

The Economic Outlook

The economy's real (inflation-adjusted) output will expand at an average annual rate of roughly 2½ percent over the next two years, the Congressional Budget Office projects, after last year's estimated 2 percent growth. Consumer spending is expected to provide the largest contribution to the growth of output over the next few years, as it has done on average in the past. However, the anticipated pickup in growth in 2016 and 2017 stems largely from faster growth in investment in business capital and in housing. CBO expects that the federal tax and spending policies embodied in CBO's baseline projections would boost growth in demand for goods and services in the economy in 2016 but dampen it in 2017 and 2018. CBO also expects the economic expansion over the next few years to put upward pressure on interest rates and inflation, helping to raise the rate of inflation to the Federal Reserve's goal of 2 percent per year, on average.¹

The growth rates that CBO projects for the next two years are modestly faster than the average since the end of the recession in 2009. That postrecession average has been weak by historical standards, reflecting the nature and severity of the last recession as well as structural, longer-term factors such as declining growth in the labor force owing to an aging population. Because of the slow recovery in output, the amount of underused labor and capital resources, or "slack," in the economy has diminished slowly as well.

CBO expects the economic expansion over the next few years to reduce the slack in the labor market. For example, CBO projects that further hiring will reduce the

unemployment rate from 5.0 percent in the fourth quarter of 2015 to 4.5 percent in the fourth quarter of 2016 and put some upward pressure on employee compensation. The hiring also will encourage some people to enter or stay in the labor force, slowing a long-term decline in labor force participation that is attributable to underlying demographic trends and, to a smaller degree, to federal policies.

The later years of CBO's economic projections through 2026 are based primarily on projections of underlying trends in variables such as growth of the labor force, of hours worked, and of productivity. Those projections do not include predictions of the timing or magnitude of economic fluctuations. Real output will grow faster through 2026 than it did during the past decade, CBO expects, because business investment will be stronger and the economy's productivity will grow faster. Nevertheless, slower growth in the nation's supply of labor will probably keep growth of output below the rates observed during the 1980s, 1990s, and early 2000s. On that basis, CBO projects annual growth averaging 2.0 percent over the 2021–2026 period.

Recognizing the uncertainty of economic forecasts, CBO constructs its forecasts to fall in the middle of the distribution of possible outcomes for the economy, given current law. Nevertheless, many developments—such as a quicker tightening of the labor market, slower-than-expected growth in productivity, or slower growth of foreign economies—could cause outcomes to differ substantially from those CBO has projected.

CBO's current economic projections differ in some significant respects from its August 2015 projections. Most important, CBO has lowered its projected paths of potential and actual output, reducing its estimate of potential and actual gross domestic product (GDP) by nearly 3 percent in 2025, the end of the projection period examined in the August report. Those revisions were made on the basis of revised historical data and a reassessment of future growth in total factor productivity (TFP),

1. During December 2015, lawmakers enacted legislation that affected the economic outlook. Consequently, CBO's economic forecast, which is typically completed in early December, has been updated to incorporate the enactment of that legislation, as well as economic developments through the end of the year. In particular, as discussed in the section "Federal Fiscal Policy," recent legislation led CBO to boost its estimate of output over the next two years. In addition, economic developments in December suggested slightly more output and taxable income over the projection period.

the average real output per unit of combined labor and capital services. In addition, economic developments since August point to a weaker outlook for output growth over the next few years. CBO also projects a lower rate of unemployment and lower interest rates than it estimated in August.

The economic projections in this report indicate a slightly stronger economy in the near term than do the *Blue Chip* consensus forecast (published in January) and the forecasts developed by the Federal Reserve (and presented at the Federal Open Market Committee's December 2015 meeting).

The Economic Outlook for 2016 Through 2020

CBO expects real GDP to grow by 2.7 percent this year and 2.5 percent next year—faster than last year's estimated 2.0 percent rate—but at a slower pace in later years (see Table 2-1). The agency anticipates that continued solid growth in spending by consumers and faster growth in investment spending by businesses and homebuilders will drive most of the growth over the next few years. Under current law, developments in the federal government's tax and spending policies would, on net, have a small positive effect on the growth in the demand for goods and services this year and a modest negative effect in 2017 and 2018, CBO projects. The agency also anticipates that monetary policy will support the growth of output this year and over the next few years, but by smaller degrees over time.

CBO expects the slack in the economy to diminish to a negligible amount over the next few years. Since the end of the last recession, GDP has grown faster than potential GDP, on average, reducing the gap between the two and hence the amount of slack in the economy. CBO expects that gap to continue narrowing through the middle of 2018 (see Figure 2-1). In the agency's projections, increased demand for workers reduces the unemployment rate this year and contributes to faster growth in hourly labor compensation as measured by the employment cost index. Those developments are expected to encourage more people to enter, reenter, or remain in the labor force. Reduced slack in the economy will also remove

some of the downward pressure seen in recent years on the rate of inflation.

Unlike CBO's projections for 2016 and 2017, those for the 2018–2020 period do not reflect expected cyclical developments in the economy. Rather, the projections largely serve as transitional paths to values projected for the 2021–2026 period, which are based primarily on an assessment of underlying trends in variables such as growth of the labor force, of hours worked, and of productivity.

Federal Fiscal Policy

Changes projected to occur in federal spending and revenues under current law would have a variety of effects on the economy through 2020. Major legislation enacted since August is one source of those effects; as a whole, it is estimated to boost GDP this year and next, largely by increasing aggregate demand.² Other year-to-year changes in spending and revenues that are expected to occur under laws enacted before August are projected to have little effect on growth this year and modestly dampen demand for goods and services in 2017 and 2018. Altogether, the fiscal policies embodied in CBO's baseline would boost GDP growth in 2016 but dampen it in 2017 and 2018, CBO estimates. (Over the past several years, changes in spending and revenues generally reduced growth in real GDP.) In addition, some aspects of fiscal policy under current law are projected to dampen the supply of labor and therefore the growth of output.

Effects on the Economy From Major Legislation

Enacted Since August 2015. Laws enacted since August 2015 raised spending and lowered revenue in comparison with the amounts in CBO's August 2015 baseline—adding an estimated \$749 billion to the projected 10-year cumulative deficit (see Appendix A). The Consolidated Appropriations Act, 2016 (Public Law 114-113), accounts for most of those legislative changes.

CBO estimates that laws enacted since August would boost real GDP growth by 0.4 percentage points in 2016 and then dampen GDP growth in 2017 and 2018 by

2. Aggregate demand is total purchases by consumers, businesses, governments, and foreigners of a country's output of final goods and services during a given period.

Table 2-1.

CBO's Economic Projections for Calendar Years 2016 to 2026

	Estimated,	Forecast		Projected Annual Average	
	2015	2016	2017	2018–2020	2021–2026
Percentage Change From Fourth Quarter to Fourth Quarter					
Gross Domestic Product					
Real (Inflation-adjusted)	2.0	2.7	2.5	1.9	2.0
Nominal	3.4	4.3	4.4	3.9	4.1
Inflation					
PCE price index	0.5	1.5	2.0	2.0	2.0
Core PCE price index ^a	1.4	1.6	1.9	2.0	2.0
Consumer price index ^b	0.4	1.7	2.4	2.4	2.4
Core consumer price index ^a	2.0	2.0	2.2	2.3	2.3
GDP price index	1.3	1.6	1.9	2.0	2.0
Employment Cost Index ^c	2.2	2.9	3.3	3.3	3.2
Fourth-Quarter Level (Percent)					
Unemployment Rate	5.0 ^d	4.5	4.5	5.0 ^e	5.0 ^f
Percentage Change From Year to Year					
Gross Domestic Product					
Real	2.4	2.5	2.6	2.0	2.0
Nominal	3.5	4.1	4.4	4.0	4.1
Inflation					
PCE price index	0.3	1.1	1.9	2.0	2.0
Core PCE price index ^a	1.3	1.5	1.8	2.0	2.0
Consumer price index ^b	0.1	1.3	2.3	2.4	2.4
Core consumer price index ^a	1.8	2.0	2.2	2.3	2.3
GDP price index	1.1	1.6	1.8	2.0	2.0
Employment Cost Index ^c	2.3	2.6	3.2	3.3	3.2
Calendar Year Average					
Unemployment Rate (Percent)	5.3 ^d	4.7	4.4	4.8	5.0
Payroll Employment (Monthly change, in thousands) ^g	228 ^d	172	124	65	75
Interest Rates (Percent)					
Three-month Treasury bills	0.1 ^d	0.7	1.6	3.0	3.2
Ten-year Treasury notes	2.1 ^d	2.8	3.5	4.0	4.1
Tax Bases (Percentage of GDP)					
Wages and salaries	43.6	43.9	43.9	43.9	43.9
Domestic economic profits	9.2	8.7	8.6	8.1	7.5

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics and the Federal Reserve.

Economic projections for each year from 2016 to 2026 appear in Appendix E.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Excludes prices for food and energy.

b. The consumer price index for all urban consumers.

c. The employment cost index for wages and salaries of workers in private industries.

d. Actual value for 2015.

e. Value for 2020.

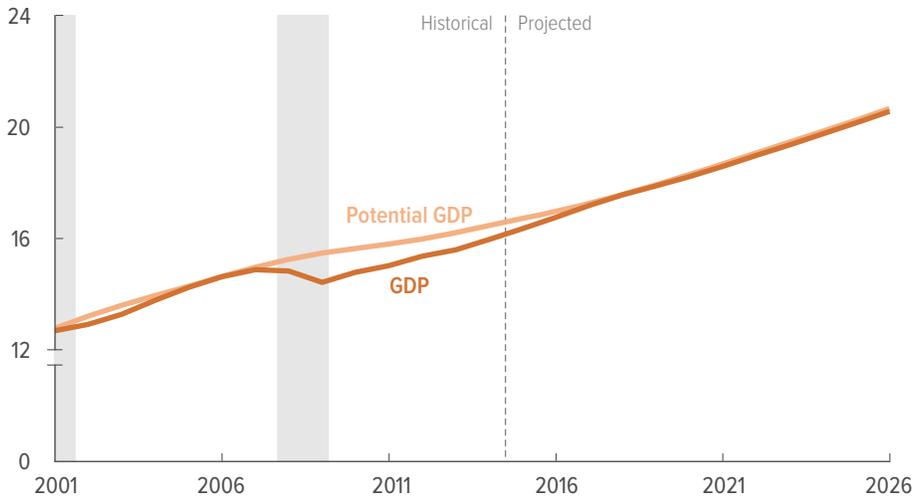
f. Value for 2026.

g. Calculated as the monthly average of the fourth-quarter-to-fourth-quarter change in payroll employment.

Figure 2-1.

GDP and Potential GDP

Trillions of 2009 Dollars



The gap between the economy's actual and potential output will be largely eliminated by the middle of 2018 and then increase to its historical average—about one-half of one percent of potential GDP—by 2020 in CBO's projection.

Source: Congressional Budget Office, using data from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

Potential gross domestic product is CBO's estimate of the maximum sustainable output of the economy.

Data are calendar year averages.

GDP = gross domestic product.

0.2 percentage points in each year.³ The effects on GDP growth through the rest of the projection period are likely to be small, and until later years the direction of those effects is uncertain. By the end of the projection period, the laws would probably lower real GDP somewhat as an increase in federal debt from the larger cumulative deficit would ultimately reduce private investment enough to more than offset any positive effects on output from other aspects of the legislation.

The estimated effects on growth in the near term, in part, reflect the laws' effects on projected discretionary spending. Together they boosted spending for discretionary programs by \$25 billion (in nominal dollars) in 2016

3. Although the legislation significantly affects spending and revenues over the next decade, several factors are estimated to restrain the economic effects over the next few years. Some of the reductions in revenues are estimated to have only a modest effect on private demand; moreover, some reductions in business taxes were retroactive and are expected to have little effect on investment. In addition, with short-term interest rates no longer constrained by the zero lower bound, monetary policy is expected to partly offset the boost to economic growth from stronger aggregate demand. For a description of CBO's approach to analyzing the economic effects of fiscal policy, see Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), www.cbo.gov/publication/49494.

over previously projected amounts, resulting in an increase of \$32 billion over the 2015 level. That increase will tend to boost the growth of real output this year. In CBO's baseline, enacting the legislation increased discretionary outlays by the same amount in 2017 as it did in 2016 and increased them by less in 2018. After adjustment for inflation, those nominal increases imply a smaller boost to real federal spending in 2017 and 2018 than will occur this year. Hence, those changes to the baseline projections dampen CBO's estimate of real GDP growth slightly in 2017 and 2018.

In addition, the Consolidated Appropriations Act, 2016, includes major changes to tax provisions that will affect the economy over the 2016–2018 period and beyond. That law increased incentives for businesses to invest by changing the tax treatment of investment spending. As discussed later, those changes are expected over the next few years to increase business investment, another source of aggregate demand.⁴ That outcome also implies faster

4. Enacted in December 2015, the Consolidated Appropriations Act, 2016, retroactively extended many tax provisions that reduced tax liabilities and had been extended routinely in previous years. Those changes in law reduced income tax revenues more in 2016 than in future years, contributing slightly to the projected increase in revenues after 2016.

growth of aggregate demand in 2016 and 2017 but slightly slower growth in 2018.

CBO anticipates that the laws enacted since August will affect the quantity of labor and capital services supplied in the economy in several ways. On net, those effects will probably have only a small impact on output in the later years of the projection period. In particular, the Consolidated Appropriations Act, 2016, will affect work incentives for many households—but the effects are small and offsetting, and the net impact on labor supply is estimated to be minuscule. Also, the projected boost to business investment over the next several years will tend to result in a larger capital stock and greater capital services in the near term. However, in the longer term the legislation enacted since August will tend to dampen the growth of capital services because it increased projected deficits over the next decade. The agency estimates that those deficits would gradually reduce—or crowd out—private investment in productive capital because the portion of people's savings used to buy government securities would not be available to finance private investment.

Effects on Aggregate Demand From Other Changes in Fiscal Policy. Other year-to-year changes in spending and revenues projected under current law would have small negative effects on growth in output. Although recent legislation boosted spending for discretionary programs, the previously enacted limits on discretionary appropriations continue to apply for 2018 through 2021, reducing projected discretionary spending as a share of output over that period. CBO also expects that the automatic stabilizers (that is, the automatic increases in revenues and decreases in outlays in the federal budget that occur when the economy strengthens) will provide less economic stimulus over the next few years.⁵

Effects on the Supply of Labor From Other Changes in Fiscal Policy. CBO anticipates that several developments in federal fiscal policy under current law will affect

the economy through their impact on the labor market. The most sizable effects stem from provisions of the Affordable Care Act (ACA). The ACA's largest effect on the labor market—especially as overall employment conditions improve—will come from provisions of the act that raise effective marginal tax rates on earnings, thereby reducing how much some people choose to work.⁶ The health insurance subsidies that the act provides through the expansion of Medicaid and the exchanges are phased out for people with higher income, creating an implicit tax on some people's additional earnings. The act also directly imposes higher taxes on some people's labor income. Because both effects on labor supply will grow over the next few years, CBO projects, they will subtract from economic growth over that period.

CBO expects that other aspects of the federal tax and transfer system also will affect incentives to work over the next decade. People's real incomes are projected to rise, on average, over the next decade, because of both a continuing recovery and underlying growth in productivity. That increase in income will tend to push some households into higher tax brackets, raising marginal tax rates and dampening growth in labor supply.

Monetary Policy and Interest Rates on Treasury Securities

CBO expects that the Federal Reserve will continue to gradually reduce the extent to which its monetary policy supports the growth of output as the economy improves and as the rate of inflation approaches the central bank's longer-run goal of 2 percent. After holding the target range for the federal funds interest rate (the Federal Reserve's primary policy rate) at zero to 0.25 percent since late 2008, the Federal Reserve raised the range to 0.25 percent to 0.50 percent at its December 2015 meeting. In CBO's forecast, the federal funds rate rises to 1.2 percent in the fourth quarter of 2016 and 2.2 percent in the fourth quarter of 2017, and it settles at 3.5 percent in the second quarter of 2019. CBO's projections not only take into account projections by Federal Reserve officials but also place some weight on the lower path for interest rates implied by prices in the futures market for federal funds (see Figure 2-2).

5. All else being equal, automatic stabilizers affect aggregate demand, and therefore output, because they are changes in the amount of taxes that households and businesses pay and the transfer payments that households receive. The change in aggregate demand, in turn, affects businesses' decisions about whether to increase production and hire workers, further affecting income, demand, and output. For more discussion of the automatic stabilizers, see Appendix C and Frank Russek and Kim Kowalewski, *How CBO Estimates Automatic Stabilizers*, Working Paper 2015-07 (Congressional Budget Office, November 2015), www.cbo.gov/publication/51005.

6. For more information on the effects of the ACA, see Edward Harris and Shannon Mok, *How CBO Estimates the Effects of the Affordable Care Act on the Labor Market*, Working Paper 2015-09 (Congressional Budget Office, December 2015), www.cbo.gov/publication/51065.

Figure 2-2.

Forecasts of Interest Rates by CBO, by Federal Reserve Officials, and Derived From Federal Funds Futures



CBO’s forecast for the **federal funds rate** is below forecasts by most Federal Reserve officials for the next two years. CBO’s forecast places some weight on the lower path for interest rates implied by prices in the futures market for federal funds.

CBO projects that **interest rates on Treasury securities** will rise steadily over the next few years, reflecting continued economic improvement and increases in the federal funds rate.

Sources: Congressional Budget Office; Bloomberg; Board of Governors of the Federal Reserve System, “Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, December 2015” (December 16, 2015), <http://go.usa.gov/cUkyR>.

The 17 data points for each year in the top panel represent forecasts made by members of the Federal Reserve Board and presidents of the Federal Reserve Banks in December 2015. Forecasts are expected values at the end of the year. For the Federal Reserve, longer-term projections are described as the value at which each variable would settle under appropriate monetary policy and in the absence of further shocks to the economy.

The forecast from the futures market for federal funds is dated December 31, 2015, corresponding to the last observation used for CBO’s forecast. Values for 2016 and 2017 are averages for the fourth quarter of the year; the value for 2018 is the average of July and August of 2018, the last values available at the time of the forecast.

CBO’s forecast values are for the fourth quarter of the year shown. CBO’s forecast for the longer term is the value for 2026.

Interest rates on federal borrowing will rise steadily over the next few years, CBO projects, as the economy improves and the federal funds rate rises. CBO projects that the interest rate on 3-month Treasury bills will rise from 0.1 percent in the fourth quarter of 2015 and settle at 3.2 percent by mid-2019.⁷ The interest rate on 10-year Treasury notes is projected to rise from 2.2 percent in the fourth quarter of 2015 to 4.1 percent by late 2019.

The projected increase in the 10-year rate reflects the anticipated increase in the 3-month rate and an expected increase in the term premium—the premium paid to bondholders for the extra risk associated with holding long-term bonds—from its historically low level at the end of last year. The term premium has probably been held down in recent years by an unusually heightened concern among investors that economic activity in the United States might be unexpectedly bad, which would lead monetary policymakers to keep short-term interest rates lower for a longer-than-expected period. CBO expects those concerns to diminish if, as it anticipates, the economy grows at a steady pace over the next few years. In addition, the term premium has probably been held down by the influence of the Federal Reserve’s large portfolio of long-term assets. CBO expects the size of that portfolio to gradually diminish beginning at the end of this year; that development will begin to put upward pressure on the term premium and the 10-year rate. Because the reduction in the size of the Federal Reserve’s portfolio is expected to begin later than the rise in the federal funds rate, the interest rate on 10-year notes rises more slowly in CBO’s projection and stabilizes slightly later than the rate on 3-month bills.⁸

Although CBO expects long-term rates to rise, it also anticipates that several factors, detailed below, will keep real interest rates from rising to levels that prevailed before the 2007–2009 recession (see “The Economic Outlook for 2021 Through 2026”).

7. CBO expects the interest rate on 3-month Treasury bills to be lower than the federal funds rate over the next 10 years, consistent with their historical relationship. The 3-month Treasury bill rate is typically lower than the federal funds rate because Treasury securities are free of default risk, whereas the overnight unsecured loans made at the federal funds rate carry a small risk of default.

8. The 10-year rate is projected to rise by less than the 3-month rate, because, in CBO’s estimation, the current 10-year rate already largely incorporates the projected rise in the 3-month rate over the 10-year period.

Contributions to Growth of Real GDP

CBO expects that consumer spending and both business and residential investment will drive growth of real GDP in coming years (see Figure 2-3). Consumer spending is expected to provide the largest contribution to the growth of output over the next few years, as it has done on average in the past. However, the anticipated pickup in growth in 2016 and 2017 stems largely from faster growth in investment in business capital and in housing (see Table 2-2). On net, purchases by the federal government and by state and local governments are projected to have a small positive effect on the growth of GDP through 2020. In contrast, net exports will restrain growth in 2016 and 2017 but contribute slightly to growth thereafter, CBO projects.

Consumer Spending. In CBO’s estimation, solid growth in consumer spending on goods and services will be an important contributor to the growth of real output. That contribution this year will be nearly the same as in 2015—about 1.9 percentage points (as measured from the fourth quarter of the previous year)—and then fall slightly to 1.8 percentage points in 2017. CBO estimates that consumer spending will contribute less to the growth of output thereafter.

Several factors support that outlook for consumer spending over the next two years. The most important factor is real compensation of employees, which CBO expects will be spurred by the expected further recovery in the labor market (see Figure 2-4 on page 40). CBO also expects low prices for energy goods and services to continue to support consumer spending; in particular, CBO projects prices for gasoline to remain below their 2015 average over the next few years. The agency also projects that further increases in housing prices will support consumer spending by raising household wealth. However, CBO does not expect a significant boost to consumer spending from changes in financial wealth over the next two years.⁹

CBO also expects improvements in households’ credit-worthiness and in availability of credit to support consumer spending over the next few years. The projected growth in income will allow consumers to borrow more,

9. Broad indexes of U.S. equity markets have fallen sharply since the end of 2015 when CBO completed its economic forecast, lowering the value of household equity wealth. If equity values remain below CBO’s forecast, that development could dampen the growth of real consumer spending over the next year or two.

Figure 2-3.

Projected Contributions to the Growth of Real GDP

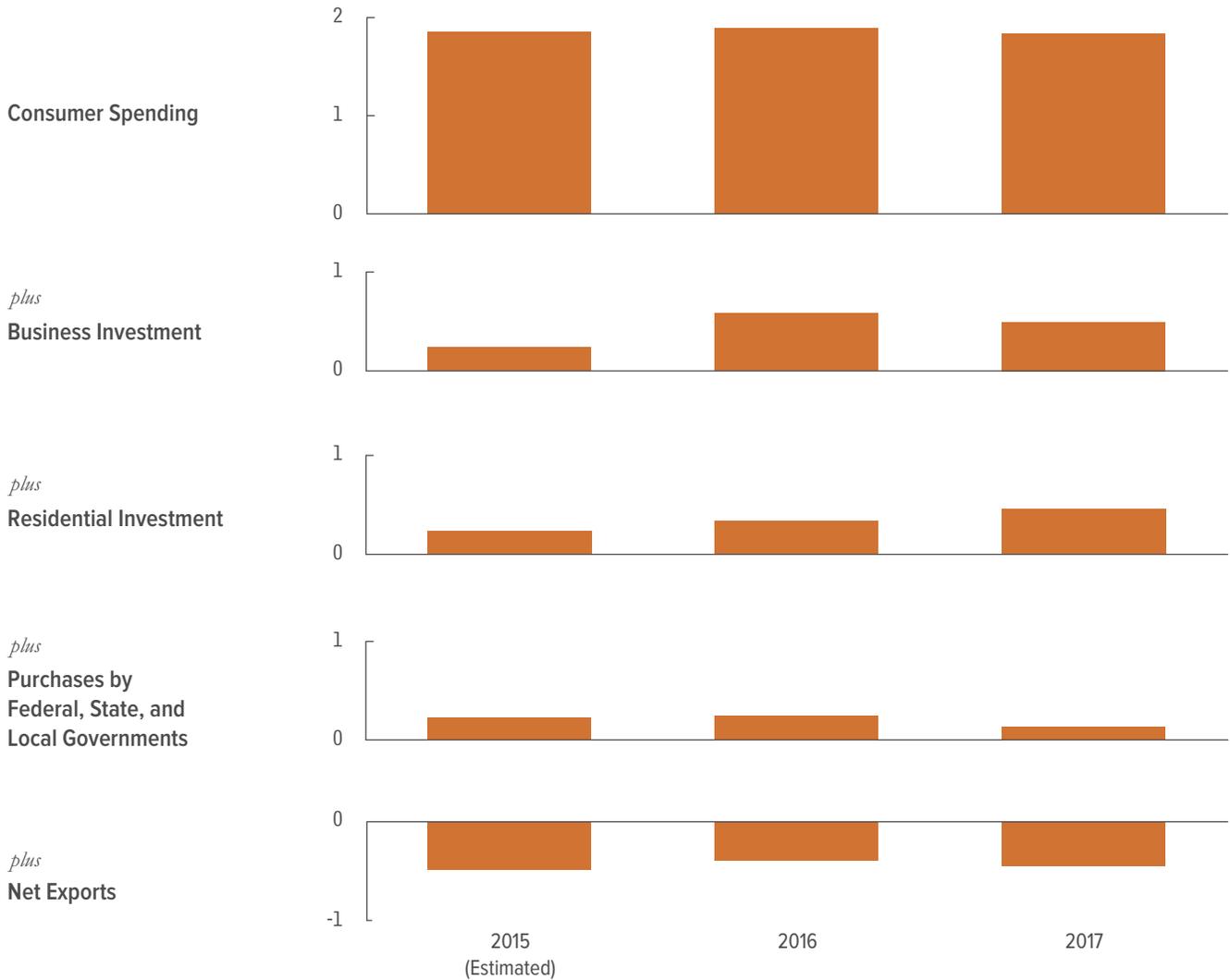
Projected growth of real GDP

2.0%

2.7%

2.5%

is the sum of contributions,
in percentage points, from . . .



Source: Congressional Budget Office.

The values show the projected contribution of the major components of GDP to the projected growth rate of real (inflation-adjusted) GDP. Consumer spending consists of personal consumption expenditures. Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, as well as the change in inventories. Residential investment includes the construction of single-family and multifamily structures, manufactured homes, and dormitories; spending on home improvements; and brokers' commissions and other ownership-transfer costs. Purchases by federal, state, and local governments are taken from the national income and product accounts. Net exports are exports minus imports. Changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

GDP = gross domestic product.

Table 2-2.

Projected Growth in Components of Real GDP

	Estimated,	Forecast	
	2015	2016	2017
	Change From Fourth Quarter to Fourth Quarter (Percent)		
Real GDP	2.0	2.7	2.5
Consumer Spending	2.7	2.7	2.6
Business Investment	1.9	4.8	4.0
Business Fixed Investment	2.6	5.4	4.5
Residential Investment	7.2	10.0	12.6
Purchases by Federal, State, and Local Governments	1.3	1.4	0.8
Federal	0.2	0.7	-0.7
State and local	1.9	1.9	1.7
Exports	0.9	3.0	4.7
Imports	4.1	5.2	6.9
	Change From Fourth Quarter to Fourth Quarter (Billions of 2009 dollars, annualized)		
Net Exports	-88	-77	-92

Source: Congressional Budget Office.

Real gross domestic product is the output of the economy adjusted to remove the effects of inflation. Consumer spending consists of personal consumption expenditures. Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, as well as the change in inventories. Business fixed investment is the spending by businesses on structures, equipment, and software. Residential investment includes the construction of single-family and multifamily structures, manufactured homes, and dormitories; spending on home improvements; and brokers' commissions and other ownership-transfer costs. Purchases by federal, state, and local governments are taken from the national income and product accounts. Net exports are exports minus imports.

GDP = gross domestic product.

CBO expects, and will diminish delinquency rates on consumer loans, which already are historically low by some measures. In recent years, banks have increased their willingness to make consumer loans, and CBO expects them to continue to do so over the next few years.

Business Investment. CBO expects investment by businesses to contribute significantly to the growth of real GDP over the next few years.¹⁰ CBO estimates that real business investment will contribute 0.6 percentage points to the growth rate of real GDP in 2016 and 0.5 percentage points in 2017—up from a contribution of 0.2 percentage points in 2015. The contribution in 2016 accounts for most of this year's increase in the projected growth in real GDP. CBO estimates that real business investment will contribute less to the growth of output in later years. All of the contribution from business

investment will be from investment in fixed assets rather than from inventory accumulation because businesses have largely restored the ratio of their inventories to sales to the desired level, in CBO's view.

Business investment remains in a cyclical expansion after the last recession. In addition to replacing worn-out or obsolete capital assets, businesses invest in new assets to meet the unexpected growth of demand for their goods and services since the last time they purchased capital and to meet expected growth of demand. Consequently, investment responds to both past and expected growth of real output. For that reason, the recession and slow recovery of the economy slowed the recovery in business investment. CBO expects that past output growth and expectations of growth will significantly boost investment this year and next but will provide a smaller boost in later years as output growth slows (see Figure 2-4).

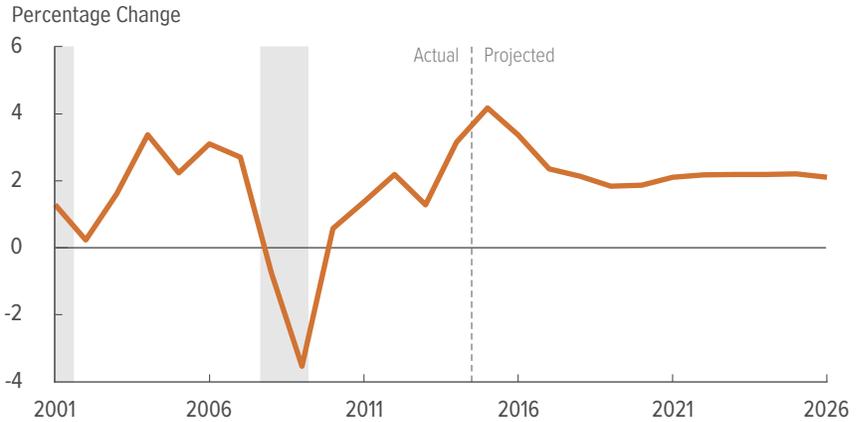
10. Business investment consists of fixed investment (investment in equipment, nonresidential structures, and intellectual property products such as research and development) and investment in inventories.

Other factors also play a role in CBO's projection of business investment. Partial-expensing provisions will encourage investment by permitting businesses to deduct new

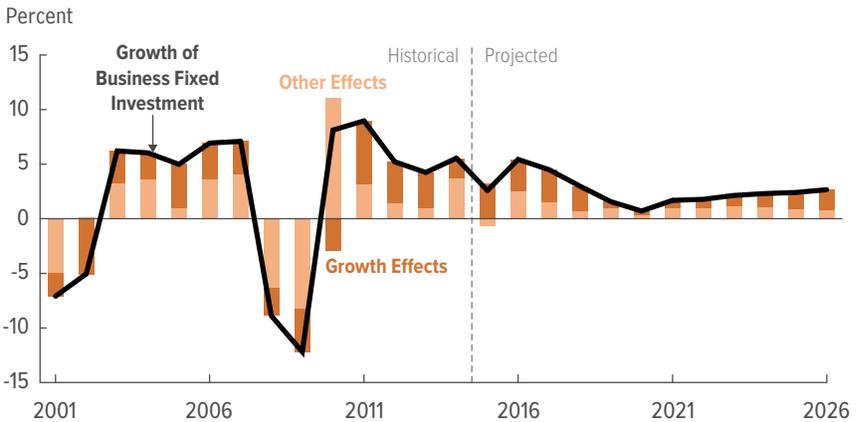
Figure 2-4.

Factors Underlying the Projected Contributions to the Growth of Real GDP

Solid growth in the total amount of **inflation-adjusted compensation of employees** is projected to support growth in consumer spending in the next few years.



CBO expects the **effects of past and expected future growth of output** to drive the growth of business fixed investment over the next few years.



Source: Congressional Budget Office, using data from the Bureau of Economic Analysis, the Bureau of the Census, and the Federal Reserve.

The total amount of real (inflation-adjusted) compensation of employees is the sum of total wages, salaries, and supplements divided by the price index for personal consumption expenditures. Percentage changes are measured from the average of one calendar year to the next year.

Growth effects are the estimated effects of past and expected future growth of output on the growth of real business fixed investment (purchases of equipment, nonresidential structures, and intellectual property products). In addition to replacing worn out and obsolete capital, businesses buy new capital to meet the growth of demand for their goods and services since the last time they purchased capital and to meet expected future growth of demand. All other effects include such factors as taxes and the cost of financing investments. Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

Continued

investment from taxable income more rapidly, CBO expects. In the other direction, the agency expects that investment in mining structures will continue to slow in response to low oil prices through mid-2016, but by less than it did in 2015, and then begin to pick up again thereafter.¹¹ Moreover, the increase in interest rates anticipated in CBO's forecast will exert some downward pressure on investment, but not enough to offset the influence of the ongoing economic expansion. The recent lifting of restrictions on exports of crude oil will have

little impact on oil prices and thus on investment over the next few years, in CBO's judgment. Because continuing the restrictions probably would eventually have restrained domestic oil prices, lifting them is expected to increase investment beyond the next few years.

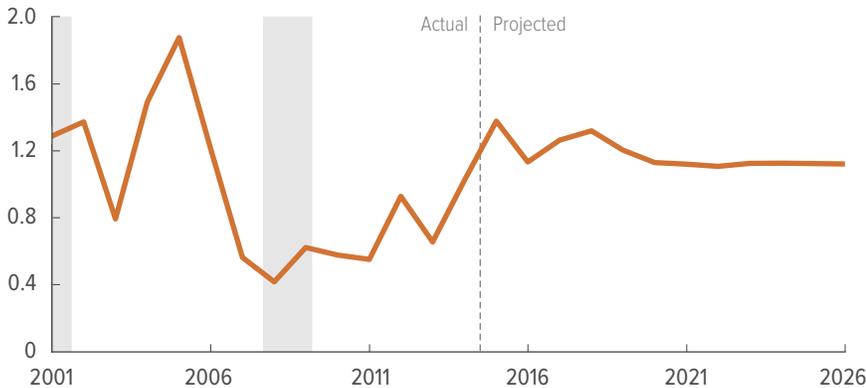
11. Oil prices have fallen considerably since CBO completed its forecast in late December. That decline implies somewhat lower oil prices over the projection period and a somewhat greater slowing of mining investment in 2016.

Figure 2-4.

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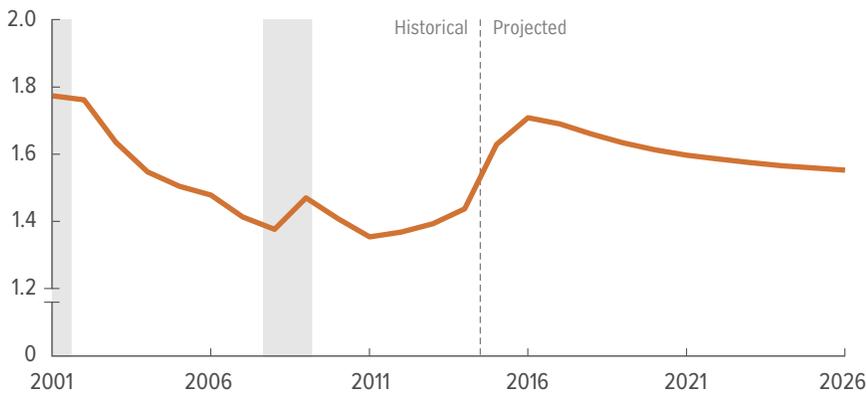
Factors Underlying the Projected Contributions to the Growth of Real GDP

Millions of Households



Household formation, along with robust demand for replacement housing units and less restrictive mortgage lending standards, will contribute to solid growth in residential investment over the next few years.

Index, 1970=1



The continued appreciation of the **exchange rate of the U.S. dollar** through 2016 is projected to contribute to lower net exports this year and next.

Household formation is the change in the average number of households from one calendar year to the next.

The measure of the exchange rate of the dollar is an export-weighted average of exchange rates between the dollar and the currencies of the United States' leading trading partners. Data are calendar year averages.

GDP = gross domestic product.

Residential Investment. CBO expects residential investment to grow rapidly in real terms over the next few years, even as mortgage rates begin to rise.¹² The sector's small size will limit its contribution to the growth of real GDP, but CBO expects the contribution will be noticeably larger than the historical average. CBO projects that residential investment will contribute 0.4 percentage points to the average growth rate of real GDP from 2016

through 2018—up slightly from 2015—and a smaller amount thereafter.

CBO anticipates that construction of new homes will be the primary contributor to residential investment, mainly because of expected continued strength in household formation (see Figure 2-4). Other factors include less restrictive mortgage lending standards and robust demand for replacement housing units. Although mortgage lending standards remain tighter than they were before the 2007–2009 recession, they have been loosening over the past few years and probably will continue to loosen.

12. Residential investment consists mostly of single-family construction, multifamily construction, residential improvements, real estate agents' commissions, and other ownership transfer costs.

CBO anticipates that stronger growth in demand for housing will put upward pressure on house prices. In 2015, house prices (as measured by the Federal Housing Finance Agency's price index for home purchases) rose by 4.4 percent (on a fourth-quarter-to-fourth-quarter basis), in CBO's estimation. CBO projects that they will increase by 2.1 percent in 2016 and by about 2.4 percent per year, on average, over the 2017–2020 period. That outlook accounts for the projected increase in the supply of housing units, which is expected to temper the price gains resulting from stronger housing demand.

Government Purchases. CBO projects that, in real terms, the purchases of goods and services by federal, state, and local governments will contribute 0.2 percentage points to the growth rate of output this year—about the same as last year—and contribute about 0.1 percentage point per year thereafter. The projected growth of the real value of overall government purchases in 2016 is attributable to an estimated increase of 1.9 percent in state and local purchases and an increase of 0.7 percent in federal purchases. After this year, the government sector's positive contribution to the growth of output will be small and due entirely to spending by state and local governments, CBO projects. The statutory caps on funding for discretionary programs constrain spending through 2021, reducing projected real purchases by the federal government in both 2017 and 2018 and leaving them roughly unchanged in 2019 and 2020.

Net Exports. CBO expects that real net exports will fall and slow the growth of GDP from 2016 through 2018, just as they did last year. In later years, net exports are expected to make a small contribution to growth.¹³ CBO's projection of net exports is based primarily on the significant increase in the exchange value of the dollar during the past two years and on the agency's forecast of that value (see Figure 2-4). In the past two years, the trade-weighted U.S. dollar appreciated by approximately 19 percent.¹⁴ That appreciation occurred because long-term interest rates declined among the United States' leading trading partners, particularly in Europe and Asia, and because the outlook for foreign growth deteriorated. Those developments increased the exchange value of the dollar by boosting the relative demand for dollar-

denominated assets, which reduced net exports in the past year and will continue to do so this year. CBO expects the stronger growth in the United States compared with that among its trading partners to continue to contribute to an increasing divergence between interest rates in the United States and those abroad this year. That effect will further push up the exchange value of the dollar and contribute to weaker net exports over the next two years. As growth in foreign economies strengthens, however, foreign central banks will gradually tighten their monetary policies and foreign interest rates will generally rise, in CBO's estimation. As a result, the exchange value of the dollar is expected to decrease and contribute to stronger net exports in 2019 and beyond.

CBO's projection of net exports also is based partly on important differences in the expected pace of economic activity in the United States and among its leading trading partners. CBO expects growth in the United States this year to outpace that of the leading U.S. trading partners; for example, China's economic growth is projected to continue to slow over the next few years, and continued decline in commodity prices will dampen growth in Canada and Mexico over the next year. The effects of modest improvements to economic growth in the euro zone and Japan are expected to only partially offset the effects of slow growth in the economies of China, Canada, and Mexico. Consequently, U.S. spending on imports is projected to rise more than the trading partners' spending on U.S. exports will, reducing net exports. As commodity prices rebound, CBO expects growth among the nation's major trading partners (especially Canada, Mexico, and other commodity-producing economies) to rise and exceed the rate of U.S. economic growth—slightly boosting net exports.

The Labor Market

The labor market showed marked improvement in 2015. The primary measure CBO uses to assess the amount of slack in the labor market—the estimated shortfall in employment from its potential (maximum sustainable)

13. Net exports are currently negative, meaning that the United States imports more than it exports. A decrease in net exports indicates that imports are increasing more than exports.

14. CBO's measure of the exchange value of the dollar is an export-weighted average of the exchange rates between the dollar and the currencies of leading U.S. trading partners. Similarly, CBO calculates the economic growth of leading U.S. trading partners by using a weighted average of their growth rates. That measure uses shares of U.S. exports as weights.

Figure 2-5.

Employment Shortfall

Millions of People



The employment shortfall has dropped sharply since 2009 because of a decline in the unemployment rate; it currently remains elevated, however, mostly from low labor force participation.

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

The employment shortfall from unemployment is the number of people who would be employed if the unemployment rate equaled its natural rate. (The natural rate is CBO's estimate of the rate arising from all sources except fluctuations in the overall demand for goods and services.) The shortfall from unemployment falls below zero from 2016 through early 2019, reflecting CBO's forecast that the unemployment rate will be below its natural rate during that period. The employment shortfall from labor force participation is the number of people who would be employed if the rate of labor force participation equaled its potential.

Data are quarterly.

amount—fell by an estimated 1½ million people, down to about 2½ million people at the end of last year. That decline reflects, in part, a drop in the unemployment rate to its lowest value since early 2008. (For more discussion of slack at the end of 2015, see Box 2-1.) Because of population growth, the labor force continued to grow modestly last year, despite a decline in the rate of labor force participation.¹⁵

According to CBO's estimates, the growth of output over the next two years will increase the demand for labor, leading to solid employment gains and virtually eliminating labor market slack. The employment shortfall is projected to shrink to a little more than 1 million people by the end of 2016 and reach ½ million people by the end of 2017 (see Figure 2-5). The projected employment shortfall over the next few years reflects CBO's expectation that the labor force will remain smaller than its estimated potential size. Partially offsetting that factor is the agency's projection that the unemployment rate will fall

below the estimated natural rate of unemployment (the rate that arises from all sources except fluctuations in the overall demand for goods and services). That difference shrinks the projected employment shortfall in 2016 and 2017. With that increased demand for labor, CBO projects, the increased competition for workers will boost the growth of hourly labor compensation (wages, salaries, and benefits).

CBO's labor market projections for 2018 through 2020 do not reflect expected cyclical developments in the economy. Instead, the projections largely serve as a transition to values projected for later years, which primarily reflect estimated long-term trends. Consequently, the projected rate of unemployment rises to its historical relationship with the natural rate of unemployment over that period, increasing labor market slack, by a small amount, to its average level over past decades.

Employment. Nonfarm payroll employment rose solidly last year, and CBO expects it to continue to increase over the next few years, but more slowly. After an average increase of 228,000 jobs per month in 2015, employment is expected to rise by an average of about

15. The rate of labor force participation is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and are either working or seeking work.

Box 2-1.

Slack in the Labor Market at the End of 2015

Slack in the labor market decreased last year but remained elevated. The Congressional Budget Office based that assessment on its analysis of the employment shortfall and measures of underused labor as well as indicators such as growth of compensation and rates of hiring and quitting.

The employment shortfall, CBO's primary measure of slack in the labor market, is the difference between actual employment and the agency's estimate of potential (maximum sustainable) employment. Potential employment is the employment that would exist if the unemployment rate was at the natural rate of unemployment (the rate that arises from all sources except fluctuations in the overall demand for goods and services) and the rate of labor force participation was at its potential rate. The contribution to the shortfall from the difference in unemployment rates is the difference between the number of jobless people searching for work at the current rate of unemployment and the number who would be jobless at the natural rate of unemployment. The contribution to the shortfall from the difference in participation rates is the difference between the number of people who are employed at the current labor force participation rate and the number who would potentially be employed if the participation rate reflected a labor

market with healthy job prospects. CBO estimates that the employment shortfall was about 2½ million people at the end of last year. That shortfall was almost entirely accounted for by the depressed rate of labor force participation; CBO estimates that the unemployment rate was only slightly above its natural rate.

CBO's primary measure of labor market slack incorporates the most important sources of slack during the current recovery but does not include all possible sources. For example, another source of slack in the labor market is the continued unusually large percentage of part-time workers who would prefer to work full time. About 4 percent of all workers were employed part time for economic reasons (that is, because of weakness in the overall demand for goods and services) at the end of 2015, down from 4¾ percent at the end of 2014. Yet that rate is still about 1 percentage point above the rate in the fourth quarter of 2007. But how much of that difference is a measure of slack is hard to determine because part of the increase since 2007 may also be related to structural factors such as a changing composition of employment by industry. One such factor is a shift of employment to industries that employ a larger fraction of part-time workers, such as service industries. That development suggests

Continued

172,000 jobs per month in 2016 and about 124,000 jobs per month in 2017, reflecting an anticipated slowdown in the decline in the unemployment rate and slower growth in the labor force because of the retirement of baby boomers (people born between 1946 and 1964). CBO's employment projections indicate that the number of people employed as a percentage of the population will be roughly unchanged over the next two years before falling steadily in later years as the rate of participation in the labor force falls (see Figure 2-6 on page 46).

Labor Force Participation. The rate of labor force participation has dropped noticeably in recent years. It fell by 0.3 percentage points, to 62.5 percent in 2015. That

rate was roughly 1 percentage point below CBO's estimate of the potential participation rate. CBO projects that the participation rate will remain at 62.5 percent through 2016 and then fall by roughly 0.1 percentage point per year, reaching 62.1 percent at the end of 2019 (see Figure 2-7 on page 47). At the same time, the potential participation rate continues to fall in CBO's projection, also reaching 62.1 percent by the end of 2019.

Those projected declines in actual and potential rates of labor force participation reflect several factors. The most important factor is the aging of members of the baby-boom generation, even though that generation apparently has a stronger attachment to the labor force than

Box 2-1.

Continued

Slack in the Labor Market at the End of 2015

that the share of workers working fewer hours than they prefer may be elevated as workers and firms adjust to those structural changes.¹

Another source of slack is the number of people said to be marginally attached to the labor force (that is, who are not looking for work now but have looked for work in the past 12 months). That number is larger than before the recession, for example—about 1.8 million people at the end of last year, up from about 1.4 million in the fourth quarter of 2007. Since the elevated level of the number of people who are marginally attached to the labor force is closely related to the depressed rate of labor force participation, CBO's measure of the employment shortfall largely reflects that factor. Marginally attached people are included in the U-6 measure of underused labor computed by the Bureau of Labor Statistics, along with the number of unemployed people and the number of people employed part time for economic reasons. U-6 is expressed as a percentage of the number of people in the labor force plus the number of marginally attached workers. At the end of last year, the U-6 measure stood at 9.9 percent, greater than the 8.5 percent observed before the last recession.

Another measure of slack could focus on the number of hours worked, such as the average number of hours worked per week. CBO does not use hours to

measure slack because the agency forecasts average hours worked per week for only a portion of the economy (the nonfarm business sector). Nonetheless, in 2015 the average number of hours worked per week had returned to its prerecession value, and average hours worked per week in the nonfarm business sector had returned to its historic relationship with potential average hours worked per week. That outcome suggests that any cyclical influence on average hours worked per week was not a significant source of slack in the labor market last year.²

Other economic indicators offered mixed signals about the amount of slack remaining in the labor market. The continued slow growth in hourly labor compensation compared with the growth in labor productivity and inflation indicated slack at the end of 2015. But two other indicators—the rate at which job seekers are hired and the rate at which workers are quitting their jobs (as a fraction of total employment)—suggested that slack had diminished considerably.

1. See Rob Valletta and Catherine van der List, "Involuntary Part-Time Work: Here to Stay?" FRBSF Economic Letter 2015-19 (Federal Reserve Bank of San Francisco, June 8, 2015), <http://tinyurl.com/pbywpck>.

2. As measured by the number of people who work part time for economic reasons, the percentage of workers who would prefer to work more hours is higher than before the recession. Yet the average number of weekly hours worked per job has returned to its prerecession value. Those two developments can be reconciled by noting the following: First, the number of workers holding multiple jobs is depressed, putting downward pressure on average hours worked per worker. Second, the improvement in average weekly hours worked per job reflects in part more overtime hours. If those increases in overtime are concentrated in some jobs, average weekly hours may have rebounded even as a large share of workers would prefer more hours.

that of people age 60 and over in recent generations. The lingering effects of the recession and ensuing weak recovery also will continue to push down participation, in CBO's view. Although many workers who experienced long-term unemployment because of the deep recession and slow recovery later found jobs, a notable fraction also left the labor force and remain categorized as not participating in the labor force. In addition, federal tax and spending policies—in particular, certain aspects of the ACA and the structure of the tax code, which pushes some people with rising income into higher tax

brackets—will tend to lower participation rates over the next several years. Finally, a set of long-term trends involving particular cohorts of people are projected to push down the participation rate slightly. Those trends include, for example, less participation in the labor force by younger and less-educated workers.

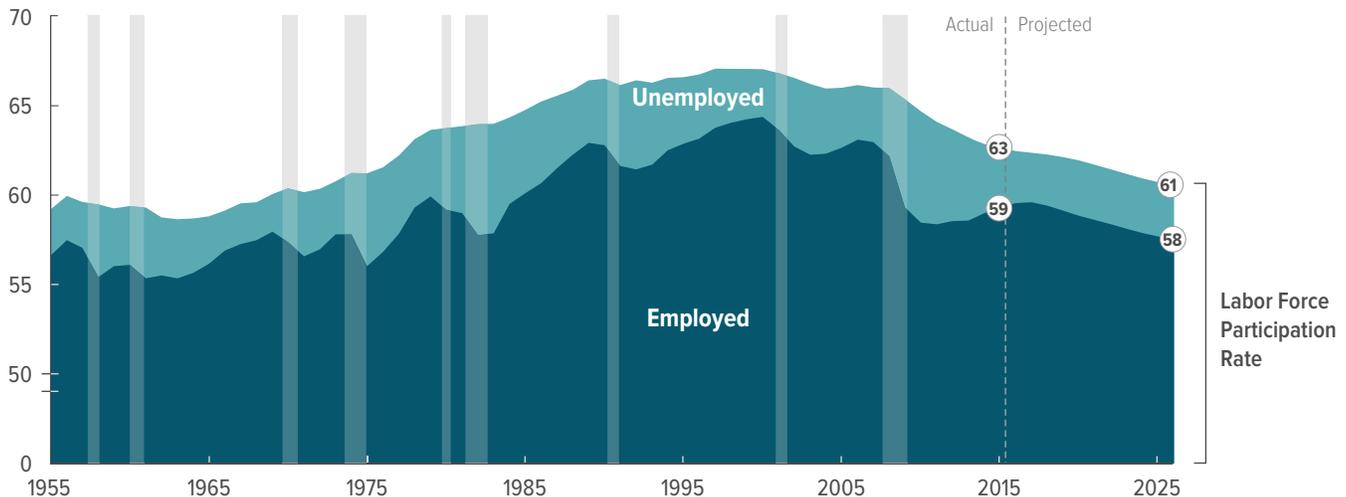
CBO's projection of the actual rate of labor force participation falls by less than its projection of the potential rate because the expected continued improvement in the

Figure 2-6.

The Labor Force, Employment, and Unemployment

The percentage of the population that is employed is projected to remain roughly unchanged over the next few years and then decrease through 2026 because of declining participation in the labor force, mainly by baby boomers as they age and move into retirement.

Percentage of the Population



Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

The labor force consists of people who are employed and people who are unemployed but who are available for work and are actively seeking jobs. Unemployment as a percentage of the population is not the same as the official unemployment rate, which is expressed as a percentage of the labor force. The population is the civilian noninstitutionalized population age 16 or older.

Data are calendar year averages.

labor market will bolster the actual rate. Some workers who left the labor force temporarily, or who stayed out of the labor force because of weak employment prospects, will enter it in the next few years as demand for labor strengthens.

Unemployment. The unemployment rate fell from 5.7 percent in the fourth quarter of 2014 to 5.0 percent in the fourth quarter of 2015. Most of that decline stemmed from a decline in long-term unemployment (that is, unemployment lasting at least 27 consecutive weeks) as those who had been unemployed long-term appeared to move into employment (see Figure 2-8 on page 48). That outcome indicates possibly diminishing effects of the stigma and erosion of skills that can result from long-term unemployment.

CBO projects the unemployment rate to fall to 4.5 percent by the end of this year and reach 4.4 percent in 2017, leaving the rate roughly 0.4 percentage points below CBO's estimate of the natural rate of unemployment. That difference reflects a projected increase in the

demand for labor that temporarily outstrips the boost to the labor force resulting from an improving labor market. However, the relatively low unemployment rate does not imply that slack is no longer present in the labor market beginning this year. Some slack is expected to persist through 2020 because fewer people will be participating in the labor market than would do so if the economy was operating at its potential.

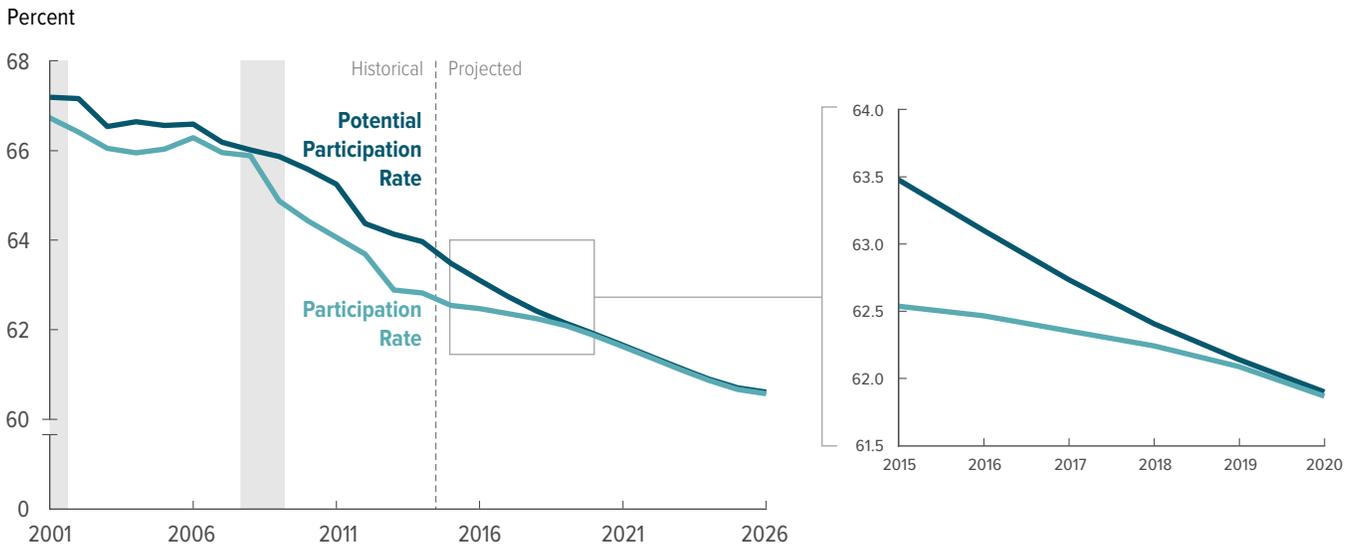
CBO expects the natural rate of unemployment to fall by about 0.1 percentage point through 2020—from 4.9 percent last year—largely because of the demographic shift in composition of the workforce to older workers, who tend to have lower rates of unemployment.

Labor Compensation. Labor compensation has grown slowly since the end of the last recession. But CBO projects that compensation—as measured by the Bureau of Labor Statistics with the employment cost index (ECI)—will grow faster over the next several years (see Figure 2-9 on page 49). CBO expects the ECI for workers in private industries to increase at an average annual

Figure 2-7.

Labor Force Participation Rates

CBO expects the rate of labor force participation to remain largely unchanged over the coming year and then to decline through 2026.



Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

The participation rate is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and in the labor force. The labor force consists of people who are employed and people who are unemployed but who are available for work and are actively seeking jobs. The potential participation rate is the participation rate excluding the effects of the business cycle.

Data are fourth-quarter values.

rate of 3.3 percent in 2016 and 2017 and 3.6 percent from 2018 through 2020, compared with an average of 2.0 percent from 2010 through 2015. The growth of other measures of compensation, such as the average hourly earnings of production and nonsupervisory workers in private industries, is similarly expected to increase.

The projection of labor compensation is based on CBO's projections of demand for workers, slack in the labor market, productivity, and inflation. Historically, growth in labor compensation has been among the last labor market indicators to recover after a recession, picking up only when little slack was left in the labor market. As slack diminishes and firms must increasingly compete for a shrinking pool of unemployed or underemployed workers, growth in hourly compensation will pick up, CBO projects.

Inflation

CBO anticipates that prices will rise at a modest pace over the next few years, consistent with its projection of the remaining—but diminishing—slack in the economy

and with widely held expectations for low and stable inflation. The agency projects that the rate of inflation in the price index for personal consumption expenditures (PCE price index) will rise to 1.5 percent this year, up from 0.5 percent in 2015 (see Figure 2-10 on page 50). The decline in energy prices and the increase in the exchange value of the dollar exerted downward pressure on inflation last year. CBO expects inflation to rise in 2016 as the temporary downward pressure from the decline in energy prices dissipates and the remaining slack in the economy diminishes.¹⁶

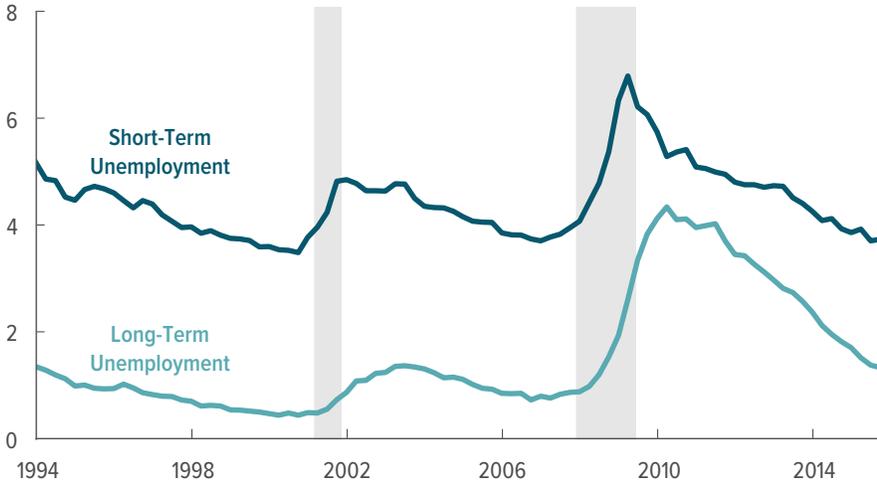
In 2017, the agency projects, inflation will stabilize at 2.0 percent—the Federal Reserve's longer-run goal. That projection reflects CBO's judgment that consumers and businesses expect the Federal Reserve to adjust monetary

16. The further declines in oil prices since CBO completed its forecast in late December imply slightly lower energy prices and overall inflation in the near term than is currently recognized in the forecast.

Figure 2-8.

Rates of Short- and Long-Term Unemployment

Percent



Most of the decline in the overall unemployment rate in the past few years reflected a drop in long-term unemployment, suggesting that the effects of stigma and the erosion of skills that can stem from long-term unemployment are diminishing.

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

The rate of short-term unemployment is the percentage of the labor force that has been out of work for 26 weeks or less. The rate of long-term unemployment is the percentage of the labor force that has been out of work for at least 27 consecutive weeks.

Data are quarterly and are plotted through 2015.

policy to prevent inflation from exceeding or falling short of the 2 percent goal for a prolonged period. CBO has a similar projection for core PCE inflation, which excludes food and energy prices; in CBO's forecast, that inflation rate reaches 2 percent at the end of 2017.

The consumer price index for all urban consumers (CPI-U) and its core version are expected to increase a little faster than their PCE counterparts because of the different methods used to calculate them. CBO projects that the difference between inflation as measured by the CPI-U and inflation in the PCE price index will generally be about 0.4 percentage points per year—close to the average difference over the past several decades.

The Economic Outlook for 2021 Through 2026

CBO's projections of real GDP, inflation, and real interest rates for 2021 through 2026—unlike its projections for the next few years—are not based on forecasts of cyclical developments. Rather, they are based primarily on projections of underlying trends in key variables, such as growth of the labor force, hours worked, capital

formation, and productivity. CBO also considers the effects of federal tax and spending policies under current law, and in recent years it has taken into account the persistent effects of the 2007–2009 recession and subsequent weak recovery.

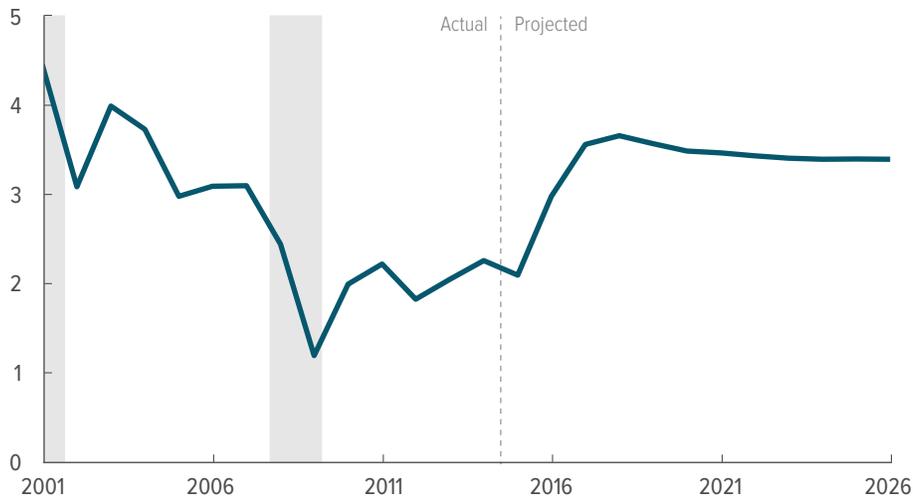
In CBO's projections for the 2021–2026 period:

- Actual and potential real GDP grow at an annual average of roughly 2.0 percent per year.
- The unemployment rate remains stable at 5.0 percent, slightly above the estimated natural rate of 4.8 percent.
- Both overall inflation and core inflation, as measured by the PCE price index, average 2.0 percent per year, and inflation as measured by the CPI-U is slightly higher, on average.
- The interest rates for 3-month Treasury bills and 10-year Treasury notes average 3.2 percent and 4.1 percent, respectively.

Figure 2-9.

Hourly Labor Compensation

Percentage Change



CBO projects that growth over the next several years will be stronger than that in 2015, spurred by continued gains in the demand for labor, which will lower slack in the labor market, and faster growth in productivity and prices.

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

Hourly labor compensation is measured by the employment cost index for total compensation—wages, salaries, and employers' costs for employees' benefits—of workers in private industry.

Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

CBO projects that real GDP will be about one-half of one percent below its estimate of real potential GDP, on average, during the 2021–2026 period. That projection reflects CBO's estimate that output has been roughly that much lower, on average, over the seven complete business cycles (measured trough to trough) that occurred between 1961 and 2009.¹⁷ CBO projects that, consistent with the average gap between actual and potential GDP, the unemployment rate will be slightly higher than its estimated natural rate, on average, during the 2021–2026 period.

Future developments will undoubtedly differ from what those underlying trends and averages imply, so CBO's projections should be interpreted as the average of likely outcomes, given information available now.

Potential Output

In developing its projections of potential output, CBO projects underlying trends in the aggregate labor force; the distribution of employment across sectors of the economy; and hours worked, capital services, and TFP in

the nonfarm business sector (which accounts for roughly three-quarters of total output). In doing so, CBO considers the effects on those trends of federal policies under current law as well as the persistent effects of the 2007–2009 recession and subsequent weak recovery.

The 2.1 percent average annual rate of increase in real potential output that CBO projects is substantially faster than the growth in potential output since the end of 2007, the beginning of the last recession (see Table 2-3 on page 51). However, that rate represents a significant slowdown from average growth in potential output over the three complete business cycles that occurred between 1981 and 2007. Most of that projected slowdown reflects slower projected growth of the potential labor force. GDP is also expected to be lower from 2021 through 2026 than it otherwise would have been because of the lingering effects of the recession and slow recovery.

Growth in Potential Output Compared With Growth Since the Last Recession.

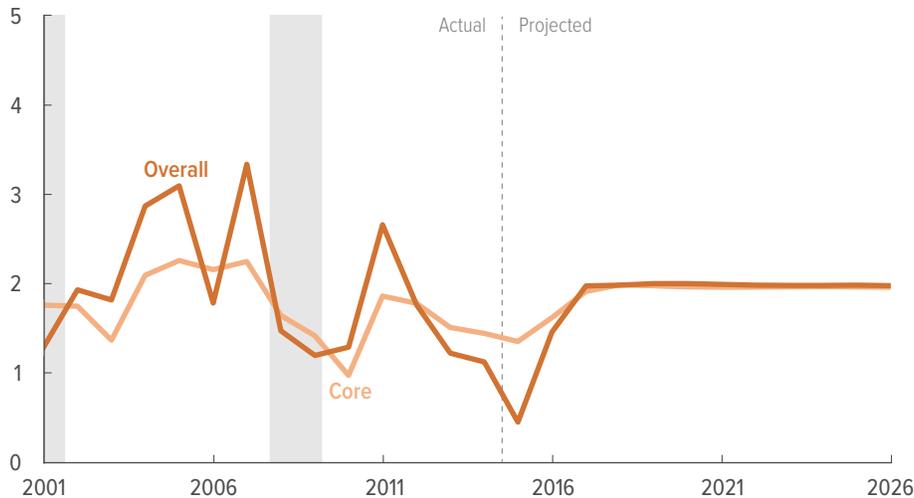
The average projected rate of potential output growth of 2.1 percent over the 2021–2026 period is half again faster than the estimated average growth of about 1.4 percent per year over the 2008–2015 period. The projected increase arises primarily because CBO expects growth of the determinants of potential

17. See Congressional Budget Office, *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890.

Figure 2-10.

Inflation

Percentage Change in Prices



CBO anticipates that inflation will rise to the Federal Reserve's goal of 2 percent over the next two years, which is consistent with CBO's projection of the diminishing slack in the economy.

Source: Congressional Budget Office, using data from the Bureau of Economic Analysis.

The overall inflation rate is based on the price index for personal consumption expenditures; the core rate excludes prices for food and energy.

Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

output in the nonfarm business sector to accelerate from their recent rates of growth. In particular, CBO expects potential TFP in the nonfarm business sector to quicken from its unusually slow postrecession pace of 0.8 percent to nearly 1.4 percent during the 2021–2026 period.¹⁸ CBO also projects a modest pickup in growth of potential hours worked in the nonfarm business sector, reflecting a similar pickup in growth of the overall potential labor force.

Growth of capital services in the nonfarm business sector has been restrained since 2008 because of weak investment, itself a response to the cyclical weakness of the overall demand for goods and services. In the long term, however, growth of capital services depends mostly on increases in TFP and hours worked. As a result, faster growth in the sector's potential TFP and potential hours

worked is expected to spur an increase in the growth of capital services in the sector as well.

Because of those factors, CBO expects potential labor force productivity (the ratio of potential GDP to the potential labor force) for the economy as a whole to pick up to 1.5 percent. That growth rate is substantially higher than the 0.9 percent average rate that CBO estimates for the 2008–2015 period.

Growth in Potential Output Compared With Growth in Previous Business Cycles. Despite the anticipated acceleration in the growth of potential output, CBO's projection for the growth of potential output over the 2021–2026 period is a full percentage point slower than the estimated 3.1 percent average annual growth that the economy experienced between 1981 and 2007. Most of that decrease reflects the slower growth of the potential labor force, itself the consequence of several factors. Most important, growth in the labor force is declining because of the ongoing retirement of baby boomers and the relatively stable labor force participation rate among working-age women (after sharp increases from the 1960s to the mid-1990s). Federal tax and spending policies set in current law also are projected to cause some people to work less than in earlier decades.

18. CBO projects that growth in potential TFP will gradually return by 2020 to a rate equal to the weighted average of the growth rates estimated between 1991 and 2015. The projected rate is slightly slower than the average for the 1991–2015 period because CBO places more weight on the relatively slow growth of TFP during the recession and recovery than on the faster growth rates of the 1990s and early 2000s.

Table 2-3.

Key Inputs in CBO's Projections of Potential GDP

Percent, by Calendar Year

	Average Annual Growth						Projected Average Annual Growth			
	1950-1973	1974-1981	1982-1990	1991-2001	2002-2007	2008-2015	Total, 1950-2015	2016-2020	2021-2026	Total, 2016-2026
	Overall Economy									
Potential GDP	4.0	3.2	3.2	3.3	2.7	1.4	3.2	1.8	2.1	1.9
Potential Labor Force	1.6	2.5	1.6	1.3	1.0	0.5	1.5	0.4	0.5	0.5
Potential Labor Force Productivity ^a	2.4	0.7	1.5	2.0	1.6	0.9	1.7	1.4	1.5	1.4
Nonfarm Business Sector										
Potential Output	4.1	3.6	3.3	3.7	3.0	1.6	3.5	2.1	2.4	2.3
Potential Hours Worked	1.4	2.3	1.5	1.5	0.3	0.4	1.3	0.4	0.5	0.5
Capital Services	3.8	3.8	3.5	3.8	2.8	1.7	3.4	2.7	2.2	2.4
Potential TFP	1.9	0.9	1.1	1.5	1.9	0.8	1.5	1.1	1.4	1.2
Potential TFP excluding adjustments	1.9	0.9	1.1	1.5	1.5	0.8	1.4	1.1	1.4	1.2
Adjustments to TFP (Percentage points) ^b	0	0	0	0.1	0.4	*	0.1	*	*	*
Contributions to the Growth of Potential Output (Percentage points)										
Potential hours worked	1.0	1.6	1.1	1.0	0.2	0.3	0.9	0.3	0.4	0.3
Capital input	1.1	1.1	1.1	1.2	0.8	0.5	1.0	0.8	0.7	0.7
Potential TFP	1.9	0.9	1.1	1.5	1.9	0.8	1.5	1.1	1.4	1.2
Total Contributions	4.0	3.6	3.3	3.7	3.0	1.6	3.4	2.1	2.4	2.3
Potential Labor Productivity ^c	2.7	1.3	1.7	2.2	2.7	1.2	2.1	1.7	1.8	1.8

Source: Congressional Budget Office.

Potential GDP is CBO's estimate of the maximum sustainable output of the economy, adjusted to remove the effects of inflation.

GDP = gross domestic product; TFP = total factor productivity; * = between -0.05 percentage points and zero.

- The ratio of potential GDP to the potential labor force.
- The adjustments reflect CBO's estimate of the unusually rapid growth of TFP between 2001 and 2003, and changes in the average level of education and experience of the labor force.
- The ratio of potential output to potential hours worked in the nonfarm business sector.

CBO projects that productivity of the potential labor force also will grow more slowly, but only modestly so, during the 2021–2026 period than over the 1981–2007 period. That slowdown, attributable to both slower growth of capital per worker and slower potential TFP growth in nonfarm business, accounts for the remaining reduction in projected potential output growth from the average over recent business cycles.

Lingering Effects of the Recession and Slow Recovery.

CBO expects the three major factors that determine potential output to be lower through 2026 than they would have been if not for the recession and slow recovery.

Potential labor hours will be lower because persistently weak demand for workers since the recession has led some people to weaken their attachment to the labor force permanently. For example, some people who left the labor force after experiencing long-term unemployment are not expected to return to full-time, stable employment over the next decade. The rate of labor force participation will thus be slightly lower—and the labor force slightly smaller—than it would have been otherwise.

Capital services also will be lower for several reasons. Fewer workers require proportionately less capital, all else being equal, and lower TFP (discussed below) tends to

reduce investment as well. Because of automatic stabilizers and changes in fiscal policies implemented to bolster the economy during and after the recession, federal debt increased sharply. That higher debt will crowd out additional capital investment in the long term, CBO estimates.

Finally, in CBO's judgment, the protracted weakness in the economy and the large amount of slack in the labor market have lowered—and will continue to lower—potential TFP. They will do so by reducing the speed and efficiency with which resources are allocated to their most productive uses, thereby slowing the rate at which workers gain new skills and restraining businesses' spending on research and development.

How the recession and slow recovery will continue to affect those three factors is difficult to quantify with any precision. For instance, significant uncertainty surrounds estimates of how much of the recent weakness in TFP can be traced to the effects of the recession and slow recovery on potential TFP and how much reflects other developments in the economy. (For example, the rate of improvement in information technology may have begun to slow a few years before the recession began.)

The Labor Market

In CBO's projection, the unemployment rate settles down to its long-term relationship with the agency's estimate of the natural rate of unemployment. The unemployment rate remains steady at 5.0 percent from the first quarter of 2020 through the fourth quarter of 2026, roughly a quarter of a percentage point above the natural rate of 4.8 percent.¹⁹

For 2026, CBO projects a potential rate of labor force participation of 61 percent. That rate is about 1 percentage point lower than what the agency projects for 2021 and about 5½ percentage points lower than the estimated rate for the end of 2007. CBO estimates that roughly 4½ percentage points of the decline from 2007 to 2026 is attributable to the aging of the population, because older people tend to work less than younger ones. Roughly one-quarter of a percentage point of the decline in the potential participation rate from 2007 reflects the fact

that some workers withdrew from the labor force in response to the most recent recession and slow recovery.

The rest of the projected fall in potential labor force participation stems from some people's reduced incentive to work as a result of the ACA and the structure of the tax code (whereby rising income pushes some people into higher tax brackets). Both effects reduce workers' incentive to supply labor.

Real labor compensation per hour in the nonfarm business sector, a measure of labor costs that is a useful gauge of longer-term trends, will grow at an average annual rate of 2.0 percent between 2021 and 2026, CBO projects. That projection is consistent with the agency's projection of the growth of labor productivity, reflecting the historical relationship between the two. In the early 2000s, however, that relationship broke down when compensation grew more slowly. In recent years, real compensation per hour and productivity have grown at more similar rates, suggesting that the relationship has been largely restored. CBO expects average historical patterns to be maintained in the future, with real compensation per hour growing about as fast as productivity over the 2021–2026 period. Another measure of hourly labor compensation, the ECI for private industry workers, shows a qualitatively similar pattern in the agency's projections.

Inflation

In CBO's projections, inflation as measured by the overall PCE and the core PCE price indexes averages 2.0 percent annually over the 2021–2026 period. That rate is consistent with the Federal Reserve's longer-run goal and is broadly in line with widely held expectations. As measured by the CPI-U and the core CPI-U, projected inflation is higher during that period, at 2.4 percent and 2.3 percent, respectively.²⁰ CPI-U and core CPI-U have maintained a close, long-run relationship. In the current forecast, the agency anticipates slightly faster growth in energy prices in the out years, which will cause CPI-U to grow faster than core CPI-U.

Interest Rates

CBO projects that, under fiscal policies embodied in current law, the interest rates on 3-month Treasury bills and 10-year Treasury notes will be 3.2 percent and

19. The difference between the projections of the unemployment rate and the natural rate over the 2021–2026 period corresponds to the projected gap between output and potential output, as discussed above.

20. Differences in how the two price indexes are calculated make the CPI-U grow faster than the PCE price index, on average.

4.1 percent, respectively, from 2021 through 2026. CBO projects that the federal funds rate would be 3.5 percent during that period.

When the effect of expected inflation (as measured by the CPI-U) is removed, the projected real interest rate on 10-year Treasury notes equals 1.7 percent between 2021 and 2026. That rate would be well above the current real rate but more than a percentage point below the average real rate of 2.9 percent between 1990 and 2007. CBO uses that period for comparison because it featured fairly stable expectations for inflation and no severe economic downturns or financial crises.

According to CBO's analysis, average real interest rates on Treasury securities will be lower than their earlier average for several reasons:

- Slower growth in the labor force (reducing the return on capital),
- Slightly slower growth of productivity (also reducing the return on capital),
- A greater share of total income going to high-income households (tending to increase saving, thereby making more funds available for borrowing), and
- A higher risk premium on risky assets (increasing relative demand for Treasury securities, boosting their prices and thereby lowering their interest rates).

In addition to those factors, which affect both short-term and long-term securities, CBO also foresees a greater demand for long-term bonds as a hedge against unexpectedly low inflation. Investors' concerns that adverse economic surprises would lead to unexpectedly low inflation appear to have increased over recent decades, and CBO expects those concerns to continue. The increased demand for long-term bonds as a hedge against that outcome is expected to push long-term interest rates down from their average levels during the 1990–2007 period.

Other factors will act to raise real interest rates from their earlier average, but not by enough to offset the factors pushing rates down:

- A larger amount of federal debt as a percentage of GDP (increasing the supply of Treasury securities),

- Smaller net inflows of capital from other countries as a percentage of GDP (making less funds available for borrowing),
- More older people, who will be drawing down their savings, than younger workers in their prime saving years (tending to decrease saving, thereby also making less funds available for borrowing), and
- A larger share of income going to capital (increasing return on capital assets with which Treasury securities compete).²¹

In addition to considering those factors, CBO also relies on information from financial markets in projecting interest rates over the long term. For example, the current interest rate on 30-year Treasury bonds implies a forecast of interest rates on shorter-term securities 30 years into the future. Incorporating that information tends to reduce the interest rates that CBO projects when compared with rates implied by the analysis of factors described above.

Projections of Income

Economic activity and federal tax revenues depend not only on the amount of total income in the economy but also on how that income is divided among labor income, domestic economic profits, proprietors' income, interest and dividend income, and other categories.²² CBO projects various categories of income by estimating their shares of gross domestic income (GDI, the income earned in the production of GDP).²³ Labor income (especially wage and salary payments) and domestic profits are the most important components of income for the tax base.

21. For a more detailed discussion of the factors affecting future interest rates, see Congressional Budget Office, *The 2015 Long-Term Budget Outlook* (June 2015), pp. 116–117, www.cbo.gov/publication/50250.

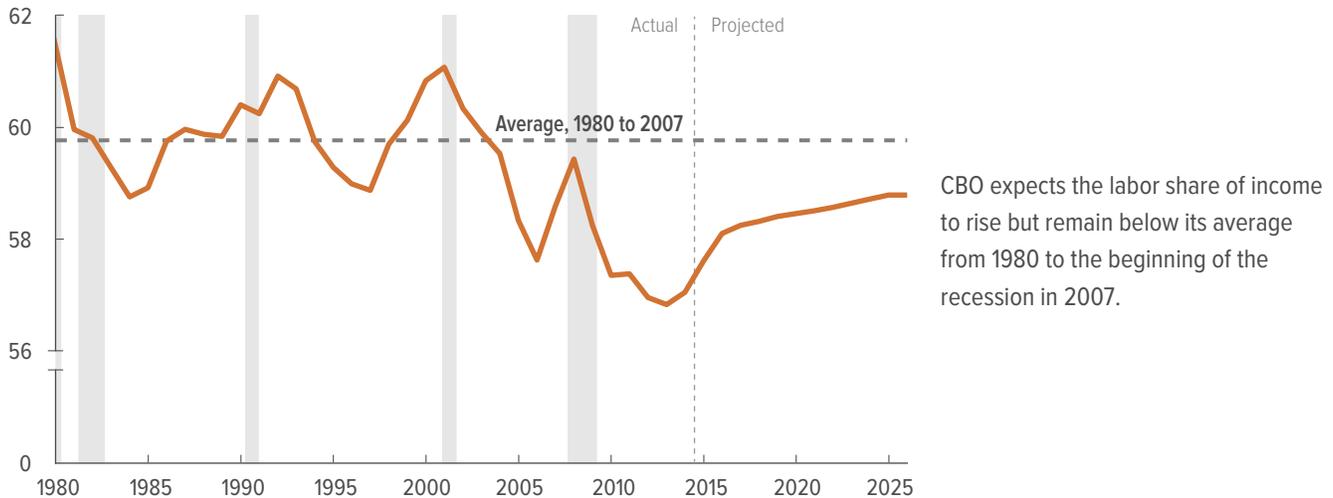
22. Calculating domestic economic profits involves adjusting estimates of corporations' domestic profits to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of inflation on the value of inventories. Estimates of domestic economic profits exclude certain income of U.S.-based multinational corporations that is derived from foreign sources, most of which does not generate corporate income tax receipts in the United States.

23. In principle, GDI equals GDP because each dollar of production yields a dollar of income; in practice, they differ because of difficulties in measuring both quantities.

Figure 2-11.

Labor Income

Percentage of Gross Domestic Income



CBO expects the labor share of income to rise but remain below its average from 1980 to the beginning of the recession in 2007.

Source: Congressional Budget Office, using data from the Bureau of Economic Analysis.

Labor income is the sum of employees' compensation and CBO's estimate of the share of proprietors' income that is attributable to labor. Gross domestic income is all income earned in the production of gross domestic product. For further discussion of the labor share of income, see Congressional Budget Office, *How CBO Projects Income* (July 2013), www.cbo.gov/publication/44433.

Data are calendar year averages and are plotted through 2026.

In CBO's projections, labor income grows faster than other components of GDI over the next decade, increasing its share from 57.6 percent in 2015 to 58.8 percent in 2026 (see Figure 2-11). CBO expects the labor share to rise because employment is expected to rise and real compensation per hour is projected to grow more strongly than productivity for several years as cyclical weakness in the labor market wanes. As a result, the bargaining power of workers will improve and the share of income going to corporate profits will be smaller. By the end of the projection period, however, real hourly compensation is projected to move in step with growth in labor productivity.

However, CBO expects that some factors that have depressed labor's share of GDI since 2000 will continue during the coming decade. As a result, that share will not return to its 1980–2007 average of nearly 60 percent. One such factor is globalization, which has tended to move the production of labor-intensive goods and services to countries with lower labor costs. Another factor is technological change, which may have increased returns to capital more than returns to labor.

In CBO's projection, domestic economic profits fall from an estimated 9.1 percent of GDI in 2015 to 7.5 percent

in 2026. Over the next several years, that decline occurs largely because of the expected pickup in the growth of labor compensation and a projected increase in corporate interest payments, the result of rising interest rates. In later years, CBO expects the sum of all non-labor income components to grow less rapidly than output, reversing a trend seen since 2000 and making GDI equal to GDP by the latter half of the projection period.

Another measure of overall income, real gross national product (GNP), is projected to grow at an annual average of 2.0 percent per year between 2016 and 2026. Unlike the more commonly cited GDP, GNP includes income that U.S. residents earn abroad and excludes income that foreigners earn in this country. GNP is therefore a better measure than GDP of the resources available to U.S. households.

Some Uncertainties in the Economic Outlook

Significant uncertainty surrounds CBO's economic forecast, which the agency constructed to be in the middle of the distribution of possible outcomes given the federal policies embodied in current law. Even if no significant

changes are made to those fiscal policies, economic outcomes will undoubtedly differ from CBO's projections. For example, CBO's forecasts of the average annual growth of real GDP over five-year periods since the early 1980s have a standard deviation around the actual values of 1.2 percentage points.²⁴ If the nature of CBO's forecast errors is the same in the future as in the past, then CBO's current forecast of average annual GDP growth for the next five years will, roughly speaking, have a two-thirds chance of being within a range of 1.2 percentage points above or below the actual amount. The forecasts of inflation as measured by the CPI-U have had a standard deviation around the actual values of 0.6 percentage points.

Many developments—such as unforeseen changes in the labor market, business confidence, the housing market, and international conditions—could cause economic growth and other variables to differ considerably from what CBO has projected. On the one hand, the agency's current forecast of employment and output for the 2016–2020 period may be too pessimistic. For example, firms might respond to the expected increase in overall demand for goods and services with more robust hiring than CBO anticipates. If so, the unemployment rate could fall more sharply and inflationary pressures could rise more quickly than CBO projects. In addition, a greater-than-expected easing of borrowing constraints in mortgage markets could support more rapid growth of residential investment than CBO anticipates, accelerating the housing market's recovery and further boosting house prices. Households' increased wealth could then buttress consumer spending, raising GDP.

On the other hand, CBO's forecast for 2016 through 2020 may be too optimistic. For example, if the increased tightness of labor markets does not lead to increases in wages and benefits, household income and consumer spending could grow more slowly than CBO anticipates.

24. That standard deviation around the actual values is also known as the root mean square error. For more on the inherent uncertainty underlying economic forecasts, see Congressional Budget Office, *CBO's Economic Forecasting Record: 2015 Update* (February 2015), www.cbo.gov/publication/49891. That report presents an evaluation of the quality of CBO's economic forecasts, in comparison with the economy's performance and with forecasts by the Administration and the *Blue Chip* consensus. Such comparisons indicate the extent to which imperfect information and analysis—factors that affect all forecasters—might have caused CBO to misread patterns and turning points in the economy.

In addition, an unexpected worsening in international political or economic conditions, such as a more severe decline in China's stock market, could likewise weaken the U.S. economy by disrupting the international financial system, interfering with international trade, and reducing business and consumer confidence. Further declines in U.S. equity markets, if persistent, could significantly reduce household wealth and consumer spending. Also, household formation could be weaker than CBO expects. Weaker household formation would imply slower residential investment and slower overall growth of GDP.

In addition, the possibility exists that the economy will enter a recession. The current economic expansion is over 6 years old—slightly longer than the average expansion (about 5 years) over the past 11 business cycles back to 1945. Over the past 30 years, expansions lasting at least 6 years that are characterized by a relatively low unemployment rate have tended to fall into recession within two years. However, the length of economic expansions has varied greatly. And, although the longest expansion over the past 11 business cycles has been 10 years, no statistical evidence suggests that the length of an expansion alone causes the economy to enter a recession.

Several factors that will determine the economy's output later in the coming decade are also uncertain—for example:

- The economy could grow considerably faster than CBO forecasts if the labor force grew more quickly than expected (say, because older workers chose to stay in the labor force longer than expected),
- The natural rate of unemployment could be lower than expected, or
- Productivity could grow more rapidly.

Similarly, lower-than-expected growth would occur if the stigma and erosion of skills that stem from elevated long-term unemployment dissipated more slowly than expected or if improving labor market conditions did not draw significant numbers of workers back into the labor force. In that case, future hours worked could be substantially fewer than CBO expects, and slower growth of the labor force would in turn imply less need for business investment.

Also uncertain is how income inequality affects economic growth. Economists have found mixed theoretical and empirical results on that question. Some studies conclude that income inequality leads to faster growth, others suggest that it slows growth, and still others find that it does not affect growth. Therefore, CBO's projection of economic growth does not explicitly include the effect of changes in income inequality. However, CBO's economic projections implicitly include some effects of income inequality insofar as past changes in inequality have affected economic growth. Economists continue to study the issue, and CBO will update its analysis if research in that area yields a more definitive conclusion.

Comparison With CBO's August 2015 Projections

CBO's current economic projections differ notably in one important respect from those issued in August 2015 and more modestly in other respects (see Table 2-4). Real GDP is now projected to be 2.7 percent lower in 2025 than CBO projected in August, the last year of CBO's previous projection (see Table 2-5). Other changes to the projection are more modest: The unemployment rate is lower throughout the 2016–2025 period, inflation is lower in the near term but unchanged later in the projection period, and interest rates are lower throughout the projection period.²⁵

Output

CBO has revised its projected path of potential output downward since the August forecast. That revision results largely from the agency's lower estimate of potential TFP over recent history and over the projection period. That change was prompted by revisions to historical data that lowered CBO's estimates of potential TFP in the nonfarm business sector through 2015 and by CBO's reassessment of how long the slow growth in potential TFP is likely to persist. In particular, the Bureau of Economic Analysis revised downward its estimate of nonfarm business output for recent years. That downward revision resulted in about 1.0 percent lower actual TFP, on average, in 2013 and 2014. Combined with continued slow TFP growth in 2015, those new data resulted in a notably lower estimate of trend growth in potential TFP over the current business cycle, which has now finished its eighth year. For example, potential TFP is

estimated to have grown at a 0.8 percent pace last year, down from CBO's previous projection of 1.1 percent.

In addition, to account for the possibility that the slow growth in potential TFP could persist for some time, CBO reduced the speed and extent to which the growth of potential TFP is projected to rebound from its current low rates. To do that, CBO calculated a weighted average of potential TFP growth over the past 25 years. That calculation placed more weight on the recent slow growth than on the faster growth of the 1990s and early 2000s. Reflecting those judgments, CBO projects that potential TFP growth will rebound to a 1.4 percent pace by 2022—later and to a slightly lower rate than appeared in CBO's previous projection.

Lower growth in potential TFP would also indirectly reduce potential output by reducing demand for capital goods and growth of capital services. That effect is responsible for most of the decline in projected growth of capital services, compared with the August forecast. In addition, CBO projects greater federal borrowing than in its August forecast, which would limit the money available for private investment and thus dampen growth in capital services. But an upward revision in the private saving rate roughly offsets that effect. CBO also has slightly revised down projected population growth, which suggests a slightly smaller potential labor force. However, a downward revision in CBO's estimate of the natural rate of unemployment slightly boosts potential output. That rate is projected to be more than 0.2 percentage points lower over the 2021–2025 period than in the August forecast (discussed below). In addition, a reassessment of the share of employment in the nonfarm business sector in comparison with other sectors dampens potential hours worked in the nonfarm business sector and boosts hours worked in other sectors.

In addition, economic developments since August point to a weaker outlook for output growth over the next few years. In particular, CBO's current projection for growth of real GDP during the 2016–2020 period averages 2.2 percent, compared with 2.5 percent in August. One source of the downward revision is that CBO expects net exports to contribute less to growth during the next few years, largely because the exchange value of the dollar is higher and foreign economic growth is likely to be lower than anticipated. Another source is expected slower growth in business investment spending. Oil prices declined more sharply from August through the end

25. CBO uses the 2016–2025 period for comparison because the August forecast did not include 2026.

Table 2-4.

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2015 to 2025

	Estimated, 2015	Forecast		Projected Annual Average		
		2016	2017	2015–2020	2021–2025	2015–2025
Percentage Change From Fourth Quarter to Fourth Quarter						
Real (Inflation-adjusted) GDP						
January 2016	2.0	2.7	2.5	2.2	2.0	2.1
August 2015	2.0	3.1	2.7	2.4	2.1	2.3
Nominal GDP						
January 2016	3.4	4.3	4.4	4.0	4.1	4.0
August 2015	3.2	4.7	4.7	4.3	4.3	4.3
PCE Price Index						
January 2016	0.5	1.5	2.0	1.6	2.0	1.8
August 2015	0.6	1.8	2.0	1.7	2.0	1.9
Core PCE Price Index ^a						
January 2016	1.4	1.6	1.9	1.8	2.0	1.9
August 2015	1.4	1.7	1.9	1.8	2.0	1.9
Consumer Price Index ^b						
January 2016	0.4	1.7	2.4	2.0	2.4	2.2
August 2015	0.7	2.3	2.3	2.1	2.4	2.2
Core Consumer Price Index ^a						
January 2016	2.0	2.0	2.2	2.2	2.3	2.3
August 2015	2.0	2.1	2.3	2.2	2.3	2.3
GDP Price Index						
January 2016	1.3	1.6	1.9	1.8	2.0	1.9
August 2015	1.1	1.6	2.0	1.8	2.1	1.9
Employment Cost Index ^c						
January 2016	2.2	2.9	3.3	3.1	3.2	3.1
August 2015	2.8	3.3	3.5	3.3	3.3	3.3
Real Potential GDP						
January 2016	1.5	1.6	1.7	1.8	2.0	1.9
August 2015	1.7	1.9	2.1	2.1	2.1	2.1
Calendar Year Average						
Unemployment Rate (Percent)						
January 2016	5.3 ^d	4.7	4.4	4.8	5.0	4.9
August 2015	5.4	5.1	5.0	5.2	5.2	5.2
Interest Rates (Percent)						
Three-month Treasury bills						
January 2016	0.1 ^d	0.7	1.6	1.9	3.2	2.5
August 2015	0.1	0.7	1.7	2.0	3.4	2.6
Ten-year Treasury notes						
January 2016	2.1 ^d	2.8	3.5	3.4	4.1	3.7
August 2015	2.3	3.0	3.7	3.6	4.3	3.9
Tax Bases (Percentage of GDP)						
Wages and salaries						
January 2016	43.6	43.9	43.9	43.9	43.9	43.9
August 2015	43.4	43.5	43.5	43.5	43.5	43.5
Domestic economic profits						
January 2016	9.2	8.7	8.6	8.4	7.5	8.0
August 2015	9.7	9.3	8.9	8.7	7.6	8.1

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics and the Federal Reserve.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Excludes prices for food and energy.

b. The consumer price index for all urban consumers.

c. The employment cost index for wages and salaries of workers in private industries.

d. Actual value for 2015.

Table 2-5.

**Sources of Revision Since August 2015 in
CBO's Estimate of Potential Output in 2025**

Percent	
Source	Reduction in Potential Output
Potential Output in the Nonfarm Business Sector	
Total factor productivity	
New data	-1.1
New methodology	-0.8
Subtotal	-2.0
Capital services	-0.4
Potential hours worked	-0.2
Subtotal	-2.5
Potential Output in Other Sectors	-0.1
Total Revision	-2.7

Source: Congressional Budget Office.

Potential output is CBO's estimate of the maximum sustainable output of the economy.

Total factor productivity is average real (inflation-adjusted) output per unit of combined labor and capital services.

Capital services are a measure of the flow of services available for production from the stock of capital goods.

Other sectors include farm businesses, owner-occupied housing, nonprofit institutions serving households, the federal government, and state and local governments.

of December than CBO had anticipated; those prices are expected to remain lower than CBO had forecast, so the forecast for mining investment has been revised downward. A final source of the downward revision is the decline in the prices of equities from mid-2015 through the end of December, which has lowered CBO's near-term projection of household wealth. Lower estimates of wealth imply less support for consumer spending in CBO's near-term forecast. However, that negative effect is smaller than the boost to consumer spending expected from the downward revision to energy prices that results from the downward revision to oil prices.

CBO has made a smaller change to projected GDP growth in the later years of the coming decade. In CBO's forecast, growth of real GDP during the 2021–2025 period is slower by less than 0.1 percentage point per year, on average, than in CBO's August projection. That rate reflects slower growth in potential GDP during the same period. That attenuated growth, in turn, is due

to slower projected potential growth in the three determinants of nonfarm business output: potential hours worked (due to slower population growth), capital services, and potential TFP. Higher employment and output in other sectors of the economy slightly offset that slower growth of potential output in the nonfarm business sector.

Labor Market

Compared with CBO's August estimates, the agency's current projection for the unemployment rate is lower and the pace of employment growth is higher during the 2016–2020 period. Those changes largely reflect a judgment that recent trends in certain labor market indicators will continue longer than CBO estimated earlier. For example, recent trends in rates of hiring, layoffs, and retirement suggest that the unemployment rate will decline slightly faster and job growth will be more rapid during the next few years than CBO had estimated. In particular, CBO now projects that the unemployment rate will temporarily fall below its estimated 4.8 percent natural rate. In the years after 2020, projected employment growth is similar to what CBO projected in August. However, the unemployment rate is roughly 0.2 percentage points lower than the August projection, largely because CBO lowered its estimate of the natural rate of unemployment.

CBO lowered its estimate of the natural rate of unemployment over the past decade and throughout the next decade after reassessing how demographic trends affect that rate. Reflecting those trends, the share of younger workers in the working-age population has declined and the share of older workers has increased since 2005. Because a higher proportion of younger workers are unemployed, on average, than older workers, incorporating those developments points to a downward revision in the agency's estimate of the average natural rate of unemployment across all workers in the labor market. Consequently, CBO has reduced its estimate of the economywide natural rate of unemployment to 4.9 percent in 2015 from 5.1 percent in its previous estimate. Because those trends are projected to continue, the natural rate is projected to decline to 4.8 percent in 2025, down from 5.0 percent in the previous projection. Correspondingly, CBO has lowered its estimate of the unemployment rate to 5.0 percent in 2025, down from 5.2 percent.

CBO projects that the rate of labor force participation will be roughly one-quarter of a percentage point lower in the near term than it projected in August. During the second half of 2015, that rate fell more than CBO had forecast in August. That larger-than-expected decline resulted from older workers leaving the labor force, probably to retire, and CBO does not expect them to return. CBO's projection for the participation rate during the 2021–2026 period is almost unchanged since August.

Inflation and Interest Rates

CBO projects that inflation through 2020 will be slightly lower, on average, than forecast in August. In the near term, CBO's forecast reflects lower-than-expected energy prices and an increase in the exchange value of the dollar; both moves through the end of December have been larger than CBO had forecast. CBO's projections for the rates of core and overall inflation during the years after 2020 are roughly the same as in the agency's August forecast.

The agency anticipates that interest rates will be lower on average during the 2016–2020 period than projected in August. The rate on 3-month Treasury bills is expected to be 0.1 percentage points lower, on average, and the rate on 10-year Treasury notes is expected to be 0.2 percentage points lower, on average, in the near term. CBO projects lower rates over that period, partly because interest rates since August were lower than expected and because the Federal Reserve is now projected to raise the federal funds rate by less than CBO expected through 2020.

CBO also anticipates that interest rates will be lower during the 2021–2025 period than projected in August. Both short- and long-term rates are expected to be 0.2 percentage points lower, on average, over that period than in CBO's previous forecast. That downward revision stems from revised forecasts of the factors that influence real interest rates, particularly the downward revision to projected growth of potential TFP. CBO projects larger federal deficits than it did in its August forecast, which would generally lead to higher interest rates. However, upward revisions in other components of saving left national saving as a share of GDP roughly unchanged. CBO's revised projection also reflects changes in expectations of future interest rates on the part of

participants in the financial markets and private-sector forecasters.

Comparison With Other Economic Projections

The agency's projections of the growth of real GDP, the unemployment rate, inflation, and interest rates in 2016 and 2017 are similar to the *Blue Chip* consensus—the average of the roughly 50 forecasts by private-sector economists published in the January 2016 *Blue Chip Economic Indicators*. CBO's projection for real GDP growth is slightly above the *Blue Chip* consensus, which indicates a slightly stronger economy in the near term, and the agency's forecast of the unemployment rate is slightly below that consensus, which indicates a slightly stronger labor market. However, the agency's projections for GDP growth and other indicators are generally within the middle two-thirds of the range of private-sector forecasts included in the *Blue Chip* survey (see Figure 2-12). For example, the agency's projections of GDP price inflation, the 3-month Treasury bill rate, and the 10-year Treasury note rate also fall within the middle two-thirds of the range included in the *Blue Chip* survey.

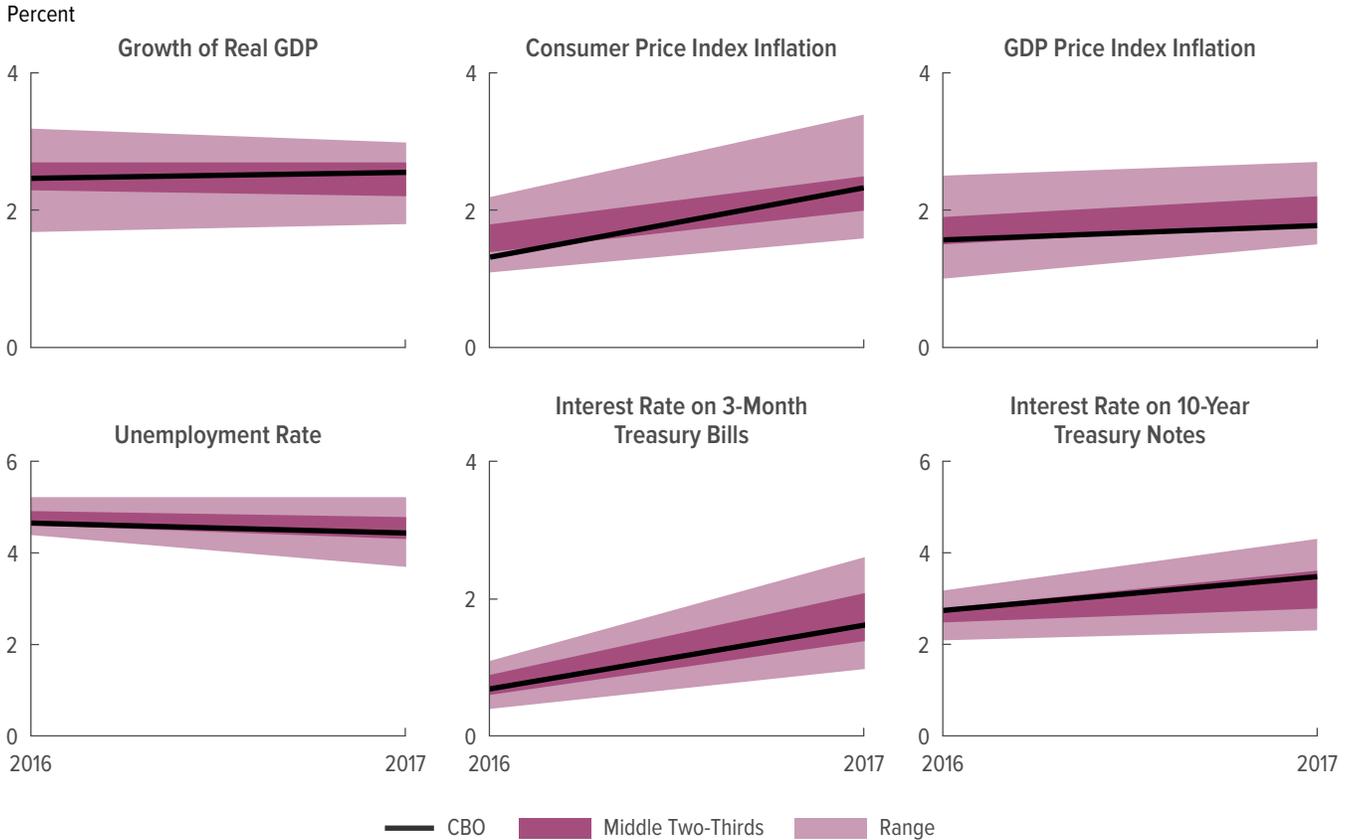
CBO's projections suggest a slightly stronger economy than the forecasts produced by Federal Reserve officials and presented at the December 2015 meeting of the Federal Open Market Committee (see Figure 2-13). The Federal Reserve reports three sets of forecasts: a median, a range, and a central tendency. The range reflects the highest and lowest forecasts of the members of the Board of Governors of the Federal Reserve System and of the presidents of the Federal Reserve Banks. The central tendency reflects the range without the three highest and three lowest projections. CBO's projections for growth of real GDP in 2016 and 2017 are above the central tendency and at the upper end of the range. CBO's projections for the unemployment rate in 2016 and 2017 are within the full range and below the central tendency.

CBO's projections differ from those of other forecasters for a variety of reasons. For example, the other forecasts may not yet include all of the economic effects of the federal legislation enacted in late 2015. Differences in the economic news available when the forecasts were completed and differences in the economic and statistical models used might also account for the discrepancies.

Figure 2-12.

Comparison of Economic Projections by CBO and *Blue Chip* Forecasters

CBO’s projections of the growth of real GDP, inflation, the unemployment rate, and interest rates are generally within the middle two-thirds of the range of forecasts from the *Blue Chip* survey.



Sources: Congressional Budget Office; Wolters Kluwer, *Blue Chip Economic Indicators* (January 10, 2016).

The full range of forecasts from the *Blue Chip* reflects the highest and lowest forecasts among the roughly 50 forecasts in the survey. The middle two-thirds of that range omits the top one-sixth of the forecasts and the bottom one-sixth.

Real GDP is the output of the economy adjusted to remove the effects of inflation.

Consumer price index inflation uses the consumer price index for all urban consumers.

The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force.

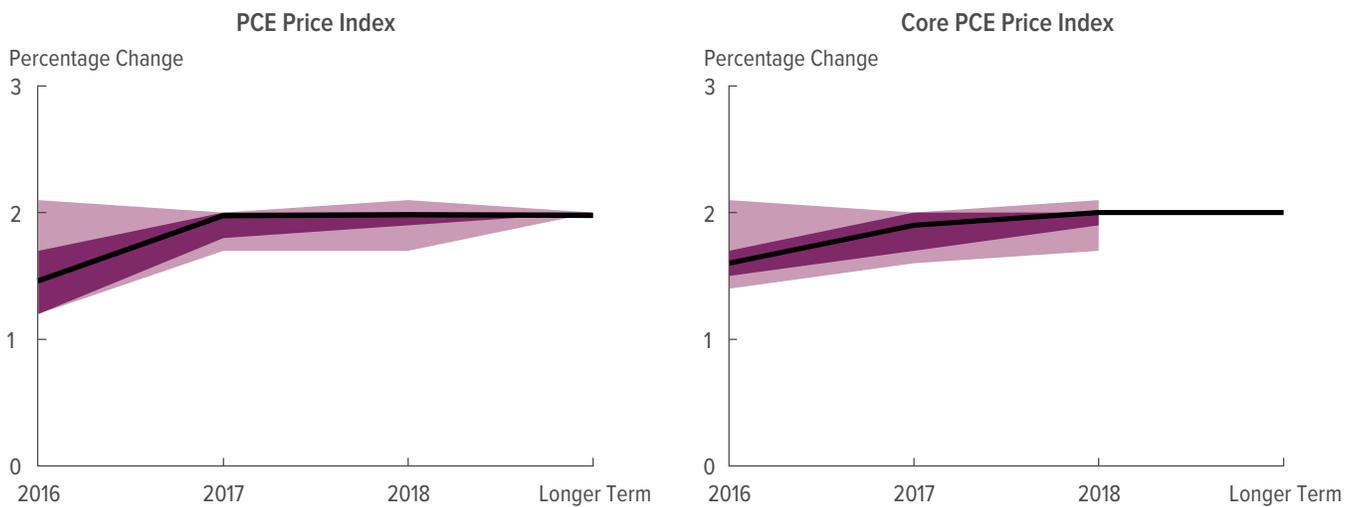
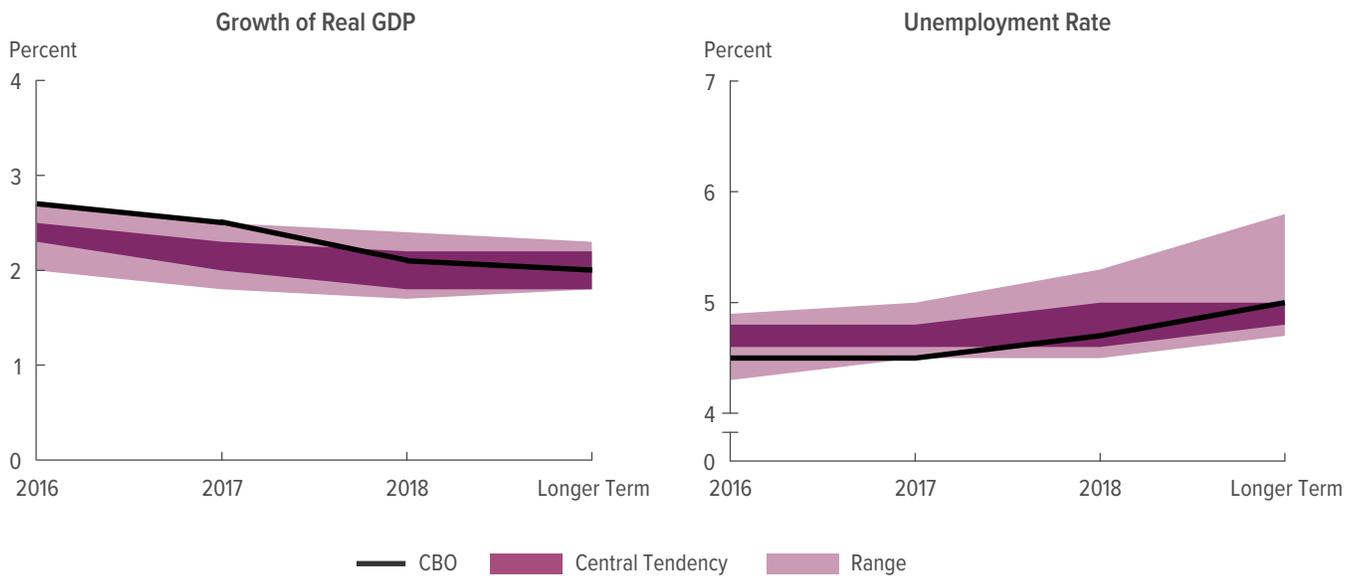
Growth of real GDP and inflation are measured from the average of one calendar year to the next year. The unemployment rate and interest rates are calendar year averages.

GDP = gross domestic product.

Figure 2-13.

Comparison of Economic Projections by CBO and Federal Reserve Officials

Over the next two years, CBO’s forecast for the growth of real GDP is at the upper end of the range, and its forecast for the unemployment rate is at the lower end of the range, of forecasts by Federal Reserve officials.



Sources: Congressional Budget Office; Board of Governors of the Federal Reserve System, “Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, December 2015” (December 16, 2015), <http://go.usa.gov/cUkyR>.

Each range of estimates from the Federal Reserve reflects the 17 projections by the Board of Governors and the president of each Federal Reserve Bank. The central tendency is that range without the three highest and three lowest projections, roughly indicating the middle two-thirds of the range.

For CBO, longer-term projections are values for 2026. For the Federal Reserve, longer-term projections are described as the value at which each variable would settle under appropriate monetary policy and in the absence of further shocks to the economy.

Real GDP is the output of the economy adjusted to remove the effects of inflation.

The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force.

The core PCE price index excludes prices for food and energy.

Growth of real GDP and growth of price indexes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year. The unemployment rate is a fourth-quarter value.

GDP = gross domestic product; PCE = personal consumption expenditures.

