

The Economic Outlook

Under the assumption that current laws governing federal taxes and spending will generally remain in place, the Congressional Budget Office anticipates that economic activity will expand modestly this year, grow at a more solid pace in 2016 and 2017, and then moderate in subsequent years. As the result of a very weak first quarter in 2015, real (inflation-adjusted) gross domestic product (GDP) rose at an average annual rate of only 1.5 percent in the first half of the year. Recent data indicate that the economy is now on firmer ground, however, and CBO expects stronger growth in the second half. As measured by the change from the fourth quarter of the previous year, CBO projects, real GDP will increase by 2.0 percent this year and by 3.1 percent in 2016.

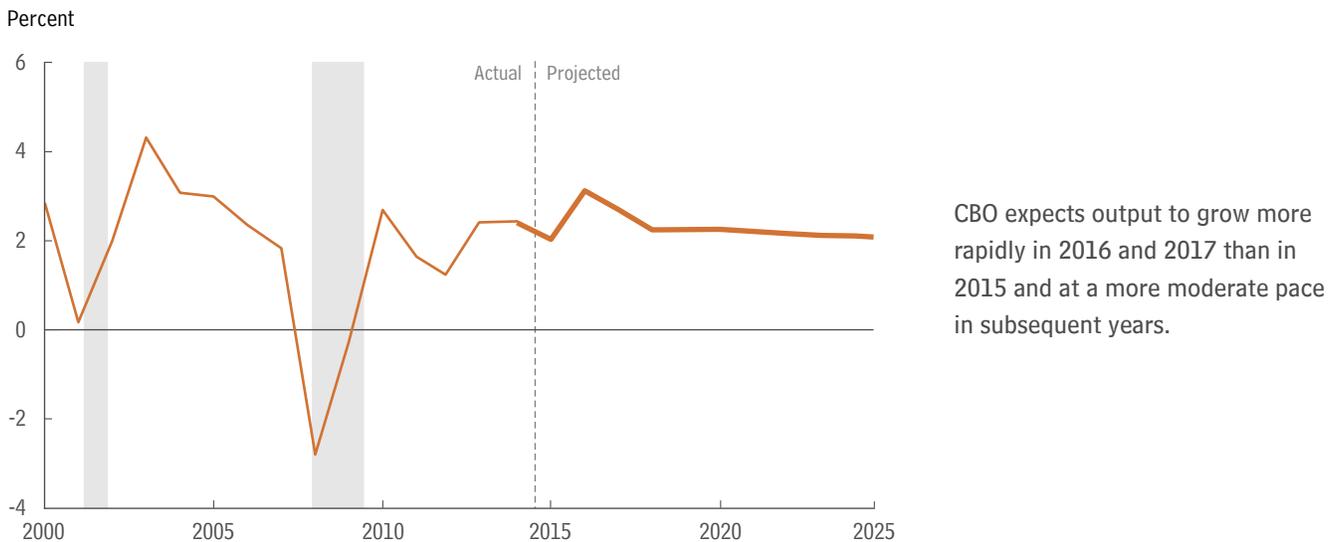
In CBO's estimation, the economic expansion that will occur this year and over the next few years will be driven by increases in consumer spending, business investment, and residential investment. Government purchases are expected to have a positive but modest effect on growth from 2016 through 2019. By contrast, net exports (exports minus imports) will restrain growth in 2015 and 2016 but contribute to growth in 2018 and beyond.

The faster pace of growth in output is expected to reduce the quantity of underused resources, or "slack," in the economy over the next few years. The difference between actual GDP and CBO's estimate of potential (that is, maximum sustainable) GDP was about 3.4 percent at the end of 2014. CBO expects that gap to narrow to its historical average by the end of 2017. CBO also expects slack in the labor market—which is indicated by such factors as the elevated unemployment rate and a relatively low rate of labor force participation—to dissipate over the next few years. In particular, the agency projects that further hiring will reduce the unemployment rate from 5.2 percent in the fourth quarter of 2015 to 5.0 percent in the fourth quarter of 2017. The upward pressure on compensation brought about by that hiring will encourage some people to enter or stay in the labor force,

in CBO's estimation. That development will slow the longer-term decline in labor force participation, which is attributable both to underlying demographic trends and to federal policies, but it will also slow the fall of the unemployment rate.

Over the next few years, reduced slack in the economy will put upward pressure on inflation and interest rates. Nevertheless, CBO expects the rate of inflation—as measured by the price index for personal consumption expenditures (PCE)—to stay below the Federal Reserve's goal of 2 percent during the next few years. CBO anticipates that the interest rate on 3-month Treasury bills, which has been near zero since the end of 2009, will begin increasing in the second half of 2015 and rise to 3.4 percent by the end of 2019. The agency further expects that the rate on 10-year Treasury notes will rise from an average of 2.4 percent in the second half of 2015 to 4.2 percent by the end of 2019.

CBO's projections for the period from 2020 through 2025 exclude possible cyclical developments in the economy because the agency does not attempt to predict the timing or magnitude of fluctuations in the economy so far into the future. CBO projects that real GDP will grow by an average of 2.1 percent per year from 2020 through 2025—a rate that matches the agency's estimate of the growth of potential output in those years but that is higher than the rate of growth of real GDP over the previous 10 years. CBO anticipates that output will grow more slowly than it did in the 1980s, 1990s, and early 2000s, primarily because the labor force is expected to grow more slowly than it did then. CBO projects that the unemployment rate between 2020 and 2025 will average 5.2 percent and that inflation, as measured by the PCE price index, will average 2.0 percent. Over the same period, the interest rates on 3-month Treasury bills and 10-year Treasury notes are projected to be 3.4 percent and 4.3 percent, respectively.

Figure 2-1.**Growth of Real GDP**

Sources: Congressional Budget Office; Bureau of Economic Analysis.

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

Data are annual. Values from 2000 through 2014 (the thin line) reflect revisions to the national income and product accounts that the Bureau of Economic Analysis released on July 30, 2015. Values from 2014 through 2025 (the thick line) reflect the data available and projections made before July 30. Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

GDP = gross domestic product.

Recognizing that economic forecasts are always uncertain, 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-anticipated growth in consumption, or slower growth of foreign economic activity—could cause outcomes to differ substantially from those CBO has projected.

CBO's current economic projections differ in some respects from those the agency issued in January 2015. For instance, CBO now projects slower growth of real GDP this year—largely because of the weak performance of the U.S. economy during the first half of the year—and slightly faster growth between 2016 and 2019 than it did in January. In addition, CBO now projects lower unemployment rates and lower long-term interest rates over the 2015–2025 period; inflation is projected to be lower in 2015 and 2016 than estimated in January.

CBO's current economic projections do not differ much from those of most other forecasters. They generally are similar to those reported in the *Blue Chip* consensus forecast (published in August) and the forecasts developed

by the Federal Reserve and presented at the June 2015 meeting of the Federal Open Market Committee.

The Economic Outlook for 2015 Through 2019

CBO expects economic activity to expand modestly this year, at a more solid pace in 2016 and 2017, and then at a moderate pace in subsequent years (see Figure 2-1 and Table 2-1). Real GDP grew slowly in the first half of this year, on average, increasing at an annual rate of 0.6 percent in the first quarter and 2.3 percent during the second quarter. (Those estimates reflect the July 30 revisions to the national income and product accounts; see Box 2-1.) The agency expects output to grow more rapidly in the second half of 2015. The outlook for the next few years reflects CBO's view that, under current law, federal fiscal policy (the government's tax and spending policies) will have only a modest effect on aggregate demand through 2019.¹ CBO also expects that monetary policy (the policies of the Federal Reserve that affect interest rates and the availability

1. 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 2015 to 2025**

	Forecast			Projected Annual Average	
	2015	2016	2017	2018–2019	2020–2025
Percentage Change From Fourth Quarter to Fourth Quarter					
Gross Domestic Product					
Real (Inflation-adjusted)	2.0	3.1	2.7	2.2	2.1
Nominal	3.2	4.7	4.7	4.3	4.3
Inflation					
PCE price index	0.6	1.8	2.0	2.0	2.0
Core PCE price index ^a	1.4	1.7	1.9	2.0	2.0
Consumer price index ^b	0.7	2.3	2.3	2.4	2.4
Core consumer price index ^a	2.0	2.1	2.3	2.3	2.3
GDP price index	1.1	1.6	2.0	2.0	2.1
Employment Cost Index ^c	2.8	3.3	3.5	3.5	3.3
Fourth-Quarter Level (Percent)					
Unemployment Rate	5.2	5.1	5.0	5.2 ^d	5.2 ^e
Percentage Change From Year to Year					
Gross Domestic Product					
Real	2.3	3.0	2.9	2.3	2.1
Nominal	3.3	4.5	4.8	4.4	4.3
Inflation					
PCE price index	0.3	1.7	1.9	2.0	2.0
Core PCE price index ^a	1.3	1.7	1.9	2.0	2.0
Consumer price index ^b	0.1	2.1	2.3	2.3	2.4
Core consumer price index ^a	1.8	2.1	2.2	2.3	2.3
GDP price index	1.0	1.5	1.9	2.0	2.1
Employment Cost Index ^c	2.6	3.0	3.4	3.5	3.3
Calendar Year Average					
Unemployment Rate (Percent)	5.4	5.1	5.0	5.1	5.2
Payroll Employment (Monthly change, in thousands) ^f	225	167	113	62	72
Interest Rates (Percent)					
Three-month Treasury bills	0.1	0.7	1.7	3.1	3.4
Ten-year Treasury notes	2.3	3.0	3.7	4.1	4.3
Tax Bases (Percentage of GDP)					
Wages and salaries	43.4	43.5	43.5	43.6	43.5
Domestic economic profits	9.7	9.3	8.9	8.3	7.7

Source: Congressional Budget Office.

Notes: Economic projections for each year from 2015 to 2025 appear in Appendix B.

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. Value for 2019.
- e. Value for 2025.
- f. Calculated as the monthly average of the fourth-quarter-to-fourth-quarter change in payroll employment.

Box 2-1.**Recent Revisions to the National Income and Product Accounts**

The Bureau of Economic Analysis (BEA) released its annual revisions to the national income and product accounts on July 30, 2015, after the Congressional Budget Office had completed its economic forecast in early July. That revision to previously published estimates incorporates new data from a variety of sources and some changes in methodology and definitions.¹ Revisions to estimates of output and income (and their components) were limited to the period from the first quarter of 2012 to the first quarter of 2015.

The revisions indicate that, in real (inflation-adjusted) terms, output and income grew more slowly in recent years than previously estimated. BEA now estimates that real gross domestic product (GDP) grew at an average annual rate of 2.1 percent from 2012 to 2014, compared with its previous estimate of 2.3 percent. Most of the downward revisions affect estimates for 2012 and 2013. BEA also lowered its estimates of real gross domestic income (the income earned in the production of gross domestic product) for the 2012–2014 period, with notable downward revisions to corporate profits.

This revision reflects BEA's first comprehensive effort to improve the way it accounts for seasonal effects when adjusting its estimates. That effort responds to concerns that BEA was failing to eliminate seasonal patterns in its estimate of GDP, concerns raised primarily because of the persistently slow growth of output in the first quarters of recent years. Partly because of improvements in its seasonal adjustment procedures, BEA raised its estimate of the growth of real GDP in the first quarter of 2015 to 0.6 percent from the previously reported –0.2 percent. The data still

reflect seasonal patterns, however, so BEA plans further work to address remaining problems related to seasonal adjustment, including collaborative efforts with the agencies that provide the data on which BEA's estimates are based.

An initial review of the revisions indicates that accounting for them would not cause CBO to make any significant revisions to its near-term projections for the economy or for the budget. Both the revised data and newly available data suggest that the growth of GDP in the first half of 2015 was stronger than in CBO's forecast, which suggests that growth will be slightly stronger for the year as a whole. Similarly, the revised data on income do not suggest that major revisions to CBO's revenue projections would be necessary because the revisions to BEA's estimates of wages and salaries were minor. In addition, CBO's projections already incorporate the data on corporate tax receipts that prompted BEA's downward revisions to corporate profits.

In contrast to those near-term considerations, the revised data suggest that growth in potential (maximum sustainable) output over the medium term will be slightly weaker, although the magnitude of that reduction cannot yet be calculated with any precision. BEA's revision incorporates both lower real GDP and higher estimates of business investment in fixed capital, suggesting slower growth of total factor productivity and faster growth in capital services in recent years.² Those developments imply a slightly lower historical estimate of potential output and slightly slower projected growth in potential output, but it is impossible to determine the magnitude of those effects until BEA releases the revised estimates of capital stock later this year.

1. See Bureau of Economic Analysis, "National Income and Product Accounts, Gross Domestic Product: Second Quarter 2015 (Advance Estimate); Includes Historical Revisions" (News Release BEA 15-35, July 30, 2015), www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm.

2. The growth of total factor productivity is defined as the growth of real output that is not explained by the growth of labor and capital services.

of credit) will support the growth of aggregate demand this year and over the next few years, but by smaller degrees over time.

CBO expects that GDP will grow faster than potential GDP through 2017 and that, by the end of 2017, the gap between actual and potential output will narrow to its average of one-half of one percent. The faster growth of output will bolster the demand for labor, slowing the longer-term decline in labor force participation and lowering the unemployment rate to the natural rate of unemployment (the rate that arises from all sources except fluctuations in the overall demand for goods and services) of 5.0 percent in 2017. By the fourth quarter of 2019, the unemployment rate in CBO's forecast is about one-quarter of a percentage point above the natural rate, a difference that is consistent with the gap between actual and potential output. Reduced slack in the economy will remove the downward pressure on the rate of inflation seen in recent years.

Federal Fiscal Policy

CBO anticipates that federal fiscal policy under current law will have little net effect on aggregate demand this year, after having reduced demand over the past several years.² As a result of reduced defense outlays, stemming largely from lower spending for military operations overseas, CBO expects the amount of federal purchases to decline somewhat in 2015 relative to the size of the economy, thus slowing growth in aggregate demand and GDP slightly. However, offsetting the effect of that factor are a number of other changes to fiscal policy that are expected to increase aggregate demand and make a small contribution to the growth of GDP. For example, CBO expects federal grants to states and localities, payments to health care providers arising from the expansion of Medicaid, and payments to individuals resulting from the health care subsidies provided under the Affordable Care Act (ACA) to increase relative to GDP, thus boosting overall spending. In addition, various tax provisions (mainly bonus depreciation allowances) that expired at the end of 2013 were extended retroactively in December 2014, thus reducing businesses' tax payments more this year than in 2014 and helping boost investment by some businesses.

2. For a discussion of why federal fiscal policy reduced aggregate demand and output over the past several years, see Congressional Budget Office, *The Budget and Economic Outlook: 2015 to 2025* (January 2015), www.cbo.gov/publication/49892.

From 2016 through 2019, various changes in the federal budget and in fiscal policy will reduce aggregate demand. The economic stimulus provided by the automatic stabilizers in the federal budget (the automatic reductions in revenues and increases in outlays that occur when the economy weakens) will continue to wane somewhat as the economy improves and therefore will provide a smaller boost to aggregate demand.³ Beginning in 2016, collections of corporate and individual income taxes are projected to rise relative to GDP largely because of the expiration, at the end of 2014, of bonus depreciation and certain other tax provisions, which reduces investment. (For its current-law projections, CBO assumes that those expired provisions are not extended.) In addition, rising income will push some taxpayers into higher tax brackets over time, which will modestly reduce their spending as well as their incentive to work, thus reducing the supply of labor.

The ACA will also affect the labor market in the coming years and thereby affect output.⁴ The largest impact of the ACA on the labor market, especially as overall employment conditions improve, will be that some provisions of the act raise effective tax rates on earnings and thus reduce the amount of labor that some workers choose to supply. That effect occurs partly because 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 the additional earnings of some people, and partly because the act directly imposes higher taxes on the labor income of other people.

3. All else being equal, automatic stabilizers affect aggregate demand 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 and demand. For additional discussion of the automatic stabilizers, see Frank Russek and Kim Kowalewski, *How CBO Estimates the Automatic Stabilizers* (Congressional Budget Office, forthcoming).

4. For more information on the effects of the ACA, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), Appendix C, www.cbo.gov/publication/45010. A more recent analysis of the effects of repealing the ACA includes updated information; see Congressional Budget Office, *Budgetary and Economic Effects of Repealing the Affordable Care Act* (June 2015), www.cbo.gov/publication/50252.

Monetary Policy and Interest Rates

CBO expects that, over the next few years, the Federal Reserve will gradually reduce the extent to which monetary policy supports the growth of aggregate demand as the economy improves and as the rate of inflation approaches the Federal Reserve's goal of 2 percent. In CBO's forecast, the federal funds rate—the interest rate that financial institutions charge each other for overnight loans, which has been near zero since the end of 2008—rises to about 0.2 percent in the fourth quarter of 2015 and to 2.4 percent in the fourth quarter of 2017, before settling at 3.7 percent in the second quarter of 2019. CBO's forecast for the federal funds rate is roughly consistent with the forecasts by Federal Reserve officials but also takes into account the path for interest rates implied by prices in the futures market for federal funds, which points to lower rates (see Figure 2-2, top panel).⁵ CBO projects that the interest rate on 3-month Treasury bills will begin to rise from nearly zero in the fourth quarter of 2015 and then increase to 2.2 percent by the end of 2017 before settling at 3.4 percent by the second quarter of 2019 (see Figure 2-2, bottom panel).

According to CBO's projections, the interest rate on 10-year Treasury notes will rise from 2.5 percent in the fourth quarter of 2015 to 3.9 percent at the end of 2017 and then to 4.2 percent by the end of 2019 (before settling at 4.3 percent at the end of 2020). That increase will reflect continued improvement in economic conditions as well as the expected rise of short-term interest rates. Although long-term rates are expected to rise, several factors, which are detailed below, will keep real interest rates from rising to levels that prevailed before the 2007–2009 recession (see “The Economic Outlook for 2020 Through 2025” on page 48).

In CBO's projections, the interest rate on 10-year Treasury notes stabilizes a year later than the rate on 3-month Treasury bills because of the influence of the Federal Reserve's large portfolio of long-term assets. The Federal Reserve has indicated it will begin to gradually reduce its holdings of long-term assets after it starts raising the federal funds rate; the exact timing will depend on economic and financial conditions and the economic outlook. CBO projects that those holdings will start to decline in

2016, but they will take many years to fall to historical levels.

Contributions to the Growth of Real GDP

CBO expects the growth of real GDP from 2015 through 2019 to be driven largely by consumer spending and by both business and residential investment (see Figure 2-3). On net, purchases by the federal government and state and local governments are projected to have a small positive effect on the growth of GDP through 2019. In contrast, net exports will restrain growth in 2015 and 2016, although they will contribute slightly to growth thereafter, CBO projects.

Consumer Spending. In CBO's estimation, consumer spending on goods and services will be an important contributor to the growth of output through 2019. In real terms, spending on consumer goods and services is projected to grow at an average annual rate of 2.8 percent both this year and next year, as measured from the fourth quarter of one calendar year to the fourth quarter of the next. Because consumer spending accounts for about two-thirds of GDP, that projection means consumer spending will contribute 1.9 percentage points to the projected growth rate of real GDP this year and in 2016 (see Figure 2-3). CBO estimates that consumer spending will grow more slowly in later years and contribute about 1½ percentage points to the growth rate of output each year from 2017 through 2019.

CBO anticipates that consumer spending in the next few years will be bolstered largely by faster growth in income and wealth. The agency estimates that real disposable (after-tax) personal income will grow at an average annual rate of 2.8 percent between 2015 and 2019 after averaging 1.6 percent since the end of the recession. That faster growth largely reflects faster projected growth in real labor compensation, which results from an improving labor market (see Figure 2-4 on page 38). The expected growth of real disposable personal income through 2017 also reflects CBO's projection of continued growth in transfer payments to households by federal, state, and local governments.⁶ In addition, a sharp drop in energy prices since mid-2014 boosted consumers' purchasing power

5. As of August 19, prices in the futures market indicate that market participants expect the federal funds rate for 2017 to be 0.2 percentage points lower than they did when CBO completed the forecast on July 7.

6. Transfer payments by governments are those payments for which no goods or services are required in return. Federal transfer payments include Social Security and unemployment benefits, as well as payments for health care programs, such as Medicaid. Expanding enrollments in Medicaid and in subsidized individual insurance policies purchased through exchanges contribute to the projected increases in transfer payments.

Figure 2-2.

Forecasts of Interest Rates by CBO, the Federal Reserve, and Federal Funds Futures



Sources: Congressional Budget Office; Federal Reserve; Bloomberg.

Notes: The 17 data points for each year in the top panel represent forecasts made by Federal Reserve Board members and Federal Reserve Bank presidents in June 2015. They are available at <http://go.usa.gov/3sQnA>. 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 July 7, 2015, when CBO's economic forecast was completed. Values are averages for the fourth quarter of the year shown. The value for 2017 is the average of futures prices for October and November.

CBO's forecast values are for the fourth quarter of the year shown. CBO's forecast for the longer term is the value for 2025.

and should support consumer spending later in 2015 and in 2016, as households appear to have delayed spending some of the windfall from lower energy prices. Also, CBO expects that household wealth will be bolstered by continuing growth in house prices.

Another set of factors supporting consumer spending in the next few years, in CBO's view, will be continued

improvements in households' creditworthiness and in the availability of credit. Delinquency rates on consumer loans continue to fall and by some measures are at historically low values. The number of households with home mortgages that are underwater (that is, the outstanding loan balance is greater than the market value of the mortgaged property) also continues to fall. The Federal Reserve's survey of senior loan officers indicates that,

Figure 2-3.

Projected Contributions to the Growth of Real GDP

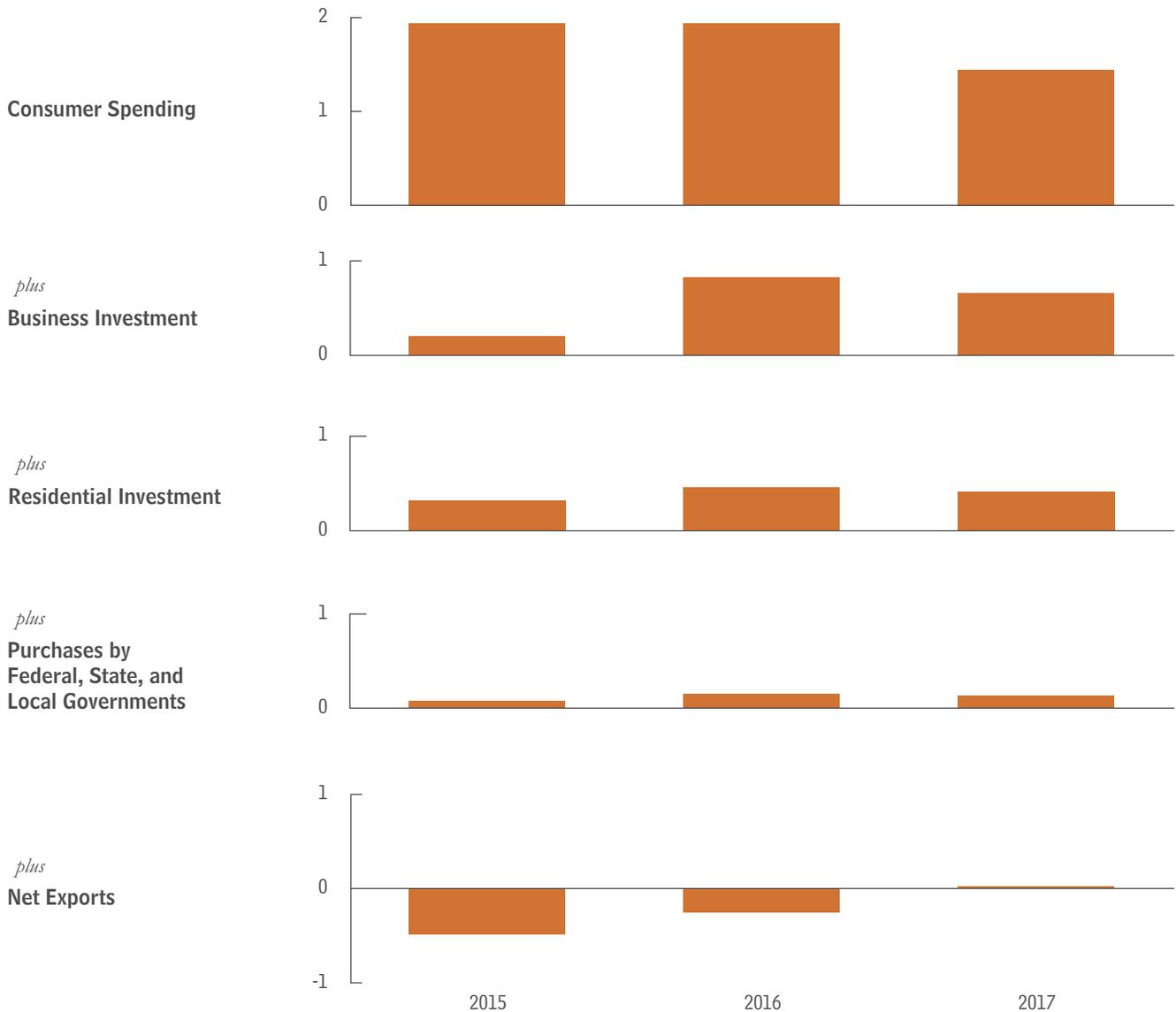
Projected growth of real GDP

2.0%

3.1%

2.7%

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



Source: Congressional Budget Office.

Notes: Data are annual. The values show the projected contribution of the major components of GDP to the projected growth rate of real (inflation-adjusted) GDP. Changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year. Consumer spending consists of personal consumption expenditures. Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, and 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.

GDP = gross domestic product.

over time, banks are becoming more willing to extend consumer credit and on slightly more favorable terms. The strengthening labor market and healing real estate market are expected to continue to improve the creditworthiness of households.

Business Investment. CBO expects investment by businesses—which consists of fixed investment (investment in equipment, nonresidential structures, and intellectual property products) and investment in inventories—to be a key contributor to the growth of real GDP over the next few years. In the first half of 2015, overall fixed investment by businesses grew slowly in real terms because falling energy prices prompted a reduction of investment in mining structures and equipment. However, CBO estimates that the reduction in mining investment will end later this year, so that real business investment will grow by 1.5 percent in 2015 as a whole and by 6.3 percent in 2016, before slowing in subsequent years. Real business investment, as a consequence, is expected to contribute only 0.2 percentage points to the growth rate of real GDP in 2015, but 0.8 percentage points in 2016, and 0.7 percentage points in 2017 (see Figure 2-3).

Business investment is still in the midst of a cyclical recovery and expansion. Overall investment is currently close to the amount needed to replace depreciating capital and provide for the growth of potential GDP, although some categories still appear low relative to that amount. However, across all categories, businesses also will seek to make up for investments that they did not undertake during the recession; that effort will push up business investment over the next few years (see Figure 2-4). In addition, CBO expects mining investment to begin growing again by the end of 2015 as oil prices begin to rise. Although investment in inventories falls during recessions and rises during economic recoveries, it has already rebounded from the recession; therefore, CBO expects that it will not be a source of further growth. In addition, in CBO's forecast, rising interest rates will exert some downward pressure on investment, but not enough to offset the influence of the ongoing economic expansion.

Growth of investment in the near term will be concentrated in categories that have historically responded in a strong but delayed manner during an economic recovery and expansion—investment in structures and equipment. Growth is expected to be strongest in investment in

nonmining structures because such investment is still low relative to its historical relationship to potential GDP. Moreover, national measures of vacancy rates for offices and industrial space have fallen to relatively low levels. Investment in equipment is also expected to be strong as businesses attempt to make up for investment that was not carried out or that was postponed over the past six years.

Residential Investment. CBO expects all major components of residential investment—single-family construction, multifamily construction, residential improvements, and brokers' commissions and other ownership transfer costs—to grow rapidly in real terms over the next few years, even as mortgage rates begin to rise. However, the small size of the sector will limit its contribution to the growth of real GDP. In CBO's forecast, residential investment grows at an annual average rate of 11 percent in the second half of 2015, after growing by 8 percent in the first half. Such investment will grow by 13 percent in 2016 and by 11 percent in 2017, in CBO's estimation, before slowing in subsequent years. Given that outlook, residential investment will contribute 0.3 percentage points to the growth rate of real GDP in 2015, 0.5 percentage points in 2016, and 0.4 percentage points in 2017 (see Figure 2-3).

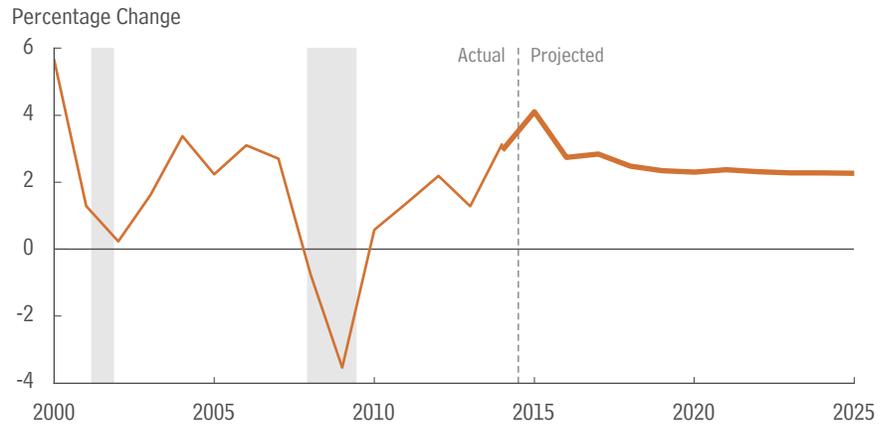
CBO anticipates that three factors will contribute to the solid growth in residential investment—household formation, the demand for replacement housing units, and mortgage lending standards:

- More than 1.6 million new households were formed in the 12 months that ended in June, compared with fewer than 600,000 per year over the previous eight years. CBO expects that an average of 1.2 million new households will be formed per year over the 2015–2019 period (see Figure 2-4).
- CBO expects that nearly 300,000 starts per year are needed to replace obsolete housing units. Together, CBO's estimates of future household formation and replacement demand are consistent with housing starts of 1.6 million per year over the 2015–2019 period, many more than the current 1.2 million.
- Mortgage lending standards are loosening, although they remain tighter than they were before the recession.

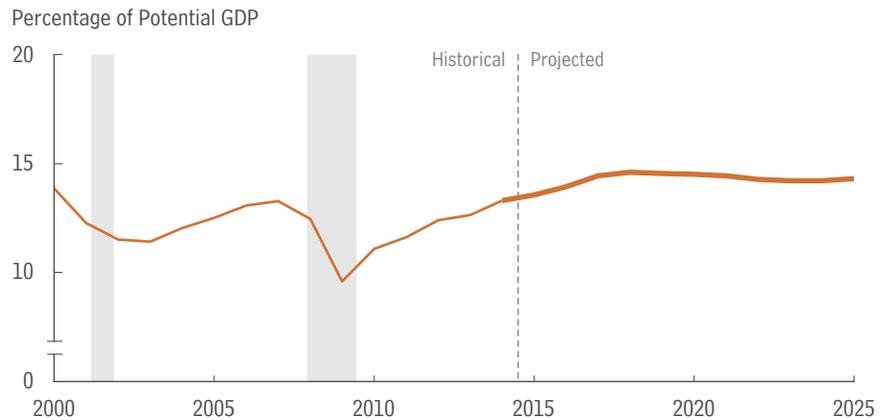
Figure 2-4.

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 faster growth in consumer spending in the next few years.



Business investment will rise above current levels in the next few years as businesses make up for investments that they did not undertake during the recession.



Sources: Congressional Budget Office; Bureau of Economic Analysis; Bureau of the Census; Consensus Economics.

Notes: Data are annual. Values from 2000 through 2014 (the thin lines) reflect revisions to the national income and product accounts that the Bureau of Economic Analysis released on July 30, 2015. Values from 2014 through 2025 (the thick lines) reflect the data available and projections made before July 30.

The total amount of 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.

Continued

Evidence that those factors will translate into increased investment in the second half of 2015 can be seen in sales of new single-family homes and permits for multifamily units, which have both increased substantially this year.

CBO anticipates that stronger growth in the demand for housing will put upward pressure on house prices. CBO projects that house prices—as measured by the Federal Housing Finance Agency’s price index for home purchases—will increase by 3.6 percent (on a fourth-

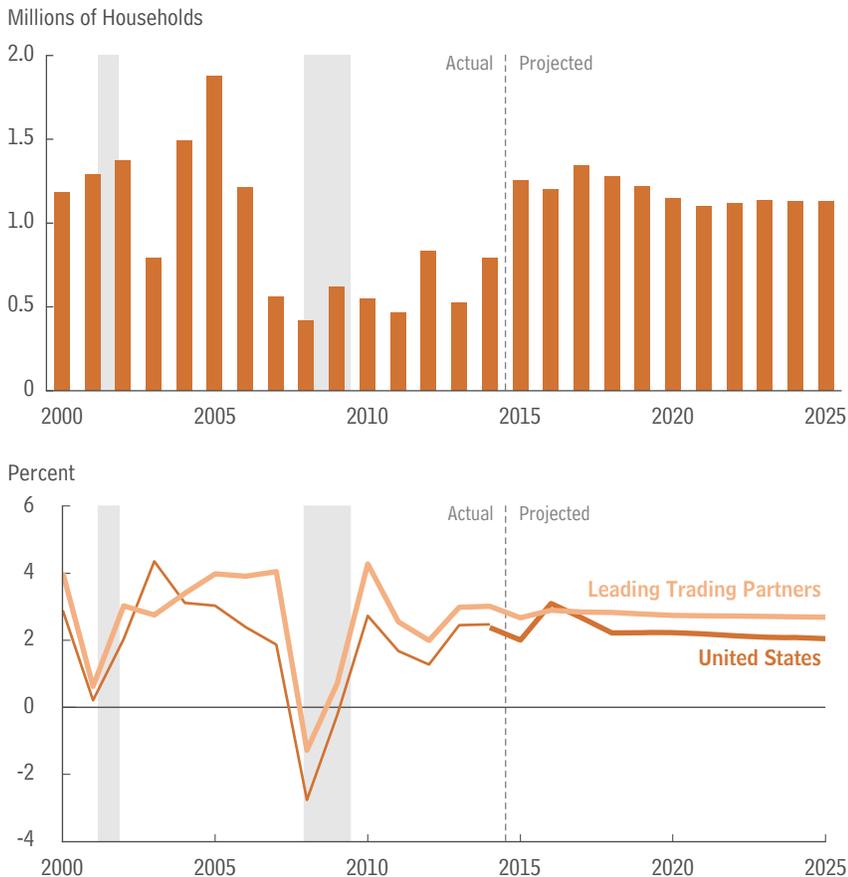
quarter-to-fourth-quarter basis) in 2015 and by about 2.3 percent per year, on average, over the 2016–2019 period, after rising by 5.0 percent in 2014. That outlook accounts for the projected increase in the supply of housing units, which is expected to temper the price gains from stronger housing demand.

Government Purchases. CBO projects that, in real terms, purchases of goods and services by governments at the federal, state, and local levels (the portion of government

Figure 2-4.

Continued

Factors Underlying the Projected Contributions to the Growth of Real GDP



An increase in **household formation** is projected to boost the demand for housing and spur residential investment for the next few years.

The rise in **growth of real GDP in the United States** relative to that of its leading trading partners is projected to contribute to lower net exports this year and next.

Notes: Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, and the change in inventories. It is measured as a percentage of real (inflation-adjusted) potential GDP.

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

The percentage change in real GDP among the United States' leading trading partners is calculated as the average of the rates of growth of those countries' real GDP, with their shares of U.S. exports used as weights. The trading partners are Australia, Brazil, Canada, China, Hong Kong, Japan, Mexico, Singapore, South Korea, Switzerland, Taiwan, the United Kingdom, and the countries of the euro zone. Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

GDP = gross domestic product.

spending directly included in GDP) will contribute a small positive amount to the growth rate of output over the next few years—about 0.1 percentage point per year (see Figure 2-3 on page 36). For 2015, CBO estimates that such purchases will rise by about one-half of one percent, on a fourth-quarter-to-fourth-quarter basis, compared with a slightly smaller increase in 2014 and decreases in each of the four years before 2014. The projected growth of the real value of overall government purchases in 2015 is attributable to an increase of 1.2 percent in state and local purchases, which offsets

an estimated decline of roughly 1 percent in federal purchases. From 2016 through 2019, real federal purchases are projected to continue to decline, but at a slower rate than in 2015, and real state and local purchases, on average, are expected to grow at roughly the same pace as in 2015.

The relatively strong growth of real state and local purchases that CBO projects reflects the agency's view that the finances of those jurisdictions will continue to improve. The recession, the subsequent slow recovery,

and falling house prices strained state and local finances, resulting in four years of real declines in state and local purchases before 2014. With improving finances, real state and local purchases grew by about 1 percent in 2014 and are expected to grow from 2015 to 2019. By contrast, CBO projects that, under current law, purchases by the federal government will fall over the next four years in real terms, constrained by the statutory caps on funding for discretionary programs.

Net Exports. CBO expects that, in real terms, net exports will continue to impose a drag on the growth of GDP in the second half of 2015 and in 2016 before contributing positively to growth in 2018 and 2019.⁷ Real net exports are projected to decline by about \$89 billion between the fourth quarter of 2014 and the fourth quarter of 2015; 80 percent of that decline occurred in the first half of 2015.⁸ Real net exports are projected to decline by \$50 billion in 2016. After 2016, however, CBO expects net exports to rise in real terms. According to CBO's projections, net exports will reduce the growth rate of GDP by 0.5 percentage points in 2015 and by 0.3 percentage points in 2016 before rebounding and adding 0.3 percentage points to GDP growth by 2019 (see Figure 2-3 on page 36).

CBO's projection of net exports is based partly on important differences in the expected pace of economic activity in the United States and among the nation's leading trading partners (see Figure 2-4). CBO forecasts that economic growth in the United States during the second half of 2015 and in 2016 will exceed that of its major trading partners, on average, but will fall below the growth of those foreign economies in ensuing years.⁹ Consequently, over the next year and a half, imports will rise more than the nation's exports, reducing net exports. Beginning in 2017, however, faster economic growth among the

nation's major trading partners is expected to reverse that trend, increasing net exports in 2018 and 2019.

The projected weak growth of foreign economies over the next year and a half is attributable to expected developments in the economies of three of the United States' largest trading partners. In 2015 and 2016, the growth of real GDP in both Canada and Mexico, two of the country's most important trading partners (by volume of trade), is projected to be slow because lower energy prices will weigh on their relatively large energy sectors. At the same time, growth in China's economy is expected to continue to weaken as that country adjusts to slower growth in investment spending.¹⁰ But CBO expects that the modest rebound in the growth of output of countries in the euro zone, which began in early 2015, will continue, partially offsetting the relatively slow economic growth in Canada, Mexico, and China. CBO anticipates that, once the economic recovery in the euro zone strengthens and the Canadian and Mexican economies improve (as energy prices rise), the average rate of foreign economic growth will rise relative to that in the United States, eventually exceeding domestic growth beginning in 2017.

CBO's projection of net exports is also based on the significant increase in the exchange value of the dollar in 2014 and in the first quarter of 2015 and on the agency's forecast of a stable exchange value through mid-2016, followed by a decrease in subsequent years. In the past year, the trade-weighted U.S. dollar has appreciated by approximately 12 percent. That appreciation was partly caused by a decline in long-term interest rates among the United States' leading trading partners, particularly in Europe and Asia, and by a deteriorating outlook for foreign growth. Those developments increased the exchange value of the dollar by boosting the relative demand for dollar-denominated assets. Over the second half of 2015

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

8. The dockworkers' strike at West Coast ports disrupted trade flows during the first quarter of 2015. The strike delayed the processing of imports to the United States, thereby understating the U.S. trade deficit over the first two months of the year. However, once the strike ended, backlogged imports were finally processed and trade flows slowly normalized. Most analysts estimate that, on net, the dock strike had a minimal effect on the U.S. net export position by the time the effects of the strike dissipated (toward the end of the first half of 2015).

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

10. Recent volatility in Chinese equity markets should not have a substantial effect on the U.S. economy because U.S. investors have little exposure to Chinese equity markets (both because those markets are a small part of the global financial system and because capital controls limit outside investment in China).

and 2016, CBO expects the rise in growth in the United States relative to that among the nation's trading partners to continue to contribute to rising interest rates in the United States relative to those abroad. That widening divergence in interest rates is projected to support a strong and stable value of the dollar and contribute to weaker net exports through 2016. As growth in foreign economies strengthens over time, however, CBO expects foreign central banks to tighten their monetary policies gradually, which will lower the exchange value of the dollar and contribute to stronger net exports in 2017 and beyond.

The Labor Market

The labor market improved significantly in 2014 and continued to improve in the first half of 2015. Several developments reflected that improvement: From the fourth quarter of 2014 to the second quarter of 2015, the unemployment rate continued to decline; growth of non-farm jobs continued at a pace that exceeded its average from the previous five years; and the labor force participation rate remained stable despite downward pressure on that rate from the aging of the population.

Although labor market conditions have improved notably over the past year, CBO estimates that slack in the labor market still remains but will diminish over the next few years. Nevertheless, the strengthening economy will lead to continued labor market improvements, and CBO estimates that the slack will largely be eliminated by 2017.

Slack in the Labor Market. Slack in the labor market refers to underused labor resources arising from weak demand for labor during periods when output is below its potential. Assessing the amount of slack is difficult, but in CBO's view, the key measures of slack in the labor market include the following:

- The extent to which the labor force participation rate (the percentage of people in the civilian non-institutionalized population who are at least 16 years old and are either working or actively seeking work) is below the *potential* labor force participation rate;
- The extent to which the unemployment rate is higher than the current natural rate of unemployment; and
- The extent to which the share of part-time workers who would prefer full-time work is unusually high.

A direct consequence of persistent slack in the labor market is that wages continue to grow more slowly than they did before the recession. As slack diminishes, CBO expects that increased competition for fewer available workers will lead firms to begin increasing wages more rapidly in order to attract workers.

Even if some elements of labor market slack return to their potential or natural values, a certain amount of slack could still remain. Currently, the unemployment rate is close to CBO's estimate of the natural rate; however, the labor force participation rate remains notably below CBO's estimate of its potential level, and the share of part-time workers who would prefer full-time work remains high. If the unemployment rate were to reach or fall below its natural rate but the labor force participation rate remained below its potential and the amount of involuntary part-time work remained high, for example, some slack would still be present in the labor market.

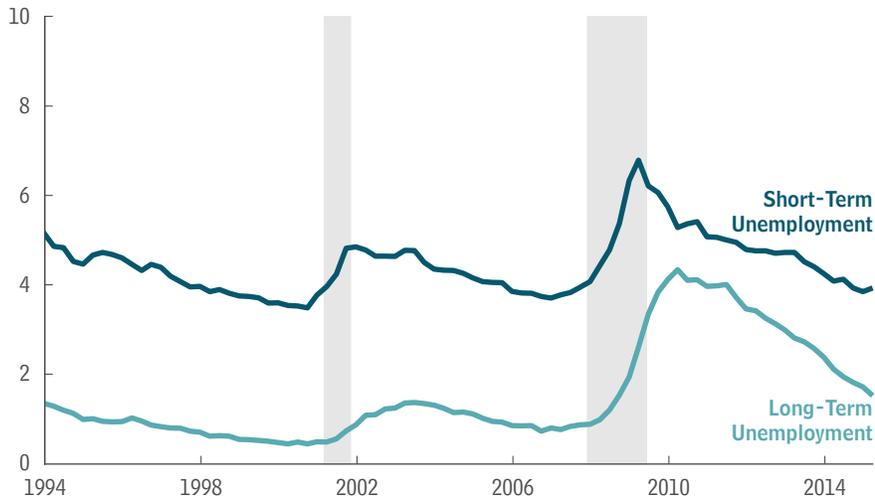
Labor Force Participation. The labor force participation rate fell from 65.9 percent in the fourth quarter of 2007, at the beginning of the recession, to 62.8 percent in the second quarter of 2014. It has since stabilized and remains 0.9 percentage points below CBO's estimate of the potential rate.

Three factors account for the roughly 3 percentage-point decline in the labor force participation rate from the end of 2007 to 2015. By CBO's estimate, roughly 1 percentage point of the fall stems from cyclical weakness in employment prospects and wages, which historically has long-lasting effects on participation. That weakness is one component of slack in the labor market, and it should diminish over time as the economy continues to move toward its potential. Another roughly one and one-half percentage points stems from the aging of the population. Finally, a set of longer-term trends within cohorts accounts for the roughly one-half percentage point of the remaining difference. Those longer-term trends include, for example, the decline in labor force participation of young workers since 2001, a reduction in participation by workers who became discouraged by the persistent weakness in the labor market and permanently dropped out of the labor force, and a reduction in participation by some workers as a result of the ACA.

Unemployment. The unemployment rate was 5.4 percent in the second quarter of 2015, roughly one-half of a percentage point above the unemployment rate at the

Figure 2-5.**Rates of Short- and Long-Term Unemployment**

Percent



The overall unemployment rate remains elevated partly because of weakness in the demand for goods and services and partly because of the stigma and erosion of skills that can stem from long-term unemployment.

Sources: Congressional Budget Office; Bureau of Labor Statistics.

Notes: 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 the second quarter of 2015.

beginning of the recession (at the end of 2007). That difference, in CBO's view, stems from both cyclical and structural factors. CBO estimates that most of that difference reflects cyclical weakness in the economy because the unemployment rate is about one-third of a percentage point above the natural rate of unemployment. The remainder of the difference (which has raised CBO's estimate of the natural rate of unemployment) is attributable to structural factors associated with the erosion of skills and stigma that can stem from long-term unemployment (that is, unemployment that lasts for at least 27 consecutive weeks). Much of the effect of those structural factors on the unemployment rate has dissipated. Nevertheless, the long-term unemployment rate remains nearly three-quarters of a percentage point above the prerecession rate of 0.9 percent (see Figure 2-5). CBO expects that some of the long-term unemployed will continue to have a hard time finding stable employment. However, the effect of long-term unemployment on the natural rate will diminish over time as affected people reach retirement age or have more opportunity to find stable employment.

The still-elevated unemployment rate and cyclically low labor force participation rate have resulted in substantially lower employment in 2015 than would have been the case if the economy was at its potential. If the

unemployment rate had returned to the level recorded in December 2007, and if the labor force participation rate had equaled its potential rate, there would have been roughly $2\frac{3}{4}$ million more people employed in the second quarter of 2015, CBO estimates. The depressed labor force participation rate accounts for roughly three-fourths of the shortfall, and the elevated unemployment rate accounts for roughly one-fourth (see Figure 2-6). The equivalent shortfall in employment in the second quarter of 2014 amounted to about $4\frac{3}{4}$ million people, nearly equally reflecting both elevated unemployment and cyclically low labor force participation. At its peak in 2009, the shortfall was $9\frac{1}{2}$ million people, by CBO's estimate.

Part-Time Employment. Another component of labor market slack is the number of people employed but not working as many hours as they would like. The incidence of part-time employment for economic reasons (that is, part-time employment among workers who would prefer full-time employment) remains significantly higher than it was before the recession (see Figure 2-7). About 4.5 percent of all workers were employed part time for economic reasons in the second quarter of 2015, 1 percentage point above the rate in the fourth quarter of 2007. The continued large share of part-time workers is

Figure 2-6.**Employment Shortfall**

Millions of People



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

Source: Congressional Budget Office.

Notes: Data are quarterly.

The employment shortfall is the number of people who would be employed if the unemployment rate equaled its rate in December 2007 (the shortfall from unemployment) and if the labor force participation rate equaled its potential rate (the shortfall from labor force participation).

one reason that the Bureau of Labor Statistics' U-6 measure of underused labor stood at 10.7 percent in the second quarter of 2015, down from a peak of 17.1 in the fourth quarter of 2009 but still more than 2 percentage points above its level before the recession.¹¹

Indicators of Labor Market Slack. Continued weak growth in hourly rates of labor compensation (that is, wages, salaries, and benefits) is one important indicator that notable slack remains in the labor market. Firms have less incentive to increase compensation when there is a large pool of underemployed labor resources.

Labor compensation continues to grow considerably more slowly than it did before the recession, according to

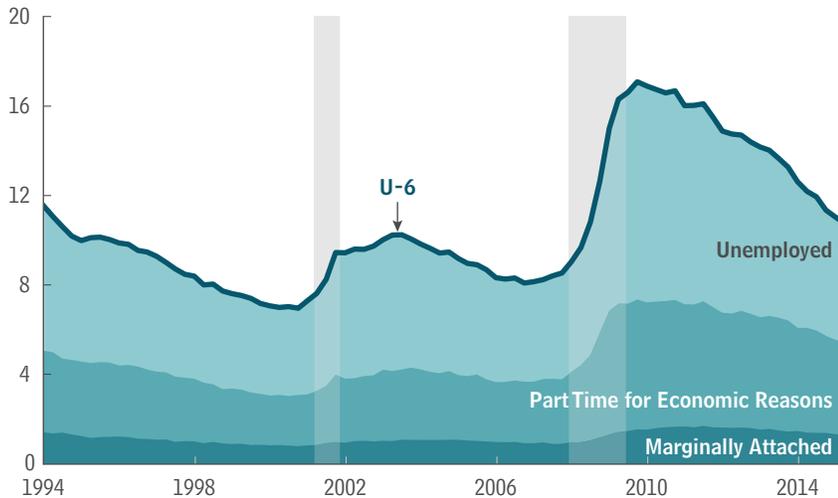
most measures. As indicated by the employment cost index for workers in private industry (which measures the change in the cost of labor, holding employment shifts across occupations and industries fixed), hourly rates of labor compensation grew at an average annual rate of 1.9 percent in the year ending in the second quarter of 2015. That rate was 3.1 percent in 2007, near the beginning of the last recession (see Figure 2-8). Another measure of labor compensation—the average hourly earnings of production workers and nonsupervisory workers on private nonfarm payrolls, which include only wages—grew at an average annual rate of 2.0 percent in the 12 months ending in the second quarter of 2015, about the same rate recorded in 2014 but less than the rate in 2007.

Two other indicators of slack in the labor market—the rate at which job seekers are hired and the rate at which workers are quitting their jobs (as a fraction of total employment)—have improved considerably and are approaching their levels recorded before the recession. The increase in both rates suggests that employers are gaining confidence in the strength of the economy and that workers are more confident about finding new jobs after quitting previous jobs.

11. The U-6 measure combines the number of unemployed people, the number of people who are employed part time for economic reasons, and the number of people who are “marginally attached” to the labor force (that is, who are not currently looking for work but have looked for work in the past 12 months). It divides the total by the number of people in the labor force and the number of marginally attached workers. The number of workers who are marginally attached to the labor force is also larger than it was before the recession—about 2.0 million people in the second quarter of 2015, up from about 1.4 million in the fourth quarter of 2007.

Figure 2-7.**Underuse of Labor**

Percentage of the Labor Force Plus Marginally Attached Workers



The **U-6 measure of the underuse of labor** has fallen since the end of the recession but remains high: The percentage of people who are employed **part time for economic reasons** remains significantly higher than it was before the recession, and the percentage of people who are **marginally attached** to the labor force is slightly greater than it was before the recession began.

Sources: Congressional Budget Office; Bureau of Labor Statistics.

Notes: People who are employed part time for economic reasons are those who would prefer full-time employment.

People who are marginally attached to the labor force are not currently looking for work but have looked for work in the past 12 months.

Data are quarterly and are plotted through the second quarter of 2015.

Difficulties in Measuring Slack in the Labor Market. Considerable difficulties arise when assessing the amount of slack in the labor market, especially under current circumstances. For example, in projecting potential labor force participation, CBO estimated how many people permanently dropped out of the labor force because of such factors as long-term unemployment. However, CBO may have underestimated or overestimated that number, and therefore potential labor force participation could be lower or higher than the agency has concluded.

Similarly, CBO's estimate of the natural rate of unemployment may be too high or too low. Currently, CBO's estimate of the increase in the natural rate since before the recession incorporates the agency's estimate of the effect that stigma associated with long-term unemployment has on that rate. That stigma effect has dissipated over the past year, in CBO's judgment, as the long-term unemployment rate continues to fall and the people who have been unemployed for a long time find jobs. CBO may have overstated the effect of that decrease in stigma on the natural rate. Conversely, CBO may have understated the downward pressure that demographics (specifically, the aging of the population) have on the natural rate. A higher natural rate would suggest more upward

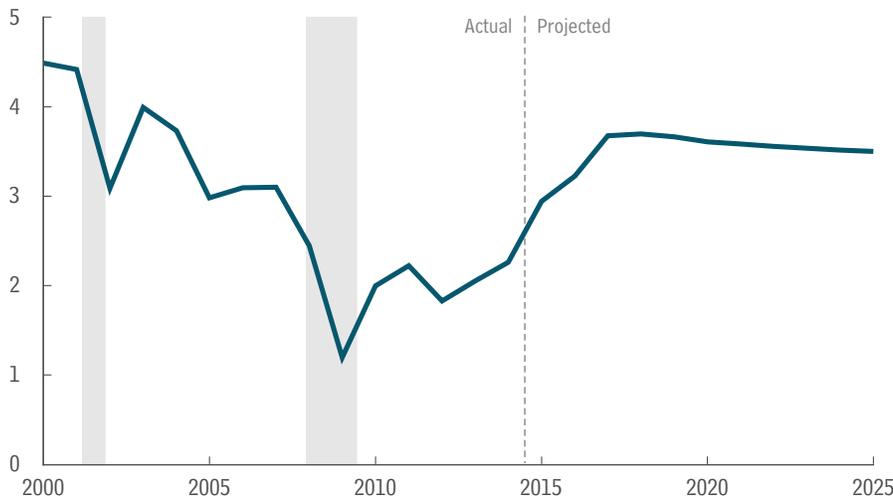
pressure on wages for any given unemployment rate; a lower natural rate would suggest less upward pressure on wages and more slack in the labor market at the current unemployment rate.

The Labor Market Outlook Through 2019. The growth of output this year will increase the demand for labor, leading to solid employment gains and a further reduction in labor market slack, according to CBO's estimates. The unemployment rate is projected to fall to 5.2 percent in the fourth quarter of 2015 and to edge down to 5.0 percent by 2017. CBO projects that the decline in the unemployment rate will be tempered somewhat because the agency expects the stronger labor market will draw more workers into the labor force. CBO also expects diminished slack in the labor market to raise the growth of hourly labor compensation.

CBO's labor market projections for 2018 and 2019 are largely based on a transition between the agency's projections for the next few years and projections for later years, when the relationship between the unemployment rate and the natural rate of unemployment is generally expected to match its historical average. Therefore,

Figure 2-8.**Hourly Labor Compensation**

Percentage Change



Although hourly labor compensation has grown slowly in recent years, CBO projects that growth over the next several years will be stronger than in 2014, as the demand for workers continues to rise and slack in the labor market diminishes.

Sources: Congressional Budget Office; Bureau of Labor Statistics.

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

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

CBO projects a slightly higher unemployment rate—5.2 percent—in the fourth quarter of 2019.

Employment. CBO expects nonfarm payroll employment to rise by an average of about 225,000 jobs per month in 2015. The average increase is projected to slow in 2016 and 2017 to 140,000 jobs per month, as the labor market tightens. That projection is also consistent with expected improvement in productivity growth.

According to CBO's estimates, the number of people employed as a percentage of the population will increase over the coming year and then will decrease slightly through the end of 2019, leaving it close to its current level of about 59 percent (see Figure 2-9). That percentage is well below the levels seen in the two decades before the recent recession, a difference that primarily reflects long-term trends pushing down labor force participation—above all the aging of baby boomers and their transition to retirement.

Labor Force Participation. The rate of labor force participation has stabilized over the past year at 62.8 percent, and CBO expects it to remain at that rate into 2016 (see Figure 2-10). That projection is the net result of a number of offsetting factors.

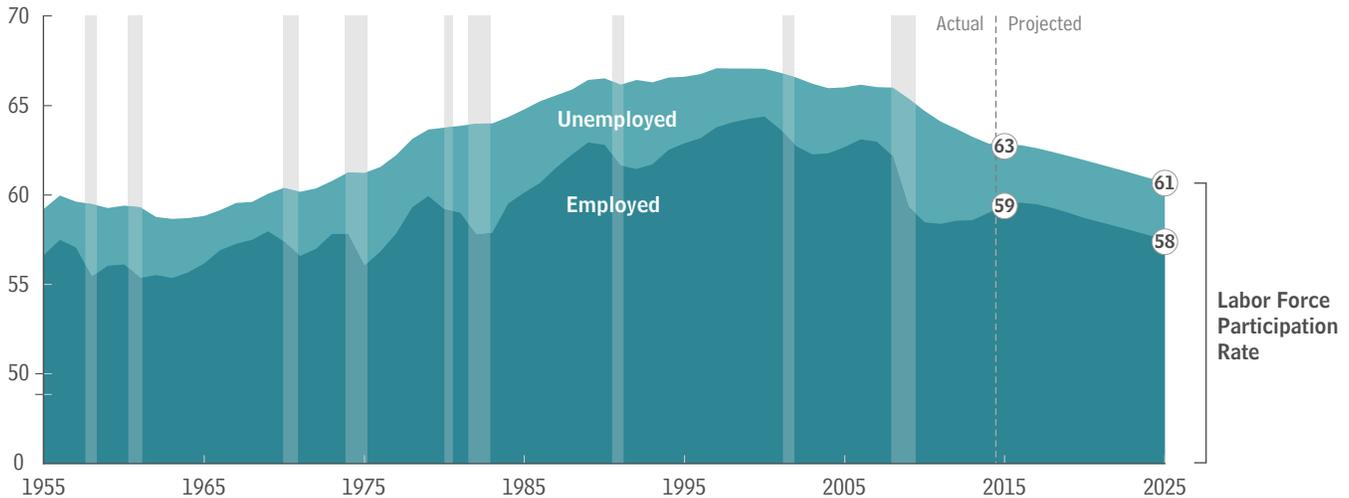
Among the factors that will raise participation is the cyclical improvement in the labor market. Some workers who left the labor force temporarily, or who stayed out of the labor force because of weak employment prospects, will enter it in the next few years as demand for labor continues to strengthen. Indeed, recent data show a willingness on the part of individuals to enter the labor force as employment prospects have improved. CBO estimates that other workers will choose to stay in the labor force as a result of the improving economy and rising compensation rather than drop out.

A number of factors, however, will dampen participation. Lingering effects of the recession and ensuing weak recovery continue to push down participation. Although many workers who experienced long-term unemployment as a result of the deep recession have subsequently become employed, a notable fraction also left the labor force and remain categorized as not participating in the labor force. Federal tax and spending policies—in particular, certain aspects of the ACA and also the structure of the tax code, wherein rising income pushes some people into higher tax brackets—will also tend to lower the participation rate over the next several years. Additionally, downward trends in the participation rates of younger workers have slightly pushed down the overall participation rate.

Figure 2-9.**The Labor Force, Employment, and Unemployment**

The percentage of the population that is employed is projected to fall over the next 10 years because of declining participation in the labor force, mainly by baby boomers as they age and move into retirement.

Percentage of the Population



Sources: Congressional Budget Office; Bureau of Labor Statistics.

Notes: 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 annual. Actual data are plotted through 2014.

The most important factor pushing down labor force participation is the aging of the baby-boom generation, which is moving a cumulatively greater fraction of the population out of their prime working-age years and into retirement. By 2017, CBO expects the downward pressure on the participation rate that is attributable to the aging of the population will prevail, steadily pushing down the overall participation rate. However, that effect will be slightly offset by the baby-boom generation's unusually strong attachment to the labor force in traditional retirement years, which will push up the participation rate among older workers. As a result of those factors, CBO expects the labor force participation rate to fall by roughly one-quarter of one percentage point during 2017 (to 62.6 percent) and an additional one-half of one percentage point by 2019.

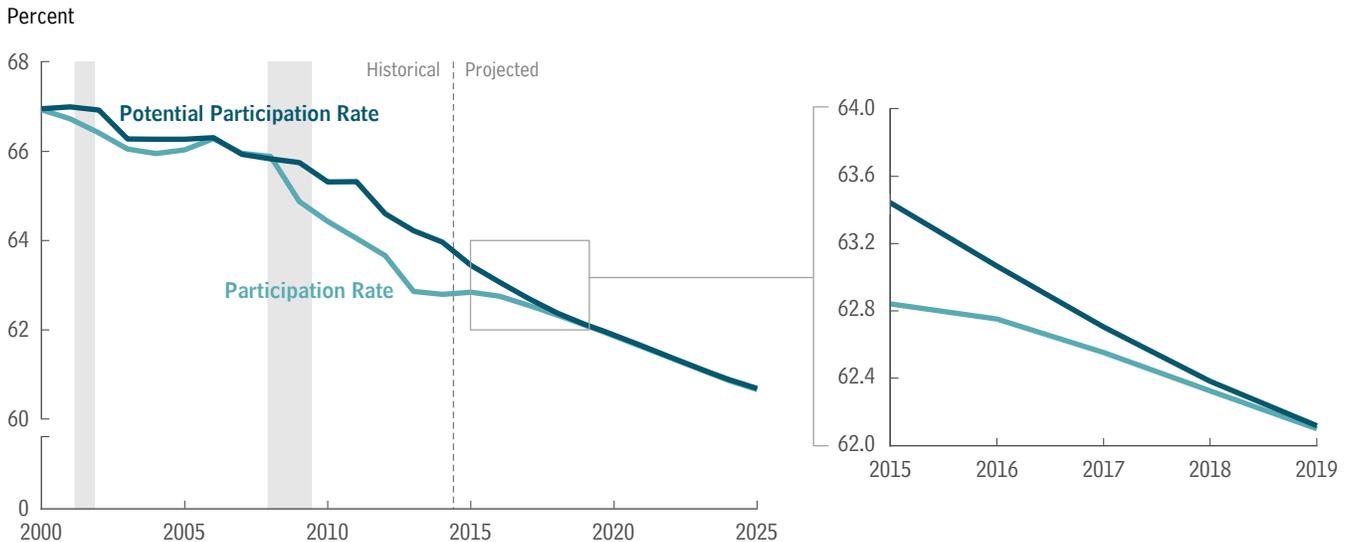
The Unemployment Rate. For two reasons, CBO expects the unemployment rate to decline from an average of 5.4 percent in the second quarter of 2015 to 5.0 percent in 2017. First, stronger demand for labor will boost employment and close the gap between the unemployment rate and the natural rate. Second, CBO expects the

natural rate to fall slightly with the continued fading of the effects of stigma and erosion of skills among the long-term unemployed as increasing demand for labor creates jobs for those people and they eventually gain more stable employment.

Labor Compensation. Although labor compensation has grown slowly in recent years, CBO projects that growth over the next several years will be stronger than in 2014, as the demand for workers continues to rise and slack in the labor market diminishes. Historically, growth in labor compensation has been among the last of the labor market indicators to recover following a recession, picking up only when little slack was left in the labor market. As slack in the labor market diminishes and firms must increasingly compete for a shrinking pool of unemployed or underemployed workers, the growth in hourly compensation will pick up, CBO projects. That increase in compensation will boost labor force participation and thus the number of available workers, thereby moderating the overall increase in the rate of growth of compensation.

Figure 2-10.**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 2025.



Sources: Congressional Budget Office; Bureau of Labor Statistics.

Notes: 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.

CBO expects the employment cost index for the compensation of workers in private industries to increase at an average annual rate of 3.4 percent from 2015 through 2019, compared with an average of 2.1 percent from 2010 through 2014. The growth of other measures of hourly compensation, such as the average hourly earnings of production and nonsupervisory workers in private industries, is similarly expected to increase.

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. In the first half of this year, consumer price inflation fluctuated dramatically because of changes in the price of crude oil and hence in consumer energy prices. In particular, the price of a major variety of crude oil, West Texas Intermediate, fell from \$73 per barrel in the fourth quarter of 2014 to \$49 per barrel in the first quarter of 2015 and then rose to \$58 per barrel in the

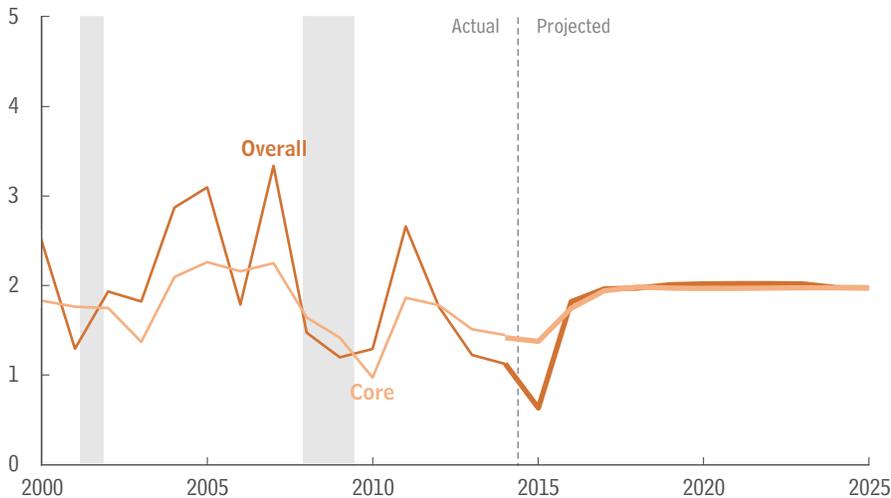
second quarter. Similarly, consumer energy prices fell early in the year and then partially rebounded. CBO expects crude oil prices to rise gradually later this year, largely in response to rising global demand for oil, which will lead to gradual increases in consumer energy prices.¹² The overall PCE price index is projected to rise by 0.6 percent in 2015 as a whole and by 1.8 percent in 2016 (see Figure 2-11). By contrast, the core PCE price index, which excludes food and energy prices, is projected to increase by 1.4 percent in 2015 and by 1.7 percent in 2016.

With slack in the economy diminishing, the rate of inflation as measured by the overall PCE price index is projected to increase to 2.0 percent in 2017 and to

12. Since CBO's economic projection was completed in early July, the price of West Texas Intermediate has fallen to \$41 per barrel (as of August 19). That decline and the prices implied by futures markets point to lower oil prices in the near term than CBO projects.

Figure 2-11.**Inflation**

Percentage Change in Prices



CBO anticipates that core prices will rise modestly, reflecting the remaining slack in the economy and widely held expectations for low and stable inflation.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

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

Data are annual. Values from 2000 through 2014 (the thin lines) reflect revisions to the national income and product accounts that the Bureau of Economic Analysis released on July 30, 2015. Values from 2014 through 2025 (the thick lines) reflect the data available and projections made before July 30. Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

remain at that rate through 2025. That rate, which is equal to the Federal Reserve's longer-term goal, reflects CBO's judgment that consumers and businesses expect inflation to stay at 2.0 percent. CBO's projection also rests on the expectation that the Federal Reserve will make changes in monetary policy to prevent inflation from exceeding or falling short of that goal for a prolonged period. The agency has a similar projection for the core PCE price index, but that index does not reach 2.0 percent until 2018.

The consumer price index for all urban consumers (CPI-U) and its core version, which excludes food and energy prices, are expected to increase a little more rapidly than their PCE counterparts because of the different methods used to calculate them and because housing rents play a larger role in the consumer price indexes. 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, which is close to the average difference over the past several decades.

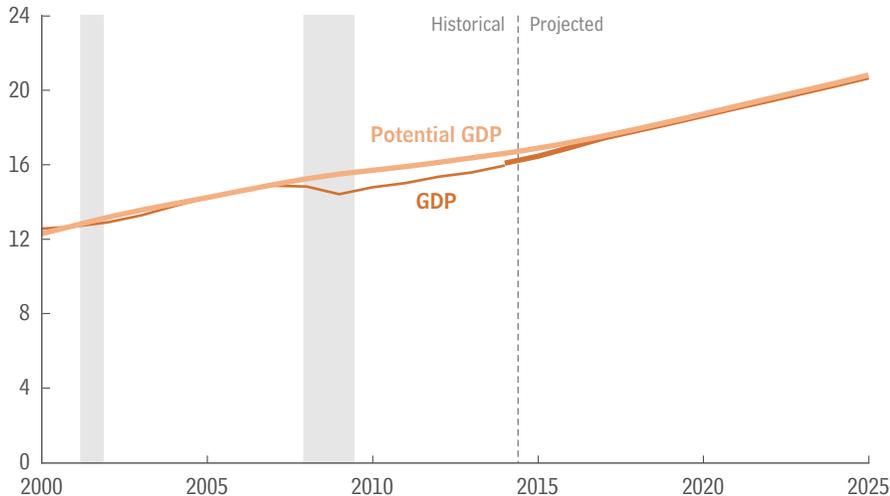
The Economic Outlook for 2020 Through 2025

CBO's economic projections for 2020 through 2025, unlike its projections for the next several years, are not based on forecasts of cyclical developments. Rather, they are based on projections of underlying trends in variables such as the growth of the labor force, of hours worked, and of productivity. The projections take into account a variety of factors, including historical patterns in the non-farm business sector and the rest of the economy; historical and projected changes in demographic patterns; the response of investment to those and other trends; CBO's estimates of the persistent effects of the 2007–2009 recession and subsequent weak recovery; and federal tax and spending policies under current law. Future developments will undoubtedly differ from what those underlying trends imply, so CBO's projections should be interpreted as the average of likely outcomes, given currently available information.

CBO projects that real GDP will be about one-half of one percent below its estimate of real potential GDP, on

Figure 2-12.**GDP and Potential GDP**

Trillions of 2009 Dollars



The gap between the economy's actual and potential output, adjusted for inflation, narrows to its historical average—about one-half of one percent of potential GDP—by the end of 2017 in CBO's projection.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

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

Data are annual. Values from 2000 through 2014 (the thin line) reflect revisions to the national income and product accounts that the Bureau of Economic Analysis released on July 30, 2015. Values from 2014 through 2025 (the thick line) reflect the data available and projections made before July 30.

GDP = gross domestic product.

average, during the 2020–2025 period (see Figure 2-12). 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 2009.¹³ Consistent with the average gap between actual and potential GDP, CBO projects that the unemployment rate will be slightly higher than its natural rate, on average, during the 2020–2025 period, as well.

In CBO's projections for the 2020–2025 period:

- Both actual and potential real GDP grow at an annual average of 2.1 percent per year.

13. CBO estimates that, over the course of each of the five complete business cycles that have occurred since 1975, real GDP was more than one-half of one percent below potential GDP, on average. The term "business cycle" describes fluctuations in overall economic activity accompanied by fluctuations in the unemployment rate, interest rates, income, and other variables. Over a business cycle, economic activity rises to a peak and then falls until it reaches a trough, whereupon it starts to rise again, defining a new cycle. Business cycles are irregular, varying in frequency, magnitude, and duration.

- The unemployment rate remains stable at 5¼ percent, slightly above the natural rate of 5.0 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 3.4 percent and 4.3 percent, respectively.

Potential Output

CBO projects that real potential output over the 2020–2025 period will grow by 2.1 percent per year, on average. That figure is substantially lower than the agency's estimate of the rate of growth that occurred during the business cycles from 1981 to 2007—3.1 percent per year, on average (measured from peak to peak). However, that projected rate of growth is substantially higher than the growth in potential output during the current business cycle so far (that is, from 2008 through the end of 2014)—1.5 percent per year, on average. Those differences reflect changes in the growth of potential hours

Table 2-2.**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	2008-2014	Total, 1950-2014	2015-2019	2020-2025	Total, 2015-2025
Overall Economy										
Potential GDP	4.0	3.3	3.1	3.3	2.7	1.5	3.3	2.0	2.1	2.1
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	0.8	1.5	2.0	1.6	1.0	1.8	1.5	1.6	1.6
Nonfarm Business Sector										
Potential Output	4.1	3.6	3.3	3.7	3.0	1.7	3.5	2.4	2.6	2.5
Potential Hours Worked	1.4	2.3	1.5	1.4	0.4	0.4	1.3	0.4	0.6	0.5
Capital Services	3.8	3.8	3.6	3.9	2.7	1.6	3.4	2.8	2.5	2.6
Potential TFP	1.9	0.9	1.1	1.5	1.9	1.0	1.5	1.3	1.4	1.4
Potential TFP excluding adjustments	1.9	0.9	1.1	1.5	1.5	1.0	1.5	1.3	1.4	1.4
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	0.3	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	0.8
Potential TFP	1.9	0.9	1.1	1.5	1.9	1.0	1.5	1.3	1.4	1.4
Total Contributions	4.0	3.6	3.3	3.7	3.0	1.7	3.5	2.4	2.6	2.5
Potential Labor Productivity ^c	2.7	1.3	1.7	2.2	2.6	1.4	2.1	2.0	2.0	2.0

Source: Congressional Budget Office.

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

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.

worked, the growth of capital services, and the growth of potential productivity—primarily in the nonfarm business sector, which represents roughly three-quarters of total output. In addition, CBO's projection of potential output over the 2020–2025 period is lower than it would have been if the 2007–2009 recession had not occurred. According to CBO's estimates, the recession and the ensuing slow recovery have weakened the factors that determine potential output (labor supply, capital services, and productivity) for an extended period.

Overall Growth in Output. The main reason that potential output is projected to grow more slowly than it did in the earlier business cycles is that CBO expects growth in the potential labor force (the labor force adjusted for variations caused by the business cycle) to be much slower than it was earlier (see Table 2-2). Growth in the potential labor force will be held down by the ongoing retirement of the baby boomers; by a relatively stable labor force participation rate among working-age women, after sharp increases from the 1960s to the mid-1990s; and by federal tax and spending policies set in current law, which will reduce some people's incentives to work.

The primary reason that CBO expects potential output to grow more quickly than it has over the past half-dozen years is that the agency expects the potential productivity of the labor force to grow more quickly. In CBO's projections, potential productivity grows at an annual average rate of 1.6 percent from 2020 through 2025, which would be close to its average rate of growth during the business cycles that occurred between 1981 and 2007 and substantially higher than the 1.0 percent average rate that CBO estimates for the period from 2008 through 2014. That projected increase, in turn, mostly reflects CBO's assessment of potential total factor productivity, or TFP—which is the average real output per unit of combined labor and capital services—in the nonfarm business sector. That measure has grown unusually slowly since the onset of the recession in 2007, but CBO estimates that it will accelerate during the next few years, returning to its average rate of growth during the years before the recession.

The Nonfarm Business Sector. In the nonfarm business sector, CBO projects, potential output will grow at an average rate of 2.6 percent per year over the 2020–2025 period. Like the projected growth rate of overall potential output, that growth rate would be lower than it was during the business cycles from 1981 through 2007 but faster than it has been since the beginning of 2008.

Potential hours worked in the nonfarm business sector are projected to grow at an average annual rate of 0.6 percent from 2020 through 2025—more slowly than they did in earlier periods (particularly from 1982 through 2001) but more quickly than they did from 2008 through 2014. The growth in hours projected for that sector is expected to be faster than it was during the most recent period despite the projected slow growth of the overall potential labor force. CBO expects faster growth in hours worked because other sectors—including owner-occupied housing, nonprofit institutions serving households, and state and local governments—are expected to become a smaller share of the economy.¹⁴

14. The output of the state and local government sector includes only the compensation of state and local employees and the depreciation of equipment, structures, and intellectual property products owned by state and local governments. Other purchases by state and local governments—such as new capital investments, goods that are not capital investments, and contracted services—are part of the output of other sectors of the economy, primarily the nonfarm business sector.

Capital services in the nonfarm business sector are also projected to grow more slowly from 2020 through 2025—at an average annual rate of 2.5 percent—than they did during the business cycles from 1981 through 2007, primarily because of the slower growth of potential hours worked. But the projected growth of capital services from 2020 through 2025 is somewhat faster than such growth has been since 2007, reflecting projected increases in investment. The growth of capital services has been restrained since 2007 because of weak investment, which itself was a response to the cyclical weakness of demand; in the long run, however, the growth of capital services depends mostly on the growth of hours worked and on the rate of increase in productivity.

CBO projects that the growth of potential TFP in the nonfarm business sector between 2020 and 2025 will be slightly below its average of 1.5 percent between 2002 and 2007 (after the effects of a temporary surge in the early 2000s are excluded). That is, CBO projects the growth rate of potential TFP to be essentially what recent history, before the recession, suggests. That approach is similar to the one that CBO uses to project trends in other factors that determine the growth of potential output. The projected growth rate is also close to the average observed during the business cycles from 1981 through 2007, a longer period that witnessed marked swings in the growth of TFP.¹⁵ However, the projected rate is more rapid than the estimated average annual rate of growth of 1.0 percent from 2008 to 2014, as this chapter discusses below.

Lingering Effects of the Recession and Slow Recovery.

Incorporated in the projection of growth in potential output is CBO's expectation that each of the factors that determine potential output—potential labor hours, capital services, and potential TFP—will be somewhat lower through 2025 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 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

15. During that period, potential TFP grew at an average annual rate of 1.5 percent if the surge in the early 2000s is taken into account and at a rate of 1.4 percent if it is not, CBO estimates.

decade. As a result, the labor force participation rate will be slightly lower—and hence the labor force slightly smaller—than it would have been otherwise.

Capital services will also be lower than they would have been if not for the recession and slow recovery for several reasons. Fewer workers require proportionately less capital, all else being equal, and lower TFP tends to reduce investment as well. The economic weakness has also affected capital services because of the plunge in investment during the recession, although that effect is expected to dissipate by 2025. In addition, CBO estimates that the sharp increase in federal debt—which resulted not only from the automatic stabilizers but also from changes in fiscal policies that were implemented in response to the weak economy—will crowd out additional capital investment in the long term. (CBO has not quantified the individual effect of each of those developments on capital formation in its current projection.)

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

The effects of the recession and slow recovery on those three factors are 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. (The rate of improvement in information technology may have begun to slow a few years before the recession began.) In addition, the effects of the recession and slow recovery on the labor force, capital services, and productivity are interrelated; for example, a smaller potential labor force implies a smaller need for firms to invest in capital services.

The Labor Market

CBO projects that the unemployment rate will reach its long-run relationship with the natural rate and remain steady at 5.2 percent from the fourth quarter of 2019 through the fourth quarter of 2025, roughly one-quarter of a percentage point above CBO's estimate of the natural rate of 5.0 percent. The labor force participation rate is

expected to fall from about 62 percent in 2020 to about 61 percent in 2025 (see Figure 2-10 on page 47).

The projected difference between the unemployment rate and the natural rate during the 2020–2025 period is not based on a forecast of particular cyclical movements in the economy. Rather, it is based on the observation that, on average, the unemployment rate has been roughly one-quarter of one percentage point higher than the natural rate over the 50-year period ending in 2009. The difference between the projections of the unemployment rate and the natural rate over the 2020–2025 period corresponds to the projected gap between output and potential output, as discussed above.

CBO's projection of the labor force participation rate in 2025—approximately 61 percent—is about 1 percentage point lower than the rate that the agency projects for 2020 and 5¼ percentage points lower than the rate recorded at the end of 2007. CBO estimates that roughly 4½ percentage points of the decline since 2007 is attributable to the aging of the population, as older workers tend to work less than younger workers. Roughly one-quarter of a percentage point of that decline reflects the withdrawal of some workers from the labor force in response to the most recent recession and slow recovery. The remainder of the projected fall in labor force participation stems from the reduction in some people's 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, thus reducing their incentive to supply labor.

CBO projects that labor compensation will grow at an average annual rate of 3.6 percent between 2020 and 2025. Growth in labor compensation in private industry is largely driven by developments in the nonfarm business sector; CBO's forecast of compensation in that sector is consistent with historical patterns, which are closely linked to labor productivity in that sector. Compensation per hour (as adjusted for inflation) in that sector has grown at the same rate as productivity over long periods. In the early 2000s, that relationship broke down when compensation grew more slowly; but in recent years, real compensation per hour and productivity have grown at similar rates, suggesting that the relationship has been restored. CBO expects average historical patterns to be maintained in the future—with compensation growing at about the same rate as productivity over the 2020–2025 period, after adjusting for inflation.

Inflation

In CBO's projections, inflation as measured by the PCE price index and the core PCE price index averages 2.0 percent annually over the 2020–2025 period. That rate is consistent with the Federal Reserve's longer-term goal. 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. (Differences in the ways that the two price indexes are calculated make the CPI-U grow faster than the PCE price index, on average.)

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 3.4 percent and 4.3 percent, respectively, from 2020 through 2025. CBO expects the federal funds rate to be 3.7 percent during that period.

Reflecting adjustments for inflation, as measured by the CPI-U, the projected real interest rate on 10-year Treasury notes equals 1.9 percent between 2020 and 2025. That would be well above the current real rate but more than a percentage point below the average real rate between 1990 and 2007, a period that CBO uses for comparison because it featured fairly stable expectations for inflation and no severe economic downturns or financial crises.

According to CBO's analysis, a number of factors will act to push down real interest rates on Treasury securities relative to their earlier average: slower growth in the labor force (which reduces the return on capital), slightly slower growth of productivity (which also reduces the return on capital), a greater share of total income going to high-income households (which tends to increase saving), and a higher risk premium on risky assets (which increases the relative demand for risk-free Treasury securities, boosting their prices and thereby lowering their interest rates). CBO also foresees a greater demand for long-term bonds as a hedge against possible adverse economic outcomes (such as unexpectedly low inflation), which will push long-term interest rates down relative to the period from 1990 to 2007.

Other factors will act to raise real interest rates relative to 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 (which increases the supply of

Treasury securities), smaller net inflows of capital from other countries as a percentage of GDP (which reduces the supply of funds available for borrowing), a smaller number of workers in their prime saving years relative to the number of older people drawing down their savings (which tends to decrease saving and thus also reduces the supply of funds available for borrowing), and a larger share of income going to capital (which increases the return on capital assets with which Treasury securities compete).¹⁶

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 its constituent parts: labor income, domestic economic profits, proprietors' income, interest and dividend income, and other categories.¹⁷ CBO projects various categories of income by estimating their shares of gross domestic income (GDI).¹⁸ Of the categories of income, the most important components for the tax base are labor income, especially wage and salary payments, and domestic profits.

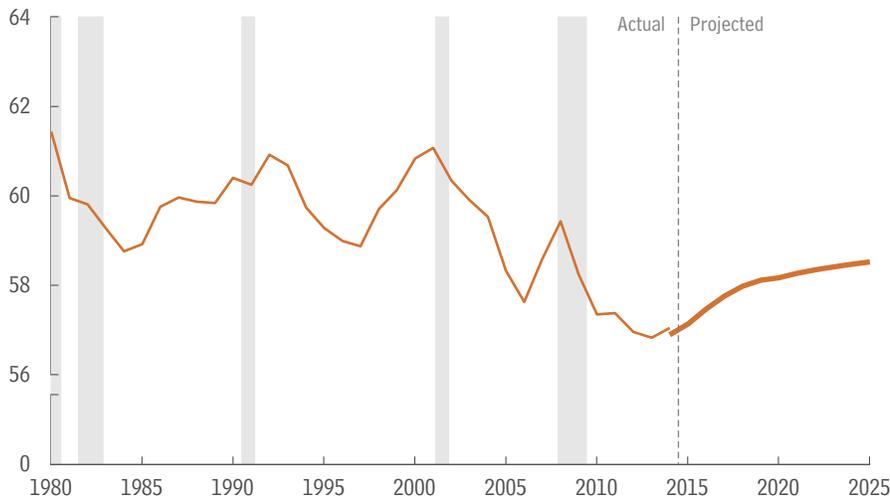
16. For a more detailed discussion of the factors affecting interest rates in the future, see Congressional Budget Office, *The 2014 Long-Term Budget Outlook* (July 2014), pp. 108–109, www.cbo.gov/publication/45471.

17. To calculate domestic economic profits, estimates of corporations' domestic profits are adjusted 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.

18. 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. GDP was about 1 percent smaller than GDI in 2014, but CBO projects that GDP will grow slightly faster than GDI over the next decade, which will leave the gap between the two in 2025 close to its average of the past 30 years.

Figure 2-13.**Labor Income**

Percentage of Gross Domestic Income



CBO expects the labor share of income to rise but remain below its 1980–2007 average.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Notes: Labor income is defined as 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 annual. Values from 1980 through 2014 (the thin line) reflect revisions to the national income and product accounts that the Bureau of Economic Analysis released on July 30, 2015. Values from 2014 through 2025 (the thick line) reflect the data available and projections made before July 30.

In CBO's projections, labor income grows faster than other components of GDI over the next decade, increasing its share from a revised 57 percent in 2014 to 58.5 percent in 2025 (see Figure 2-13). The projected increase in labor income's share of GDI stems primarily from an expected pickup in the growth of real hourly labor compensation, which will result both from strengthening demand for labor and from rising labor productivity.

However, CBO expects that some of the factors that have depressed labor's share of GDI since 2000 will continue during the coming decade, preventing that share from returning to its 1980–2007 average of nearly 60 percent. One factor is globalization, which has tended to move the production of labor-intensive goods and services to countries where labor costs are lower. 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 9.7 percent of GDI (as published in the national income and product accounts) in the second half of 2014 to

7.6 percent in 2025. That decline occurs largely because of two factors: the pickup in the growth of labor compensation and a projected increase in corporate interest payments, the result of rising interest rates.

Another measure of overall income, real gross national product (GNP), is projected to grow at an annual average of 2.3 percent per year between 2015 and 2025. Unlike the more commonly cited GDP, GNP includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in this country. It 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 that are embodied in current law. Even if no significant changes are made to those fiscal policies,

economic outcomes will undoubtedly differ from CBO's projections. Many developments—such as unforeseen changes in the housing market, labor market, business confidence, and international conditions—could cause economic growth and other variables to differ substantially from what CBO has projected.¹⁹

The agency's current forecast for employment and output from 2015 through 2019 may be too pessimistic. For example, if households spend their savings from lower energy prices more quickly than CBO has projected, consumer spending could increase faster than CBO projects. More consumer expenditures could lead to stronger growth in business investment, faster hiring, and greater income gains. Similarly, if household formation continues at the rapid pace of the past year or if mortgage lenders loosen lending standards faster than expected, housing investment could be stronger than CBO has forecast. Faster-than-expected economic growth abroad also could spur stronger demand for U.S. exports and lead to faster domestic growth.

Alternatively, CBO's forecast for 2015 through 2019 may be too optimistic. For example, if businesses do not respond to tighter labor markets by increasing wages and benefits, then household income and consumer spending could grow more slowly than CBO anticipates. Also, a large shift in housing demand from single-family to multifamily units would slow residential investment because multifamily units generally require less investment than single-family units. In addition, an unexpected worsening in international political or economic conditions could likewise weaken the U.S. economy by disrupting the international financial system, interfering with international trade, and reducing business and consumer confidence.

A number of 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) or if productivity grew 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.

The effect of income inequality on the economy is also uncertain. Economists have found mixed theoretical and empirical results on this question—some studies conclude that income inequality leads to faster growth, others suggest that it slows growth, and still others find that it has no effect on growth. As a consequence, CBO does not explicitly include the impact of changes in income inequality in its projection of economic growth. However, CBO's economic projections implicitly include some effects of income inequality to the extent that past changes in inequality have affected underlying trends in the economy. Economists continue to study the issue, and CBO will update its analysis if the research in this area provides a more definitive conclusion.

Comparison With CBO's January 2015 Projections

CBO's current economic projections differ modestly from those issued in January 2015 (see Table 2-3). Growth in real GDP is projected to be considerably slower in 2015 and slightly faster over the 2016–2025 period than CBO previously indicated, leaving real GDP in 2025 roughly unchanged. In CBO's projection, the unemployment rate is lower throughout the 2015–2025 period. In addition, CBO now expects more workers to reenter the labor force in the next few years as demand for labor continues to strengthen, boosting the rate of labor force participation in the near term relative to CBO's January projection. CBO expects inflation to be lower in 2015 and 2016 and unchanged during the years after 2016, relative to its January forecast. CBO has also lowered its projection of interest rates—through 2018 for short-term rates and throughout the projection period for long-term rates.

19. For a further discussion of the inherent uncertainty underlying economic forecasts, see Congressional Budget Office, *CBO's Economic Forecasting Record: 2015 Update* (February 2015), www.cbo.gov/publication/49891. CBO regularly evaluates the quality of its economic forecasts by comparing them with the economy's actual 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.

Table 2-3.**Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2015 to 2025**

	Forecast			Projected Annual Average		
	2015	2016	2017	2015-2019	2020-2025	2015-2025
Percentage Change From Fourth Quarter to Fourth Quarter						
Real (Inflation-adjusted) GDP						
August 2015	2.0	3.1	2.7	2.4	2.1	2.3
January 2015	2.9	2.9	2.5	2.5	2.1	2.3
Nominal GDP						
August 2015	3.2	4.7	4.7	4.2	4.3	4.3
January 2015	4.2	4.6	4.5	4.3	4.2	4.3
PCE Price Index						
August 2015	0.6	1.8	2.0	1.7	2.0	1.9
January 2015	1.4	1.9	2.0	1.9	2.0	1.9
Core PCE Price Index ^a						
August 2015	1.4	1.7	1.9	1.8	2.0	1.9
January 2015	1.8	1.9	1.9	1.9	2.0	1.9
Consumer Price Index ^b						
August 2015	0.7	2.3	2.3	2.0	2.4	2.2
January 2015	1.5	2.3	2.3	2.2	2.4	2.3
Core Consumer Price Index ^a						
August 2015	2.0	2.1	2.3	2.2	2.3	2.3
January 2015	2.1	2.2	2.3	2.2	2.3	2.3
GDP Price Index						
August 2015	1.1	1.6	2.0	1.8	2.1	1.9
January 2015	1.3	1.7	1.9	1.8	2.0	1.9
Employment Cost Index ^c						
August 2015	2.8	3.3	3.5	3.3	3.3	3.3
January 2015	2.7	3.2	3.6	3.3	3.4	3.4
Real Potential GDP						
August 2015	1.7	1.9	2.1	2.0	2.1	2.1
January 2015	1.8	2.1	2.2	2.1	2.1	2.1
Calendar Year Average						
Unemployment Rate (Percent)						
August 2015	5.4	5.1	5.0	5.1	5.2	5.2
January 2015	5.5	5.4	5.3	5.4	5.4	5.4
Interest Rates (Percent)						
Three-month Treasury bills						
August 2015	0.1	0.7	1.7	1.7	3.4	2.6
January 2015	0.2	1.2	2.6	2.2	3.4	2.8
Ten-year Treasury notes						
August 2015	2.3	3.0	3.7	3.4	4.3	3.9
January 2015	2.8	3.4	3.9	3.7	4.6	4.2
Tax Bases (Percentage of GDP)						
Wages and salaries						
August 2015	43.4	43.5	43.5	43.5	43.5	43.5
January 2015	42.6	42.6	42.7	42.7	43.0	42.9
Domestic economic profits						
August 2015	9.7	9.3	8.9	8.9	7.7	8.1
January 2015	10.0	9.7	9.4	9.3	8.0	8.5

Source: Congressional Budget Office.

Note: 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.

Output

CBO's current forecast for growth in output is only slightly different from its January forecast. Growth is projected to be slower in 2015 largely because of the weak performance of the U.S. economy during the first half of the year. That weakness resulted largely from factors that did not alter CBO's view of the underlying (or long-run) levels of consumer spending, business investment, and residential investment. Those factors include severe weather during the first quarter and a sharp drop in mining investment caused by lower oil prices. CBO expects faster growth in real labor compensation to increase consumer spending and, hence, growth in GDP slightly during the 2016–2018 period, relative to the agency's January forecast. CBO's projection of the growth of real GDP over the 2019–2025 period is almost unchanged since January because projected growth in potential output during that period is almost unchanged (see the discussion of potential output below).

The Labor Market

Compared with January's estimates, CBO's current projection of the unemployment rate is lower, and the projection of employment growth is higher, until the end of 2017. CBO expects the unemployment rate will be about 0.2 percentage points lower at the end of 2015 than was forecast in January and about 0.3 percentage points lower at the end of 2017. CBO now expects the growth of nonfarm payroll to be greater this year by about 40,000 jobs (per month, on average) and next year by about 20,000 jobs. Those changes reflect the fact that the unemployment rate fell more than CBO had anticipated during the first half of 2015 because of stronger-than-expected gains in employment.

CBO also estimates a higher rate of potential labor force participation in the near term than it did in January. The potential labor force participation rate is projected to be nearly one-half of one percentage point higher during the first half of 2015 than was previously forecast. That revision stems from recent evidence of a greater willingness on the part of individuals to enter or reenter the labor force and better employment prospects for people currently outside of the labor force. With higher potential participation, CBO estimates, the gap between the current level of labor force participation and its full potential is currently about one-half of one percentage point larger than the previously estimated gap.

In addition, CBO revised its projection of the natural rate of unemployment in the near term—lowering it by about one-third of a percentage point from 2015 through 2017—on the basis of recent evidence about the propensity of the long-term unemployed to find jobs. That evidence suggests that spells of unemployment cause less permanent stigma and erosion of skills than CBO previously estimated.

Together, the revisions to CBO's forecast of the rate of potential labor force participation and the natural rate of unemployment suggest that more slack exists in the labor market than CBO previously estimated. That increased degree of slack helps explain why recent growth in labor compensation has been slower than CBO had previously expected, despite the fact that the improvement in labor market conditions during late 2014 and early 2015 was faster than expected.

CBO has also lowered its estimate of the natural rate of unemployment during the latter years of the projection. The revision to the natural rate of unemployment, averaging 0.2 percentage points from 2018 through 2025, reflects CBO's assessment that the rate of long-term unemployment will decline further during the next 10 years than CBO previously anticipated. CBO's projection of the potential labor force participation rate during the 2018–2025 period is largely unchanged since January.

Inflation

CBO's current forecast includes a lower rate of inflation for 2015 and 2016, as measured by the CPI-U and the PCE price index. That lower rate is mostly attributable to two unexpected developments since late last year: a large increase in the value of the dollar and a significant drop in energy prices. In the first half of the year, the trade-weighted value of the dollar appreciated by about 6 percentage points more than CBO had anticipated. At the same time, energy prices fell more than CBO had expected. For example, the price of West Texas Intermediate crude oil fell by about eight dollars more than CBO had forecast in January.²⁰ Beyond 2016, rates of core and overall inflation are almost identical to those in CBO's previous forecast.

20. As noted earlier, since CBO completed its forecast in early July, the price of crude oil has fallen more than CBO had previously anticipated. That development points to a somewhat lower rate of inflation in the near term than CBO has projected.

Interest Rates

CBO anticipates that interest rates over the 2015–2019 period will be lower than it projected in January. Short-term interest rates are, on average, expected to be about 0.5 percentage points lower; and long-term interest rates are, on average, expected to be about 0.3 percentage points lower. CBO projects lower rates over that period because the Federal Reserve is expected to begin raising the federal funds rate later than CBO previously anticipated. Additionally, other forecasters and participants in financial markets have lowered their forecasts of interest rates since January, and CBO places some weight on those forecasts in preparing its forecast of interest rates.

Over the 2020–2025 period, short-term interest rates in CBO’s projections are unchanged from the agency’s January forecast, but long-term interest rates are 0.3 percentage points lower, implying a narrowing of the spread between long-term and short-term rates. The downward revision in long-term rates stems from revised forecasts of the factors that influence real interest rates, as well as changed expectations of future long-term rates on the part of participants in financial markets.

Potential Output

CBO has raised its estimate of potential output for recent quarters—by about 0.6 percent for 2014—mainly because the agency revised its estimates of the potential labor force and the natural rate of unemployment (discussed above). CBO’s estimate of the output gap in 2014 has risen somewhat less than that, by about 0.4 percentage points, because growth of actual output during the second half of 2014 was stronger than CBO had anticipated.

For the projection period, however, CBO has lowered the annual rate of growth in potential output by about 0.05 percentage points, almost entirely because of slower projected growth of the potential labor force, owing to revisions in CBO’s projection for the rate of potential labor force participation. As a result of higher estimates of the potential labor force during recent quarters and slower projected growth, the agency’s projections of the potential labor force and of potential output in 2025 are both very similar to the levels projected in January.

At the same time, CBO has lowered its estimates of historical and projected growth of capital services in the nonfarm business sector, even though the historical data that the agency uses to estimate capital services are unchanged. That revision stems from improvements in CBO’s method

for estimating the productive services that flow from the different types of assets that compose the capital stock.²¹ The revision to projections of capital services also affects CBO’s estimate of potential TFP: Because TFP reflects the portion of economic growth not attributable to changes in hours worked or capital services, the downward revision to projected capital services results in a corresponding increase in estimated TFP. Stronger growth in actual and potential TFP over the historical period, in turn, implies stronger growth in potential TFP in the future than CBO previously projected.

Comparison With Other Economic Projections

CBO’s projections of the growth of real GDP, the unemployment rate, inflation, and interest rates in 2015 and 2016 are generally similar to the projections of the *Blue Chip* consensus, which were published in August 2015 (see Figure 2-14).

Similarly, CBO’s projections differ modestly from the forecasts produced by the Federal Reserve and presented at the June 2015 meeting of the Federal Open Market Committee (see Figure 2-15). The Federal Reserve reports two sets of forecasts: a range (which 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) and a central tendency (which excludes the range’s three highest and three lowest projections). CBO’s projections of the growth of real GDP, unemployment, and PCE inflation are all within the Federal Reserve’s central tendencies for 2015. CBO’s projections for the growth of real GDP in 2016 and 2017 are somewhat above the values forecast by the Federal Reserve; CBO’s projections of the unemployment rate and PCE inflation are within the Federal Reserve’s central tendencies for those years.

CBO’s projections probably differ from those of the other forecasters at least partly because of varying assumptions about the government’s future tax and spending policies. Also, CBO’s projections might differ from those of the other forecasters because of differences in the economic news available when the forecasts were completed and differences in the economic and statistical models used.

21. Those adjustments bring CBO’s estimates of historical growth rates in capital services more closely in line with those of the Bureau of Labor Statistics.

Figure 2-14.

Comparison of Economic Projections by CBO and the *Blue Chip* Consensus



Sources: Congressional Budget Office; Aspen Publishers, *Blue Chip Economic Indicators* (August 10, 2015).

Notes: The *Blue Chip* consensus is the average of about 50 forecasts by private-sector economists.

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

Growth of real GDP and inflation rates are measured from the fourth quarter of one calendar year to the fourth quarter of the next year.

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.

GDP = gross domestic product.

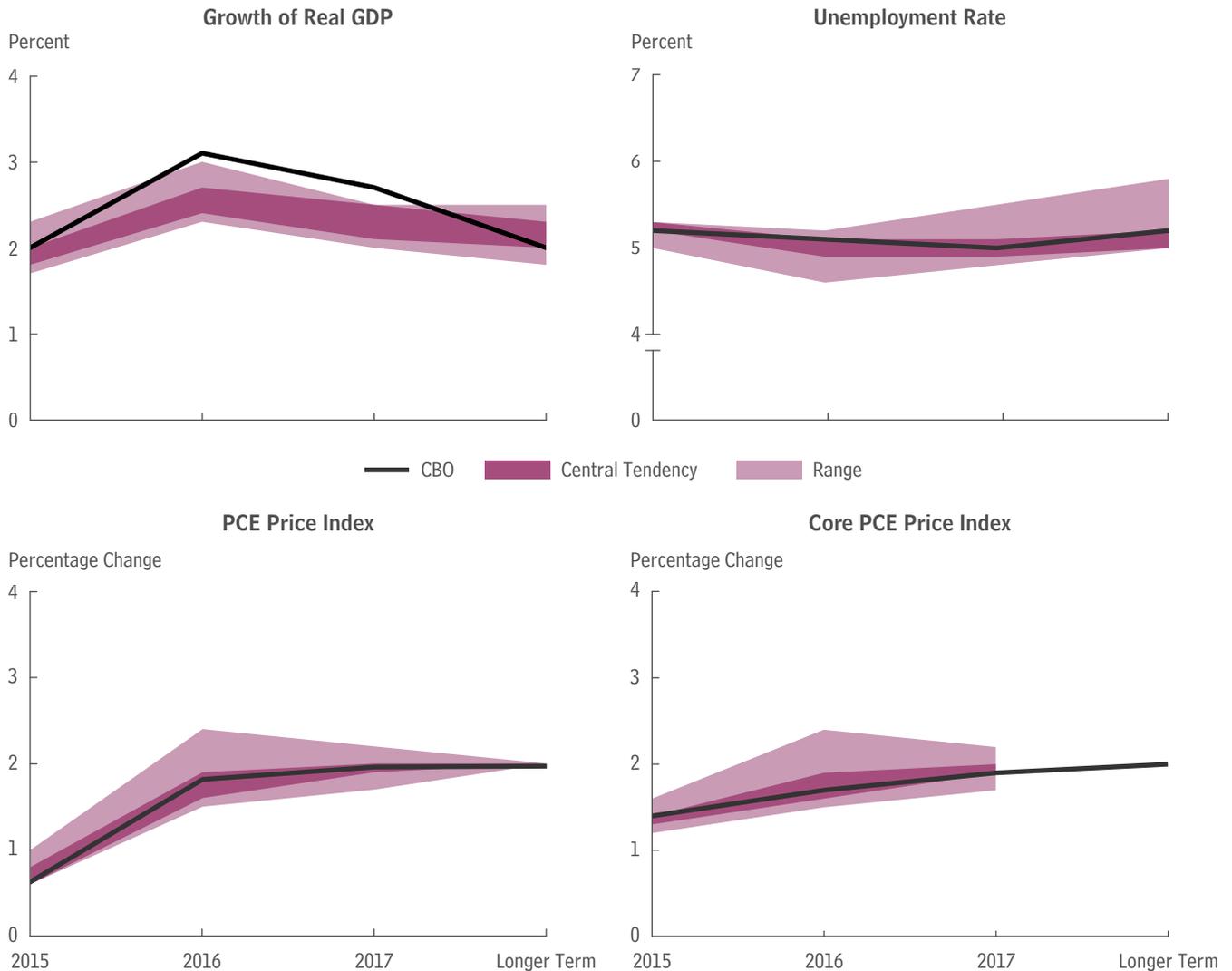
a. The consumer price index for all urban consumers.

b. Rate in the fourth quarter.

Figure 2-15.

Comparison of Economic Projections by CBO and the Federal Reserve

CBO's projection of the growth of real GDP is slightly above or within the Federal Reserve's central tendencies, and CBO's projections of the rates of unemployment and inflation are within the central tendencies.



Sources: Congressional Budget Office; Board of Governors of the Federal Reserve System, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, June 2015" (June 17, 2015).

Notes: Each range of estimates from the Federal Reserve reflects the projections of each member of 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. For CBO, longer-term projections are values for 2025. 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.

Data are annual.

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