3.0 percent of GDP. Revenues were nearly unchanged, edging up by $17 billion (or 0.5 percent), while outlays (with adjustments to exclude the effects of the timing shifts) rose by $125 billion (or 3.4 percent).

In total, debt held by the public increased by $1.1 trillion in 2016, reaching 77 percent of GDP—about 4 percentage points higher than the amount recorded in 2015, marking the highest ratio since 1950. Debt increased both because of the rise in the budget deficit and for other reasons. For example, about $200 billion of that increase stemmed from payments to the G-Fund of the Thrift Savings Plan, which were made to compensate for amounts that were not invested during the previous debt-ceiling impasse. Another $155 billion stemmed from an increase in the cash balance held by the Treasury.

Revenues

Total revenues rose by just $17 billion (or 0.5 percent) in 2016, decreasing from 18.2 percent of GDP in 2015 to 17.8 percent. The biggest change was in collections of corporate income taxes: Such receipts decreased by $44 billion (or 13 percent), from 1.9 percent of GDP in 2015 to 1.6 percent in 2016. That was the lowest percentage of GDP since 2012 and below the average of 2.0 percent of GDP over the past 50 years. Part of the decline stemmed from the enactment in December 2015 of the Consolidated Appropriations Act, 2016 (Public Law 114-113), which extended—retroactively and prospectively—certain tax rules, including those that allowed businesses with large amounts of investments in equipment to immediately deduct from their taxable income 50 percent of the costs of those investments. CBO estimates that the retroactive extension of those provisions for tax year 2015, followed by a prospective extension for 2016, resulted in some revenue reductions that normally would have happened in 2015 occurring in 2016 instead. Another part of the decline may reflect taxable profits that were lower in calendar year 2016 than they were during 2015. The reasons for the decline will become clearer as detailed information from corporate income tax returns becomes available over the next two years.

Receipts from individual income taxes, the largest source of revenues, rose by just $5 billion (or less than 1 percent), and therefore fell as a share of the economy, from 8.6 percent of GDP in 2015 to 8.4 percent of GDP in 2016. However, that percentage in 2016 was still higher than in any year since 2001, except for 2015. The slow growth in those receipts in 2016 resulted from the offsetting effects of different types of payments. Receipts

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4. During that impasse, which took place between March and November 2015, the Treasury took a number of “extraordinary measures” to borrow additional funds without breaching the debt ceiling, including disinvesting the Thrift Savings Plan’s G Fund. Once the debt limit was raised in November 2015, the G Fund was made whole (with interest).
High and rising federal debt would reduce national saving and income in the long term; increase the government’s interest payments, thereby putting more pressure on the rest of the budget; limit lawmakers’ ability to respond to unforeseen events; and increase the likelihood of a fiscal crisis.

Source: Congressional Budget Office. For details about the sources of data used for past debt held by the public, see Congressional Budget Office, Historical Data on Federal Debt Held by the Public (July 2010), www.cbo.gov/publication/21728.

The extended baseline generally reflects current law, following CBO’s 10-year baseline budget projections through 2027 and then extending most of the concepts underlying those baseline projections for the rest of the long-term projection period (in this case, through 2047).
Application: Efforts to Control the Deficit

Controlling the budget is a difficult process.

- The Balanced Budget and Emergency Control Act (also known as the Gramm-Rudman-Hollings Deficit Reduction Act, or GRH).
  - Passed in 1985 in an attempt to control the budget.
  - Initiated automatic spending cuts once the budget deficit started missing specified targets.
  - The cuts were avoided by gimmicks, such as changing the targets.
Application: Efforts to Control the Deficit

Failure to meet GRH deficit targets led to the 1990 adoption of the Budget Enforcement Act (BEA):

- Rather than trying to target a deficit level, the BEA aimed to restrain government growth.
- It created the pay-as-you-go process (PAYGO), which prohibited any policy from increasing the estimated deficit in the next six-year period.
- If deficits increase, the President must issue a sequestration requirement, which reduces direct spending by a fixed percentage.
- Apparently successful in reducing spending.
PAYGO expired on September 30, 2002, and has not been renewed.

- President Bush proposed renewing PAYGO in 2004...
  - ... but not before passing a budget that cut taxes and increased spending.
- President Obama has publicly supported PAYGO legislation...
  - ... but his proposed budget would increase deficits to almost $2 trillion in the near term.
Projected versus Actual Surplus/Deficit

- **Projected surplus/deficit** 5 years previous
- **Actual surplus/deficit**
- **$546.8 billion**

APPLICATION: The Financial Shenanigans of 2001

• The bill itself contained numerous tax cuts operating on erratic schedules.

• Many of the cuts would phase in over periods longer than in any prior American legislation, backloading most of the fiscal impact toward 2010.

• Convoluted scheduling allowed legislators to claim action had been taken on a wide range of issues, while delaying the fiscal consequences associated with these actions.
Capital Market Equilibrium

Price of capital (Interest rate), $r$

Supply of savings, $S_1$

Demand for capital, $D_1$

Quantity of capital, $K$

$K_1$, $K_2$

$r_1$, $r_2$
Figure 4.7. Public wealth in the United States, 1770-2010

Public debt is worth 1 year of national income in the U.S. in 1950 (almost as much as assets)

Sources and series: see piketty.pse.ens.fr/capital21c

Source: Piketty (2014)
Government spending and growth, 2010-2013

Change in real GDP

Change in real government purchases
Payroll tax receipts decline by 0.1 percentage point of GDP, primarily because of the expected increase in the share of wages going to higher-income taxpayers.

Corporate income tax receipts as a share of GDP also fall by 0.1 percentage point between 2017 and 2027.

Outlays
In CBO’s projections, outlays remain near 21 percent of GDP for the next few years, which is higher than their average of 20.3 percent over the past 50 years. Later in the coming decade, the growth in outlays would exceed growth in the economy, and, by 2027, outlays would rise to 23.4 percent of GDP. That increase reflects significant growth in mandatory spending and interest payments, which is offset somewhat by a decline in discretionary spending as a share of GDP. More specifically, CBO’s baseline includes the following projections:

- Outlays for mandatory programs increase as a share of GDP by 2.4 percentage points from 2017 to 2027—mainly because of the aging of the population and rising per capita health care costs. Social Security and Medicare account for nearly all of that increase.

- Because of rising interest rates and, to a lesser extent, growing federal debt held by the public, the government’s interest payments on that debt rise sharply over the next 10 years—nearly tripling in nominal terms and almost doubling relative to GDP.

- Discretionary spending drops from 6.3 percent of GDP in 2017 to 5.3 percent in 2027—a smaller percentage relative to the size of the economy than in any year since 1962 (the first year for which comparable data are available).

Debt Held by the Public
As deficits accumulate in CBO’s baseline, debt held by the public rises from 77 percent of GDP ($15 trillion) at the end of 2017 to 89 percent of GDP ($25 trillion) by 2027. At that level, debt held by the public would be the largest since 1947 and more than twice the average over the past five decades in relation to GDP (see Summary Figure 1).

Beyond the 10-year period, if current laws remained in place, the pressures that contributed to rising deficits during the baseline period would accelerate and push debt up even more sharply. Three decades from now, for instance, debt held by the public is projected to be nearly twice as high, relative to GDP, as it is this year—and a higher percentage than any previously recorded.

Such high and rising debt would have serious negative consequences for the budget and the nation:

- Federal spending on interest payments would increase substantially as a result of increases in interest rates, such as those projected to occur over the next few years.
CBO projects that economic activity will expand at a pace this year and next that will lower the unemployment rate and place upward pressure on inflation and interest rates.


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

For real GDP growth and inflation, percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next.

For the unemployment and interest rates, data are fourth-quarter values.

GDP = gross domestic product.
THE BUDGET AND ECONOMIC OUTLOOK: 2017 TO 2027

CBO

Figure 1-1. Total Deficits and Surpluses
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

facing the nation. The aging of the population is already a significant issue: The population age 65 and older is projected to grow by 39 percent through 2027, whereas the population ages 20 to 64 is projected to grow by just 3 percent. In CBO’s baseline, projected spending for people age 65 or older in five large programs—Social Security, Medicare, Medicaid, and military and federal civilian retirement—increases from about 37 percent of all federal noninterest spending in 2017 to about 45 percent in 2027. In addition, health care costs per beneficiary (after adjusting for the aging of the population) are projected to grow faster than the economy over the long term, contributing to growth in spending for Medicare and Medicaid in particular. The effects on the federal budget of the aging population and rapidly growing health care costs are already apparent over the 10-year horizon—especially for Social Security and Medicare—and will grow in size beyond the baseline period. Unless laws governing fiscal policy were changed—that is, spending for large benefit programs was reduced, increases in revenues were implemented, or some combination of those approaches was adopted—debt would rise sharply relative to GDP after 2027.2

CBO’s current projections for the coming decade have changed little since its previous publication of 10-year projections in August 2016.3 Deficits under current law are now projected to be just $6 billion higher between 2017 and 2026 (the 10-year projection period CBO used last year). Relative to CBO’s previous set of projections, deficits are lower in the first half of the period (by a cumulative $131 billion) and higher in the second half (by $136 billion). All told, the cumulative deficit over the 10-year period is projected to total $8.6 trillion, or 3.8 percent of GDP, which is unchanged from August.

A Review of 2016
In fiscal year 2016, the budget deficit rose for the first time in a number of years, totaling $587 billion—about one-third more than the $438 billion shortfall recorded in 2015. As a percentage of GDP, the deficit increased from 2.4 percent in 2015 to 3.2 percent last year, the first such increase since 2009. Part of the increase in the deficit is attributable to the shifting of certain payments from fiscal year 2017 into fiscal year 2016 (because October 1, 2016, fell on a weekend). Even without that shift of $41 billion in payments, the budget shortfall would have increased in 2016, amounting to $546 billion, or

2. For a more detailed discussion of the consequences of elevated debt in particular and a long-term overview for the budget generally, see Congressional Budget Office, The 2016 Long-Term Budget Outlook (July 2016), www.cbo.gov/publication/51580.

3. For CBO’s previous baseline budget projections, see Congressional Budget Office, An Update to the Budget and Economic Outlook: 2016 to 2026 (August 2016), www.cbo.gov/publication/51908.
### Table 1-1.

#### CBO’s Baseline Budget Projections, by Category

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**Revenues**

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<td>2,566</td>
<td>2,734</td>
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<td>3,462</td>
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#### Deficit (-) or Surplus

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Source: Congressional Budget Office.
Through 2021, CBO’s baseline incorporates the caps on budget authority for discretionary programs that are currently in place; in later years, the baseline reflects the assumption that such funding keeps pace with inflation (consistent with the provisions of Section 257 of the Deficit Control Act). Some elements of discretionary funding are not constrained by the caps and are generally assumed to grow with inflation from the amounts provided in 2017: the appropriations designated for overseas contingency operations; activities designated as emergency requirements; disaster relief (up to certain limits); certain efforts to reduce overpayments in benefit programs; and programs designated in the 21st Century Cures Act (P.L. 114-255), subject to the limits set in that legislation.  

For 2018, the caps on discretionary budget authority are $5 billion lower than for 2017—$3 billion lower for nondefense programs and $2 billion lower for defense programs. (That estimate incorporates the automatic reductions required by law and excludes adjustments for overseas contingency operations and other activities not constrained by the caps.) However, the changes in budget authority relative to 2017 incorporated in the baseline differ from the changes in the cap levels for two main reasons:

- Discretionary budget authority for nondefense programs declines by $24 billion in 2018; much of that decline—$17 billion—stems from reductions in mandatory budget authority that are included in the current continuing resolution for 2017 to help keep appropriations within the limit set by the cap on nondefense funding. (When reductions in mandatory programs are included in appropriation acts, the savings are credited against the discretionary funding provided in those acts in judging compliance with the caps.) Over the past six years, such offsets to discretionary budget authority have averaged about $18 billion a year; none have yet been included in CBO’s baseline for 2018 because no such changes have been enacted for that year. Without such offsets, discretionary budget authority in 2018 would have to be noticeably lower than the funding in 2017 in order to comply with the caps.

- Budget authority for defense programs is $2 billion greater in 2018 than in 2017 largely because funding for overseas contingency operations is assumed to grow from this year’s amount at the rate of inflation.

25. Spending for certain transportation programs is controlled by obligation limitations, which also are not constrained by the caps on discretionary spending.

26. The Bipartisan Budget Act of 2015 (P.L. 114-74) canceled the automatic reductions in discretionary spending for 2017 imposed by the Budget Control Act of 2011 and set new caps for that year that are, in total, $30 billion above what the limits would have been if the automatic spending reductions had occurred. (That law also made changes to the caps for 2016.) No adjustments have been made to the caps and automatic reductions in place for 2018 through 2021.