	5.1
2024	18,392.3	21,485.3	76,871.0	2.3	3.4	4.7
2025 [p]	19,100.8	22,386.9	80,719.3	3.9	4.2	5.2
2024: Jan	18,001.0	20,843.7	...	–4.0	.5	...
Feb	18,031.2	20,926.9	...	–2.5	1.4	...
Mar	18,047.0	20,973.2	74,709.2	–1.2	2.2	5.1
Apr	17,997.4	20,958.8	...	–.8	2.2	...
May	18,029.3	21,019.9	...	.3	2.6	...
June	18,042.7	21,067.7	75,405.6	.7	2.8	3.7
July	18,039.7	21,094.4	...	.4	2.4	...
Aug	18,103.2	21,185.8	...	.8	2.5	...
Sept	18,165.2	21,268.6	76,470.7	1.3	2.8	5.7
Oct	18,227.3	21,331.0	...	2.6	3.6	...
Nov	18,354.9	21,451.6	...	3.6	4.1	...
Dec	18,392.3	21,485.3	76,871.0	3.9	4.0	4.2
2025: Jan	18,461.5	21,547.6	...	4.7	4.3	...
Feb	18,511.3	21,613.2	...	4.5	4.0	...
Mar	18,555.6	21,693.5	77,450.7	4.3	4.0	3.5
Apr	18,621.8	21,775.5	...	4.3	4.2	...
May	18,662.8	21,833.8	...	3.4	3.6	...
June	18,746.7	21,938.7	77,979.9	3.9	4.2	3.2
July	18,803.7	22,019.9	...	3.7	4.4	...
Aug	18,840.3	22,086.8	...	3.6	4.4	...
Sept	18,903.9	22,169.8	79,697.3	3.8	4.4	8.8
Oct	18,986.0	22,250.4	...	3.9	4.4	...
Nov	19,022.7	22,296.5	...	3.9	4.2	...
Dec [p]	19,100.8	22,386.9	80,719.3	3.8	4.1	4.9

[1] Beginning May 2020, M1 includes savings deposits. Prior to May 2020, savings deposits were not included in M1. See the H.6 statistical release for additional details.

[2] Money market mutual fund (MMMF). Savings deposits include money market deposit accounts.

[3] Consists of outstanding debt securities and loans of the U.S. Government, State and local governments, and private nonfinancial sectors. Quarterly data shown in last month of quarter. End-of-year data are for fourth quarter.

[4] Annual changes are from December to December; monthly changes are from six months earlier at an annual rate.

[5] Debt growth of domestic nonfinancial sectors is the seasonally adjusted borrowing flow divided by the seasonally adjusted level of debt outstanding in the previous period. Annual changes are from fourth quarter to fourth quarter; quarterly changes are from previous quarter at an annual rate.

Note: For further information on the composition of M1 and M2, see the H.6 release.

For further information on the debt of domestic nonfinancial sectors and the derivation of debt growth, see the Z.1 release.

Source: Board of Governors of the Federal Reserve System.

TABLE B–41. Consumer credit outstanding, 1977–2025

[Amount outstanding (end of month); millions of dollars, seasonally adjusted]

Year and month	Total consumer credit [1]	Revolving	Nonrevolving [2]
December:			
1977	260,562.70	37,414.82	223,147.88
1978	306,100.39	45,690.95	260,409.43
1979	348,589.11	53,596.43	294,992.67
1980	351,920.05	54,970.05	296,950.00
1981	371,301.44	60,928.00	310,373.44
1982	389,848.74	66,348.30	323,500.44
1983	437,068.86	79,027.25	358,041.61
1984	517,278.98	100,385.63	416,893.35
1985	599,711.23	124,465.80	475,245.43
1986	654,750.24	141,068.15	513,682.08
1987	686,318.77	160,853.91	525,464.86
1988 [3]	731,917.76	184,593.12	547,324.64
1989	794,612.18	211,229.83	583,382.34
1990	808,230.57	238,642.62	569,587.95
1991	798,028.97	263,768.55	534,260.42
1992	806,118.69	278,449.67	527,669.02
1993	865,650.58	309,908.02	555,742.56
1994	997,301.74	365,569.56	631,732.19
1995	1,140,744.36	443,920.09	696,824.27
1996	1,253,437.09	507,516.57	745,920.52
1997	1,324,757.33	540,005.56	784,751.77
1998	1,420,996.44	581,414.78	839,581.66
1999	1,531,105.96	610,696.47	920,409.49
2000	1,716,969.72	682,646.37	1,034,323.35
2001	1,867,852.87	714,840.73	1,153,012.14
2002	1,972,112.21	750,947.45	1,221,164.76
2003	2,077,360.69	768,258.31	1,309,102.38
2004	2,192,246.17	799,552.18	1,392,693.99
2005 [3]	2,290,928.13	829,518.36	1,461,409.78
2006	2,456,715.70	923,876.78	1,532,838.92
2007	2,609,476.53	1,001,625.30	1,607,851.24
2008	2,643,788.96	1,003,997.04	1,639,791.92
2009	2,555,016.64	916,076.63	1,638,940.01
2010 [3]	2,646,811.26	839,102.67	1,807,708.59
2011	2,756,224.85	840,164.23	1,916,060.62
2012	2,912,905.02	839,980.84	2,072,924.19
2013	3,090,467.79	854,138.80	2,236,328.98
2014	3,309,539.83	887,381.64	2,422,158.19
2015 [3]	3,400,230.33	898,082.65	2,502,147.67
2016	3,636,437.75	960,095.49	2,676,342.26
2017	3,830,784.99	1,016,806.60	2,813,978.39
2018	4,007,041.95	1,053,847.44	2,953,194.51
2019	4,192,191.39	1,091,988.88	3,100,202.51
2020	4,149,026.48	954,603.43	3,194,423.05
2021	4,512,720.41	1,033,546.93	3,479,173.48
2022	4,858,438.60	1,192,639.70	3,665,798.90
2023	4,988,225.93	1,298,865.89	3,689,360.04
2024	4,948,060.37	1,296,965.56	3,651,094.81
2025 p	5,106,629.68	1,324,277.25	3,782,352.43
2024: Jan	5,003,237.00	1,310,033.54	3,693,203.46
Feb	5,013,802.76	1,320,172.41	3,693,630.35
Mar	5,013,894.23	1,322,156.80	3,691,737.43
Apr	5,017,383.19	1,324,876.54	3,692,506.65
May	5,025,680.49	1,331,664.15	3,694,016.34
June	5,027,231.09	1,330,645.54	3,696,585.54
July	5,045,190.31	1,338,289.48	3,706,900.82
Aug	5,052,970.03	1,338,717.06	3,714,252.96
Sept	5,056,994.97	1,341,182.07	3,715,812.90
Oct	5,067,259.29	1,350,299.02	3,716,960.26
Nov	5,060,645.16	1,339,075.00	3,721,570.16
Dec	4,948,060.37	1,296,965.56	3,651,094.81
2025: Jan	4,957,972.00	1,304,262.54	3,653,709.46
Feb	4,956,911.64	1,305,504.87	3,651,406.78
Mar	5,020,902.36	1,294,474.35	3,726,428.01
Apr	5,038,845.21	1,301,496.38	3,737,348.83
May	5,047,974.11	1,300,226.33	3,747,747.79
June	5,042,682.73	1,300,318.00	3,742,364.74
July	5,055,388.53	1,310,908.54	3,744,479.99
Aug	5,056,229.64	1,306,121.23	3,750,108.41
Sept	5,071,499.16	1,310,561.76	3,760,937.40
Oct	5,078,804.19	1,315,011.60	3,763,792.58
Nov	5,081,425.71	1,311,884.89	3,769,540.83
Dec p	5,106,629.68	1,324,277.25	3,782,352.43

[1] Covers most short- and intermediate-term credit extended to individuals. Credit secured by real estate is excluded.
[2] Includes automobile loans and all other loans not included in revolving credit, such as loans for mobile homes, education, boats, trailers, or vacations. These loans may be secured or unsecured. Beginning with 1977, includes student loans extended by the Federal Government and by SLM Holding Corporation.
[3] Data newly available result in breaks in these series between the prior period and subsequent months.

Source: Board of Governors of the Federal Reserve System.

TABLE B–42. Bond yields and interest rates, 1955–2025

[Percent per annum]

Year	U.S. Treasury securities: Bills (at auction)[1]		U.S. Treasury securities: Constant maturities[2]			Corporate bonds (Moody's)		High-grade municipal bonds (Standard & Poor's)	Home mortgage yields[4]	Prime rate charged by banks[5]	Discount window (Federal Reserve Bank of New York)[5, 6]		Federal funds rate[7]
	3-month	6-month	3-year	10-year	30-year	Aaa[3]	Baa				Primary credit	Adjustment credit	
1955	1.753	....	2.47	2.82	....	3.06	3.53	2.53	....	3.16	....	1.89	1.79
1956	2.658	....	3.19	3.18	....	3.36	3.88	2.93	....	3.77	....	2.77	2.73
1957	3.267	....	3.98	3.65	....	3.89	4.71	3.60	....	4.20	....	3.12	3.11
1958	1.839	....	2.84	3.32	....	3.79	4.73	3.56	....	3.83	....	2.15	1.57
1959	3.405	3.832	4.46	4.33	....	4.38	5.05	3.95	....	4.48	....	3.36	3.31
1960	2.93	3.25	3.98	4.12	....	4.41	5.19	3.73	....	4.82	....	3.53	3.21
1961	2.38	2.61	3.54	3.88	....	4.35	5.08	3.46	....	4.50	....	3.00	1.95
1962	2.78	2.91	3.47	3.95	....	4.33	5.02	3.18	....	4.50	....	3.00	2.71
1963	3.16	3.25	3.67	4.00	....	4.26	4.86	3.23	....	4.50	....	3.23	3.18
1964	3.56	3.69	4.03	4.19	....	4.40	4.83	3.22	....	4.50	....	3.55	3.50
1965	3.95	4.05	4.22	4.28	....	4.49	4.87	3.27	....	4.54	....	4.04	4.07
1966	4.88	5.08	5.23	4.93	....	5.13	5.67	3.82	....	5.63	....	4.50	5.11
1967	4.32	4.63	5.03	5.07	....	5.51	6.23	3.98	....	5.63	....	4.19	4.22
1968	5.34	5.47	5.68	5.64	....	6.18	6.94	4.51	....	6.31	....	5.17	5.66
1969	6.68	6.85	7.02	6.67	....	7.03	7.81	5.81	....	7.96	....	5.87	8.21
1970	6.43	6.53	7.29	7.35	....	8.04	9.11	6.51	....	7.91	....	5.95	7.17
1971	4.35	4.51	5.66	6.16	....	7.39	8.56	5.70	7.54	5.73	....	4.88	4.67
1972	4.07	4.47	5.72	6.21	....	7.21	8.16	5.27	7.38	5.25	....	4.50	4.44
1973	7.04	7.18	6.96	6.85	....	7.44	8.24	5.18	8.04	8.03	....	6.45	8.74
1974	7.89	7.93	7.84	7.56	....	8.57	9.50	6.09	9.19	10.81	....	7.83	10.51
1975	5.84	6.12	7.50	7.99	....	8.83	10.61	6.89	9.05	7.86	....	6.25	5.82
1976	4.99	5.27	6.77	7.61	....	8.43	9.75	6.49	8.87	6.84	....	5.50	5.05
1977	5.27	5.52	6.68	7.42	7.75	8.02	8.97	5.56	8.85	6.83	....	5.46	5.54
1978	7.22	7.58	8.29	8.41	8.49	8.73	9.49	5.90	9.64	9.06	....	7.46	7.94
1979	10.05	10.02	9.70	9.43	9.28	9.63	10.69	6.39	11.20	12.67	....	10.29	11.20
1980	11.51	11.37	11.51	11.43	11.27	11.94	13.67	8.51	13.74	15.26	....	11.77	13.35
1981	14.03	13.78	14.46	13.92	13.45	14.17	16.04	11.23	16.63	18.87	....	13.42	16.39
1982	10.69	11.08	12.93	13.01	12.76	13.79	16.11	11.57	16.04	14.85	....	11.01	12.24
1983	8.63	8.75	10.45	11.10	11.18	12.04	13.55	9.47	13.24	10.79	....	8.50	9.09
1984	9.53	9.77	11.92	12.46	12.41	12.71	14.19	10.15	13.88	12.04	....	8.80	10.23
1985	7.47	7.64	9.64	10.62	10.79	11.37	12.72	9.18	12.43	9.93	....	7.69	8.10
1986	5.98	6.03	7.06	7.67	7.78	9.02	10.39	7.38	10.19	8.33	....	6.32	6.80
1987	5.82	6.05	7.68	8.39	8.59	9.38	10.58	7.73	10.21	8.21	....	5.66	6.66
1988	6.69	6.92	8.26	8.85	8.96	9.71	10.83	7.76	10.34	9.32	....	6.20	7.57
1989	8.12	8.04	8.55	8.49	8.45	9.26	10.18	7.24	10.32	10.87	....	6.93	9.21
1990	7.51	7.47	8.26	8.55	8.61	9.32	10.36	7.25	10.13	10.01	....	6.98	8.10
1991	5.42	5.49	6.82	7.86	8.14	8.77	9.80	6.89	9.25	8.46	....	5.45	5.69
1992	3.45	3.57	5.30	7.01	7.67	8.14	8.98	6.41	8.39	6.25	....	3.25	3.52
1993	3.02	3.14	4.44	5.87	6.59	7.22	7.93	5.63	7.31	6.00	....	3.00	3.02
1994	4.29	4.66	6.27	7.09	7.37	7.96	8.62	6.19	8.38	7.15	....	3.60	4.21
1995	5.51	5.59	6.25	6.57	6.88	7.59	8.20	5.95	7.93	8.83	....	5.21	5.83
1996	5.02	5.09	5.99	6.44	6.71	7.37	8.05	5.75	7.81	8.27	....	5.02	5.30
1997	5.07	5.18	6.10	6.35	6.61	7.26	7.86	5.55	7.60	8.44	....	5.00	5.46
1998	4.81	4.85	5.14	5.26	5.58	6.53	7.22	5.12	6.94	8.35	....	4.92	5.35
1999	4.66	4.76	5.49	5.65	5.87	7.04	7.87	5.43	7.44	8.00	....	4.62	4.97
2000	5.85	5.92	6.22	6.03	5.94	7.62	8.36	5.77	8.05	9.23	....	5.73	6.24
2001	3.44	3.39	4.09	5.02	5.49	7.08	7.95	5.19	6.97	6.91	....	3.40	3.88
2002	1.62	1.69	3.10	4.61	5.43	6.49	7.80	5.05	6.54	4.67	....	1.17	1.67
2003	1.01	1.06	2.10	4.01	....	5.67	6.77	4.73	5.83	4.12	2.12	....	1.13
2004	1.38	1.57	2.78	4.27	....	5.63	6.39	4.63	5.84	4.34	2.34	....	1.35
2005	3.16	3.40	3.93	4.29	....	5.24	6.06	4.29	5.87	6.19	4.19	....	3.22
2006	4.73	4.80	4.77	4.80	4.91	5.59	6.48	4.42	6.41	7.96	5.96	....	4.97
2007	4.41	4.48	4.35	4.63	4.84	5.56	6.48	4.42	6.34	8.05	5.86	....	5.02
2008	1.48	1.71	2.24	3.66	4.28	5.63	7.45	4.80	6.03	5.09	2.39	....	1.92
2009	.16	.29	1.43	3.26	4.08	5.31	7.30	4.64	5.04	3.25	.50	....	.16
2010	.14	.20	1.11	3.22	4.25	4.94	6.04	4.16	4.69	3.25	.72	....	.18
2011	.06	.10	.75	2.78	3.91	4.64	5.66	4.29	4.45	3.25	.75	....	.10
2012	.09	.13	.38	1.80	2.92	3.67	4.94	3.14	3.66	3.25	.75	....	.14
2013	.06	.09	.54	2.35	3.45	4.24	5.10	3.96	3.98	3.25	.75	....	.11
2014	.03	.06	.90	2.54	3.34	4.16	4.85	3.78	4.17	3.25	.75	....	.09
2015	.06	.17	1.02	2.14	2.84	3.89	5.00	3.48	3.85	3.26	.76	....	.13
2016	.33	.46	1.00	1.84	2.59	3.67	4.72	3.07	3.65	3.51	1.01	....	.39
2017	.94	1.05	1.58	2.33	2.89	3.74	4.44	3.36	3.99	4.10	1.60	....	1.00
2018	1.94	2.10	2.63	2.91	3.11	3.93	4.80	3.53	4.54	4.91	2.41	....	1.83
2019	2.08	2.07	1.94	2.14	2.58	3.39	4.38	3.38	3.94	5.28	2.78	....	2.16
2020	.38	.39	.42	.89	1.56	2.48	3.60	2.41	3.11	3.54	.64	....	.37
2021	.04	.06	.46	1.45	2.06	2.70	3.39	2.00	2.96	3.25	.25	....	.08
2022	2.04	2.44	3.05	2.95	3.11	4.07	5.07	3.85	5.34	4.86	1.86	....	1.69
2023	5.08	5.08	4.30	3.96	4.09	4.81	5.86	4.31	6.81	8.20	5.20	....	5.03
2024	4.98	4.81	4.22	4.21	4.41	5.04	5.75	4.21	6.72	8.31	5.31	....	5.14
2025	4.08	3.96	3.81	4.29	4.78	5.35	6.00	4.58	6.60	7.37	4.37	....	4.21

[1] High bill rate at auction, issue date within period, bank-discount basis. On or after October 28, 1998, data are stop yields from uniform-price auctions. Before that date, they are weighted average yields from multiple-price auctions.

See next page for continuation of table.

TABLE B–42. Bond yields and interest rates, 1955–2025—*Continued*

[Percent per annum]

Year and month	U.S. Treasury securities: Bills (at auction)[1]: 3-month	U.S. Treasury securities: Bills (at auction)[1]: 6-month	U.S. Treasury securities: Constant maturities[2]: 3-year	U.S. Treasury securities: Constant maturities[2]: 10-year	U.S. Treasury securities: Constant maturities[2]: 30-year	Corporate bonds (Moody's): Aaa[3]	Corporate bonds (Moody's): Baa	High-grade municipal bonds (Standard & Poor's)	Home mortgage yields[4]	Prime rate charged by banks[5]	Discount window (Federal Reserve Bank of New York)[5, 6]: Primary credit	Discount window (Federal Reserve Bank of New York)[5, 6]: Adjustment credit	Federal funds rate[7]
										High-low	High-low	High-low	
2021: Jan	0.09	0.09	0.20	1.08	1.82	2.45	3.24	1.61	2.74	3.25–3.25	0.25–0.25	....	0.09
Feb	.04	.06	.21	1.26	2.04	2.70	3.42	1.13	2.81	3.25–3.25	0.25–0.25	....	.08
Mar	.03	.05	.32	1.61	2.34	3.04	3.74	1.74	3.08	3.25–3.25	0.25–0.25	....	.07
Apr	.02	.04	.35	1.64	2.30	2.90	3.60	1.84	3.06	3.25–3.25	0.25–0.25	....	.07
May	.02	.03	.32	1.62	2.32	2.96	3.62	1.63	2.96	3.25–3.25	0.25–0.25	....	.06
June	.03	.04	.39	1.52	2.16	2.79	3.44	2.16	2.98	3.25–3.25	0.25–0.25	....	.08
July	.05	.05	.40	1.32	1.94	2.57	3.24	2.22	2.87	3.25–3.25	0.25–0.25	....	.10
Aug	.06	.05	.42	1.28	1.92	2.55	3.24	2.38	2.84	3.25–3.25	0.25–0.25	....	.09
Sept	.04	.05	.47	1.37	1.94	2.53	3.23	2.30	2.90	3.25–3.25	0.25–0.25	....	.08
Oct	.05	.06	.67	1.58	2.06	2.68	3.35	2.43	3.07	3.25–3.25	0.25–0.25	....	.08
Nov	.05	.07	.82	1.56	1.94	2.62	3.28	2.30	3.07	3.25–3.25	0.25–0.25	....	.08
Dec	.06	.14	.95	1.47	1.85	2.65	3.30	2.24	3.10	3.25–3.25	0.25–0.25	....	.08
2022: Jan	.14	.31	1.25	1.76	2.10	2.93	3.58	2.47	3.45	3.25–3.25	0.25–0.25	....	.08
Feb	.34	.64	1.65	1.93	2.25	3.25	3.97	2.78	3.76	3.25–3.25	0.25–0.25	....	.08
Mar	.46	.82	2.09	2.13	2.41	3.43	4.29	3.22	4.17	3.50–3.25	0.50–0.25	....	.20
Apr	.80	1.24	2.72	2.75	2.81	3.76	4.66	3.74	4.98	3.50–3.50	0.50–0.50	....	.33
May	.98	1.46	2.79	2.90	3.07	4.13	5.12	4.06	5.23	4.00–3.50	1.00–0.50	....	.77
June	1.48	2.07	3.15	3.14	3.25	4.24	5.27	4.01	5.52	4.75–4.00	1.75–1.00	....	1.21
July	2.24	2.75	3.03	2.90	3.10	4.06	5.21	3.96	5.41	5.50–4.75	2.50–1.75	....	1.68
Aug	2.61	3.01	3.23	2.90	3.13	4.07	5.15	3.99	5.22	5.50–5.50	2.50–2.50	....	2.33
Sept	3.09	3.53	3.88	3.52	3.56	4.59	5.69	4.53	6.11	6.25–5.50	3.25–2.50	....	2.56
Oct	3.67	4.13	4.38	3.98	4.04	5.10	6.26	4.70	6.90	6.25–6.25	3.25–3.25	....	3.08
Nov	4.14	4.47	4.34	3.89	4.00	4.90	6.07	4.52	6.81	7.00–6.25	4.00–3.25	....	3.78
Dec	4.29	4.58	4.05	3.62	3.66	4.43	5.59	4.19	6.36	7.50–7.00	4.50–4.00	....	4.10
2023: Jan	4.53	4.68	3.91	3.53	3.66	4.40	5.50	4.03	6.27	7.50–7.50	4.50–4.50	....	4.33
Feb	4.65	4.80	4.23	3.75	3.80	4.56	5.59	4.18	6.26	7.75–7.50	4.75–4.50	....	4.57
Mar	4.72	4.78	4.09	3.66	3.77	4.60	5.71	4.19	6.54	8.00–7.75	5.00–4.75	....	4.65
Apr	4.98	4.80	3.76	3.46	3.68	4.47	5.53	4.06	6.34	8.00–8.00	5.00–5.00	....	4.83
May	5.14	4.99	3.82	3.57	3.86	4.67	5.77	4.20	6.43	8.25–8.00	5.25–5.00	....	5.06
June	5.20	5.22	4.27	3.75	3.87	4.65	5.75	4.14	6.71	8.25–8.25	5.25–5.25	....	5.08
July	5.25	5.26	4.47	3.90	3.96	4.66	5.74	4.19	6.84	8.50–8.25	5.50–5.25	....	5.12
Aug	5.30	5.29	4.59	4.17	4.28	4.95	6.02	4.43	7.07	8.50–8.50	5.50–5.50	....	5.33
Sept	5.32	5.30	4.74	4.38	4.47	5.13	6.16	4.58	7.20	8.50–8.50	5.50–5.50	....	5.33
Oct	5.33	5.33	4.89	4.80	4.95	5.61	6.63	4.99	7.62	8.50–8.50	5.50–5.50	....	5.33
Nov	5.29	5.26	4.64	4.50	4.66	5.28	6.29	4.62	7.44	8.50–8.50	5.50–5.50	....	5.33
Dec	5.26	5.15	4.19	4.02	4.14	4.74	5.64	4.09	6.82	8.50–8.50	5.50–5.50	....	5.33
2024: Jan	5.23	5.02	4.11	4.06	4.26	4.87	5.68	4.24	6.64	8.50–8.50	5.50–5.50	....	5.33
Feb	5.23	5.07	4.33	4.21	4.38	5.03	5.77	4.16	6.78	8.50–8.50	5.50–5.50	....	5.33
Mar	5.24	5.11	4.38	4.21	4.36	5.01	5.75	4.17	6.82	8.50–8.50	5.50–5.50	....	5.33
Apr	5.24	5.14	4.71	4.54	4.66	5.28	6.00	4.36	6.99	8.50–8.50	5.50–5.50	....	5.33
May	5.25	5.16	4.66	4.48	4.62	5.25	5.95	4.28	7.06	8.50–8.50	5.50–5.50	....	5.33
June	5.25	5.15	4.50	4.31	4.44	5.13	5.82	4.21	6.92	8.50–8.50	5.50–5.50	....	5.33
July	5.21	5.04	4.29	4.25	4.46	5.12	5.84	4.21	6.85	8.50–8.50	5.50–5.50	....	5.33
Aug	5.07	4.78	3.79	3.87	4.15	4.87	5.60	4.16	6.50	8.50–8.50	5.50–5.50	....	5.33
Sept	4.79	4.46	3.51	3.72	4.04	4.68	5.42	4.09	6.18	8.50–8.00	5.50–5.00	....	5.13
Oct	4.51	4.29	3.90	4.10	4.38	4.95	5.63	4.21	6.43	8.00–8.00	5.00–5.00	....	4.83
Nov	4.42	4.31	4.21	4.36	4.54	5.14	5.78	4.19	6.81	8.00–7.75	5.00–4.75	....	4.64
Dec	4.30	4.21	4.22	4.39	4.58	5.20	5.80	4.19	6.72	7.75–7.50	4.75–4.50	....	4.48
2025: Jan	4.21	4.15	4.33	4.63	4.85	5.46	6.08	4.34	6.96	7.50–7.50	4.50–4.50	....	4.33
Feb	4.22	4.19	4.22	4.45	4.68	5.32	5.92	4.26	6.84	7.50–7.50	4.50–4.50	....	4.33
Mar	4.20	4.10	3.96	4.28	4.60	5.29	5.93	4.42	6.65	7.50–7.50	4.50–4.50	....	4.33
Apr	4.21	4.05	3.78	4.28	4.71	5.45	6.18	4.72	6.73	7.50–7.50	4.50–4.50	....	4.33
May	4.25	4.11	3.90	4.42	4.90	5.54	6.29	4.72	6.82	7.50–7.50	4.50–4.50	....	4.33
June	4.23	4.14	3.86	4.38	4.89	5.46	6.15	4.86	6.82	7.50–7.50	4.50–4.50	....	4.33
July	4.24	4.12	3.84	4.39	4.92	5.45	6.10	4.93	6.72	7.50–7.50	4.50–4.50	....	4.33
Aug	4.14	3.95	3.67	4.26	4.87	5.35	6.00	4.90	6.59	7.50–7.50	4.50–4.50	....	4.33
Sept	3.94	3.76	3.55	4.12	4.74	5.21	5.83	4.58	6.35	7.50–7.25	4.50–4.25	....	4.22
Oct	3.82	3.68	3.53	4.06	4.64	5.13	5.74	4.40	6.25	7.25–7.00	4.25–4.00	....	4.09
Nov	3.78	3.69	3.56	4.09	4.70	5.26	5.86	4.40	6.24	7.00–7.00	4.00–4.00	....	3.88
Dec	3.62	3.55	3.55	4.14	4.80	5.31	5.90	4.46	6.20	7.00–6.75	4.00–3.75	....	3.72

[2] Yields on the more actively traded issues adjusted to constant maturities by the Department of the Treasury. The 30-year Treasury constant maturity series was discontinued on February 18, 2002, and reintroduced on February 9, 2006.

[3] Beginning with December 7, 2001, data for corporate Aaa series are industrial bonds only.

[4] Contract interest rate on commitments for 30-year first-lien prime conventional conforming home purchase mortgage with a loan-to-value of 80 percent.

[5] For monthly data, high and low for the period.

[6] Primary credit replaced adjustment credit as the Federal Reserve's principal discount window lending program effective January 9, 2003.

[7] Beginning March 1, 2016, the daily effective federal funds rate is a volume-weighted median of transaction-level data collected from depository institutions in the Report of Selected Money Market Rates (FR 2420). Between July 21, 1975 and February 29, 2016, the daily effective rate was a volume-weighted mean of rates on brokered trades. Prior to that, the daily effective rate was the rate considered most representative of the day's transactions, usually the one at which most transactions occurred.

Sources: Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Home Loan Mortgage Corporation, Moody's Investors Service, Bloomberg, and Standard & Poor's.

Table B–43. Mortgage debt outstanding by type of property and of financing, 1967–2025

[Billions of dollars]

End of year or quarter	All proper-ties	Farm proper-ties	Nonfarm properties				Nonfarm properties by type of mortgage					
							Government underwritten				Conventional [2]	
								1- to 4-family houses				
			Total	1- to 4-family houses	Multi-family proper-ties	Com-mercial proper-ties	Total [1]	Total	FHA-insured	VA-guaran-teed	Total	1- to 4-family houses
1967	382.1	25.0	357.0	246.0	44.8	66.2	88.2	79.9	47.4	32.5	268.9	166.0
1968	411.4	27.2	384.2	262.9	48.3	73.0	93.4	84.4	50.6	33.8	290.8	178.5
1969	439.9	29.0	410.9	278.7	53.2	79.1	100.2	90.2	54.5	35.7	310.7	188.5
1970	469.4	30.5	438.9	292.2	60.1	86.5	109.2	97.3	59.9	37.3	329.6	195.0
1971	517.9	32.4	485.5	318.4	70.1	97.0	120.7	105.2	65.7	39.5	364.8	213.2
1972	589.8	35.4	554.4	357.4	82.9	114.2	131.1	113.0	68.2	44.7	423.3	244.4
1973	666.5	39.8	626.7	399.8	93.2	133.7	135.0	116.2	66.2	50.0	491.7	283.6
1974	728.4	44.9	683.5	435.2	100.0	148.3	140.2	121.3	65.1	56.2	543.3	313.9
1975	785.6	49.9	735.7	474.0	100.7	161.0	147.0	127.7	66.1	61.6	588.7	346.3
1976	870.5	55.4	815.1	535.0	105.9	174.2	154.0	133.5	66.5	67.0	661.1	401.5
1977	999.2	63.9	935.3	627.7	114.3	193.3	161.7	141.6	68.0	73.6	773.5	486.1
1978	1,150.7	72.8	1,077.9	738.3	125.2	214.5	176.4	153.4	71.4	82.0	901.5	584.9
1979	1,317.0	86.8	1,230.3	855.8	135.0	239.4	199.0	172.9	81.0	92.0	1,031.3	682.8
1980	1,457.8	97.5	1,360.3	957.9	142.5	259.9	225.1	195.2	93.6	101.6	1,135.3	762.7
1981	1,579.5	107.2	1,472.3	1,030.2	142.4	299.7	238.9	207.6	101.3	106.2	1,233.4	822.6
1982	1,661.3	111.3	1,550.0	1,070.2	146.1	333.7	248.9	217.9	108.0	109.9	1,301.1	852.3
1983	1,850.6	113.7	1,736.9	1,186.3	161.2	389.4	279.8	248.8	127.4	121.4	1,457.1	937.4
1984	2,092.0	112.4	1,979.6	1,321.5	186.1	471.9	294.8	265.9	136.7	129.1	1,684.7	1,055.7
1985	2,368.5	94.1	2,274.5	1,526.9	205.9	541.7	328.3	288.8	153.0	135.8	1,946.1	1,238.1
1986	2,655.6	84.1	2,571.5	1,730.1	239.4	602.0	370.5	328.6	185.5	143.1	2,201.0	1,401.5
1987	2,958.0	75.8	2,882.2	1,928.9	258.7	694.5	431.4	387.9	235.5	152.4	2,450.7	1,541.0
1988	3,277.1	70.8	3,206.2	2,163.3	275.1	767.9	459.7	414.2	258.8	155.4	2,746.6	1,749.1
1989	3,529.0	68.8	3,460.2	2,370.0	287.6	802.6	486.8	440.1	282.8	157.3	2,973.4	1,929.9
1990	3,785.7	67.6	3,718.1	2,607.4	288.1	822.6	517.9	470.9	310.9	160.0	3,200.1	2,136.5
1991	3,937.3	67.5	3,869.8	2,775.2	284.8	809.7	537.2	493.3	330.6	162.7	3,332.6	2,281.9
1992	4,047.3	67.9	3,979.4	2,942.6	271.7	765.2	533.3	489.8	326.0	163.8	3,446.1	2,452.9
1993	4,177.7	68.4	4,109.3	3,101.6	268.5	739.1	513.4	469.5	303.2	166.2	3,595.9	2,632.2
1994	4,342.3	69.9	4,272.4	3,279.1	269.3	724.0	559.3	514.2	336.8	177.3	3,713.0	2,764.9
1995	4,528.8	71.7	4,457.1	3,447.0	275.3	734.8	584.3	537.1	352.3	184.7	3,872.8	2,909.9
1996	4,808.9	74.4	4,734.5	3,683.3	287.6	763.6	620.3	571.2	379.2	192.0	4,114.2	3,112.1
1997	5,121.2	78.5	5,042.7	3,909.7	301.4	831.6	656.7	605.7	405.7	200.0	4,386.1	3,304.0
1998	5,609.4	83.1	5,526.3	4,267.0	337.5	921.8	674.0	623.8	417.9	205.9	4,852.2	3,643.2
1999	6,216.2	87.2	6,129.0	4,691.0	378.5	1,059.5	731.5	678.8	462.3	216.5	5,397.5	4,012.2
2000	6,772.9	84.7	6,688.1	5,113.4	408.1	1,166.6	773.1	719.9	499.9	220.1	5,915.0	4,393.5
2001	7,456.1	88.5	7,367.6	5,664.9	450.0	1,252.6	772.7	718.5	497.4	221.2	6,594.9	4,946.4
2002	8,364.9	95.4	8,269.5	6,419.6	490.7	1,359.2	759.3	704.0	486.2	217.7	7,510.2	5,715.6
2003	9,369.4	83.2	9,286.2	7,241.1	565.0	1,480.2	709.2	653.3	438.7	214.6	8,577.0	6,587.8
2004	10,657.6	95.7	10,562.0	8,273.5	617.7	1,670.8	660.2	604.1	398.1	206.0	9,901.8	7,669.4
2005	12,092.0	104.8	11,987.2	9,411.0	670.7	1,905.5	606.6	550.4	348.4	202.0	11,380.6	8,860.5
2006	13,504.3	108.0	13,396.2	10,489.9	714.0	2,192.4	600.2	543.5	336.9	206.6	12,796.1	9,946.4
2007	14,580.4	112.7	14,467.7	11,204.5	804.6	2,458.7	609.2	552.6	342.6	210.0	13,858.6	10,651.9
2008	14,686.9	134.7	14,552.2	11,113.7	857.9	2,580.6	807.2	750.7	534.0	216.7	13,745.0	10,363.0
2009	14,448.6	146.0	14,302.6	10,926.5	870.2	2,505.9	1,005.0	944.3	752.6	191.7	13,297.6	9,982.2
2010	13,896.5	154.1	13,742.4	10,489.0	870.5	2,382.8	1,227.6	1,156.1	934.4	221.7	12,514.8	9,333.0
2011	13,580.5	167.2	13,413.3	10,250.7	874.8	2,287.8	1,368.6	1,291.3	1,036.0	255.3	12,044.8	8,959.5
2012	13,347.2	173.4	13,173.8	10,017.6	903.9	2,252.2	1,544.8	1,459.7	1,165.4	294.2	11,628.9	8,558.0
2013	13,342.5	185.2	13,157.3	9,917.6	946.5	2,293.1	3,927.2	3,832.6	3,480.8	351.8	9,230.1	6,085.1
2014	13,485.6	196.8	13,288.8	9,890.9	1,016.2	2,381.7	4,130.9	4,028.1	3,615.3	412.8	9,157.9	5,862.8
2015	13,869.2	208.8	13,660.4	10,019.3	1,121.5	2,519.6	4,432.7	4,326.7	3,851.3	475.4	9,227.7	5,692.6
2016	14,314.5	226.0	14,088.5	10,212.0	1,237.9	2,638.6	4,764.8	4,654.9	4,106.9	548.1	9,323.6	5,557.0
2017	14,886.2	236.2	14,650.0	10,519.5	1,364.0	2,766.5	5,079.1	4,958.2	4,344.3	613.9	9,570.9	5,561.3
2018	15,443.5	245.8	15,197.7	10,815.0	1,492.8	2,890.0	5,380.0	5,246.5	4,562.3	684.2	9,817.7	5,568.4
2019	16,029.7	267.9	15,761.8	11,095.4	1,635.1	3,031.3	5,664.1	5,522.9	4,788.6	734.3	10,097.7	5,572.5
2020	16,817.1	288.6	16,528.5	11,571.8	1,787.6	3,169.1	6,053.8	5,908.0	5,108.2	799.7	10,474.7	5,663.8
2021	18,316.2	324.4	17,991.8	12,675.1	1,938.4	3,378.3	6,480.3	6,325.5	5,442.1	883.4	11,511.5	6,349.6
2022	19,673.7	334.4	19,339.3	13,587.9	2,107.2	3,644.2	6,784.7	6,626.5	5,670.9	955.5	12,554.7	6,961.5
2023	20,291.4	344.9	19,946.5	13,970.5	2,202.8	3,773.2	7,053.2	6,889.9	5,884.1	1,005.8	12,893.3	7,080.6
2024	20,868.2	367.3	20,500.9	14,359.2	2,305.4	3,836.3	7,355.7	7,186.0	6,129.8	1,056.2	13,145.2	7,173.2
2025 p	21,559.6	385.9	21,173.7	14,770.1	2,446.7	3,957.0	7,710.2	7,530.1	6,410.6	1,119.5	13,463.5	7,240.0
2024: I	20,387.7	350.5	20,037.3	14,016.3	2,227.1	3,793.9	7,115.1	6,951.2	5,935.8	1,015.5	12,922.2	7,065.1
II	20,530.8	356.0	20,174.8	14,128.2	2,245.7	3,800.8	7,191.2	7,026.0	5,996.5	1,029.5	12,983.6	7,102.2
III	20,707.0	361.7	20,345.4	14,243.6	2,270.3	3,831.4	7,270.2	7,102.9	6,062.1	1,040.8	13,075.2	7,140.7
IV	20,868.2	367.3	20,500.9	14,359.2	2,305.4	3,836.3	7,355.7	7,186.0	6,129.8	1,056.2	13,145.2	7,173.2
2025: I	20,967.5	371.9	20,595.6	14,417.0	2,330.2	3,848.3	7,368.7	7,197.4	6,129.1	1,068.4	13,226.8	7,219.6
II	21,153.1	376.5	20,776.5	14,541.0	2,352.2	3,883.4	7,519.8	7,346.5	6,263.6	1,082.9	13,256.7	7,194.5
III	21,365.7	381.2	20,984.5	14,665.7	2,392.5	3,926.3	7,610.5	7,434.7	6,336.8	1,097.9	13,374.0	7,231.0
IV p	21,559.6	385.9	21,173.7	14,770.1	2,446.7	3,957.0	7,710.2	7,530.1	6,410.6	1,119.5	13,463.5	7,240.0

[1] Includes Federal Housing Administration (FHA)–insured multi-family properties, not shown separately.
[2] Derived figures. Total includes multi-family and commercial properties with conventional mortgages, not shown separately.

Source: Board of Governors of the Federal Reserve System, based on data from various Government and private organizations.

Table B–44. Mortgage debt outstanding by holder, 1967–2025

[Billions of dollars]

End of year or quarter	Total	Major financial institutions			Other holders		
		Total	Depository Institutions [1, 2]	Life insurance companies	Federal and related agencies [3]	Mortgage pools or trusts [4]	Individuals and others
1967	382.1	296.4	228.9	67.5	18.9	2.0	64.7
1968	411.4	317.3	247.3	70.0	22.6	2.5	69.0
1969	439.9	336.6	264.6	72.0	27.9	3.2	72.2
1970	469.4	352.9	278.5	74.4	33.6	4.8	78.2
1971	517.9	389.2	313.7	75.5	36.8	9.5	82.3
1972	589.8	443.8	366.8	76.9	40.1	14.4	91.5
1973	666.5	500.7	419.4	81.4	46.6	18.0	101.1
1974	728.4	539.3	453.1	86.2	60.7	21.5	106.9
1975	785.6	576.1	486.9	89.2	72.6	28.5	108.4
1976	870.5	640.7	549.1	91.6	76.0	40.7	113.2
1977	999.2	735.3	638.4	96.8	83.7	56.8	123.4
1978	1,150.7	837.5	731.3	106.2	100.2	70.4	142.7
1979	1,317.0	928.6	810.2	118.4	121.2	94.8	172.4
1980	1,457.8	988.0	857.0	131.1	142.9	114.0	213.0
1981	1,579.5	1,034.1	896.4	137.7	160.4	129.0	256.0
1982	1,661.3	1,019.6	877.6	142.0	176.9	178.5	286.3
1983	1,850.6	1,108.4	957.4	151.0	188.5	244.8	309.0
1984	2,092.0	1,248.2	1,091.5	156.7	201.6	300.0	342.2
1985	2,368.5	1,368.7	1,196.9	171.8	213.0	392.4	394.4
1986	2,655.6	1,483.3	1,289.5	193.8	202.1	549.5	420.6
1987	2,958.0	1,635.2	1,419.1	216.1	188.5	700.8	433.4
1988	3,277.1	1,803.0	1,564.9	238.0	192.5	785.7	495.9
1989	3,529.0	1,902.9	1,643.2	259.6	197.8	922.2	506.1
1990	3,785.7	1,925.1	1,651.0	274.1	239.0	1,085.9	535.7
1991	3,937.3	1,852.7	1,586.7	266.1	266.0	1,269.6	549.0
1992	4,047.3	1,777.0	1,528.5	248.5	286.1	1,440.0	544.3
1993	4,177.7	1,790.5	1,560.4	230.1	311.9	1,561.1	514.2
1994	4,342.3	1,838.5	1,616.7	221.8	307.8	1,696.9	499.1
1995	4,528.8	1,910.8	1,691.0	219.9	303.9	1,812.0	502.0
1996	4,808.9	1,990.7	1,776.2	214.6	291.9	1,989.1	537.1
1997	5,121.2	2,090.5	1,877.9	212.6	284.4	2,166.5	571.5
1998	5,609.4	2,201.6	1,981.3	220.2	291.5	2,487.1	619.7
1999	6,216.2	2,401.6	2,163.6	238.0	319.6	2,832.3	651.9
2000	6,772.9	2,625.8	2,383.1	242.8	339.9	3,097.5	697.6
2001	7,456.1	2,797.4	2,547.9	249.6	372.0	3,532.4	740.6
2002	8,364.9	3,096.2	2,839.3	256.8	432.3	3,978.4	842.8
2003	9,369.4	3,394.9	3,126.4	268.5	694.1	4,330.3	933.0
2004	10,657.6	3,934.1	3,653.0	281.1	703.2	4,834.5	1,166.2
2005	12,092.0	4,403.4	4,110.8	292.6	665.4	5,710.0	1,290.9
2006	13,504.3	4,792.3	4,479.8	312.4	687.5	6,629.5	1,370.0
2007	14,580.4	5,074.1	4,738.6	335.5	725.2	7,434.4	1,318.8
2008	14,686.9	5,063.9	4,711.8	352.1	791.3	7,592.7	1,207.8
2009	14,448.6	4,803.8	4,467.6	336.2	800.5	7,649.8	1,162.9
2010	13,896.5	4,599.6	4,271.8	327.9	5,121.9	3,108.4	1,035.0
2011	13,580.5	4,461.3	4,117.9	343.4	5,031.7	3,034.3	1,020.8
2012	13,347.2	4,449.3	4,092.5	356.8	4,933.7	2,947.6	983.6
2013	13,342.5	4,424.5	4,047.0	377.5	4,992.3	2,773.5	1,116.7
2014	13,485.6	4,558.8	4,159.2	399.6	4,987.0	2,742.7	1,157.9
2015	13,869.2	4,817.2	4,373.7	443.5	5,036.4	2,793.6	1,178.1
2016	14,314.5	5,111.2	4,631.3	479.9	5,146.8	2,826.6	1,179.0
2017	14,886.2	5,324.2	4,801.5	522.8	5,313.4	2,971.5	1,220.2
2018	15,443.5	5,505.2	4,919.5	585.7	5,456.9	3,143.7	1,272.3
2019	16,029.7	5,728.9	5,090.4	638.5	5,634.5	3,255.3	1,334.9
2020	16,817.1	5,793.0	5,131.0	662.0	6,269.6	3,261.6	1,404.5
2021	18,316.2	5,994.5	5,285.0	709.5	7,057.2	3,391.0	1,768.2
2022	19,673.7	6,596.4	5,817.0	779.4	7,491.5	3,587.9	1,897.1
2023	20,291.4	6,852.7	6,028.0	824.6	7,603.7	3,795.5	2,039.5
2024	20,868.2	7,000.8	6,109.0	891.8	7,737.4	4,038.1	2,091.9
2025 ^{p}	21,559.6	7,194.3	6,237.8	956.5	7,859.7	4,309.2	2,196.4
2024: I	20,387.7	6,884.8	6,047.6	837.3	7,609.2	3,850.9	2,042.8
II	20,530.8	6,934.0	6,083.0	851.0	7,637.1	3,896.5	2,063.2
III	20,707.0	6,978.0	6,101.0	877.0	7,683.4	3,968.0	2,077.6
IV	20,868.2	7,000.8	6,109.0	891.8	7,737.4	4,038.1	2,091.9
2025: I	20,967.5	7,015.6	6,115.5	900.1	7,745.6	4,097.4	2,108.9
II	21,153.1	7,081.6	6,160.7	920.9	7,762.8	4,169.3	2,139.4
III	21,365.7	7,124.8	6,190.4	934.5	7,813.5	4,256.6	2,170.8
IV ^{p}	21,559.6	7,194.3	6,237.8	956.5	7,859.7	4,309.2	2,196.4

[1] Includes savings banks and savings and loan associations. Data reported by Federal Savings and Loan Insurance Corporation–insured institutions include loans in process for 1987 and exclude loans in process beginning with 1988.

[2] Includes loans held by nondeposit trust companies but not loans held by bank trust departments.

[3] Includes Government National Mortgage Association (GNMA or Ginnie Mae), Federal Housing Administration, Veterans Administration, Farmers Home Administration (FmHA), Federal Deposit Insurance Corporation, Resolution Trust Corporation (through 1995), and in earlier years Reconstruction Finance Corporation, Homeowners Loan Corporation, Federal Farm Mortgage Corporation, and Public Housing Administration. Also includes U.S.-sponsored agencies such as Federal National Mortgage Association (FNMA or Fannie Mae), Federal Land Banks, Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), Federal Agricultural Mortgage Corporation (Farmer Mac, beginning 1994), Federal Home Loan Banks (beginning 1997), and mortgage pass-through securities issued or guaranteed by GNMA, FHLMC, FNMA, FmHA, or Farmer Mac. Other U.S. agencies (amounts small or current separate data not readily available) included with "individuals and others."

[4] Includes private mortgage pools.

Source: Board of Governors of the Federal Reserve System, based on data from various Government and private organizations.

Table B–45. Federal receipts, outlays, surplus or deficit, and debt, fiscal years 1960–2025

[Billions of dollars; fiscal years]

Fiscal year or period	Total			On-budget			Off-budget			Federal debt (end of period)		Addendum: Gross domestic product
	Receipts	Outlays	Surplus or deficit (–)	Receipts	Outlays	Surplus or deficit (–)	Receipts	Outlays	Surplus or deficit (–)	Gross Federal	Held by the public	
1960	92.5	92.2	0.3	81.9	81.3	0.5	10.6	10.9	–0.2	290.5	236.8	534.3
1961	94.4	97.7	–3.3	82.3	86.0	–3.8	12.1	11.7	.4	292.6	238.4	546.6
1962	99.7	106.8	–7.1	87.4	93.3	–5.9	12.3	13.5	–1.3	302.9	248.0	585.7
1963	106.6	111.3	–4.8	92.4	96.4	–4.0	14.2	15.0	–.8	310.3	254.0	618.2
1964	112.6	118.5	–5.9	96.2	102.8	–6.5	16.4	15.7	.6	316.1	256.8	661.7
1965	116.8	118.2	–1.4	100.1	101.7	–1.6	16.7	16.5	.2	322.3	260.8	709.3
1966	130.8	134.5	–3.7	111.7	114.8	–3.1	19.1	19.7	–.6	328.5	263.7	780.5
1967	148.8	157.5	–8.6	124.4	137.0	–12.6	24.4	20.4	4.0	340.4	266.6	836.5
1968	153.0	178.1	–25.2	128.1	155.8	–27.7	24.9	22.3	2.6	368.7	289.5	897.6
1969	186.9	183.6	3.2	157.9	158.4	–.5	29.0	25.2	3.7	365.8	278.1	980.3
1970	192.8	195.6	–2.8	159.3	168.0	–8.7	33.5	27.6	5.9	380.9	283.2	1,046.7
1971	187.1	210.2	–23.0	151.3	177.3	–26.1	35.8	32.8	3.0	408.2	303.0	1,116.6
1972	207.3	230.7	–23.4	167.4	193.5	–26.1	39.9	37.2	2.7	435.9	322.4	1,216.3
1973	230.8	245.7	–14.9	184.7	200.0	–15.2	46.1	45.7	.3	466.3	340.9	1,352.7
1974	263.2	269.4	–6.1	209.3	216.5	–7.2	53.9	52.9	1.1	483.9	343.7	1,482.9
1975	279.1	332.3	–53.2	216.6	270.8	–54.1	62.5	61.6	.9	541.9	394.7	1,606.9
1976	298.1	371.8	–73.7	231.7	301.1	–69.4	66.4	70.7	–4.3	629.0	477.4	1,786.1
Transition quarter	81.2	96.0	–14.7	63.2	77.3	–14.1	18.0	18.7	–.7	643.6	495.5	471.7
1977	355.6	409.2	–53.7	278.7	328.7	–49.9	76.8	80.5	–3.7	706.4	549.1	2,024.3
1978	399.6	458.7	–59.2	314.2	369.6	–55.4	85.4	89.2	–3.8	776.6	607.1	2,273.5
1979	463.3	504.0	–40.7	365.3	404.9	–39.6	98.0	99.1	–1.1	829.5	640.3	2,565.6
1980	517.1	590.9	–73.8	403.9	477.0	–73.1	113.2	113.9	–.7	909.0	711.9	2,791.9
1981	599.3	678.2	–79.0	469.1	543.0	–73.9	130.2	135.3	–5.1	994.8	789.4	3,133.2
1982	617.8	745.7	–128.0	474.3	594.9	–120.6	143.5	150.9	–7.4	1,137.3	924.6	3,313.4
1983	600.6	808.4	–207.8	453.2	660.9	–207.7	147.3	147.4	–.1	1,371.7	1,137.3	3,536.0
1984	666.4	851.8	–185.4	500.4	685.6	–185.3	166.1	166.2	–.1	1,564.6	1,307.0	3,949.2
1985	734.0	946.3	–212.3	547.9	769.4	–221.5	186.2	176.9	9.2	1,817.4	1,507.3	4,265.1
1986	769.2	990.4	–221.2	568.9	806.8	–237.9	200.2	183.5	16.7	2,120.5	1,740.6	4,526.3
1987	854.3	1,004.0	–149.7	640.9	809.2	–168.4	213.4	194.8	18.6	2,346.0	1,889.8	4,767.7
1988	909.2	1,064.4	–155.2	667.7	860.0	–192.3	241.5	204.4	37.1	2,601.1	2,051.6	5,138.6
1989	991.1	1,143.7	–152.6	727.4	932.8	–205.4	263.7	210.9	52.8	2,867.8	2,190.7	5,554.7
1990	1,032.0	1,253.0	–221.0	750.3	1,027.9	–277.6	281.7	225.1	56.6	3,206.3	2,411.6	5,898.8
1991	1,055.0	1,324.2	–269.2	761.1	1,082.5	–321.4	293.9	241.7	52.2	3,598.2	2,689.0	6,093.2
1992	1,091.2	1,381.5	–290.3	788.8	1,129.2	–340.4	302.4	252.3	50.1	4,001.8	2,999.7	6,416.3
1993	1,154.3	1,409.4	–255.1	842.4	1,142.8	–300.4	311.9	266.6	45.3	4,351.0	3,248.4	6,775.3
1994	1,258.6	1,461.8	–203.2	923.5	1,182.4	–258.8	335.0	279.4	55.7	4,643.3	3,433.1	7,176.9
1995	1,351.8	1,515.7	–164.0	1,000.7	1,227.1	–226.4	351.1	288.7	62.4	4,920.6	3,604.4	7,560.4
1996	1,453.1	1,560.5	–107.4	1,085.6	1,259.6	–174.0	367.5	300.9	66.6	5,181.5	3,734.1	7,951.3
1997	1,579.2	1,601.1	–21.9	1,187.2	1,290.5	–103.2	392.0	310.6	81.4	5,369.2	3,772.3	8,451.0
1998	1,721.7	1,652.5	69.3	1,305.9	1,335.9	–29.9	415.8	316.6	99.2	5,478.2	3,721.1	8,930.8
1999	1,827.5	1,701.8	125.6	1,383.0	1,381.1	1.9	444.5	320.8	123.7	5,605.5	3,632.4	9,479.6
2000	2,025.2	1,789.0	236.2	1,544.6	1,458.2	86.4	480.6	330.8	149.8	5,628.7	3,409.8	10,117.1
2001	1,991.1	1,862.8	128.2	1,483.6	1,516.0	–32.4	507.5	346.8	160.7	5,769.9	3,319.6	10,525.7
2002	1,853.1	2,010.9	–157.8	1,337.8	1,655.2	–317.4	515.3	355.7	159.7	6,198.4	3,540.4	10,828.9
2003	1,782.3	2,159.9	–377.6	1,258.5	1,796.9	–538.4	523.8	363.0	160.8	6,760.0	3,913.4	11,278.8
2004	1,880.1	2,292.8	–412.7	1,345.4	1,913.3	–568.0	534.7	379.5	155.2	7,354.7	4,295.5	12,028.4
2005	2,153.6	2,472.0	–318.3	1,576.1	2,069.7	–493.6	577.5	402.2	175.3	7,905.3	4,592.2	12,840.0
2006	2,406.9	2,655.1	–248.2	1,798.5	2,233.0	–434.5	608.4	422.1	186.3	8,451.4	4,829.0	13,636.8
2007	2,568.0	2,728.7	–160.7	1,932.9	2,275.0	–342.2	635.1	453.6	181.5	8,950.7	5,035.1	14,305.4
2008	2,524.0	2,982.5	–458.6	1,865.9	2,507.8	–641.8	658.0	474.8	183.3	9,986.1	5,803.1	14,796.6
2009	2,105.0	3,517.7	–1,412.7	1,451.0	3,000.7	–1,549.7	654.0	517.0	137.0	11,875.9	7,544.7	14,467.3
2010	2,162.7	3,457.1	–1,294.4	1,531.0	2,902.4	–1,371.4	631.7	554.7	77.0	13,528.8	9,018.9	14,884.4
2011	2,303.5	3,603.1	–1,299.6	1,737.7	3,104.5	–1,366.8	565.8	498.6	67.2	14,764.2	10,128.2	15,466.5
2012	2,450.0	3,526.6	–1,076.6	1,880.5	3,019.0	–1,138.5	569.5	507.6	61.9	16,050.9	11,281.1	16,109.4
2013	2,775.1	3,454.9	–679.8	2,101.8	2,821.1	–719.2	673.3	633.8	39.5	16,719.4	11,982.7	16,687.8
2014	3,021.5	3,506.3	–484.8	2,285.9	2,800.2	–514.3	735.6	706.1	29.5	17,794.5	12,779.9	17,428.1
2015	3,249.9	3,691.9	–442.0	2,479.5	2,948.8	–469.3	770.4	743.1	27.3	18,120.1	13,116.7	18,164.3
2016	3,268.0	3,852.6	–584.7	2,457.8	3,077.9	–620.2	810.2	774.7	35.5	19,539.5	14,167.6	18,641.3
2017	3,316.2	3,981.6	–665.5	2,465.6	3,180.4	–714.9	850.6	801.2	49.4	20,205.7	14,665.4	19,375.2
2018	3,329.9	4,109.0	–779.1	2,475.2	3,260.4	–785.2	854.7	848.6	6.2	21,462.3	15,749.6	20,436.3
2019	3,463.4	4,447.0	–983.6	2,549.1	3,540.3	–991.3	914.3	906.6	7.7	22,669.5	16,800.7	21,286.2
2020	3,421.2	6,516.8	–3,095.7	2,455.7	5,561.2	–3,105.5	965.4	955.6	9.8	26,902.5	21,016.7	21,336.8
2021	4,047.1	6,820.7	–2,773.6	3,094.8	5,816.9	–2,722.1	952.3	1,003.8	–51.5	28,385.6	22,284.0	23,044.1
2022	4,897.3	6,271.5	–1,374.2	3,831.4	5,190.4	–1,359.0	1,066.0	1,081.2	–15.2	30,838.6	24,253.4	25,565.4
2023	4,440.9	6,128.4	–1,687.5	3,247.2	4,907.3	–1,660.1	1,193.8	1,221.1	–27.3	32,989.0	26,235.6	27,398.0
2024	4,919.9	6,735.3	–1,815.4	3,660.0	5,415.0	–1,754.9	1,259.9	1,320.3	–60.4	35,230.7	28,193.9	28,947.9
2025	5,236.4	7,011.1	–1,774.7	3,952.7	5,579.5	–1,626.8	1,283.7	1,431.6	–147.9	37,375.0	30,167.2	30,322.8

Note: Fiscal years through 1976 were on a July 1–June 30 basis; beginning with October 1976 (fiscal year 1977), the fiscal year is on an October 1–September 30 basis. The transition quarter is the three-month period from July 1, 1976 through September 30, 1976.

See *Budget of the United States Government, Fiscal Year 2027*, for additional information.

Sources: Department of Commerce (Bureau of Economic Analysis), Department of the Treasury, and Office of Management and Budget.

Table B–46. Federal receipts, outlays, surplus or deficit, and debt, as percent of gross domestic product, fiscal years 1955–2025

[Percent; fiscal years]

Fiscal year or period	Receipts	Outlays		Surplus or deficit (–)	Federal debt (end of period)	
		Total	National defense		Gross Federal	Held by public
1955	16.1	16.8	10.5	–0.7	67.5	55.8
1956	17.0	16.1	9.7	.9	62.2	50.7
1957	17.3	16.5	9.8	.7	58.8	47.3
1958	16.8	17.4	9.9	–.6	59.1	47.8
1959	15.7	18.3	9.7	–2.5	57.0	46.5
1960	17.3	17.3	9.0	.1	54.4	44.3
1961	17.3	17.9	9.1	–.6	53.5	43.6
1962	17.0	18.2	8.9	–1.2	51.7	42.3
1963	17.2	18.0	8.6	–.8	50.2	41.1
1964	17.0	17.9	8.3	–.9	47.8	38.8
1965	16.5	16.7	7.1	–.2	45.4	36.8
1966	16.8	17.2	7.4	–.5	42.1	33.8
1967	17.8	18.8	8.5	–1.0	40.7	31.9
1968	17.0	19.8	9.1	–2.8	41.1	32.3
1969	19.1	18.7	8.4	.3	37.3	28.4
1970	18.4	18.7	7.8	–.3	36.4	27.1
1971	16.8	18.8	7.1	–2.1	36.6	27.1
1972	17.0	19.0	6.5	–1.9	35.8	26.5
1973	17.1	18.2	5.7	–1.1	34.5	25.2
1974	17.8	18.2	5.4	–.4	32.6	23.2
1975	17.4	20.7	5.4	–3.3	33.7	24.6
1976	16.7	20.8	5.0	–4.1	35.2	26.7
Transition quarter	17.2	20.3	4.7	–3.1	34.1	26.3
1977	17.6	20.2	4.8	–2.7	34.9	27.1
1978	17.6	20.2	4.6	–2.6	34.2	26.7
1979	18.1	19.6	4.5	–1.6	32.3	25.0
1980	18.5	21.2	4.8	–2.6	32.6	25.5
1981	19.1	21.6	5.0	–2.5	31.8	25.2
1982	18.6	22.5	5.6	–3.9	34.3	27.9
1983	17.0	22.9	5.9	–5.9	38.8	32.2
1984	16.9	21.6	5.8	–4.7	39.6	33.1
1985	17.2	22.2	5.9	–5.0	42.6	35.3
1986	17.0	21.9	6.0	–4.9	46.8	38.5
1987	17.9	21.1	5.9	–3.1	49.2	39.6
1988	17.7	20.7	5.7	–3.0	50.6	39.9
1989	17.8	20.6	5.5	–2.7	51.6	39.4
1990	17.5	21.2	5.1	–3.7	54.4	40.9
1991	17.3	21.7	4.5	–4.4	59.1	44.1
1992	17.0	21.5	4.6	–4.5	62.4	46.8
1993	17.0	20.8	4.3	–3.8	64.2	47.9
1994	17.5	20.4	3.9	–2.8	64.7	47.8
1995	17.9	20.0	3.6	–2.2	65.1	47.7
1996	18.3	19.6	3.3	–1.4	65.2	47.0
1997	18.7	18.9	3.2	–.3	63.5	44.6
1998	19.3	18.5	3.0	.8	61.3	41.7
1999	19.3	18.0	2.9	1.3	59.1	38.3
2000	20.0	17.7	2.9	2.3	55.6	33.7
2001	18.9	17.7	2.9	1.2	54.8	31.5
2002	17.1	18.6	3.2	–1.5	57.2	32.7
2003	15.8	19.2	3.6	–3.3	59.9	34.7
2004	15.6	19.1	3.8	–3.4	61.1	35.7
2005	16.8	19.3	3.9	–2.5	61.6	35.8
2006	17.6	19.5	3.8	–1.8	62.0	35.4
2007	18.0	19.1	3.9	–1.1	62.6	35.2
2008	17.1	20.2	4.2	–3.1	67.5	39.2
2009	14.5	24.3	4.6	–9.8	82.1	52.2
2010	14.5	23.2	4.7	–8.7	90.9	60.6
2011	14.9	23.3	4.6	–8.4	95.5	65.5
2012	15.2	21.9	4.2	–6.7	99.6	70.0
2013	16.6	20.7	3.8	–4.1	100.2	71.8
2014	17.3	20.1	3.5	–2.8	102.1	73.3
2015	17.9	20.3	3.2	–2.4	99.8	72.2
2016	17.5	20.7	3.2	–3.1	104.8	76.0
2017	17.1	20.6	3.1	–3.4	104.3	75.7
2018	16.3	20.1	3.1	–3.8	105.0	77.1
2019	16.3	20.9	3.2	–4.6	106.5	78.9
2020	16.0	30.5	3.4	–14.5	126.1	98.5
2021	17.6	29.6	3.3	–12.0	123.2	96.7
2022	19.2	24.5	3.0	–5.4	120.6	94.9
2023	16.2	22.4	3.0	–6.2	120.4	95.8
2024	17.0	23.3	3.0	–6.3	121.7	97.4
2025	17.3	23.1	3.0	–5.9	123.3	99.5

Note: See Note, Table B–45.

Sources: Department of the Treasury and Office of Management and Budget.

Table B–47. Federal receipts and outlays, by major category, and surplus or deficit, fiscal years 1960–2025

[Billions of dollars; fiscal years]

Fiscal year or period	Receipts (on-budget and off-budget)					Outlays (on-budget and off-budget)										Surplus or deficit (–) (on-budget and off-budget)
	Total	Individual income taxes	Corporation income taxes	Social insurance and retirement receipts	Other	Total	National defense: Total	National defense: Department of Defense, military	International affairs	Health	Medicare	Income security	Social security	Net interest	Other	
1960	92.5	40.7	21.5	14.7	15.6	92.2	48.1	....	3.0	0.8	....	7.4	11.6	6.9	14.4	0.3
1961	94.4	41.3	21.0	16.4	15.7	97.7	49.6	....	3.2	.9	....	9.7	12.5	6.7	15.2	–3.3
1962	99.7	45.6	20.5	17.0	16.5	106.8	52.3	50.1	5.6	1.2	....	9.2	14.4	6.9	17.2	–7.1
1963	106.6	47.6	21.6	19.8	17.6	111.3	53.4	51.1	5.3	1.5	....	9.3	15.8	7.7	18.3	–4.8
1964	112.6	48.7	23.5	22.0	18.5	118.5	54.8	52.6	4.9	1.8	....	9.7	16.6	8.2	22.6	–5.9
1965	116.8	48.8	25.5	22.2	20.3	118.2	50.6	48.8	5.3	1.8	....	9.5	17.5	8.6	25.0	–1.4
1966	130.8	55.4	30.1	25.5	19.8	134.5	58.1	56.6	5.6	2.5	0.1	9.7	20.7	9.4	28.5	–3.7
1967	148.8	61.5	34.0	32.6	20.7	157.5	71.4	70.1	5.6	3.4	2.7	10.3	21.7	10.3	32.1	–8.6
1968	153.0	68.7	28.7	33.9	21.7	178.1	81.9	80.4	5.3	4.4	4.6	11.8	23.9	11.1	35.1	–25.2
1969	186.9	87.2	36.7	39.0	23.9	183.6	82.5	80.8	4.6	5.2	5.7	13.1	27.3	12.7	32.6	3.2
1970	192.8	90.4	32.8	44.4	25.2	195.6	81.7	80.1	4.3	5.9	6.2	15.6	30.3	14.4	37.2	–2.8
1971	187.1	86.2	26.8	47.3	26.8	210.2	78.9	77.5	4.2	6.8	6.6	22.9	35.9	14.8	40.0	–23.0
1972	207.3	94.7	32.2	52.6	27.8	230.7	79.2	77.6	4.8	8.7	7.5	27.6	40.2	15.5	47.3	–23.4
1973	230.8	103.2	36.2	63.1	28.3	245.7	76.7	75.0	4.1	9.4	8.1	28.3	49.1	17.3	52.8	–14.9
1974	263.2	119.0	38.6	75.1	30.6	269.4	79.3	77.9	5.7	10.7	9.6	33.7	55.9	21.4	52.9	–6.1
1975	279.1	122.4	40.6	84.5	31.5	332.3	86.5	84.9	7.1	12.9	12.9	50.2	64.7	23.2	74.9	–53.2
1976	298.1	131.6	41.4	90.8	34.3	371.8	89.6	87.9	6.4	15.7	15.8	60.8	73.9	26.7	82.8	–73.7
Transition quarter	81.2	38.8	8.5	25.2	8.8	96.0	22.3	21.8	2.5	3.9	4.3	15.0	19.8	6.9	21.4	–14.7
1977	355.6	157.6	54.9	106.5	36.6	409.2	97.2	95.1	6.4	17.3	19.3	61.0	85.1	29.9	93.0	–53.7
1978	399.6	181.0	60.0	121.0	37.7	458.7	104.5	102.3	7.5	18.5	22.8	61.5	93.9	35.5	114.7	–59.2
1979	463.3	217.8	65.7	138.9	40.8	504.0	116.3	113.6	7.5	20.5	26.5	66.4	104.1	42.6	120.2	–40.7
1980	517.1	244.1	64.6	157.8	50.6	590.9	134.0	130.9	12.7	23.2	32.1	86.5	118.5	52.5	131.3	–73.8
1981	599.3	285.9	61.1	182.7	69.5	678.2	157.5	153.9	13.1	26.9	39.1	100.3	139.6	68.8	133.0	–79.0
1982	617.8	297.7	49.2	201.5	69.3	745.7	185.3	180.7	12.3	27.4	46.6	108.1	156.0	85.0	125.0	–128.0
1983	600.6	288.9	37.0	209.0	65.6	808.4	209.9	204.4	11.8	28.6	52.6	123.0	170.7	89.8	121.8	–207.8
1984	666.4	298.4	56.9	239.4	71.8	851.8	227.4	220.9	15.9	30.4	57.5	113.4	178.2	111.1	117.9	–185.4
1985	734.0	334.5	61.3	265.2	73.0	946.3	252.7	245.1	16.2	33.5	65.8	129.0	188.6	129.5	131.0	–212.3
1986	769.2	349.0	63.1	283.9	73.2	990.4	273.4	265.4	14.1	35.9	70.2	120.7	198.8	136.0	141.3	–221.2
1987	854.3	392.6	83.9	303.3	74.5	1,004.0	282.0	273.9	11.6	40.0	75.1	124.1	207.4	138.6	125.2	–149.7
1988	909.2	401.2	94.5	334.3	79.2	1,064.4	290.4	281.9	10.5	44.5	78.9	130.4	219.3	151.8	138.7	–155.2
1989	991.1	445.7	103.3	359.4	82.7	1,143.7	303.6	294.8	9.6	48.4	85.0	137.6	232.5	169.0	158.2	–152.6
1990	1,032.0	466.9	93.5	380.0	91.5	1,253.0	299.3	289.7	13.8	57.7	98.1	148.8	248.6	184.3	202.4	–221.0
1991	1,055.0	467.8	98.1	396.0	93.1	1,324.2	273.3	262.3	15.8	71.1	104.5	172.6	269.0	194.4	223.4	–269.2
1992	1,091.2	476.0	100.3	413.7	101.3	1,381.5	298.3	286.8	16.1	89.4	119.0	199.7	287.6	199.3	172.1	–290.3
1993	1,154.3	509.7	117.5	428.3	98.8	1,409.4	291.1	278.5	17.2	99.3	130.6	210.1	304.6	198.7	157.8	–255.1
1994	1,258.6	543.1	140.4	461.5	113.7	1,461.8	281.6	268.6	17.1	107.1	144.7	217.2	319.6	202.9	171.5	–203.2
1995	1,351.8	590.2	157.0	484.5	120.1	1,515.7	272.1	259.4	16.4	115.4	159.9	223.8	335.8	232.1	160.3	–164.0
1996	1,453.1	656.4	171.8	509.4	115.4	1,560.5	265.7	253.1	13.5	119.3	174.2	229.7	349.7	241.1	167.3	–107.4
1997	1,579.2	737.5	182.3	539.4	120.1	1,601.1	270.5	258.3	15.2	123.8	190.0	235.0	365.3	244.0	157.4	–21.9
1998	1,721.7	828.6	188.7	571.8	132.6	1,652.5	268.2	255.8	13.1	131.4	192.8	237.7	379.2	241.1	189.0	69.3
1999	1,827.5	879.5	184.7	611.8	151.5	1,701.8	274.8	261.2	15.2	141.0	190.4	242.4	390.0	229.8	218.1	125.6
2000	2,025.2	1,004.5	207.3	652.9	160.6	1,789.0	294.4	281.0	17.2	154.5	197.1	253.7	409.4	222.9	239.7	236.2
2001	1,991.1	994.3	151.1	694.0	151.7	1,862.8	304.7	290.2	16.5	172.2	217.4	269.7	433.0	206.2	243.2	128.2
2002	1,853.1	858.3	148.0	700.8	146.0	2,010.9	348.5	331.8	22.3	196.5	230.9	312.7	456.0	170.9	273.2	–157.8
2003	1,782.3	793.7	131.8	713.0	143.9	2,159.9	404.7	387.1	21.2	219.6	249.4	334.6	474.7	153.1	302.6	–377.6
2004	1,880.1	809.0	189.4	733.4	148.4	2,292.8	455.8	436.4	26.9	240.1	269.4	333.0	495.5	160.2	311.8	–412.7
2005	2,153.6	927.2	278.3	794.1	154.0	2,472.0	495.3	474.1	34.6	250.6	298.6	345.8	523.3	184.0	339.8	–318.3
2006	2,406.9	1,043.9	353.9	837.8	171.2	2,655.1	521.8	499.3	29.5	252.8	329.9	352.4	548.5	226.6	393.5	–248.2
2007	2,568.0	1,163.5	370.2	869.6	164.7	2,728.7	551.3	528.5	28.5	266.4	375.4	365.9	586.2	237.1	317.9	–160.7
2008	2,524.0	1,145.7	304.3	900.2	173.7	2,982.5	616.1	594.6	28.9	280.6	390.8	431.2	617.0	252.8	365.2	–458.6
2009	2,105.0	915.3	138.2	890.9	160.5	3,517.7	661.0	636.7	37.5	334.4	430.1	533.1	683.0	186.9	651.7	–1,412.7
2010	2,162.7	898.5	191.4	864.8	207.9	3,457.1	693.5	666.7	45.2	369.1	451.6	622.1	706.7	196.2	372.6	–1,294.4
2011	2,303.5	1,091.5	181.1	818.8	212.1	3,603.1	705.6	678.1	45.7	372.5	485.7	597.3	730.8	230.0	435.7	–1,299.6
2012	2,450.0	1,132.2	242.3	845.3	230.2	3,526.6	677.9	650.9	36.8	346.8	471.8	541.2	773.3	220.4	458.4	–1,076.6
2013	2,775.1	1,316.4	273.5	947.8	237.4	3,454.9	633.4	607.8	46.5	358.3	497.8	536.4	813.6	220.9	348.0	–679.8
2014	3,021.5	1,394.6	320.7	1,023.5	282.7	3,506.3	603.5	577.9	46.9	409.5	511.7	513.6	850.5	229.0	341.7	–484.8
2015	3,249.9	1,540.8	343.8	1,065.3	300.0	3,691.9	589.7	562.5	52.0	482.3	546.2	508.8	887.8	223.2	402.0	–442.0
2016	3,268.0	1,546.1	299.6	1,115.1	307.3	3,852.6	593.4	565.4	45.3	511.3	594.5	514.1	916.1	240.0	437.9	–584.7
2017	3,316.2	1,587.1	297.0	1,161.9	270.1	3,981.6	598.7	568.9	46.3	533.2	597.3	503.4	944.9	262.6	495.3	–665.5
2018	3,329.9	1,683.5	204.7	1,170.7	270.9	4,109.0	631.3	600.8	48.9	551.2	588.7	495.3	987.8	325.0	480.9	–779.1
2019	3,463.4	1,717.9	230.2	1,243.1	272.1	4,447.0	685.7	653.7	53.0	584.8	651.0	514.8	1,044.4	375.2	538.0	–983.6
2020	3,421.2	1,608.7	211.8	1,310.0	290.7	6,516.8	724.6	690.4	30.9	747.6	776.2	1,263.6	1,095.8	345.5	1,532.6	–3,095.7
2021	4,047.1	2,044.4	371.8	1,314.1	316.8	6,820.7	753.9	717.6	45.2	796.5	696.5	1,647.7	1,134.6	352.3	1,394.1	–2,773.6
2022	4,897.3	2,632.1	424.9	1,483.5	356.8	6,271.5	765.6	726.5	70.6	914.1	755.1	866.1	1,218.7	475.9	1,205.5	–1,374.2
2023	4,440.9	2,176.5	419.6	1,614.5	230.4	6,128.4	820.3	775.9	63.1	888.6	847.5	774.7	1,354.3	658.3	721.8	–1,687.5
2024	4,919.9	2,426.1	529.9	1,708.9	255.0	6,735.3	873.5	826.3	56.4	911.3	874.1	670.5	1,460.9	879.9	1,008.6	–1,815.4
2025	5,236.4	2,656.0	452.1	1,748.3	380.0	7,011.1	916.1	868.4	45.2	978.5	996.7	701.6	1,580.7	970.1	822.2	–1,774.7

Note: See Note, Table B–45.

Sources: Department of the Treasury and Office of Management and Budget.

Table B–48. Federal receipts, outlays, surplus or deficit, and debt, fiscal years 2020–2025

[Millions of dollars; fiscal years]

Description	Actual					
	2020	2021	2022	2023	2024	2025
RECEIPTS, OUTLAYS, AND SURPLUS OR DEFICIT						
Total:						
Receipts	3,421,164	4,047,111	4,897,339	4,440,948	4,919,884	5,236,421
Outlays	6,516,817	6,820,705	6,271,510	6,128,415	6,735,261	7,011,105
Surplus or deficit (–)	–3,095,653	–2,773,594	–1,374,171	–1,687,467	–1,815,377	–1,774,684
On-budget:						
Receipts	2,455,736	3,094,788	3,831,364	3,247,193	3,660,002	3,952,685
Outlays	5,561,235	5,816,858	5,190,355	4,907,315	5,414,951	5,579,500
Surplus or deficit (–)	–3,105,499	–2,722,070	–1,358,991	–1,660,122	–1,754,949	–1,626,815
Off-budget:						
Receipts	965,428	952,323	1,065,975	1,193,755	1,259,882	1,283,736
Outlays	955,582	1,003,847	1,081,155	1,221,100	1,320,310	1,431,605
Surplus or deficit (–)	9,846	–51,524	–15,180	–27,345	–60,428	–147,869
OUTSTANDING DEBT, END OF PERIOD						
Gross Federal debt	26,902,455	28,385,562	30,838,586	32,988,990	35,230,714	37,374,964
Held by Federal Government accounts	5,885,786	6,101,522	6,585,141	6,753,398	7,036,848	7,207,740
Held by the public	21,016,669	22,284,040	24,253,445	26,235,592	28,193,866	30,167,224
Federal Reserve System	4,445,477	5,433,156	5,634,940	4,952,914	4,364,357	4,196,345
Other	16,571,192	16,850,884	18,618,505	21,282,678	23,829,509	25,970,879
RECEIPTS BY SOURCE						
Total: On-budget and off-budget	3,421,164	4,047,111	4,897,339	4,440,948	4,919,884	5,236,421
Individual income taxes	1,608,663	2,044,377	2,632,146	2,176,481	2,426,067	2,656,044
Corporation income taxes	211,845	371,831	424,865	419,584	529,867	452,089
Social insurance and retirement receipts	1,309,955	1,314,088	1,483,527	1,614,456	1,708,926	1,748,294
On-budget	344,527	361,765	417,552	420,701	449,044	464,558
Off-budget	965,428	952,323	1,065,975	1,193,755	1,259,882	1,283,736
Excise taxes	86,780	75,274	87,728	75,802	101,426	105,937
Estate and gift taxes	17,624	27,140	32,550	33,668	31,616	29,462
Customs duties and fees	68,551	79,985	99,908	80,338	77,036	194,866
Miscellaneous receipts	117,746	134,416	136,615	40,619	44,946	49,729
Deposits of earnings by Federal Reserve System	81,880	100,054	106,674	581	3,131	5,490
All other	35,866	34,362	29,941	40,038	41,815	44,239
OUTLAYS BY FUNCTION						
Total: On-budget and off-budget	6,516,817	6,820,705	6,271,510	6,128,415	6,735,261	7,011,105
National defense	724,589	753,897	765,649	820,263	873,523	916,140
International affairs	30,923	45,195	70,555	63,055	56,396	45,171
General science, space, and technology	34,022	35,534	37,404	41,276	41,476	41,966
Energy	7,083	5,977	–9,132	–406	13,571	20,765
Natural resources and environment	42,445	44,151	40,951	47,387	58,469	89,834
Agriculture	47,298	47,398	33,065	33,651	32,841	47,447
Commerce and housing credit	572,071	307,847	–19,075	100,765	36,032	–28,131
On-budget	574,474	310,581	–18,658	94,996	32,148	–33,214
Off-budget	–2,403	–2,734	–417	5,769	3,884	5,083
Transportation	145,623	154,291	131,024	126,417	136,582	145,320
Community and regional development	81,878	44,655	69,963	86,553	85,215	82,374
Education, training, employment, and social services	237,754	298,406	677,305	–2,189	306,370	72,042
Health	747,582	796,450	914,081	888,555	911,290	978,511
Medicare	776,225	696,458	755,094	847,544	874,133	996,718
Income security	1,263,639	1,647,729	866,097	774,656	670,548	701,609
Social security	1,095,816	1,134,586	1,218,663	1,354,317	1,460,918	1,580,673
On-budget	39,893	34,862	48,524	50,800	53,773	59,755
Off-budget	1,055,923	1,099,724	1,170,139	1,303,517	1,407,145	1,520,918
Veterans benefits and services	218,655	234,282	274,404	301,600	325,645	377,163
Administration of justice	71,997	71,430	71,323	80,432	83,793	83,146
General government	180,109	273,941	133,216	38,199	35,316	40,546
Net interest	345,470	352,338	475,887	658,267	879,879	970,065
On-budget	424,274	425,591	543,625	724,774	947,299	1,040,091
Off-budget	–78,804	–73,253	–67,738	–66,507	–67,420	–70,026
Allowances	....	....	....	....	....	....
Undistributed offsetting receipts	–106,362	–123,860	–234,964	–131,927	–146,736	–150,254
On-budget	–87,228	–103,970	–214,135	–110,248	–123,437	–125,884
Off-budget	–19,134	–19,890	–20,829	–21,679	–23,299	–24,370

Note: See Note, Table B–45.

Sources: Department of the Treasury and Office of Management and Budget.

TABLE B–49. Federal and State and local government current receipts and expenditures, national income and product accounts (NIPA) basis, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Total government			Federal Government			State and local government			Addendum: Grants-in-aid to State and local governments
	Current receipts	Current expenditures	Net government saving (NIPA)	Current receipts	Current expenditures	Net Federal Government saving (NIPA)	Current receipts	Current expenditures	Net State and local government saving (NIPA)	
1975	441.2	549.9	–108.6	276.8	374.8	–97.9	208.0	218.7	–10.7	43.6
1976	505.7	591.0	–85.3	322.6	403.5	–80.9	232.2	236.6	–4.4	49.1
1977	567.4	640.3	–72.9	363.9	437.3	–73.4	258.3	257.8	.5	54.8
1978	646.1	703.3	–57.2	423.8	485.9	–62.0	285.8	280.9	4.9	63.5
1979	729.3	777.9	–48.6	487.0	534.4	–47.4	306.3	307.5	–1.2	64.0
1980	799.9	894.6	–94.7	533.7	622.5	–88.8	335.9	341.8	–5.9	69.7
1981	919.1	1,017.4	–98.2	621.1	709.1	–88.1	367.5	377.6	–10.2	69.4
1982	940.9	1,131.0	–190.1	618.7	786.0	–167.4	388.5	411.3	–22.8	66.3
1983	1,002.1	1,227.7	–225.6	644.8	851.9	–207.2	425.3	443.7	–18.4	67.9
1984	1,115.0	1,311.7	–196.7	711.2	907.7	–196.5	476.1	476.3	–.2	72.3
1985	1,217.0	1,418.7	–201.7	775.7	975.0	–199.2	517.5	519.9	–2.4	76.2
1986	1,292.9	1,512.8	–219.9	817.9	1,033.8	–215.9	557.4	561.3	–4.0	82.4
1987	1,406.6	1,586.7	–180.1	899.5	1,065.2	–165.7	585.5	599.9	–14.4	78.4
1988	1,507.1	1,678.3	–171.3	962.4	1,122.4	–160.0	630.4	641.7	–11.3	85.7
1989	1,632.0	1,810.7	–178.7	1,042.5	1,201.8	–159.4	681.4	700.7	–19.3	91.8
1990	1,713.3	1,952.9	–239.5	1,087.6	1,290.9	–203.3	730.0	766.3	–36.3	104.4
1991	1,763.6	2,072.2	–308.5	1,107.8	1,356.2	–248.4	779.8	840.0	–60.1	124.0
1992	1,848.6	2,254.2	–405.6	1,154.4	1,488.9	–334.5	836.0	907.0	–71.1	141.7
1993	1,953.1	2,339.3	–386.2	1,231.0	1,544.6	–313.5	877.8	950.4	–72.6	155.7
1994	2,097.3	2,417.2	–319.9	1,329.3	1,585.0	–255.6	934.8	999.1	–64.2	166.8
1995	2,223.5	2,536.5	–312.9	1,417.4	1,659.5	–242.1	980.6	1,051.4	–70.8	174.5
1996	2,388.2	2,621.8	–233.6	1,536.3	1,715.7	–179.4	1,033.3	1,087.5	–54.2	181.5
1997	2,565.5	2,699.9	–134.4	1,667.4	1,759.4	–92.0	1,086.2	1,128.7	–42.4	188.1
1998	2,738.0	2,767.4	–29.3	1,789.8	1,788.4	1.4	1,149.0	1,179.7	–30.7	200.8
1999	2,908.9	2,879.5	29.5	1,906.0	1,836.8	69.1	1,222.1	1,261.8	–39.7	219.2
2000	3,138.2	3,019.9	118.2	2,067.8	1,908.1	159.7	1,303.5	1,345.0	–41.5	233.1
2001	3,124.4	3,229.2	–104.7	2,032.4	2,017.3	15.0	1,353.3	1,473.1	–119.8	261.3
2002	2,968.3	3,419.8	–451.4	1,870.9	2,138.7	–267.8	1,386.2	1,569.8	–183.6	288.7
2003	3,044.6	3,624.0	–579.4	1,896.1	2,293.5	–397.4	1,470.2	1,652.2	–182.0	321.7
2004	3,274.1	3,817.4	–543.3	2,028.1	2,421.6	–393.5	1,578.4	1,728.2	–149.8	332.3
2005	3,677.8	4,075.3	–397.4	2,304.7	2,598.5	–293.8	1,716.6	1,820.3	–103.7	343.5
2006	4,012.2	4,320.1	–307.9	2,538.8	2,760.7	–221.9	1,814.4	1,900.4	–86.0	341.0
2007	4,209.6	4,599.6	–390.0	2,668.3	2,928.0	–259.7	1,900.4	2,030.7	–130.4	359.1
2008	4,125.0	4,972.0	–847.0	2,582.1	3,207.0	–624.9	1,914.1	2,136.2	–222.1	371.2
2009	3,698.5	5,284.0	–1,585.5	2,242.1	3,485.2	–1,243.2	1,914.6	2,256.9	–342.3	458.1
2010	3,932.7	5,560.0	–1,627.3	2,446.3	3,764.6	–1,318.4	1,991.7	2,300.6	–309.0	505.2
2011	4,128.3	5,639.5	–1,511.2	2,573.6	3,807.8	–1,234.1	2,027.2	2,304.2	–277.0	472.5
2012	4,309.6	5,667.1	–1,357.5	2,700.8	3,773.5	–1,072.7	2,053.3	2,338.1	–284.8	444.4
2013	4,829.6	5,729.5	–899.9	3,136.3	3,770.3	–633.9	2,143.4	2,409.4	–266.0	450.1
2014	5,054.1	5,885.7	–831.6	3,294.4	3,888.4	–594.0	2,254.7	2,492.3	–237.6	495.0
2015	5,285.5	6,059.5	–774.0	3,448.4	4,005.8	–557.4	2,370.2	2,586.8	–216.6	533.1
2016	5,329.2	6,238.7	–909.5	3,460.7	4,128.0	–667.3	2,425.3	2,667.4	–242.2	556.7
2017	5,456.9	6,418.5	–961.6	3,503.7	4,240.5	–736.8	2,513.5	2,738.4	–224.8	560.4
2018	5,643.7	6,749.9	–1,106.2	3,583.1	4,489.5	–906.4	2,643.2	2,843.0	–199.9	582.6
2019	5,883.9	7,133.4	–1,249.6	3,704.3	4,748.1	–1,043.8	2,788.5	2,994.3	–205.8	608.9
2020	5,971.0	8,966.6	–2,995.6	3,766.7	6,715.1	–2,948.4	3,083.1	3,130.2	–47.1	878.7
2021	6,896.4	9,514.8	–2,618.4	4,429.1	7,284.1	–2,855.0	3,577.4	3,340.8	236.6	1,110.1
2022	7,856.6	8,792.8	–936.2	5,115.5	6,144.9	–1,029.4	3,689.3	3,596.2	93.1	948.3
2023	7,514.3	9,358.9	–1,844.5	4,820.9	6,538.0	–1,717.1	3,645.3	3,772.7	–127.4	951.9
2024	8,008.3	10,061.5	–2,053.2	5,178.9	7,053.4	–1,874.5	3,790.9	3,969.6	–178.7	961.5
2025 ^{p}	....	10,670.4	....	....	7,491.8	....	....	4,157.5	....	979.0
2022: I	7,803.6	8,546.5	–742.9	5,075.1	6,002.8	–927.7	3,659.6	3,474.8	184.8	931.1
II	7,928.1	8,700.4	–772.3	5,134.8	6,079.7	–944.9	3,755.4	3,582.9	172.6	962.1
III	7,857.8	8,843.4	–985.6	5,149.4	6,178.7	–1,029.3	3,660.1	3,616.4	43.7	951.7
IV	7,836.9	9,080.9	–1,244.0	5,102.8	6,318.3	–1,215.6	3,682.2	3,710.7	–28.4	948.1
2023: I	7,431.3	9,182.9	–1,751.6	4,752.0	6,433.6	–1,681.6	3,658.6	3,728.6	–70.0	979.3
II	7,434.4	9,272.7	–1,838.4	4,769.4	6,491.7	–1,722.3	3,650.0	3,766.1	–116.1	985.1
III	7,531.9	9,441.3	–1,909.4	4,835.5	6,558.6	–1,723.1	3,603.5	3,789.8	–186.4	907.1
IV	7,659.9	9,538.6	–1,878.7	4,926.5	6,668.1	–1,741.6	3,669.3	3,806.4	–137.2	935.9
2024: I	7,851.8	9,811.2	–1,959.5	5,045.8	6,846.1	–1,800.3	3,742.6	3,901.7	–159.2	936.7
II	7,942.3	9,958.0	–2,015.6	5,146.5	6,954.0	–1,807.5	3,743.1	3,951.2	–208.1	947.2
III	8,049.2	10,185.2	–2,136.0	5,210.1	7,165.7	–1,955.5	3,818.8	3,999.3	–180.4	979.7
IV	8,189.8	10,291.4	–2,101.6	5,313.2	7,247.7	–1,934.5	3,858.9	4,026.1	–167.1	982.3
2025: I	8,308.8	10,414.3	–2,105.4	5,392.7	7,313.6	–1,920.9	3,871.8	4,056.3	–184.6	955.7
II	8,553.5	10,634.7	–2,081.2	5,603.7	7,496.3	–1,892.6	3,923.6	4,112.1	–188.6	973.8
III	8,760.6	10,789.4	–2,028.8	5,793.6	7,580.2	–1,786.6	3,969.2	4,211.4	–242.2	1,002.2
IV ^{p}	....	10,843.2	....	....	7,577.0	....	....	4,250.3	....	984.1

Note: Federal grants-in-aid to State and local governments are reflected in Federal current expenditures and State and local current receipts. Total government current receipts and expenditures have been adjusted to eliminate this duplication.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–50. State and local government revenues and expenditures, fiscal years 1960–2023

[Millions of dollars]

Fiscal year [1]	General revenues by source [2]							General expenditures by function [2]				
	Total	Property taxes	Sales and gross receipts taxes	Individual income taxes	Corporation net income taxes	Revenue from Federal Government	All other [3]	Total [4]	Education	Highways	Public welfare [4]	All other [4, 5]
1960	50,505	16,405	11,849	2,463	1,180	6,974	11,634	51,876	18,719	9,428	4,404	19,325
1961	54,037	18,002	12,463	2,613	1,266	7,131	12,562	56,201	20,574	9,844	4,720	21,063
1962	58,252	19,054	13,494	3,037	1,308	7,871	13,488	60,206	22,216	10,357	5,084	22,549
1963	62,891	20,089	14,456	3,269	1,505	8,722	14,850	64,815	23,776	11,135	5,481	24,423
1963–64	68,443	21,241	15,762	3,791	1,695	10,002	15,952	69,302	26,286	11,664	5,766	25,586
1964–65	74,000	22,583	17,118	4,090	1,929	11,029	17,251	74,678	28,563	12,221	6,315	27,579
1965–66	83,036	24,670	19,085	4,760	2,038	13,214	19,269	82,843	33,287	12,770	6,757	30,029
1966–67	91,197	26,047	20,530	5,825	2,227	15,370	21,198	93,350	37,919	13,932	8,218	33,281
1967–68	101,264	27,747	22,911	7,308	2,518	17,181	23,599	102,411	41,158	14,481	9,857	36,915
1968–69	114,550	30,673	26,519	8,908	3,180	19,153	26,117	116,728	47,238	15,417	12,110	41,963
1969–70	130,756	34,054	30,322	10,812	3,738	21,857	29,973	131,332	52,718	16,427	14,679	47,508
1970–71	144,927	37,852	33,233	11,900	3,424	26,146	32,372	150,674	59,413	18,095	18,226	54,940
1971–72	167,535	42,877	37,518	15,227	4,416	31,342	36,156	168,549	65,813	19,021	21,117	62,598
1972–73	190,222	45,283	42,047	17,994	5,425	39,264	40,210	181,357	69,713	18,615	23,582	69,447
1973–74	207,670	47,705	46,098	19,491	6,015	41,820	46,542	199,222	75,833	19,946	25,085	78,358
1974–75	228,171	51,491	49,815	21,454	6,642	47,034	51,735	230,722	87,858	22,528	28,156	92,180
1975–76	256,176	57,001	54,547	24,575	7,273	55,589	57,191	256,731	97,216	23,907	32,604	103,004
1976–77	285,157	62,527	60,641	29,246	9,174	62,444	61,125	274,215	102,780	23,058	35,906	112,472
1977–78	315,960	66,422	67,596	33,176	10,738	69,592	68,435	296,984	110,758	24,609	39,140	122,478
1978–79	343,236	64,944	74,247	36,932	12,128	75,164	79,822	327,517	119,448	28,440	41,898	137,731
1979–80	382,322	68,499	79,927	42,080	13,321	83,029	95,467	369,086	133,211	33,311	47,288	155,276
1980–81	423,404	74,969	85,971	46,426	14,143	90,294	111,599	407,449	145,784	34,603	54,105	172,957
1981–82	457,654	82,067	93,613	50,738	15,028	87,282	128,925	436,733	154,282	34,520	57,996	189,935
1982–83	486,753	89,105	100,247	55,129	14,258	90,007	138,008	466,516	163,876	36,655	60,906	205,080
1983–84	542,730	96,457	114,097	64,871	16,798	96,935	153,571	505,008	176,108	39,419	66,414	223,068
1984–85	598,121	103,757	126,376	70,361	19,152	106,158	172,317	553,899	192,686	44,989	71,479	244,745
1985–86	641,486	111,709	135,005	74,365	19,994	113,099	187,314	605,623	210,819	49,368	75,868	269,568
1986–87	686,860	121,203	144,091	83,935	22,425	114,857	200,350	657,134	226,619	52,355	82,650	295,510
1987–88	726,762	132,212	156,452	88,350	23,663	117,602	208,482	704,921	242,683	55,621	89,090	317,527
1988–89	786,129	142,400	166,336	97,806	25,926	125,824	227,838	762,360	263,898	58,105	97,879	342,479
1989–90	849,502	155,613	177,885	105,640	23,566	136,802	249,996	834,818	288,148	61,057	110,518	375,094
1990–91	902,207	167,999	185,570	109,341	22,242	154,099	262,955	908,108	309,302	64,937	130,402	403,467
1991–92	979,137	180,337	197,731	115,638	23,880	179,174	282,376	981,253	324,652	67,351	158,723	430,526
1992–93	1,041,643	189,744	209,649	123,235	26,417	198,663	293,935	1,030,434	342,287	68,370	170,705	449,072
1993–94	1,100,490	197,141	223,628	128,810	28,320	215,492	307,099	1,077,665	353,287	72,067	183,394	468,916
1994–95	1,169,505	203,451	237,268	137,931	31,406	228,771	330,677	1,149,863	378,273	77,109	196,703	497,779
1995–96	1,222,821	209,440	248,993	146,844	32,009	234,891	350,645	1,193,276	398,859	79,092	197,354	517,971
1996–97	1,289,237	218,877	261,418	159,042	33,820	244,847	371,233	1,249,984	418,416	82,062	203,779	545,727
1997–98	1,365,762	230,150	274,883	175,630	34,412	255,048	395,639	1,318,042	450,365	87,214	208,120	572,343
1998–99	1,434,029	239,672	290,993	189,309	33,922	270,628	409,505	1,402,369	483,259	93,018	218,957	607,134
1999–2000	1,541,322	249,178	309,290	211,661	36,059	291,950	443,186	1,506,797	521,612	101,336	237,336	646,512
2000–01	1,647,161	263,689	320,217	226,334	35,296	324,033	477,592	1,626,063	563,572	107,235	261,622	693,634
2001–02	1,684,879	279,191	324,123	202,832	28,152	360,546	490,035	1,736,866	594,694	115,295	285,464	741,413
2002–03	1,763,212	296,683	337,787	199,407	31,369	389,264	508,702	1,821,917	621,335	117,696	310,783	772,102
2003–04	1,887,397	317,941	361,027	215,215	33,716	423,112	536,386	1,908,543	655,182	117,215	340,523	795,622
2004–05	2,026,034	335,779	384,266	242,273	43,256	438,558	581,902	2,012,110	688,314	126,350	365,295	832,151
2005–06	2,197,475	364,559	417,735	268,667	53,081	452,975	640,458	2,123,663	728,917	136,502	373,846	884,398
2006–07	2,330,611	388,905	440,470	290,278	60,955	464,914	685,089	2,264,035	774,170	145,011	389,259	955,595
2007–08	2,421,977	409,540	449,945	304,902	57,231	477,441	722,919	2,406,183	826,061	153,831	408,920	1,017,372
2008–09	2,429,672	434,818	434,128	270,942	46,280	537,949	705,555	2,500,796	851,689	154,338	437,184	1,057,586
2009–10	2,510,846	443,947	435,571	261,510	44,108	623,801	701,909	2,542,231	860,118	155,912	460,230	1,065,971
2010–11	2,618,037	445,771	463,979	285,293	48,422	647,606	726,966	2,583,805	862,271	153,895	494,682	1,072,957
2011–12	2,598,745	445,854	482,172	307,897	48,877	580,604	733,341	2,595,947	870,321	159,498	491,158	1,074,971
2012–13	2,687,495	453,458	503,553	339,666	52,853	583,294	754,672	2,631,945	878,957	160,260	518,035	1,074,693
2013–14	2,768,260	465,100	522,014	343,001	54,558	602,175	781,412	2,723,022	906,016	165,051	547,889	1,104,066
2014–15	2,920,320	484,251	544,359	368,862	57,130	658,012	807,707	2,844,289	934,353	171,084	616,515	1,122,338
2015–16	3,018,372	504,593	559,625	375,310	53,581	693,989	831,274	2,964,238	973,025	177,982	655,532	1,157,699
2016–17	3,120,509	524,664	580,963	384,678	52,805	711,827	865,573	3,084,229	1,016,295	181,295	679,848	1,206,791
2017–18	3,303,773	547,515	618,091	429,820	56,871	741,523	909,953	3,213,995	1,048,521	194,646	709,463	1,261,365
2018–19	3,465,482	576,735	644,205	446,770	67,841	762,910	967,020	3,359,781	1,094,234	202,789	748,319	1,314,439
2019–20	3,627,999	601,048	652,427	424,741	60,791	912,083	976,909	3,513,437	1,133,735	205,810	794,119	1,379,774
2020–21	4,083,722	630,414	690,216	545,122	98,715	1,127,124	992,131	3,693,785	1,145,918	206,229	865,061	1,476,578
2021–22	4,546,703	648,416	790,197	600,817	159,686	1,263,436	1,084,151	4,096,470	1,291,742	211,836	971,555	1,621,338
2022–23	4,622,612	682,107	841,361	516,135	153,377	1,235,362	1,194,270	4,385,192	1,366,869	236,313	1,057,089	1,724,921

[1] Fiscal years not the same for all governments. See Note.

[2] Excludes revenues or expenditures of publicly owned utilities and liquor stores and of insurance-trust activities. Intergovernmental receipts and payments between State and local governments are also excluded.

[3] Includes motor vehicle license taxes, other taxes, and charges and miscellaneous revenues.

[4] Includes intergovernmental payments to the Federal Government.

[5] Includes expenditures for libraries, hospitals, health, employment security administration, veterans' services, air transportation, sea and inland port facilities, parking facilities, police protection, fire protection, correction, protective inspection and regulation, sewerage, natural resources, parks and recreation, housing and community development, solid waste management, financial administration, judicial and legal, general public buildings, other government administration, interest on general debt, and other general expenditures, not elsewhere classified.

Note: Except for States listed, data for fiscal years listed from 1963–64 to 2022–23 are the aggregation of data for government fiscal years that ended in the 12-month period from July 1 to June 30 of those years; Texas used August and Alabama and Michigan used September as end dates. Data for 1963 and earlier years include data for government fiscal years ending during that particular calendar year.

Source: Department of Commerce (Bureau of the Census).

Table B–51. U.S. Treasury securities outstanding by kind of obligation, 1985–2025

[Billions of dollars]

End of fiscal year or month	Total Treasury securities outstanding[1]	Marketable							Nonmarketable				
		Total[2]	Treasury bills	Treasury notes	Treasury bonds	Treasury inflation-protected securities			Total	U.S. savings securities[3]	Foreign series[4]	Government account series	Other[5]
						Total	Notes	Bonds					
1985	1,822.3	1,360.2	384.2	776.4	199.5	....	....	....	462.1	78.2	6.6	313.9	63.3
1986	2,124.9	1,564.3	410.7	896.9	241.7	....	....	....	560.5	87.8	4.1	365.9	102.8
1987	2,349.4	1,676.0	378.3	1,005.1	277.6	....	....	....	673.4	98.5	4.4	440.7	129.8
1988	2,601.4	1,802.9	398.5	1,089.6	299.9	....	....	....	798.5	107.8	6.3	536.5	148.0
1989	2,837.9	1,892.8	406.6	1,133.2	338.0	....	....	....	945.2	115.7	6.8	663.7	159.0
1990	3,212.7	2,092.8	482.5	1,218.1	377.2	....	....	....	1,119.9	123.9	36.0	779.4	180.6
1991	3,664.5	2,390.7	564.6	1,387.7	423.4	....	....	....	1,273.9	135.4	41.6	908.4	188.5
1992	4,063.8	2,677.5	634.3	1,566.3	461.8	....	....	....	1,386.3	150.3	37.0	1,011.0	188.0
1993	4,410.7	2,904.9	658.4	1,734.2	497.4	....	....	....	1,505.8	169.1	42.5	1,114.3	179.9
1994	4,691.7	3,091.6	697.3	1,867.5	511.8	....	....	....	1,600.1	178.6	42.0	1,211.7	167.8
1995	4,953.0	3,260.4	742.5	1,980.3	522.6	....	....	....	1,692.6	183.5	41.0	1,324.3	143.8
1996	5,220.8	3,418.4	761.2	2,098.7	543.5	....	....	....	1,802.4	184.1	37.5	1,454.7	126.1
1997	5,407.6	3,439.6	701.9	2,122.2	576.2	24.4	24.4	....	1,968.0	182.7	34.9	1,608.5	141.9
1998	5,518.7	3,331.0	637.6	2,009.1	610.4	58.8	41.9	17.0	2,187.6	180.8	35.1	1,777.3	194.4
1999	5,647.3	3,233.0	653.2	1,828.8	643.7	92.4	67.6	24.8	2,414.3	180.0	31.0	2,005.2	198.1
2000	5,622.1	2,992.8	616.2	1,611.3	635.3	115.0	81.6	33.4	2,629.4	177.7	25.4	2,242.9	183.3
2001[1]	5,807.5	2,930.7	734.9	1,433.0	613.0	134.9	95.1	39.7	2,876.7	186.5	18.3	2,492.1	179.9
2002	6,228.2	3,136.7	868.3	1,521.6	593.0	138.9	93.7	45.1	3,091.5	193.3	12.5	2,707.3	178.4
2003	6,783.2	3,460.7	918.2	1,799.5	576.9	166.1	120.0	46.1	3,322.5	201.6	11.0	2,912.2	197.7
2004	7,379.1	3,846.1	961.5	2,109.6	552.0	223.0	164.5	58.5	3,533.0	204.2	5.9	3,130.0	192.9
2005	7,932.7	4,084.9	914.3	2,328.8	520.7	307.1	229.1	78.0	3,847.8	203.6	3.1	3,380.6	260.5
2006	8,507.0	4,303.0	911.5	2,447.2	534.7	395.6	293.9	101.7	4,203.9	203.7	3.0	3,722.7	274.5
2007	9,007.7	4,448.1	958.1	2,458.0	561.1	456.9	335.7	121.2	4,559.5	197.1	3.0	4,026.8	332.6
2008	10,024.7	5,236.0	1,489.8	2,624.8	582.9	524.5	380.2	144.3	4,788.7	194.3	3.0	4,297.7	293.8
2009	11,909.8	7,009.7	1,992.5	3,773.8	679.8	551.7	396.2	155.5	4,900.1	192.5	4.9	4,454.3	248.4
2010	13,561.6	8,498.3	1,788.5	5,255.9	849.9	593.8	421.1	172.7	5,063.3	188.7	4.2	4,645.3	225.1
2011	14,790.3	9,624.5	1,477.5	6,412.5	1,020.4	705.7	509.4	196.3	5,165.8	185.1	3.0	4,793.9	183.8
2012	16,066.2	10,749.7	1,616.0	7,120.7	1,198.2	807.7	584.7	223.0	5,316.5	183.8	3.0	4,939.3	190.4
2013	16,738.2	11,596.2	1,530.0	7,758.0	1,366.2	936.4	685.5	250.8	5,142.0	180.0	3.0	4,803.1	156.0
2014	17,824.1	12,294.2	1,411.0	8,167.8	1,534.1	1,044.7	765.2	279.5	5,529.9	176.7	3.0	5,212.5	137.7
2015	18,150.6	12,853.8	1,358.0	8,372.7	1,688.3	1,135.4	832.1	303.3	5,296.9	172.8	.3	5,013.5	110.3
2016	19,573.4	13,660.6	1,647.0	8,631.0	1,825.5	1,210.0	881.6	328.3	5,912.8	167.5	.3	5,604.1	141.0
2017	20,244.9	14,199.8	1,801.9	8,805.5	1,951.7	1,286.5	933.3	353.2	6,045.1	161.7	.3	5,771.1	112.0
2018	21,516.1	15,278.0	2,239.9	9,154.4	2,127.8	1,376.4	993.4	383.0	6,238.0	156.8	.3	5,977.6	103.4
2019	22,719.4	16,347.3	2,377.0	9,762.8	2,319.1	1,455.7	1,044.9	410.8	6,372.1	152.3	.3	6,133.7	85.8
2020	26,945.4	20,374.9	5,028.9	10,663.8	2,673.5	1,523.2	1,092.7	430.5	6,570.5	148.6	.3	6,196.3	225.3
2021	28,428.9	21,878.7	3,714.1	12,578.9	3,347.6	1,652.7	1,180.2	472.5	6,550.2	143.6	.3	6,243.3	163.0
2022	30,928.9	23,694.1	3,644.6	13,703.8	3,874.4	1,840.5	1,306.8	533.7	7,234.8	166.2	.3	6,929.8	138.5
2023	33,167.4	25,753.8	5,260.4	13,729.5	4,246.9	1,935.9	1,364.9	571.1	7,413.7	175.7	.0	7,117.3	120.7
2024	35,464.7	27,728.3	6,004.8	14,343.4	4,708.3	2,051.7	1,447.0	604.8	7,736.3	161.1	.0	7,444.5	130.7
2025	37,637.6	29,714.7	6,397.0	15,392.5	5,142.6	2,088.0	1,500.2	587.8	7,922.8	150.9	.0	7,666.5	105.4
2024: Jan	34,191.1	26,510.3	5,780.2	13,831.2	4,401.5	1,966.3	1,392.6	573.7	7,680.8	169.3	.0	7,400.1	111.4
Feb	34,471.1	26,818.8	6,011.2	13,829.8	4,445.1	1,973.7	1,391.2	582.5	7,652.2	168.0	.0	7,374.1	110.2
Mar	34,586.9	26,951.8	6,062.9	13,863.2	4,467.1	1,999.7	1,414.3	585.4	7,635.0	166.8	.0	7,355.2	112.9
Apr	34,617.0	26,918.4	5,866.8	13,994.9	4,515.3	1,995.6	1,406.8	588.8	7,698.6	165.9	.0	7,417.1	115.6
May	34,667.1	27,042.2	5,866.8	14,013.8	4,560.4	2,025.8	1,433.1	592.7	7,624.9	164.8	.0	7,340.5	119.7
June	34,831.9	27,050.3	5,765.8	14,046.7	4,581.1	2,054.1	1,459.4	594.8	7,781.6	163.9	.0	7,499.8	118.0
July	35,104.8	27,362.4	5,915.8	14,227.0	4,631.8	2,023.7	1,427.9	595.8	7,742.4	162.8	.0	7,455.1	124.5
Aug	35,256.1	27,595.9	6,121.8	14,192.2	4,657.6	2,032.2	1,428.0	604.2	7,660.2	161.8	.0	7,372.5	125.9
Sept	35,464.7	27,728.3	6,004.8	14,343.4	4,708.3	2,051.7	1,447.0	604.8	7,736.3	161.1	.0	7,444.5	130.7
Oct	35,951.6	27,990.8	6,186.8	14,443.6	4,743.8	2,033.9	1,429.2	604.7	7,960.8	160.4	.0	7,666.2	134.2
Nov	36,087.5	28,223.2	6,389.8	14,409.5	4,759.3	2,054.0	1,448.3	605.7	7,864.3	159.6	.0	7,579.3	125.5
Dec	36,218.6	28,280.7	6,186.9	14,565.4	4,811.7	2,078.1	1,472.1	606.0	7,937.9	158.7	.0	7,662.0	117.3
2025: Jan	36,220.2	28,518.9	6,379.9	14,691.0	4,850.2	1,995.4	1,437.3	558.1	7,701.4	157.1	.0	7,440.3	103.9
Feb	36,218.9	28,628.6	6,368.0	14,736.0	4,886.2	2,005.3	1,437.2	568.1	7,590.4	156.0	.0	7,331.6	102.8
Mar	36,214.3	28,587.1	6,156.0	14,813.9	4,919.9	2,036.2	1,464.9	571.3	7,627.3	155.0	.0	7,367.2	105.0
Apr	36,213.6	28,575.8	6,060.0	14,907.8	4,957.5	2,027.6	1,453.8	573.8	7,637.8	154.1	.0	7,374.7	109.0
May	36,216.0	28,588.6	6,003.0	14,897.6	4,987.3	2,049.8	1,474.8	575.0	7,627.3	153.3	.0	7,365.9	108.2
June	36,211.5	28,657.3	5,784.1	15,073.6	5,040.1	2,081.0	1,504.9	576.2	7,554.2	152.7	.0	7,295.3	106.2
July	36,917.0	28,970.0	5,995.9	15,207.0	5,076.6	2,051.8	1,474.4	577.4	7,947.0	152.0	.0	7,688.7	106.3
Aug	37,274.5	29,407.1	6,369.0	15,211.3	5,094.9	2,065.2	1,478.4	586.8	7,867.4	151.4	.0	7,611.8	104.2
Sept	37,637.6	29,714.7	6,397.0	15,392.5	5,142.6	2,088.0	1,500.2	587.8	7,922.8	150.9	.0	7,666.5	105.4
Oct	38,040.1	29,998.6	6,593.2	15,505.7	5,172.7	2,078.7	1,489.2	589.5	8,041.5	150.6	.0	7,788.4	102.6
Nov	38,396.4	30,198.2	6,723.3	15,497.9	5,198.8	2,101.9	1,511.2	590.7	8,198.2	150.3	.0	7,950.0	97.9
Dec	38,514.0	30,271.3	6,547.3	15,636.9	5,249.0	2,133.9	1,541.8	592.1	8,242.7	149.9	.0	7,994.0	98.7

[1] Data beginning with January 2001 are interest-bearing and non-interest-bearing securities; prior data are interest-bearing securities only.

[2] Data from 1986 to 2002 and 2005 forward include Federal Financing Bank securities, not shown separately. Beginning with data for January 2014, includes Floating Rate Notes, not shown separately.

[3] Through 1996, series is U.S. savings bonds. Beginning 1997, includes U.S. retirement plan bonds, U.S. individual retirement bonds, and U.S. savings notes previously included in "other" nonmarketable securities.

[4] Nonmarketable certificates of indebtedness, notes, bonds, and bills in the Treasury foreign series of dollar-denominated and foreign-currency-denominated issues.

[5] Includes depository bonds; retirement plan bonds through 1996; Rural Electrification Administration bonds; State and local bonds; special issues held only by U.S. Government agencies and trust funds and the Federal home loan banks; for the period July 2003 through February 2004, depositary compensation securities; and for the period August 2008 through April 2016, Hope bonds for the HOPE For Homeowners Program.

Note: The fiscal year is on an October 1–September 30 basis.

Source: Department of the Treasury.

Table B–52. Estimated ownership of U.S. Treasury securities, 2011–2025

[Billions of dollars]

End of month	Total public debt [1]	Federal Reserve and Intra-governmental holdings [2]	Held by private investors									
			Total privately held	Depository institutions [3]	U.S. savings bonds [4]	Pension funds		Insurance companies	Mutual funds [6]	State and local governments	Foreign and international [7]	Other investors [8]
						Private [5]	State and local governments					
2011: Mar	14,270.0	5,958.9	8,311.1	321.0	186.7	215.8	157.9	253.5	749.4	585.3	4,481.4	1,360.1
June	14,343.1	6,220.4	8,122.7	279.4	186.0	251.8	158.0	254.8	753.7	572.2	4,690.6	976.1
Sept	14,790.3	6,328.0	8,462.4	293.8	185.1	373.6	155.7	259.6	788.7	557.9	4,912.1	935.8
Dec	15,222.8	6,439.6	8,783.3	279.7	185.2	391.9	160.7	297.3	927.9	562.2	5,006.9	971.4
2012: Mar	15,582.3	6,397.2	9,185.1	317.0	184.8	406.6	169.4	298.1	1,015.4	567.4	5,145.1	1,081.2
June	15,855.5	6,475.8	9,379.7	303.2	184.7	427.4	171.2	293.6	997.8	585.4	5,310.9	1,105.4
Sept	16,066.2	6,446.8	9,619.4	338.2	183.8	453.9	181.7	292.6	1,080.7	596.9	5,476.1	1,015.4
Dec	16,432.7	6,523.7	9,909.1	347.7	182.5	468.0	183.6	292.7	1,031.8	599.6	5,573.8	1,229.4
2013: Mar	16,771.6	6,656.8	10,114.8	338.9	181.7	463.4	193.4	284.3	1,066.7	615.6	5,725.0	1,245.7
June	16,738.2	6,773.3	9,964.9	300.2	180.9	444.5	187.7	281.3	1,000.1	612.6	5,595.0	1,362.6
Sept	16,738.2	6,834.2	9,904.0	293.2	180.0	347.8	187.5	276.6	986.1	624.3	5,652.8	1,355.7
Dec	17,352.0	7,205.3	10,146.6	321.1	179.2	464.9	181.3	274.5	983.3	633.6	5,792.6	1,316.2
2014: Mar	17,601.2	7,301.5	10,299.7	368.4	178.3	474.3	184.3	280.1	1,060.4	632.0	5,948.3	1,173.7
June	17,632.6	7,461.0	10,171.6	409.5	177.6	482.6	198.3	291.0	986.2	638.8	6,018.7	968.8
Sept	17,824.1	7,490.8	10,333.2	471.1	176.7	490.7	198.7	301.4	1,075.8	628.7	6,069.2	920.8
Dec	18,141.4	7,578.9	10,562.6	516.8	175.9	507.1	199.2	310.5	1,121.8	654.5	6,158.0	918.7
2015: Mar	18,152.1	7,521.3	10,630.8	518.1	174.9	447.8	176.7	308.5	1,170.4	663.3	6,172.6	998.4
June	18,152.0	7,536.5	10,615.5	518.5	173.9	373.8	185.7	307.7	1,139.8	652.8	6,161.0	1,102.2
Sept	18,150.6	7,488.7	10,661.9	519.1	172.8	305.3	171.0	310.0	1,195.1	646.0	6,104.0	1,238.7
Dec	18,922.2	7,711.2	11,211.0	547.4	171.6	504.7	174.5	310.1	1,318.3	680.9	6,144.2	1,359.1
2016: Mar	19,264.9	7,801.4	11,463.6	562.9	170.3	524.4	170.4	319.1	1,404.1	694.9	6,284.4	1,333.0
June	19,381.6	7,911.2	11,470.4	580.6	169.0	537.9	185.0	333.7	1,434.2	712.6	6,279.1	1,238.3
Sept	19,573.4	7,863.5	11,709.9	626.8	167.5	545.6	203.8	345.2	1,600.4	710.9	6,155.9	1,353.8
Dec	19,976.9	8,005.6	11,971.3	663.1	165.8	538.0	218.8	334.2	1,705.4	717.3	6,002.8	1,625.9
2017: Mar	19,846.4	7,941.1	11,905.3	657.4	164.2	444.2	239.5	342.6	1,715.2	724.6	6,075.3	1,542.3
June	19,844.6	7,943.4	11,901.1	620.5	162.8	425.9	262.8	352.8	1,645.8	710.1	6,151.9	1,568.5
Sept	20,244.9	8,036.9	12,208.0	610.5	161.7	570.8	266.5	364.3	1,739.6	704.0	6,301.9	1,488.7
Dec	20,492.7	8,132.1	12,360.6	636.7	160.4	432.1	289.4	377.9	1,850.8	735.0	6,211.3	1,667.1
2018: Mar	21,089.9	8,086.6	13,003.3	637.8	159.0	589.7	300.1	366.9	2,048.2	715.8	6,223.4	1,962.5
June	21,195.3	8,106.9	13,088.5	663.1	157.8	605.0	307.3	360.2	1,902.9	726.8	6,225.0	2,140.4
Sept	21,516.1	8,068.1	13,447.9	682.0	156.8	615.3	301.7	361.3	1,957.2	730.7	6,225.9	2,417.0
Dec	21,974.1	8,095.0	13,879.1	769.7	155.7	637.3	367.9	360.5	2,094.9	713.2	6,270.1	2,509.9
2019: Mar	22,028.0	7,999.1	14,028.9	769.5	154.5	443.6	357.6	366.8	2,189.2	752.7	6,474.0	2,521.0
June	22,023.5	7,945.2	14,078.4	808.2	153.4	470.4	386.5	369.3	2,037.0	751.4	6,625.9	2,476.3
Sept	22,719.4	8,023.6	14,695.8	909.4	152.3	691.1	343.3	372.7	2,319.7	701.8	6,923.5	2,281.9
Dec	23,201.4	8,359.9	14,841.5	935.1	151.3	705.3	333.4	374.8	2,412.8	719.1	6,844.2	2,365.5
2020: Mar	23,686.9	9,279.7	14,407.2	947.5	150.0	758.9	330.4	402.6	2,501.7	715.5	6,949.5	1,651.0
June	26,477.4	10,157.7	16,319.6	1,157.9	149.8	766.9	290.1	408.9	3,695.4	872.7	7,052.1	1,925.9
Sept	26,945.4	10,371.9	16,573.5	1,240.7	148.6	772.6	318.1	420.3	3,724.9	941.9	7,069.2	1,937.3
Dec	27,747.8	10,809.2	16,938.6	1,264.8	147.1	770.6	354.7	404.7	3,784.6	991.2	7,070.7	2,150.2
2021: Mar	28,132.6	11,095.5	17,037.1	1,341.7	145.7	761.2	346.3	398.7	3,951.4	993.9	7,038.3	2,059.9
June	28,529.4	11,382.9	17,146.5	1,433.2	144.6	787.5	396.2	424.6	3,778.5	1,304.6	7,518.9	1,358.3
Sept	28,428.9	11,579.1	16,849.8	1,540.1	143.6	622.7	391.0	426.5	3,237.9	1,339.8	7,570.9	1,577.2
Dec	29,617.2	12,125.9	17,491.3	1,733.8	146.2	809.6	414.1	422.4	3,411.7	1,368.1	7,740.4	1,445.1
2022: Mar	30,401.0	12,281.3	18,119.7	1,753.5	149.7	803.4	382.2	376.3	3,290.6	1,348.0	7,604.2	2,411.7
June	30,568.6	12,399.7	18,168.9	1,807.2	160.4	785.3	368.6	367.2	2,890.3	1,387.5	7,416.9	2,985.5
Sept	30,928.9	12,264.7	18,664.2	1,736.3	166.2	756.0	336.5	368.4	2,604.3	1,381.8	7,251.5	4,063.1
Dec	31,419.9	12,401.4	19,018.5	1,713.3	173.5	733.6	321.8	392.8	2,408.7	1,395.9	7,194.7	4,684.4
2023: Mar	31,458.4	12,044.6	19,413.8	1,615.4	177.8	486.3	353.5	405.7	2,412.7	1,453.4	7,468.6	5,040.3
June	32,332.3	11,976.9	20,355.4	1,555.8	178.2	761.8	348.3	408.4	2,591.9	1,456.2	7,563.2	5,491.5
Sept	33,167.4	11,790.1	21,377.4	1,554.8	175.7	754.7	366.5	428.0	3,086.8	1,431.2	7,509.1	6,070.5
Dec	34,001.5	11,848.1	22,153.4	1,646.4	171.9	484.8	402.7	445.6	3,644.9	1,489.9	7,940.0	5,927.2
2024: Mar	34,592.4	11,689.3	22,903.1	1,737.8	166.8	488.2	420.6	471.9	3,954.0	1,504.6	8,107.9	6,051.2
June	34,831.9	11,672.4	23,159.5	1,727.4	163.9	496.6	455.8	551.4	3,857.8	1,537.5	8,299.3	6,069.8
Sept	35,464.7	11,521.7	23,943.0	1,802.7	161.1	531.6	493.7	619.1	4,157.9	1,615.3	8,766.3	5,795.3
Dec	36,218.6	11,672.7	24,545.9	1,852.8	158.7	523.5	468.6	549.8	4,500.5	1,565.1	8,619.3	6,307.6
2025: Mar	36,214.3	11,523.6	24,690.7	1,878.2	155.0	550.1	484.1	623.8	4,420.8	1,573.9	9,054.2	5,950.5
June	36,211.5	11,466.2	24,745.3	1,979.9	152.7	568.5	494.4	590.1	4,151.8	1,619.4	9,090.3	6,098.1
Sept	37,637.6	11,556.1	26,081.4	2,067.1	150.9	590.4	496.5	658.0	4,808.5	1,660.3	9,234.4	6,415.4
Dec	38,514.0	11,895.1	26,618.9	....	149.9	....	....	....	....	....	9,271.0	....

[1] Face value.
[2] Federal Reserve holdings exclude Treasury securities held under repurchase agreements.
[3] Includes U.S. chartered depository institutions, foreign banking offices in U.S., banks in U.S. affiliated areas, credit unions, and bank holding companies.
[4] Current accrual value includes myRA.
[5] Includes Treasury securities held by the Federal Employees Retirement System Thrift Savings Plan "G Fund."
[6] Includes money market mutual funds, mutual funds, and closed-end investment companies.
[7] Includes nonmarketable foreign series, Treasury securities, and Treasury deposit funds. Excludes Treasury securities held under repurchase agreements in custody accounts at the Federal Reserve Bank of New York. Estimates reflect benchmarks to this series at differing intervals; for further detail, see *Treasury Bulletin* and http://www.treasury.gov/resource-center/data-chart-center/tic/pages/index.aspx.
[8] Includes individuals, Government-sponsored enterprises, brokers and dealers, bank personal trusts and estates, corporate and noncorporate businesses, and other investors.

Source: Department of the Treasury.

Corporate Profits and Finance

TABLE B–53. Corporate profits with inventory valuation and capital consumption adjustments, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Corporate profits with inventory valuation and capital consumption adjustments	Taxes on corporate income	Corporate profits after tax with inventory valuation and capital consumption adjustments		
			Total	Net dividends	Undistributed profits with inventory valuation and capital consumption adjustments
1975	138.9	46.3	92.6	38.3	54.3
1976	174.3	59.4	114.9	44.9	70.0
1977	205.8	68.5	137.3	50.7	86.6
1978	238.6	77.9	160.7	57.8	102.9
1979	249.2	80.7	168.5	67.0	101.5
1980	223.1	75.5	147.6	76.0	71.6
1981	245.9	70.3	175.6	83.9	91.7
1982	227.8	51.3	176.5	88.5	88.0
1983	277.9	66.4	211.5	96.4	115.1
1984	337.3	81.5	255.8	102.0	153.8
1985	353.1	81.6	271.5	111.7	159.7
1986	323.6	91.9	231.7	121.1	110.6
1987	370.8	112.7	258.1	119.9	138.2
1988	416.2	124.3	292.0	145.5	146.5
1989	418.7	124.4	294.3	179.3	115.0
1990	419.3	121.8	297.5	193.6	104.0
1991	448.7	117.8	330.9	202.1	128.8
1992	481.3	131.9	349.4	206.5	142.9
1993	530.7	155.0	375.7	221.7	154.0
1994	634.1	172.7	461.4	258.6	202.9
1995	716.7	194.4	522.2	283.5	238.7
1996	803.6	211.4	592.2	323.9	268.3
1997	889.9	224.8	665.1	359.9	305.2
1998	835.2	221.8	613.4	386.6	226.7
1999	866.8	227.4	639.4	375.4	264.0
2000	826.4	233.4	593.0	413.1	179.9
2001	787.2	170.1	617.0	402.9	214.1
2002	930.4	160.7	769.7	427.5	342.2
2003	1,077.1	213.8	863.3	455.0	408.3
2004	1,320.5	278.5	1,042.0	579.8	462.2
2005	1,530.0	379.7	1,150.3	579.3	571.0
2006	1,696.1	430.1	1,266.0	715.8	550.1
2007	1,595.8	391.8	1,204.0	818.3	385.7
2008	1,345.6	255.9	1,089.7	841.4	248.3
2009	1,425.7	203.9	1,221.7	634.7	587.0
2010	1,774.5	272.3	1,502.2	636.0	866.2
2011	1,862.4	280.8	1,581.7	788.0	793.7
2012	2,057.7	334.6	1,723.1	945.3	777.8
2013	2,081.1	362.4	1,718.7	997.3	721.4
2014	2,212.8	406.9	1,805.9	1,059.9	746.0
2015	2,173.1	396.1	1,777.0	1,128.7	648.3
2016	2,144.3	376.0	1,768.3	1,139.4	628.9
2017	2,225.2	297.2	1,928.1	1,253.9	674.2
2018	2,365.2	297.4	2,067.7	1,319.9	747.8
2019	2,471.3	297.2	2,174.1	1,416.8	757.3
2020	2,411.5	311.1	2,100.5	1,492.3	608.1
2021	3,098.0	468.9	2,629.1	1,887.0	742.1
2022	3,362.6	600.6	2,762.0	2,027.9	734.1
2023	3,617.3	613.0	3,004.3	2,154.5	849.9
2024	3,801.8	680.3	3,121.4	2,225.7	895.7
2025 p	....	....	....	2,261.5	....
2022: I	3,172.5	584.3	2,588.2	2,010.7	577.5
II	3,380.6	604.6	2,776.1	2,017.3	758.7
III	3,477.1	601.0	2,876.0	2,026.9	849.1
IV	3,420.2	612.4	2,807.9	2,056.7	751.1
2023: I	3,524.3	608.1	2,916.2	2,099.9	816.3
II	3,532.5	600.9	2,931.7	2,155.0	776.7
III	3,648.8	612.3	3,036.5	2,163.6	873.0
IV	3,763.7	630.8	3,132.9	2,199.4	933.5
2024: I	3,687.5	661.6	3,025.9	2,225.0	801.0
II	3,793.1	682.5	3,110.6	2,232.6	878.0
III	3,755.7	677.2	3,078.5	2,221.4	857.1
IV	3,970.6	700.0	3,270.6	2,223.9	1,046.8
2025: I	3,922.9	670.4	3,252.4	2,255.7	996.8
II	3,929.7	670.3	3,259.4	2,257.8	1,001.7
III	4,105.2	693.6	3,411.7	2,260.8	1,150.9
IV p	....	....	....	2,271.7	....

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–54. Corporate profits by industry, 1975–2025

[Billions of dollars; quarterly data at seasonally adjusted annual rates]

Year or quarter	Corporate profits with inventory valuation adjustment and without capital consumption adjustment													
	Total	Domestic industries												Rest of the world
		Total	Financial			Nonfinancial								
			Total	Federal Reserve banks	Other	Total	Manufacturing	Transportation[1]	Utilities	Wholesale trade	Retail trade	Information	Other	
SIC:[2]														
1975	144.2	129.6	20.4	5.6	14.8	109.2	63.0	11.7	....	14.3	8.4	....	11.8	14.6
1976	182.1	165.6	25.6	5.9	19.7	140.0	82.5	17.5	....	13.7	10.9	....	15.3	16.5
1977	212.8	193.7	32.6	6.1	26.5	161.1	91.5	21.2	....	16.4	12.8	....	19.2	19.1
1978	246.7	223.8	40.8	7.6	33.1	183.1	105.8	25.5	....	16.7	13.1	....	22.0	22.9
1979	261.2	226.6	42.0	9.4	32.6	184.6	107.1	21.6	....	20.0	10.7	....	25.2	34.6
1980	240.2	204.7	34.8	11.8	23.0	169.9	97.6	22.2	....	18.5	7.0	....	24.6	35.5
1981	250.4	220.7	28.7	14.4	14.3	192.0	112.5	25.1	....	23.7	10.7	....	20.1	29.7
1982	222.7	190.1	25.1	15.2	9.9	165.0	89.6	28.1	....	20.7	14.3	....	12.3	32.6
1983	254.6	219.5	34.3	14.6	19.7	185.2	97.3	34.3	....	21.9	19.3	....	12.3	35.1
1984	293.6	257.1	34.1	16.4	17.7	223.0	114.2	44.7	....	30.4	21.5	....	12.1	36.6
1985	288.3	250.2	45.1	16.3	28.8	205.1	107.1	39.1	....	24.6	22.8	....	11.4	38.1
1986	272.4	233.0	55.5	15.5	40.0	177.4	75.6	39.3	....	24.4	23.4	....	14.7	39.5
1987	319.4	271.4	65.1	16.2	48.9	206.2	101.8	42.0	....	18.9	23.3	....	20.3	48.0
1988	368.0	311.0	68.7	18.1	50.6	242.3	132.8	46.8	....	20.4	19.8	....	22.5	57.0
1989	377.5	310.3	82.7	20.6	62.1	227.6	122.3	41.9	....	22.0	20.9	....	20.5	67.1
1990	392.8	316.7	91.2	21.8	69.4	225.5	120.9	43.5	....	19.4	20.3	....	21.3	76.1
1991	430.4	353.9	116.6	20.7	95.9	237.3	109.3	54.5	....	22.3	26.9	....	24.3	76.5
1992	463.9	390.8	136.5	18.3	118.2	254.2	109.8	57.7	....	25.3	28.1	....	33.4	73.1
1993	508.1	431.1	126.1	16.7	109.4	305.1	122.9	70.1	....	26.5	39.7	....	45.8	76.9
1994	598.6	520.6	135.2	18.5	116.7	385.4	162.6	83.9	....	31.4	46.3	....	61.2	78.0
1995	677.4	584.5	150.8	22.9	127.8	433.7	199.8	89.0	....	28.0	43.9	....	73.1	92.9
1996	755.9	653.9	161.9	22.5	139.4	492.0	220.4	91.2	....	39.9	52.0	....	88.5	102.0
1997	831.1	723.6	182.4	24.3	158.1	541.2	248.5	81.0	....	48.1	63.4	....	100.3	107.6
1998	770.5	667.8	165.6	25.6	140.0	502.1	220.4	72.6	....	50.6	72.3	....	86.3	102.8
1999	793.8	672.0	186.4	26.7	159.8	485.6	219.4	49.3	....	46.8	72.5	....	97.6	121.7
2000	769.6	624.0	189.6	31.2	158.3	434.4	205.9	33.8	....	50.4	68.9	....	75.4	145.7
NAICS:[2]														
1998	770.5	667.8	165.6	25.6	140.0	502.1	193.4	12.7	33.3	57.3	62.6	33.0	109.7	102.8
1999	793.8	672.0	186.4	26.7	159.8	485.6	188.0	7.2	34.4	55.5	48.4	28.5	123.5	121.7
2000	769.6	624.0	189.6	31.2	158.3	434.4	175.5	9.5	24.3	59.5	51.5	–11.9	126.1	145.7
2001	725.6	556.8	223.7	28.9	194.8	333.1	75.1	–.7	22.5	51.1	71.3	–26.4	140.1	168.8
2002	815.7	659.0	280.4	23.5	256.9	378.6	78.2	–6.5	10.5	53.5	83.3	5.0	154.6	156.8
2003	976.1	817.2	317.9	20.0	297.8	499.3	123.8	4.4	13.2	56.6	87.9	28.1	185.4	158.9
2004	1,248.3	1,053.2	368.3	20.0	348.3	684.9	186.1	11.9	21.1	72.7	94.0	61.6	237.5	195.1
2005	1,670.2	1,444.5	436.1	26.5	409.6	1,008.4	279.7	28.4	32.4	96.0	123.3	100.7	347.9	225.7
2006	1,861.7	1,622.0	443.3	33.8	409.5	1,178.6	352.9	40.8	55.2	105.0	133.6	115.2	376.0	239.7
2007	1,770.5	1,432.8	345.8	36.0	309.8	1,087.0	321.1	23.3	49.6	102.8	119.4	120.5	350.3	337.8
2008	1,403.9	1,013.7	138.3	35.1	103.2	875.4	240.0	29.3	30.4	92.7	82.2	98.8	302.1	390.2
2009	1,508.3	1,159.5	389.5	47.3	342.2	770.0	164.7	21.7	23.4	88.9	107.9	87.0	276.4	348.8
2010	1,831.1	1,445.3	437.5	71.6	365.9	1,007.8	281.8	44.6	30.6	99.3	115.9	102.3	333.4	385.8
2011	1,802.2	1,389.6	414.3	76.0	338.3	975.4	296.0	30.6	10.2	97.2	115.1	95.7	330.6	412.6
2012	2,203.9	1,798.6	519.0	71.8	447.2	1,279.6	403.0	54.4	13.8	137.9	155.7	112.0	402.8	405.4
2013	2,234.1	1,835.2	480.7	79.7	401.0	1,354.5	440.0	45.0	27.8	146.3	153.3	138.6	403.5	398.8
2014	2,356.1	1,951.2	536.1	103.5	432.7	1,415.1	453.1	55.7	32.4	151.2	157.8	131.0	433.9	404.9
2015	2,295.5	1,900.3	512.4	100.7	411.7	1,387.9	421.5	61.1	19.9	153.9	170.4	134.8	426.3	395.2
2016	2,245.2	1,825.3	511.8	92.0	419.8	1,313.5	327.9	64.7	9.4	130.0	176.6	163.3	441.6	419.9
2017	2,247.5	1,748.6	491.6	78.3	413.4	1,257.0	299.9	59.6	13.8	127.4	151.7	143.0	461.5	498.9
2018	2,266.6	1,746.0	478.9	68.1	410.8	1,267.1	361.7	45.1	16.5	108.2	145.6	115.2	474.6	520.6
2019	2,376.0	1,843.0	575.0	59.2	515.8	1,268.0	353.6	34.5	11.7	125.8	149.5	134.5	458.3	533.0
2020	2,503.8	2,058.5	535.9	85.4	450.5	1,522.7	332.6	39.2	27.4	158.4	248.6	120.5	596.1	445.3
2021	3,110.4	2,710.2	643.9	108.3	535.6	2,066.4	480.4	94.3	33.3	168.1	301.9	152.4	836.0	400.2
2022	3,445.9	2,996.4	682.1	59.5	622.7	2,314.2	646.7	104.1	38.0	250.1	290.9	180.8	803.7	449.5
2023	3,888.2	3,415.1	678.0	–114.7	792.7	2,737.1	728.0	124.0	56.4	291.3	368.4	231.6	937.4	473.1
2024	4,170.2	3,712.7	801.4	–78.1	879.5	2,911.3	704.3	123.3	64.6	293.8	409.1	287.8	1,028.4	457.6
2023: I	3,798.4	3,334.6	702.7	–103.7	806.4	2,631.9	734.5	120.2	52.2	293.7	333.4	214.9	883.0	463.8
II	3,805.8	3,326.1	654.8	–131.6	786.4	2,671.3	695.8	133.0	61.8	285.3	357.9	231.4	906.1	479.7
III	3,914.8	3,419.1	660.1	–131.8	792.0	2,758.9	726.9	118.8	57.0	281.4	382.8	236.2	955.8	495.8
IV	4,033.9	3,580.8	694.5	–91.6	786.1	2,886.3	754.8	123.9	54.4	305.0	399.4	244.0	1,004.8	453.0
2024: I	4,045.5	3,601.7	779.1	–92.7	871.8	2,822.6	664.5	125.2	62.8	292.0	394.5	265.0	1,018.6	443.7
II	4,158.6	3,708.8	789.8	–82.3	872.0	2,919.1	721.2	123.6	66.5	295.7	398.4	285.7	1,028.0	449.7
III	4,128.5	3,715.4	786.8	–91.6	878.4	2,928.5	703.6	120.7	63.8	291.7	420.9	292.1	1,035.7	413.1
IV	4,348.5	3,824.7	849.9	–45.8	895.6	2,974.8	727.8	123.6	65.3	296.0	422.6	308.3	1,031.2	523.8
2025: I	3,982.4	3,496.6	852.3	–26.8	879.2	2,644.2	591.1	101.2	56.1	266.5	390.2	271.0	968.0	485.8
II	3,982.9	3,511.4	858.5	–42.1	900.7	2,652.8	648.6	92.6	52.8	218.1	403.0	270.8	967.0	471.5
III	4,195.8	3,673.9	912.1	–30.4	942.4	2,761.9	704.7	94.1	60.6	206.2	402.6	304.0	989.6	521.9

[1] Data on Standard Industrial Classification (SIC) basis include transportation and public utilities. Those on North American Industry Classification System (NAICS) basis include transporation and warehousing. Utilities classified separately in NAICS (as shown beginning 1998).

[2] SIC-based industry data use the 1987 SIC for data beginning in 1987 and the 1972 SIC for prior data. NAICS-based data use 2017 NAICS.

Note: Industry data on SIC basis and NAICS basis are not necessarily the same and are not strictly comparable.

Source: Department of Commerce (Bureau of Economic Analysis).

TABLE B–55. Historical stock prices and yields, 1949–2003

End of year	Common stock prices (end of period)[1]									Common stock yields (Standard & Poor's) (percent)[5]	
	New York Stock Exchange (NYSE) indexes[2]						Dow Jones industrial average[2]	Standard & Poor's composite index (1941–43=10)[2]	Nasdaq composite index (Feb. 5, 1971=100)[2]	Dividend-price ratio[6]	Earnings-price ratio[7]
	Composite (Dec. 31, 2002=5,000)[3]	December 31, 1965=50									
		Composite	Industrial	Transportation	Utility[4]	Finance					
1949	....	....	....	....	....	....	200.52	16.76	....	6.59	15.48
1950	....	....	....	....	....	....	235.42	20.41	....	6.57	13.99
1951	....	....	....	....	....	....	269.23	23.77	....	6.13	11.82
1952	....	....	....	....	....	....	291.90	26.57	....	5.80	9.47
1953	....	13.60	....	....	....	....	280.90	24.81	....	5.80	10.26
1954	....	19.40	....	....	....	....	404.39	35.98	....	4.95	8.57
1955	....	23.71	....	....	....	....	488.40	45.48	....	4.08	7.95
1956	....	24.35	....	....	....	....	499.47	46.67	....	4.09	7.55
1957	....	21.11	....	....	....	....	435.69	39.99	....	4.35	7.89
1958	....	28.85	....	....	....	....	583.65	55.21	....	3.97	6.23
1959	....	32.15	....	....	....	....	679.36	59.89	....	3.23	5.78
1960	....	30.94	....	....	....	....	615.89	58.11	....	3.47	5.90
1961	....	38.93	....	....	....	....	731.14	71.55	....	2.98	4.62
1962	....	33.81	....	....	....	....	652.10	63.10	....	3.37	5.82
1963	....	39.92	....	....	....	....	762.95	75.02	....	3.17	5.50
1964	....	45.65	....	....	....	....	874.13	84.75	....	3.01	5.32
1965	528.69	50.00	50.00	50.00	50.00	50.00	969.26	92.43	....	3.00	5.59
1966	462.28	43.72	43.13	47.56	90.38	44.91	785.69	80.33	....	3.40	6.63
1967	569.18	53.83	56.59	49.66	86.76	53.80	905.11	96.47	....	3.20	5.73
1968	622.79	58.90	61.69	56.27	91.64	76.48	943.75	103.86	....	3.07	5.67
1969	544.86	51.53	54.74	37.85	77.54	67.87	800.36	92.06	....	3.24	6.08
1970	531.12	50.23	52.91	35.70	81.64	64.34	838.92	92.15	....	3.83	6.45
1971	596.68	56.43	60.53	49.56	78.78	73.83	890.20	102.09	114.12	3.14	5.41
1972	681.79	64.48	70.33	47.69	84.34	83.34	1,020.02	118.05	133.73	2.84	5.50
1973	547.93	51.82	56.60	37.53	68.66	64.51	850.86	97.55	92.19	3.06	7.12
1974	382.03	36.13	39.15	26.36	53.30	39.84	616.24	68.56	59.82	4.47	11.59
1975	503.73	47.64	52.73	32.98	66.94	45.20	852.41	90.19	77.62	4.31	9.15
1976	612.01	57.88	63.36	42.57	82.54	59.23	1,004.65	107.46	97.88	3.77	8.90
1977	555.12	52.50	56.43	40.50	81.08	53.85	831.17	95.10	105.05	4.62	10.79
1978	566.96	53.62	58.87	41.58	75.38	55.01	805.01	96.11	117.98	5.28	12.03
1979	655.04	61.95	70.24	50.64	73.80	63.45	838.74	107.94	151.14	5.47	13.46
1980	823.27	77.86	91.52	76.19	76.90	70.83	963.99	135.76	202.34	5.26	12.66
1981	751.90	71.11	80.89	66.85	80.10	73.68	875.00	122.55	195.84	5.20	11.96
1982	856.79	81.03	93.02	73.63	86.94	85.00	1,046.54	140.64	232.41	5.81	11.60
1983	1,006.41	95.18	111.35	98.09	92.48	94.32	1,258.64	164.93	278.60	4.40	8.03
1984	1,013.91	96.38	110.58	90.61	103.14	97.63	1,211.57	167.24	247.35	4.64	10.02
1985	1,285.66	121.59	139.27	113.97	126.38	131.29	1,546.67	211.28	324.93	4.25	8.12
1986	1,465.31	138.59	160.11	117.65	147.54	140.05	1,895.95	242.17	348.83	3.49	6.09
1987	1,461.61	138.23	167.04	118.57	134.62	114.57	1,938.83	247.08	330.47	3.08	5.48
1988	1,652.25	156.26	189.42	146.60	149.38	128.19	2,168.57	277.72	381.38	3.64	8.01
1989	2,062.30	195.04	232.76	178.33	204.00	156.15	2,753.20	353.40	454.82	3.45	7.42
1990	1,908.45	180.49	223.60	141.49	182.60	122.06	2,633.66	330.22	373.84	3.61	6.47
1991	2,426.04	229.44	285.82	201.87	204.26	172.68	3,168.83	417.09	586.34	3.24	4.79
1992	2,539.92	240.21	294.39	214.72	209.66	200.83	3,301.11	435.71	676.95	2.99	4.22
1993	2,739.44	259.08	315.26	270.48	229.92	216.82	3,754.09	466.45	776.80	2.78	4.46
1994	2,653.37	250.94	318.10	222.46	198.41	195.80	3,834.44	459.27	751.96	2.82	5.83
1995	3,484.15	329.51	413.29	301.96	252.90	274.25	5,117.12	615.93	1,052.13	2.56	6.09
1996	4,148.07	392.30	494.38	352.30	259.91	351.17	6,448.27	740.74	1,291.03	2.19	5.24
1997	5,405.19	511.19	630.38	466.25	335.19	495.96	7,908.25	970.43	1,570.35	1.77	4.57
1998	6,299.94	595.81	743.65	482.38	445.94	521.42	9,181.43	1,229.23	2,192.69	1.49	3.46
1999	6,876.10	650.30	828.21	466.70	511.15	516.61	11,497.12	1,469.25	4,069.31	1.25	3.17
2000	6,945.57	656.87	803.29	462.76	440.54	646.95	10,786.85	1,320.28	2,470.52	1.15	3.63
2001	6,236.39	589.80	735.71	438.81	329.84	593.69	10,021.50	1,148.08	1,950.40	1.32	2.95
2002	5,000.00	472.87	583.95	395.81	233.08	510.46	8,341.63	879.82	1,335.51	1.61	2.92
2003[3]	6,440.30	572.56	735.50	519.58	265.58	655.12	10,453.92	1,111.92	2,003.37	1.77	3.84

[1] End of period.
[2] Includes stocks as follows: for NYSE, all stocks listed; for Dow Jones industrial average, 30 stocks; for Standard & Poor's (S&P) composite index, 500 stocks; and for Nasdaq composite index, over 5,000.
[3] The NYSE relaunched the composite index on January 9, 2003, incorporating new definitions, methodology, and base value. (The composite index based on December 31, 1965=50 was discontinued.) Subset indexes on financial, energy, and health care were released by the NYSE on January 8, 2004 (see Table B–56). NYSE indexes shown in this table for industrials, utilities, transportation, and finance were discontinued.
[4] Effective April 1993, the NYSE doubled the value of the utility index to facilitate trading of options and futures on the index. Indexes prior to 1993 reflect the doubling.
[5] Based on 500 stocks in the S&P composite index.
[6] Aggregate cash dividends (based on latest known annual rate) divided by aggregate market value based on Wednesday closing prices. Monthly data are averages of weekly figures; annual data are averages of monthly figures.
[7] Quarterly data are ratio of earnings (after taxes) for four quarters ending with particular quarter-to-price index for last day of that quarter. Annual data are averages of quarterly ratios.

Sources: New York Stock Exchange, Dow Jones & Co., Inc., Standard & Poor's, and Nasdaq Stock Market.

Table B–56. Common stock prices and yields, 2000–2025

End of year or month	Common stock prices (end of period)[1]							Common stock yields (Standard & Poor's) (percent)[4]	
	New York Stock Exchange (NYSE) indexes (December 31, 2002=5,000)[2,3]				Dow Jones industrial average[2]	Standard & Poor's composite index (1941–43=10)[2]	Nasdaq composite index (Feb. 5, 1971=100)[2]	Dividend-price ratio[5]	Earnings-price ratio[6]
	Composite	Financial	Energy	Health care					
2000	6,945.57	......	......	......	10,786.85	1,320.28	2,470.52	1.15	3.63
2001	6,236.39	......	......	......	10,021.50	1,148.08	1,950.40	1.32	2.95
2002	5,000.00	5,000.00	5,000.00	5,000.00	8,341.63	879.82	1,335.51	1.61	2.92
2003	6,440.30	6,676.42	6,321.05	5,925.97	10,453.92	1,111.92	2,003.37	1.77	3.84
2004	7,250.06	7,493.92	7,934.49	6,119.07	10,783.01	1,211.92	2,175.44	1.72	4.89
2005	7,753.95	7,996.94	10,109.61	6,458.20	10,717.50	1,248.29	2,205.32	1.83	5.36
2006	9,139.02	9,552.22	11,967.88	6,958.64	12,463.15	1,418.30	2,415.29	1.87	5.78
2007	9,740.32	8,300.68	15,283.81	7,170.42	13,264.82	1,468.36	2,652.28	1.86	5.29
2008	5,757.05	3,848.42	9,434.01	5,340.73	8,776.39	903.25	1,577.03	2.37	3.54
2009	7,184.96	4,721.02	11,415.03	6,427.27	10,428.05	1,115.10	2,269.15	2.40	1.86
2010	7,964.02	4,958.62	12,520.29	6,501.53	11,577.51	1,257.64	2,652.87	1.98	6.04
2011	7,477.03	4,062.88	12,409.61	7,045.61	12,217.56	1,257.60	2,605.15	2.05	6.77
2012	8,443.51	5,114.54	12,606.06	7,904.06	13,104.14	1,426.19	3,019.51	2.24	6.20
2013	10,400.33	6,353.68	14,557.54	10,245.31	16,576.66	1,848.36	4,176.59	2.14	5.57
2014	10,839.24	6,707.16	12,533.54	11,967.04	17,823.07	2,058.90	4,736.05	2.04	5.25
2015	10,143.42	6,305.68	9,343.81	12,385.19	17,425.03	2,043.94	5,007.41	2.10	4.59
2016	11,056.89	6,961.56	11,503.76	11,907.20	19,762.60	2,238.83	5,383.12	2.19	4.17
2017	12,808.84	8,235.89	11,470.58	14,220.58	24,719.22	2,673.61	6,903.39	1.97	4.22
2018	11,374.39	6,969.48	9,341.44	15,158.38	23,327.46	2,506.85	6,635.28	1.90	4.66
2019	13,913.03	8,700.11	10,037.30	18,070.10	28,538.44	3,230.78	8,972.60	1.93	4.53
2020	14,524.80	8,292.85	6,502.78	20,045.67	30,606.48	3,756.07	12,888.28	1.89	3.28
2021	17,164.13	10,175.36	9,146.18	24,345.65	36,338.30	4,766.18	15,644.97	1.38	3.79
2022	15,184.31	8,668.77	13,051.89	23,439.84	33,147.25	3,839.50	10,466.48	1.57	4.79
2023	16,852.89	9,881.78	13,259.54	24,167.14	37,689.54	4,769.83	15,011.35	1.62	4.17
2024	19,097.11	12,043.30	13,127.08	24,331.86	42,544.22	5,881.63	19,310.79	1.34	3.57
2025	22,003.93	14,322.17	14,184.03	26,861.56	48,063.29	6,845.50	23,241.99	1.24	......
2023: Jan	16,036.39	9,432.80	13,434.64	23,027.98	34,086.04	4,076.60	11,584.55	1.71	......
Feb	15,428.97	9,139.29	12,724.58	22,041.91	32,656.70	3,970.15	11,455.54	1.67	......
Mar	15,374.91	8,494.23	12,455.61	22,550.28	33,274.15	4,109.31	12,221.91	1.73	4.26
Apr	15,545.88	8,699.82	12,895.29	23,395.71	34,098.16	4,169.48	12,226.58	1.67	......
May	14,887.14	8,346.55	11,635.80	22,397.48	32,908.27	4,179.83	12,935.29	1.67	......
June	15,875.91	8,907.96	12,504.78	23,378.02	34,407.60	4,450.38	13,787.92	1.59	4.07
July	16,427.29	9,305.43	13,328.62	23,604.11	35,559.53	4,588.96	14,346.02	1.54	......
Aug	16,000.37	8,988.61	13,467.87	23,602.11	34,721.91	4,507.66	14,034.97	1.55	......
Sept	15,398.21	8,668.91	13,852.13	22,951.48	33,507.50	4,288.05	13,219.32	1.57	4.30
Oct	14,919.20	8,332.44	13,275.28	22,337.96	33,052.87	4,193.80	12,851.24	1.62	......
Nov	16,088.84	9,258.87	13,250.97	23,464.37	35,950.89	4,567.80	14,226.22	1.56	......
Dec	16,852.89	9,881.78	13,259.54	24,167.14	37,689.54	4,769.83	15,011.35	1.50	4.03
2024: Jan	16,911.13	9,903.28	13,132.77	24,943.26	38,150.30	4,845.65	15,164.01	1.48	......
Feb	17,607.43	10,247.93	13,259.84	25,971.64	38,996.39	5,096.27	16,091.92	1.42	......
Mar	18,312.67	10,702.54	14,361.75	26,551.78	39,807.37	5,254.35	16,379.46	1.38	3.64
Apr	17,603.34	10,212.57	14,395.24	25,455.64	37,815.92	5,035.69	15,657.82	1.40	......
May	18,083.69	10,647.38	14,471.13	25,982.73	38,686.32	5,277.51	16,735.02	1.37	......
June	18,026.50	10,577.82	14,073.60	26,375.22	39,118.86	5,460.48	17,732.60	1.34	3.59
July	18,710.01	11,252.91	14,279.73	26,913.78	40,842.79	5,522.30	17,599.40	1.31	......
Aug	19,292.23	11,642.16	14,092.64	28,478.56	41,563.08	5,648.40	17,713.62	1.34	......
Sept	19,516.44	11,677.14	13,544.51	27,656.89	42,330.15	5,762.48	18,189.17	1.31	3.48
Oct	19,238.95	11,781.25	13,535.19	26,201.34	41,763.46	5,705.45	18,095.15	1.28	......
Nov	20,272.04	12,763.92	14,184.72	26,175.03	44,910.65	6,032.38	19,218.17	1.26	......
Dec	19,097.11	12,043.30	13,127.08	24,331.86	42,544.22	5,881.63	19,310.79	1.25	3.57
2025: Jan	19,998.82	12,736.33	13,405.07	25,771.93	44,544.66	6,040.53	19,627.44	1.25	......
Feb	20,028.19	12,952.16	13,620.84	26,125.37	43,840.91	5,954.50	18,847.28	1.25	......
Mar	19,395.86	12,493.33	14,207.15	25,542.11	42,001.76	5,611.85	17,299.29	1.34	3.86
Apr	19,114.23	12,334.77	12,462.53	24,673.77	40,669.36	5,569.06	17,446.34	1.42	......
May	19,783.81	12,893.94	12,739.27	23,370.18	42,270.07	5,911.69	19,113.77	1.32	......
June	20,429.55	13,226.87	13,366.85	23,836.23	44,094.77	6,204.95	20,369.73	1.28	3.59
July	20,458.44	13,262.64	13,654.22	22,586.51	44,130.98	6,339.39	21,122.45	1.23	......
Aug	21,151.46	13,762.98	14,100.67	24,146.73	45,544.88	6,460.26	21,455.55	1.21	......
Sept	21,564.54	13,830.53	14,003.57	24,689.81	46,397.89	6,688.46	22,660.01	1.19	3.50
Oct	21,459.58	13,506.54	13,950.35	25,051.55	47,562.87	6,840.20	23,724.96	1.16	......
Nov	21,824.67	13,884.45	14,237.86	27,093.06	47,716.42	6,849.09	23,365.69	1.16	......
Dec	22,003.93	14,322.17	14,184.03	26,861.56	48,063.29	6,845.50	23,241.99	1.14	......

[1] End of year or month.
[2] Includes stocks as follows: for NYSE, all stocks listed (in 2025, over 2,100); for Dow Jones industrial average, 30 stocks; for Standard & Poor's (S&P) composite index, 500 stocks; and for Nasdaq composite index, in 2025, about 3,300.
[3] The NYSE relaunched the composite index on January 9, 2003, incorporating new definitions, methodology, and base value. Subset indexes on financial, energy, and health care were released by the NYSE on January 8, 2004.
[4] Based on 500 stocks in the S&P composite index.
[5] Aggregate cash dividends (based on latest known annual rate) divided by aggregate market value based on Wednesday closing prices. Monthly data are averages of weekly figures, annual data are averages of monthly figures.
[6] Quarterly data are ratio of earnings (after taxes) for four quarters ending with particular quarter-to-price index for last day of that quarter. Annual data are averages of quarterly ratios.

Sources: New York Stock Exchange, Dow Jones & Co., Inc., Standard & Poor's, and Nasdaq Stock Market.

Table B–57. U.S. international transactions, 1977–2025

[Millions of dollars; quarterly data seasonally adjusted]

Year or quarter	Current Account [1]												Current account balance as a percentage of GDP
	Goods [2]			Services			Balance on goods and services	Primary income receipts and payments			Balance on secondary Income [3]	Balance on current account	
	Exports	Imports	Balance on goods	Exports	Imports	Balance on services		Receipts	Payments	Balance on primary income			
1977	120,816	151,907	−31,091	31,486	27,640	3,845	−27,247	32,355	14,218	18,137	−5,227	−14,336	−0.7
1978	142,075	176,002	−33,927	36,353	32,189	4,164	−29,763	42,087	21,680	20,407	−5,788	−15,143	−.6
1979	184,439	212,007	−27,568	39,693	36,689	3,003	−24,566	63,835	32,961	30,874	−6,593	−285	.0
1980	224,250	249,750	−25,500	47,585	41,492	6,093	−19,407	72,605	42,533	30,072	−8,349	2,318	.1
1981	237,044	265,067	−28,023	57,355	45,503	11,851	−16,172	86,529	53,626	32,903	−11,702	5,029	.2
1982	211,157	247,642	−36,485	64,078	51,750	12,330	−24,156	96,522	61,359	35,163	−16,545	−5,537	−.2
1983	201,799	268,901	−67,102	64,307	54,973	9,335	−57,767	96,031	59,643	36,388	−17,311	−38,691	−1.1
1984	219,926	332,418	−112,492	71,168	67,748	3,418	−109,074	115,639	80,574	35,065	−20,334	−94,344	−2.3
1985	215,915	338,088	−122,173	73,156	72,863	294	−121,879	105,046	79,324	25,722	−21,999	−118,155	−2.7
1986	223,344	368,425	−145,081	86,690	80,147	6,543	−138,539	102,798	87,304	15,494	−24,131	−147,176	−3.2
1987	250,208	409,765	−159,557	98,661	90,788	7,874	−151,683	113,603	99,309	14,294	−23,265	−160,655	−3.3
1988	320,230	447,189	−126,959	110,920	98,525	12,394	−114,566	141,666	122,981	18,685	−25,274	−121,153	−2.3
1989	359,916	477,665	−117,749	127,087	102,480	24,607	−93,142	166,384	146,560	19,824	−26,169	−99,487	−1.8
1990	387,401	498,438	−111,037	147,833	117,660	30,173	−80,865	176,894	148,345	28,549	−26,654	−78,969	−1.3
1991	414,083	491,020	−76,937	164,260	118,459	45,802	−31,136	155,327	131,198	24,129	9,904	2,897	.0
1992	439,631	536,528	−96,897	177,251	119,566	57,685	−39,212	139,082	114,845	24,237	−36,635	−51,613	−.8
1993	456,943	589,394	−132,451	185,920	123,780	62,141	−70,311	141,606	116,287	25,319	−39,811	−84,805	−1.2
1994	502,859	668,690	−165,831	200,395	133,057	67,338	−98,493	169,447	152,302	17,145	−40,265	−121,612	−1.7
1995	575,204	749,374	−174,170	219,183	141,397	77,786	−96,384	213,661	192,771	20,890	−38,074	−113,567	−1.5
1996	612,113	803,113	−191,000	239,489	152,554	86,935	−104,065	229,530	207,212	22,318	−43,017	−124,764	−1.5
1997	678,366	876,794	−198,428	256,087	165,932	90,155	−108,273	261,357	248,750	12,607	−45,062	−140,726	−1.6
1998	670,416	918,637	−248,221	262,758	180,677	82,081	−166,140	266,244	261,978	4,266	−53,187	−215,062	−2.4
1999	698,524	1,035,592	−337,068	278,001	196,742	81,258	−255,809	302,540	292,566	9,974	−40,777	−286,612	−3.0
2000	784,940	1,231,722	−446,783	298,023	220,927	77,096	−369,686	365,612	350,980	14,632	−46,863	−401,918	−3.9
2001	731,331	1,153,701	−422,370	284,035	222,039	61,997	−360,373	311,364	288,120	23,244	−56,953	−394,082	−3.7
2002	698,036	1,173,281	−475,245	288,059	233,480	54,579	−420,666	306,391	288,886	17,506	−52,949	−456,110	−4.2
2003	730,446	1,272,089	−541,643	297,740	252,340	45,401	−496,243	346,931	317,677	29,254	−55,300	−522,289	−4.6
2004	823,584	1,488,349	−664,766	344,536	290,609	53,927	−610,838	432,839	386,256	46,583	−71,634	−635,890	−5.2
2005	913,016	1,695,820	−782,804	378,487	312,225	66,262	−716,542	536,294	492,108	44,186	−76,876	−749,232	−5.7
2006	1,040,905	1,878,194	−837,289	423,086	349,329	73,756	−763,533	669,919	653,945	15,974	−69,088	−816,646	−5.9
2007	1,165,151	1,986,347	−821,196	495,664	385,464	110,199	−710,997	816,938	752,582	64,356	−89,910	−736,550	−5.1
2008	1,308,795	2,141,287	−832,492	540,791	420,650	120,142	−712,350	820,244	708,225	112,019	−96,192	−696,523	−4.7
2009	1,070,331	1,580,025	−509,694	522,461	407,538	114,923	−394,771	653,222	537,684	115,539	−100,496	−379,729	−2.6
2010	1,290,279	1,938,950	−648,671	582,041	436,456	145,584	−503,087	723,223	553,311	169,911	−98,834	−432,009	−2.9
2011	1,498,887	2,239,886	−740,999	644,665	458,188	186,477	−554,522	791,469	589,038	202,431	−103,211	−455,302	−2.9
2012	1,562,630	2,303,749	−741,119	684,823	469,610	215,213	−525,906	791,613	593,754	197,859	−90,134	−418,181	−2.6
2013	1,593,708	2,294,247	−700,539	719,413	465,736	253,678	−446,861	811,501	616,041	195,460	−88,115	−339,516	−2.0
2014	1,635,563	2,385,480	−749,917	757,051	491,086	265,965	−483,952	845,858	645,623	200,235	−86,339	−370,056	−2.1
2015	1,511,381	2,273,249	−761,868	769,397	498,305	271,092	−490,776	824,929	639,724	185,205	−102,882	−408,453	−2.2
2016	1,457,393	2,207,195	−749,801	783,431	513,088	270,343	−479,458	857,240	660,798	196,442	−113,199	−396,216	−2.1
2017	1,557,003	2,356,345	−799,343	837,474	555,070	282,404	−516,939	995,442	737,501	257,942	−108,618	−367,616	−1.9
2018	1,676,913	2,555,662	−878,749	867,670	566,418	301,252	−577,497	1,102,964	847,689	255,275	−116,772	−438,994	−2.1
2019	1,655,098	2,512,358	−857,260	898,996	601,007	297,989	−559,270	1,139,310	891,911	247,400	−130,092	−441,963	−2.1
2020	1,433,852	2,346,727	−912,875	738,994	472,161	266,834	−646,042	954,005	776,288	177,717	−125,174	−593,498	−2.8
2021	1,765,853	2,849,043	−1,083,190	818,215	572,300	245,916	−837,274	1,048,416	931,169	117,247	−138,605	−858,632	−3.6
2022	2,095,576	3,270,141	−1,174,565	962,869	712,033	250,836	−923,729	1,184,984	1,066,267	118,717	−188,122	−993,134	−3.8
2023	2,047,457	3,104,952	−1,057,495	1,045,079	761,789	283,290	−774,205	1,363,258	1,310,615	52,643	−206,441	−928,002	−3.3
2024	2,079,777	3,295,180	−1,215,403	1,152,747	840,877	311,870	−903,532	1,451,065	1,492,104	−41,039	−240,729	−1,185,301	−4.0
2025 p	2,197,515	3,438,331	−1,240,816	1,232,405	903,278	329,127	−911,689	1,532,752	1,519,961	12,791	−217,112	−1,116,010	−3.6
2022: I	491,073	820,647	−329,574	226,868	164,976	61,892	−267,682	275,368	252,528	22,840	−37,717	−282,559	−4.5
II	540,304	845,724	−305,420	238,076	177,475	60,601	−244,819	290,129	257,177	32,952	−43,329	−255,197	−3.9
III	546,578	811,633	−265,055	246,143	184,224	61,918	−203,137	305,944	270,347	35,596	−57,794	−225,334	−3.4
IV	517,621	792,137	−274,515	251,782	185,358	66,424	−208,091	313,544	286,215	27,329	−49,282	−230,044	−3.4
2023: I	518,912	784,090	−265,178	254,940	186,350	68,590	−196,588	327,297	308,068	19,229	−50,701	−228,060	−3.4
II	498,337	770,535	−272,198	259,719	189,608	70,111	−202,087	335,102	317,580	17,521	−50,333	−234,899	−3.4
III	515,766	772,039	−256,273	263,306	189,522	73,784	−182,489	351,163	334,974	16,189	−54,492	−220,792	−3.1
IV	514,441	778,287	−263,846	267,114	196,309	70,805	−193,041	349,696	349,993	−297	−50,915	−244,252	−3.4
2024: I	517,066	795,218	−278,152	279,690	201,313	78,377	−199,774	354,442	364,661	−10,219	−50,861	−260,854	−3.6
II	516,675	815,825	−299,150	283,050	205,358	77,692	−221,458	366,018	377,227	−11,210	−53,644	−286,311	−3.9
III	528,109	837,299	−309,189	292,412	214,573	77,839	−231,351	352,605	373,830	−21,225	−73,592	−326,168	−4.4
IV	517,926	846,838	−328,912	297,595	219,633	77,962	−250,950	378,000	376,385	1,615	−62,633	−311,967	−4.2
2025: I	537,956	1,002,369	−464,413	299,579	219,132	80,447	−383,966	358,264	360,960	−2,697	−51,683	−438,346	−5.8
II	548,969	818,012	−269,044	302,562	221,802	80,760	−188,284	378,840	384,737	−5,897	−53,597	−247,778	−3.3
III	547,025	812,927	−265,901	315,445	228,955	86,490	−179,411	389,937	392,476	−2,539	−57,192	−239,142	−3.1
IV p	563,565	805,022	−241,458	314,820	233,389	81,430	−160,027	405,711	381,787	23,924	−54,641	−190,745	−2.4

[1] Current and capital account statistics in the international transactions accounts differ slightly from statistics in the National Income and Product Accounts (NIPAs) because of adjustments made to convert the international statistics to national accounting concepts. A reconciliation can be found in NIPA table 4.3B.

[2] Adjusted from Census data to align with concepts and definitions used to prepare the international and national economic accounts. The adjustments are necessary to supplement coverage of Census data, to eliminate duplication of transactions recorded elsewhere in the international accounts, to value transactions according to a standard definition, and for earlier years, to record transactions in the appropriate period.

See next page for continuation of table.

Table B–57. U.S. international transactions, 1977–2025—*Continued*

[Millions of dollars; quarterly data seasonally adjusted]

Year or quarter	Balance on capital account [1]	Financial account											Statistical discrepancy
		Net U.S. acquisition of financial assets excluding financial derivatives [net increase in assets / financial outflow (+)]					Net U.S. incurrence of liabilities excluding financial derivatives [net increase in liabilities / financial inflow (+)]				Financial derivatives other than reserves, net transactions	Net lending (+) or net borrowing (–) from financial account transactions [5]	
		Total	Direct investment assets	Portfolio investment assets	Other investment assets	Reserve assets [4]	Total	Direct investment liabilities	Portfolio investment liabilities	Other investment liabilities			
1977	....	34,785	11,891	5,459	17,060	375	52,770	3,728	37,615	11,427	....	–17,985	–3,651
1978	....	61,130	16,057	3,626	42,179	–732	66,275	7,896	30,083	28,296	....	–5,145	9,997
1979	....	66,053	25,223	12,430	27,267	1,133	40,693	11,876	–13,502	42,319	....	25,360	25,647
1980	....	86,968	19,222	6,042	53,550	8,154	62,036	16,918	23,825	21,293	....	24,932	22,614
1981	....	114,147	9,624	15,650	83,697	5,176	85,684	25,196	17,509	42,979	....	28,463	23,433
1982	....	142,722	19,397	12,395	105,965	4,965	109,897	27,475	19,695	62,727	....	32,825	38,362
1983	....	74,690	20,844	2,063	50,588	1,195	95,715	18,688	18,382	58,645	....	–21,025	17,666
1984	....	50,740	26,770	3,498	17,340	3,132	126,413	34,832	38,695	52,886	....	–75,673	18,673
1985	....	47,064	21,241	3,008	18,957	3,858	146,544	22,057	68,004	56,483	....	–99,480	18,677
1986	....	107,252	19,524	8,984	79,057	–313	223,854	30,946	104,497	88,411	....	–116,602	30,570
1987	....	84,058	39,795	7,903	45,508	–9,148	251,863	63,232	79,631	109,000	....	–167,805	–7,149
1988	....	105,747	21,701	4,589	75,544	3,913	244,008	56,910	86,786	100,312	....	–138,261	–17,108
1989	–207	182,908	50,973	31,166	75,476	25,293	230,302	75,801	74,852	79,649	....	–47,394	52,299
1990	–7,221	103,985	59,934	30,557	11,336	2,158	162,109	71,247	25,767	65,095	....	–58,124	28,066
1991	–5,129	75,753	49,253	32,053	210	–5,763	119,586	34,535	72,562	12,489	....	–43,833	–41,601
1992	1,449	84,899	58,755	50,684	–20,639	–3,901	178,842	30,315	92,199	56,328	....	–93,943	–43,776
1993	–714	199,399	82,799	137,917	–22,696	1,379	278,607	50,211	174,387	54,009	....	–79,208	6,313
1994	–1,112	188,758	89,988	54,088	50,028	–5,346	312,995	55,942	131,849	125,204	....	–124,237	–1,514
1995	–221	363,555	110,041	143,506	100,266	9,742	446,393	69,067	254,431	122,895	....	–82,838	30,951
1996	–8	424,548	103,024	160,179	168,013	–6,668	559,027	97,644	392,107	69,276	....	–134,479	–9,706
1997	–256	502,024	121,352	121,036	258,626	1,010	720,999	122,150	311,105	287,744	....	–218,975	–77,995
1998	–7	385,936	174,751	132,186	72,216	6,783	452,901	211,152	225,878	15,871	....	–66,965	148,106
1999	–6,428	526,612	247,484	141,007	146,868	–8,747	765,215	312,449	278,697	174,069	....	–238,603	54,437
2000	–4,217	587,682	186,371	159,713	241,308	290	1,066,074	349,124	441,966	274,984	....	–478,392	–72,257
2001	12,170	386,313	146,041	106,919	128,442	4,911	788,345	172,496	431,492	184,357	....	–402,032	–20,120
2002	–3,825	319,175	178,984	79,532	56,978	3,681	821,844	111,056	504,155	206,634	....	–502,668	–42,734
2003	–8,499	371,104	195,218	133,059	44,351	–1,524	911,660	117,107	550,163	244,390	....	–540,556	–9,768
2004	–4,344	1,058,661	374,006	191,956	495,505	–2,806	1,600,881	213,642	867,340	519,899	....	–542,220	98,014
2005	950	562,996	52,591	267,290	257,210	–14,094	1,277,056	142,345	832,037	302,673	....	–714,059	34,223
2006	–7,439	1,324,623	283,800	493,366	549,830	–2,373	2,120,480	298,464	1,126,735	695,280	–29,710	–825,567	–1,482
2007	–6,057	1,563,467	523,889	380,807	658,649	122	2,190,087	346,615	1,156,612	686,860	–6,222	–632,841	109,765
2008	–172	–317,592	343,584	–284,269	–381,754	4,848	462,408	341,091	523,683	–402,367	32,947	–747,053	–50,358
2009	–5,877	131,082	312,597	375,883	–609,654	52,256	325,644	161,082	357,352	–192,789	–44,816	–239,379	146,227
2010	–6,891	958,737	349,829	199,620	407,454	1,835	1,391,042	264,039	820,434	306,569	–14,076	–446,381	–7,481
2011	–9,020	492,556	436,615	85,365	–45,301	15,877	983,522	263,499	311,626	408,397	–35,006	–525,972	–61,650
2012	931	171,359	377,239	243,182	–453,522	4,460	632,034	250,343	747,017	–365,327	7,064	–453,611	–36,361
2013	–6,559	626,189	392,796	457,734	–221,242	–3,099	1,052,068	288,131	511,987	251,949	2,222	–423,657	–77,582
2014	–6,535	865,694	387,528	581,668	–99,920	–3,583	1,109,443	251,857	697,607	159,979	–54,335	–298,084	78,506
2015	–7,940	144,104	302,072	107,154	–258,831	–6,292	503,468	511,434	213,910	–221,876	–27,035	–386,400	29,993
2016	–6,606	336,438	299,814	37,489	–2,955	2,090	706,693	474,388	231,265	1,040	7,827	–362,427	40,394
2017	12,394	1,161,984	409,413	540,728	213,533	–1,690	1,559,219	380,823	790,810	387,586	23,998	–373,237	–18,016
2018	–4,262	429,710	–130,720	381,863	173,578	4,989	712,178	214,716	303,075	194,387	–20,404	–302,872	140,384
2019	–6,462	315,580	114,924	–11,453	207,450	4,659	832,266	315,983	233,469	282,814	–41,670	–558,356	–109,931
2020	–5,620	954,808	282,333	406,368	257,133	8,974	1,621,666	137,068	946,560	538,038	–5,107	–671,965	–72,847
2021	–1,432	1,191,226	342,152	711,540	23,541	113,993	1,977,778	477,955	614,103	885,720	–39,028	–825,580	34,485
2022	–369	748,982	388,845	322,040	32,283	5,814	1,543,911	416,890	760,384	366,638	–80,698	–875,628	117,876
2023	–6,985	914,270	351,084	116,671	446,474	41	1,971,697	361,946	1,300,773	308,979	–15,604	–1,073,031	–138,044
2024	3,533	792,471	322,165	357,626	110,564	2,116	1,878,748	297,059	1,318,678	263,011	–42,316	–1,128,593	53,174
2025 *p*	976	1,703,030	422,226	340,678	937,478	2,649	2,895,856	400,520	1,689,164	806,172	–19,422	–1,212,247	–97,213
2022: I	–1,387	399,494	145,835	191,982	60,745	932	683,328	137,472	264,368	281,488	6,102	–277,733	6,213
II	–2,353	375,576	107,500	236,902	29,993	1,181	456,735	76,859	384,377	–4,500	–45,911	–127,070	130,480
III	6,192	291,583	30,879	270,370	–10,463	797	527,584	128,618	262,003	136,963	–33,940	–269,941	–50,798
IV	–2,821	–317,671	104,631	–377,214	–47,992	2,903	–123,736	73,941	–150,364	–47,313	–6,949	–200,884	31,981
2023: I	–2,886	230,244	61,297	30,222	137,947	778	628,051	66,168	420,041	141,842	–1,727	–399,533	–168,587
II	–1,100	129,686	40,148	55,806	33,460	272	395,070	110,490	456,376	–171,797	–4,741	–270,125	–34,127
III	–1,087	247,496	110,063	37,000	100,034	400	462,907	70,285	254,073	138,549	1,068	–214,342	7,537
IV	–1,911	306,844	139,576	–6,357	175,033	–1,408	485,670	115,003	170,283	200,385	–10,204	–189,031	57,133
2024: I	–2,023	294,886	94,324	108,696	89,357	2,509	376,692	62,783	228,587	85,322	4,337	–77,469	185,408
II	–2,029	205,237	26,080	152,304	26,174	679	372,965	94,925	198,692	79,348	–49,112	–216,840	71,500
III	–2,273	274,851	106,273	76,376	92,196	7	780,828	131,816	571,256	77,756	22,481	–483,496	–155,055
IV	9,858	17,497	95,489	20,250	–97,164	–1,079	348,264	7,534	320,144	20,585	–20,022	–350,788	–48,679
2025: I	6,934	576,623	101,998	116,668	356,498	1,459	898,272	88,413	428,896	380,963	19,343	–302,306	129,106
II	–1,924	217,396	10,293	44,012	162,511	580	641,143	114,176	428,242	98,725	26,086	–397,662	–147,960
III	–1,101	504,039	108,432	84,923	309,810	874	824,474	129,062	473,556	221,856	–55,974	–376,409	–136,166
IV *p*	–2,933	404,973	201,503	95,074	108,659	–264	531,966	68,868	358,470	104,628	–8,877	–135,871	57,807

[3] Includes U.S. government and private transfers, such as U.S. government grants and pensions, fines and penalties, withholding taxes, personal transfers, insurance-related transfers, and other current transfers.
[4] Consists of monetary gold, special drawing rights (SDRs), the U.S. reserve position in the International Monetary Fund (IMF), and other reserve assets, including foreign currencies.
[5] Net lending means that U.S. residents are net suppliers of funds to foreign residents, and net borrowing means the opposite.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–58. U.S. international trade in goods on balance of payments (BOP) and Census basis, and trade in services on BOP basis, 1997–2025

[Billions of dollars; monthly data seasonally adjusted]

Year or month	Goods: Exports (f.a.s. value) [1, 2]							Goods: Imports (customs value) [6]							Services (BOP basis)	
	Total, BOP basis [3, 4]	Census basis (by end-use category)						Total, BOP basis [4]	Census basis (by end-use category)						Exports [4]	Imports [4]
		Total, Census basis [3, 5]	Foods, feeds, and beverages	Industrial supplies and materials	Capital goods except automotive	Automotive vehicles, parts, and engines	Consumer goods (nonfood) except automotive		Total, Census basis [5]	Foods, feeds, and beverages	Industrial supplies and materials	Capital goods except automotive	Automotive vehicles, parts, and engines	Consumer goods (nonfood) except automotive		
1997	678.4	689.2	51.5	158.2	294.5	74.0	77.4	876.8	869.7	39.7	213.8	253.3	139.8	193.8	256.1	165.9
1998	670.4	682.1	46.4	148.3	299.4	72.4	80.3	918.6	911.9	41.2	200.1	269.5	148.7	217.0	262.8	180.7
1999	698.5	695.8	46.0	147.5	310.8	75.3	80.9	1,035.6	1,024.6	43.6	221.4	295.7	179.0	241.9	278.0	196.7
2000	784.9	781.9	47.9	172.6	356.9	80.4	89.4	1,231.7	1,218.0	46.0	299.0	347.0	195.9	281.8	298.0	220.9
2001	731.3	729.1	49.4	160.1	321.7	75.4	88.3	1,153.7	1,141.0	46.6	273.9	298.0	189.8	284.3	284.0	222.0
2002	698.0	693.1	49.6	156.8	290.4	78.9	84.4	1,173.3	1,161.4	49.7	267.7	283.3	203.7	307.8	288.1	233.5
2003	730.4	724.8	55.0	173.0	293.7	80.6	89.9	1,272.1	1,257.1	55.8	313.8	295.9	210.1	333.9	297.7	252.3
2004	823.6	814.9	56.6	203.9	327.5	89.2	103.2	1,488.3	1,469.7	62.1	412.8	343.6	228.2	372.9	344.5	290.6
2005	913.0	901.1	59.0	233.0	358.4	98.4	115.3	1,695.8	1,673.5	68.1	523.8	379.3	239.4	407.2	378.5	312.2
2006	1,040.9	1,026.0	66.0	276.0	404.0	107.3	129.1	1,878.2	1,853.9	74.9	602.0	418.3	256.6	442.6	423.1	349.3
2007	1,165.2	1,148.2	84.3	316.4	433.0	121.3	146.0	1,986.3	1,957.0	81.7	634.7	444.5	256.7	474.6	495.7	385.5
2008	1,308.8	1,287.4	108.3	388.0	457.7	121.5	161.3	2,141.3	2,103.6	89.0	779.5	453.7	231.2	481.6	540.8	420.7
2009	1,070.3	1,056.0	93.9	296.5	391.2	81.7	149.5	1,580.0	1,559.6	81.6	462.4	370.5	157.7	427.3	522.5	407.5
2010	1,290.3	1,278.5	107.7	391.7	447.5	112.0	165.2	1,939.0	1,913.9	91.7	603.1	449.4	225.1	483.2	582.0	436.5
2011	1,498.9	1,482.5	126.2	501.1	494.0	133.0	175.3	2,239.9	2,208.0	107.5	755.8	510.8	254.6	514.1	644.7	458.2
2012	1,562.6	1,545.8	133.0	501.2	527.2	146.2	181.7	2,303.7	2,276.3	110.3	730.6	548.7	297.8	516.9	684.8	469.6
2013	1,593.7	1,578.5	136.2	508.2	534.4	152.7	188.8	2,294.2	2,268.0	115.1	681.5	555.7	308.8	531.7	719.4	465.7
2014	1,635.6	1,621.9	143.7	505.8	551.5	159.8	199.0	2,385.5	2,356.4	125.9	667.0	594.1	328.6	557.1	757.1	491.1
2015	1,511.4	1,503.3	127.7	427.0	539.5	151.9	197.7	2,273.2	2,248.8	127.8	486.0	602.5	349.2	594.2	769.4	498.3
2016	1,457.4	1,451.5	130.5	397.3	519.7	150.4	193.7	2,207.2	2,186.8	130.0	443.3	589.7	349.9	583.1	783.4	513.1
2017	1,557.0	1,547.2	132.8	465.2	533.4	157.9	197.7	2,356.3	2,339.6	137.8	507.0	639.8	358.2	601.4	837.5	555.1
2018	1,676.9	1,665.8	133.1	541.2	563.2	158.8	206.0	2,555.7	2,536.1	147.3	574.6	690.9	371.1	645.4	867.7	566.4
2019	1,655.1	1,645.9	131.0	529.5	550.5	163.1	205.6	2,512.4	2,491.7	150.5	520.6	674.8	374.5	653.0	899.0	601.0
2020	1,433.9	1,430.0	139.3	466.5	463.2	129.4	175.0	2,346.7	2,331.5	154.3	478.7	643.4	309.2	639.6	739.0	472.2
2021	1,765.9	1,757.7	164.5	637.4	521.3	146.4	222.3	2,849.0	2,828.5	182.1	649.1	760.0	345.5	767.3	818.2	572.3
2022	2,095.6	2,072.6	179.9	835.7	572.9	162.9	245.0	3,270.1	3,239.7	208.3	809.6	864.5	397.9	838.1	962.9	712.0
2023	2,047.5	2,020.5	161.7	732.1	602.4	180.0	259.4	3,105.0	3,076.8	200.2	674.6	858.3	457.0	757.2	1,045.1	761.8
2024	2,079.8	2,061.7	165.8	727.9	646.4	172.2	260.1	3,295.2	3,266.4	216.0	675.8	961.8	474.4	805.7	1,152.7	840.9
2025 [p]	2,197.5	2,185.2	160.9	783.7	710.3	155.4	269.2	3,438.3	3,415.7	215.4	699.0	1,127.7	422.3	799.9	1,232.4	903.3
2024: Jan	170.2	168.9	13.5	60.2	51.5	15.0	21.6	262.9	260.1	16.9	54.8	74.9	40.2	62.5	91.6	66.0
Feb	175.3	174.1	14.5	63.8	53.0	14.3	21.4	267.7	265.0	17.9	54.7	75.7	41.4	64.4	94.0	68.0
Mar	171.5	170.2	14.0	62.3	51.4	14.3	21.2	264.6	262.3	17.5	54.2	76.2	38.2	65.8	94.1	67.3
Apr	173.0	171.9	13.5	60.7	53.0	15.0	22.3	272.0	269.3	17.5	55.0	77.8	41.4	66.5	93.4	67.5
May	170.3	168.8	13.1	59.1	52.6	14.5	22.3	271.0	268.3	17.5	57.0	78.2	40.4	64.1	94.7	68.5
June	173.3	172.0	13.5	60.0	54.1	15.1	22.0	272.9	270.8	17.4	55.2	80.3	40.2	66.5	95.0	69.4
July	174.7	172.9	13.6	60.7	55.9	13.6	21.7	279.0	276.8	17.6	57.8	83.6	39.8	67.0	96.4	70.7
Aug	178.0	176.7	13.3	61.3	57.4	14.3	22.4	275.1	272.8	18.1	54.1	83.2	39.0	67.0	97.8	71.9
Sept	175.5	173.9	14.1	59.7	56.1	14.9	21.7	283.2	281.0	18.7	55.8	85.7	39.1	70.5	98.2	72.0
Oct	170.9	169.3	13.9	59.3	53.6	13.5	21.1	271.0	268.7	18.4	53.4	79.2	38.1	69.0	98.6	72.7
Nov	176.5	174.3	14.4	61.3	54.6	14.4	22.0	282.5	280.4	19.4	56.5	83.2	39.1	70.6	99.3	73.1
Dec	170.5	168.6	14.3	59.6	53.1	13.4	20.4	293.3	290.9	19.1	67.4	83.8	37.5	71.9	99.7	73.8
2025: Jan	173.4	172.3	13.2	59.2	56.8	12.6	21.7	329.0	327.0	20.2	89.7	88.8	37.8	78.3	100.3	73.0
Feb	180.6	177.8	12.6	62.1	59.2	14.4	22.1	327.4	325.2	19.3	85.6	90.1	38.0	80.2	100.0	73.1
Mar	183.9	182.3	13.7	64.9	58.3	15.4	22.0	346.0	343.8	19.3	74.6	93.8	41.5	102.5	99.2	73.0
Apr	190.5	189.8	13.2	75.3	59.2	12.1	21.0	277.0	275.2	18.5	51.4	90.9	33.2	69.5	100.5	74.1
May	179.7	179.0	12.8	65.2	57.4	12.5	22.0	276.7	274.8	18.3	50.4	91.2	36.6	65.6	100.3	74.0
June	178.8	178.0	13.4	60.4	59.3	12.7	22.9	264.3	262.1	18.1	47.7	91.8	35.3	57.2	101.7	73.8
July	180.1	179.2	13.5	60.2	59.9	13.1	22.7	282.6	280.4	18.5	60.3	96.5	33.9	58.5	104.2	75.9
Aug	178.4	177.7	13.6	59.6	62.3	12.7	21.2	264.0	261.9	16.9	49.0	93.2	34.5	54.8	105.9	76.3
Sept	188.5	187.7	14.1	66.8	58.9	12.4	25.2	266.2	264.5	16.6	49.0	87.9	33.3	65.2	105.3	76.7
Oct	196.4	195.7	13.8	77.0	58.3	13.1	24.2	255.0	253.7	16.2	46.5	94.7	32.6	51.8	104.8	77.3
Nov	186.3	185.6	13.3	70.8	59.0	12.3	21.1	269.9	268.4	16.8	43.9	101.7	32.3	59.9	104.6	77.0
Dec [p]	180.9	180.0	13.5	62.2	61.5	12.2	22.9	280.1	278.6	16.8	50.9	107.3	33.5	56.4	105.4	79.1

[1] Department of Defense shipments of grant-aid military supplies and equipment under the Military Assistance Program are excluded from total exports through 1985 and included beginning 1986.

[2] F.a.s. (free alongside ship) value basis at U.S. port of exportation for exports.

[3] Beginning with data for 1989, exports have been adjusted for undocumented exports to Canada and are included in the appropriate end-use categories. For prior years, only total exports include this adjustment.

[4] Beginning with data for 1999, exports of goods under the U.S. Foreign Military Sales program and fuel purchases by foreign air and ocean carriers in U.S. ports are included in goods exports (BOP basis) and excluded from services exports. Beginning with data for 1999, imports of petroleum abroad by U.S. military agencies and fuel purchases by U.S. air and ocean carriers in foreign ports are included in goods imports (BOP basis) and excluded from services imports.

[5] Total includes "other" exports or imports, not shown separately.

[6] Total arrivals of imported goods other than in-transit shipments.

[7] Total includes revisions not reflected in detail.

[8] Total exports are on a revised statistical month basis; end-use categories are on a statistical month basis.

Note: Goods on a Census basis are adjusted to a BOP basis by the Bureau of Economic Analysis, in line with concepts and definitions used to prepare international and national accounts. The adjustments are necessary to supplement coverage of Census data, to eliminate duplication of transactions recorded elsewhere in international accounts, to value transactions according to a standard definition, and for earlier years, to record transactions in the appropriate period.

Data include international trade of the U.S. Virgin Islands, Puerto Rico, and U.S. Foreign Trade Zones.

Source: Department of Commerce (Bureau of the Census and Bureau of Economic Analysis).

TABLE B–59. U.S. international trade in goods and services by area and country, 2000–2025

[Millions of dollars]

Item	2000	2005	2010	2015	2020	2022	2023	2024	2025 p
EXPORTS									
Total, all countries	1,082,963	1,291,503	1,872,320	2,280,778	2,172,846	3,058,445	3,092,536	3,232,524	3,429,920
Europe	298,654	366,823	510,936	608,049	639,004	920,128	948,052	997,974	1,151,971
Euro area [1]	174,591	214,207	292,815	350,143	381,134	543,826	570,829	599,804	670,830
France	30,821	35,241	45,279	50,074	43,469	69,377	71,642	72,479	79,608
Germany	45,379	55,246	75,023	81,184	88,151	113,415	119,591	120,932	129,220
Italy	16,665	18,556	22,787	24,628	25,631	36,308	39,511	44,406	56,721
United Kingdom	73,995	83,456	104,891	126,762	121,655	161,727	167,005	179,492	206,095
Canada	204,237	246,291	307,571	341,365	310,543	437,085	441,403	440,676	426,417
Latin America and Other Western Hemisphere	228,633	259,832	416,623	551,389	476,765	729,131	709,675	747,708	775,865
Brazil	22,112	21,574	53,767	58,667	49,506	75,244	68,057	78,356	87,288
Mexico	127,581	141,856	187,487	267,794	236,185	365,844	370,217	384,851	390,732
Venezuela	9,476	9,395	15,918	14,212	2,239	3,770	4,343	5,707	4,623
Asia and Pacific	301,451	342,228	523,350	633,923	632,549	827,003	828,267	875,535	889,571
China	21,862	50,685	113,576	163,329	166,231	198,462	196,376	199,273	163,988
India	6,731	13,294	29,243	38,838	44,384	75,580	76,442	83,378	89,210
Japan	101,554	93,383	104,991	106,619	103,483	122,808	123,398	129,427	136,778
Korea, Republic of	35,106	37,867	56,700	66,254	69,693	96,876	91,927	93,930	97,871
Singapore	24,557	26,657	39,743	43,049	53,522	81,265	81,822	86,406	90,010
Taiwan	30,603	29,104	36,896	39,016	39,870	55,567	52,905	56,600	69,886
Vietnam	....	....	4,899	9,031	12,204	13,833	12,967	16,690	19,118
Middle East	28,617	48,702	70,477	102,159	77,441	95,609	107,286	112,172	120,851
Africa	17,203	22,891	40,278	41,229	33,176	45,607	46,031	51,635	59,469
IMPORTS									
Total, all countries	1,452,650	2,008,045	2,375,407	2,771,554	2,818,888	3,982,174	3,866,741	4,136,057	4,341,609
Europe	359,220	493,562	566,372	704,961	778,532	1,032,662	1,053,201	1,125,983	1,222,413
Euro area [1]	216,802	304,574	341,235	444,164	466,946	645,416	680,870	723,887	766,434
France	41,344	47,725	56,562	66,202	57,632	85,405	86,500	91,777	102,010
Germany	75,710	110,075	114,861	158,863	146,909	190,234	205,854	208,663	208,276
Italy	31,593	39,767	37,778	53,782	54,057	81,054	87,257	93,170	93,350
United Kingdom	70,962	84,200	96,034	115,152	105,251	139,557	150,170	162,181	167,744
Canada	253,312	319,543	310,341	334,249	308,589	495,110	481,716	476,701	450,829
Latin America and Other Western Hemisphere	255,760	362,652	468,190	528,383	509,700	757,386	794,085	864,216	905,636
Brazil	15,340	26,401	30,094	35,155	27,981	44,607	45,357	49,013	46,769
Mexico	148,493	188,385	248,694	327,768	346,798	498,585	525,597	560,723	585,374
Venezuela	19,192	34,662	33,394	16,215	312	572	3,768	6,208	3,872
Asia and Pacific	507,527	682,521	841,359	1,091,819	1,142,935	1,543,184	1,399,618	1,528,970	1,624,789
China	103,340	251,791	377,619	499,697	448,740	562,395	447,188	461,425	332,103
India	12,480	23,426	44,940	69,771	79,448	118,863	119,669	129,027	152,270
Japan	164,972	162,613	147,993	164,737	152,385	186,692	186,067	192,167	191,377
Korea, Republic of	45,726	51,175	59,293	82,529	86,562	132,205	132,520	148,589	143,350
Singapore	21,837	19,241	23,668	25,232	40,221	42,239	53,372	59,293	56,732
Taiwan	44,272	40,690	41,740	47,629	66,807	106,109	99,810	129,554	214,898
Vietnam	....	....	15,528	38,947	80,073	128,361	115,811	138,466	196,140
Middle East	44,500	81,361	95,038	79,353	49,914	99,616	86,778	85,379	81,735
Africa	31,076	69,516	93,001	32,713	29,166	52,416	51,249	53,485	56,154
BALANCE (excess of exports +)									
Total, all countries	–369,686	–716,542	–503,087	–490,776	–646,042	–923,729	–774,205	–903,532	–911,689
Europe	–60,566	–126,739	–55,436	–96,911	–139,528	–112,534	–105,149	–128,009	–70,441
Euro area [1]	–42,211	–90,367	–48,420	–94,021	–85,812	–101,590	–110,042	–124,083	–95,604
France	–10,523	–12,484	–11,284	–16,128	–14,163	–16,028	–14,858	–19,298	–22,402
Germany	–30,330	–54,830	–39,838	–77,679	–58,758	–76,819	–86,263	–87,731	–79,056
Italy	–14,927	–21,211	–14,991	–29,154	–28,426	–44,746	–47,746	–48,764	–36,629
United Kingdom	3,033	–744	8,856	11,611	16,404	22,170	16,835	17,311	38,352
Canada	–49,075	–73,252	–2,770	7,116	1,954	–58,024	–40,313	–36,024	–24,412
Latin America and Other Western Hemisphere	–27,127	–102,820	–51,567	23,005	–32,935	–28,255	–84,410	–116,507	–129,771
Brazil	6,772	–4,827	23,672	23,512	21,525	30,637	22,700	29,343	40,519
Mexico	–20,912	–46,528	–61,207	–59,974	–110,613	–132,741	–155,380	–175,871	–194,642
Venezuela	–9,716	–25,266	–17,476	–2,003	1,928	3,199	575	–501	751
Asia and Pacific	–206,076	–340,293	–318,009	–457,897	–510,386	–716,181	–571,352	–653,435	–735,217
China	–81,478	–201,106	–264,042	–336,368	–282,509	–363,934	–250,812	–262,152	–168,115
India	–5,749	–10,132	–15,697	–30,933	–35,064	–43,284	–43,228	–45,649	–63,060
Japan	–63,418	–69,230	–43,002	–58,118	–48,902	–63,884	–62,669	–62,740	–54,599
Korea, Republic of	–10,620	–13,308	–2,593	–16,275	–16,869	–35,329	–40,592	–54,659	–45,479
Singapore	2,720	7,415	16,075	17,817	13,302	39,026	28,450	27,113	33,278
Taiwan	–13,668	–11,586	–4,843	–8,612	–26,937	–50,542	–46,905	–72,954	–145,012
Vietnam	....	....	–10,629	–29,916	–67,869	–114,529	–102,844	–121,776	–177,022
Middle East	–15,883	–32,659	–24,561	22,806	27,526	–4,007	20,508	26,793	39,116
Africa	–13,872	–46,625	–52,723	8,516	4,010	–6,809	–5,218	–1,850	3,314

[1] Euro area consists of Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Greece (beginning in 2001), Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), Lithuania (2015), and Croatia (2023).

Note: Data are on a balance of payments basis. For further details, and additional data by country, see *Survey of Current Business*, November 2025.

Source: Department of Commerce (Bureau of Economic Analysis).

Table B–60. Foreign exchange rates, 2005–2025

[Foreign currency units per U.S. dollar, except as noted; certified noon buying rates in New York]

Period	Australia (dollar) [1]	Brazil (real)	Canada (dollar)	China, P.R. (yuan)	EMU Members (euro) [1, 2]	India (rupee)	Japan (yen)	Mexico (peso)	South Korea (won)	Sweden (krona)	Switzerland (franc)	United Kingdom (pound) [1]
March 1973	1.4129	....	0.9967	2.2401	....	7.55	261.90	0.013	398.85	4.4294	3.2171	2.4724
2005	.7627	2.4352	1.2115	8.1936	1.2449	44.00	110.11	10.894	1,023.75	7.4710	1.2459	1.8204
2006	.7535	2.1738	1.1340	7.9723	1.2563	45.19	116.31	10.906	954.32	7.3718	1.2532	1.8434
2007	.8391	1.9461	1.0734	7.6058	1.3711	41.18	117.76	10.928	928.97	6.7550	1.1999	2.0020
2008	.8537	1.8326	1.0660	6.9477	1.4726	43.39	103.39	11.143	1,098.71	6.5846	1.0816	1.8545
2009	.7927	1.9976	1.1412	6.8307	1.3935	48.33	93.68	13.498	1,274.63	7.6539	1.0860	1.5661
2010	.9200	1.7600	1.0298	6.7696	1.3261	45.65	87.78	12.624	1,155.74	7.2053	1.0432	1.5452
2011	1.0332	1.6723	.9887	6.4630	1.3931	46.58	79.70	12.427	1,106.94	6.4878	.8862	1.6043
2012	1.0359	1.9535	.9995	6.3093	1.2859	53.37	79.82	13.154	1,126.16	6.7721	.9377	1.5853
2013	.9683	2.1570	1.0300	6.1478	1.3281	58.51	97.60	12.758	1,094.67	6.5124	.9269	1.5642
2014	.9034	2.3512	1.1043	6.1620	1.3297	61.00	105.74	13.302	1,052.29	6.8576	.9147	1.6484
2015	.7522	3.3360	1.2791	6.2827	1.1096	64.11	121.05	15.874	1,130.96	8.4350	.9628	1.5284
2016	.7445	3.4839	1.3243	6.6400	1.1072	67.16	108.66	18.667	1,159.34	8.5541	.9848	1.3555
2017	.7671	3.1910	1.2984	6.7569	1.1301	65.07	112.10	18.884	1,129.04	8.5430	.9842	1.2890
2018	.7481	3.6513	1.2957	6.6090	1.1817	68.37	110.40	19.218	1,099.29	8.6945	.9784	1.3363
2019	.6952	3.9440	1.3269	6.9081	1.1194	70.38	109.02	19.247	1,165.80	9.4604	.9937	1.2768
2020	.6899	5.1587	1.3422	6.9042	1.1410	74.14	106.78	21.546	1,180.56	9.2167	.9389	1.2829
2021	.7515	5.3958	1.2533	6.4508	1.1830	73.94	109.84	20.284	1,144.89	8.5812	.9144	1.3764
2022	.6951	5.1605	1.3014	6.7290	1.0534	78.58	131.46	20.121	1,291.78	10.1177	.9550	1.2371
2023	.6644	4.9946	1.3494	7.0809	1.0817	82.57	140.50	17.733	1,306.76	10.6089	.8984	1.2440
2024	.6597	5.3872	1.3699	7.1957	1.0820	83.66	151.46	18.306	1,363.44	10.5744	.8808	1.2781
2025	.6450	5.5891	1.3973	7.1875	1.1306	87.15	149.57	19.205	1,421.40	9.8060	.8305	1.3192
2024: I	.6573	4.9528	1.3486	7.1885	1.0855	83.03	148.56	16.984	1,329.61	10.3986	.8749	1.2682
II	.6589	5.2096	1.3681	7.2410	1.0766	83.41	155.78	17.222	1,370.14	10.6937	.9047	1.2618
III	.6698	5.5447	1.3641	7.1641	1.0987	83.75	149.10	18.925	1,355.48	10.4252	.8662	1.3005
IV	.6523	5.8396	1.3989	7.1896	1.0668	84.43	152.39	20.092	1,398.67	10.7829	.8776	1.2816
2025: I	.6277	5.8469	1.4349	7.2728	1.0531	86.60	152.40	20.409	1,452.01	10.6663	.8987	1.2605
II	.6408	5.6715	1.3844	7.2331	1.1342	85.56	144.49	19.522	1,399.82	9.6634	.8260	1.3353
III	.6543	5.4486	1.3773	7.1570	1.1685	87.34	147.51	18.626	1,386.95	9.5171	.8002	1.3484
IV	.6568	5.3968	1.3939	7.0889	1.1641	89.10	154.07	18.298	1,448.76	9.4027	.7991	1.3304

Period	Trade-weighted value of the U.S. dollar					
	Nominal			Real [6]		
	Broad index (January 2006=100) [3]	Advanced foreign economies index (January 2006=100) [4]	Emerging market economies index (January 2006=100) [5]	Broad index (January 2006=100) [3]	Advanced foreign economies index (January 2006=100) [4]	Emerging market economies index (January 2006=100) [5]
2005	....	....	....	....	....	....
2006	98.6005	97.6833	99.8103	98.9214	98.3172	99.7173
2007	93.8100	92.0715	96.1170	94.2561	93.6206	95.0905
2008	90.8801	88.4517	94.1271	90.9702	90.8440	91.1762
2009	96.7509	92.8232	101.9953	95.3262	94.7213	96.0837
2010	93.0541	90.1336	97.1416	90.7912	92.0410	89.5835
2011	88.7767	84.8522	93.9916	86.2942	87.3424	85.2698
2012	91.6361	88.0233	96.5231	88.5044	90.8679	86.1641
2013	92.7611	90.6492	96.0312	88.7189	93.8607	83.7969
2014	95.5876	93.4349	98.9391	90.7140	97.0272	84.7616
2015	108.1696	108.1483	109.5239	101.1820	111.8309	91.5630
2016	113.0665	109.3636	118.1858	105.3957	114.0203	97.3637
2017	112.8101	108.9520	118.0903	104.8449	114.1631	96.2565
2018	112.0032	106.4902	119.0076	104.0773	112.2338	96.4344
2019	115.7334	110.2673	122.7186	107.1842	116.7258	98.3419
2020	117.7809	109.0631	128.3959	108.7555	116.4114	101.4536
2021	113.1162	104.5205	123.5588	106.2729	114.1668	98.8006
2022	120.7044	115.0954	128.0962	115.0691	126.9244	104.3889
2023	120.4892	115.4193	127.3109	114.2047	126.4555	103.1741
2024	123.2027	116.4136	131.8624	116.3650	128.1980	105.6501
2025	122.7374	113.8057	133.7905	116.6338	126.0921	107.8408
2024: I	121.0047	115.5340	128.2452	114.3293	127.2168	102.7924
II	122.8774	117.3299	130.2260	116.1385	129.2449	104.4112
III	122.9346	114.9510	132.8545	115.8651	126.3358	106.2470
IV	126.0081	117.8721	136.1184	119.1270	129.9943	109.1497
2025: I	127.7149	119.6879	137.7752	121.2300	132.3243	111.0504
II	122.4150	112.7030	134.3591	116.0847	124.6438	108.0420
III	120.2372	110.9399	131.6869	114.3556	122.9731	106.2755
IV	120.7487	112.0972	131.4639	114.8647	124.4272	105.9952

[1] U.S. dollars per foreign currency unit.
[2] European Economic and Monetary Union (EMU) members consists of Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Greece (beginning in 2001), Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), Lithuania (2015), and Croatia (2023).
[3] Weighted average of the foreign exchange value of the U.S. dollar against the currencies of a broad group of major U.S. trading partners.
[4] Subset of the broad index. Consists of currencies of the Euro area, Australia, Canada, Japan, Sweden, Switzerland, and the United Kingdom.
[5] Subset of the broad index currencies that are emerging market economies. For details, see *Revisions to the Federal Reserve Dollar Indexes*, January 2019.
[6] Adjusted for changes in consumer price indexes for the United States and other countries.

Source: Board of Governors of the Federal Reserve System.

Table B–61. Growth rates in real gross domestic product by area and country, 2007–2026

[Percent change]

Area and country	2007–2016 annual average	2017	2018	2019	2020	2021	2022	2023	2024	2025 [1]	2026 [1]
World	3.4	3.8	3.6	3.0	–2.7	6.6	3.8	3.5	3.3	3.3	3.3
Advanced economies	1.4	2.6	2.3	1.9	–3.9	6.0	3.0	1.7	1.8	1.7	1.8
Of which:											
United States	1.5	2.5	3.0	2.6	–2.1	6.2	2.5	2.9	2.8	2.1	2.4
Euro area [2]	0.7	2.6	1.8	1.6	–6.0	6.4	3.6	.4	.9	1.4	1.3
Germany	1.3	2.8	1.1	1.0	–4.1	3.9	1.8	–.9	–.5	.2	1.1
France	0.8	2.3	1.6	2.1	–7.6	6.8	2.8	1.6	1.1	.8	1.0
Italy	–0.5	1.6	.8	.4	–8.9	8.9	4.8	.7	.7	.5	.7
Spain	0.4	2.9	2.4	2.0	–10.9	6.7	6.4	2.5	3.5	2.9	2.3
Japan	0.5	1.7	.6	–.4	–4.2	2.7	1.0	1.2	–.2	1.1	.7
United Kingdom	1.2	2.7	1.4	1.6	–10.3	8.6	4.8	.4	1.1	1.4	1.3
Canada	1.5	3.0	2.7	1.9	–5.0	6.0	4.2	1.5	2.0	1.6	1.6
Other advanced economies	2.8	3.2	2.8	2.0	–1.6	5.8	2.7	1.8	2.3	1.8	2.0
Emerging market and developing economies	5.3	4.8	4.6	3.8	–1.8	7.0	4.3	4.7	4.3	4.4	4.2
Regional groups:											
Emerging and Developing Asia	7.6	6.6	6.4	5.4	–.5	7.8	4.7	6.1	5.3	5.4	5.0
China	9.0	6.9	6.8	6.1	2.3	8.6	3.1	5.4	5.0	5.0	4.5
India [3]	6.8	6.8	6.5	3.9	–5.8	9.7	7.6	9.2	6.5	7.3	6.4
ASEAN-5 [4]	5.0	5.2	5.0	4.2	–4.4	4.1	5.5	4.1	4.6	4.2	4.2
Emerging and Developing Europe	2.6	4.3	3.8	2.6	–1.8	7.2	.5	3.6	3.5	2.0	2.3
Russia	1.9	1.8	2.8	2.2	–2.7	5.9	–1.4	4.1	4.3	.6	.8
Latin America and the Caribbean	2.4	1.4	1.1	.2	–6.9	7.4	4.3	2.4	2.4	2.4	2.2
Brazil	2.1	1.3	1.8	1.2	–3.3	4.8	3.0	3.2	3.4	2.5	1.6
Mexico	1.7	1.9	2.0	–.4	–8.4	6.0	3.7	3.4	1.4	.6	1.5
Middle East and Central Asia	4.1	2.6	2.5	2.1	–2.3	4.7	6.4	2.6	2.7	3.7	3.9
Saudi Arabia	4.3	1.2	3.2	1.7	–3.8	6.5	12.0	.5	2.6	4.3	4.5
Sub-Saharan Africa	4.8	2.8	3.2	3.1	–3.1	3.8	4.4	3.7	4.1	4.4	4.6
Nigeria	5.6	.8	1.9	2.2	–6.4	1.1	4.3	3.3	4.1	4.2	4.4
South Africa	2.2	1.2	1.6	.3	–6.2	4.9	2.1	.8	.5	1.3	1.4

[1] All figures are forecasts as published by the International Monetary Fund. For the United States, the second estimate by the Department of Commerce shows that real GDP rose 2.1 percent in 2025.
[2] Euro area consists of Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Greece (beginning in 2001), Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), Lithuania (2015), and Croatia (2023).
[3] Data and forecasts are presented on a fiscal year basis and output growth is based on GDP at market prices.
[4] Consists of Indonesia, Malaysia, Philippines, Singapore, and Thailand.

Note: For details on data shown in this table, see *World Economic Outlook Update*, January 2026, published by the International Monetary Fund.

Sources: International Monetary Fund and Department of Commerce (Bureau of Economic Analysis).

Under our Administration, growth is exploding, productivity is soaring, investment is booming, incomes are rising, and inflation is stabilizing. There is more work to do, but in one year we have brought about a historically swift and dramatic economic transformation, and we are delivering for the American people.

—President Donald J. Trump

THE WHITE HOUSE

WASHINGTON