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Deficits and Debt: Economic Effects and Other Issues

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Summary

The federal government incurs a budget deficit (also known as a net deficit) when its total outgoing payments (outlays) exceed the total money it collects (revenues). If instead federal revenues are greater than outlays, then the federal government generates a surplus. Deficits are measured over the course of a defined period of time—in the case of the federal government, a fiscal year.

Debt measurements may be taken at any point in time and represent the accumulation of all previous government borrowing activity, from private citizens, institutions, foreign governments, and other parts of the federal government. Federal debt increases when there are net budget deficits and outflows made for federal credit programs, which combine to represent debt held by the public. Federal debt also rises through increases in intragovernmental debt, which is generated by trust fund surpluses that are used to finance other government activity.

Federal budgeting practices create a system where deficits and debt are interdependent: budget deficits increase federal debt levels, which in turn increase future net deficits. The nature of the relationship between deficits and debt varies depending on the type of debt considered. Budget deficits are the principal contributor to debt held by the public.

The contribution of deficits to intragovernmental debt is less certain than their contribution to debt held by the public. All else equal, increases in net trust fund deficits will lead to increases in total budget deficits but decreases in intragovernmental debt.

The interest payments made on publicly held debt instruments contribute directly to federal deficits. Holders of federal debt are compensated by receiving interest payments from Treasury. Intragovernmental debt does not contribute to future deficits.

The combination of persistent budget deficits and a large and increasing federal debt has generated discussions over the long-term sustainability of current budget projections. Federal budget deficits have declined from 9.8% of gross domestic product (GDP) in FY2009 to 2.5% of GDP in FY2015. However, recent estimates forecast that the government will run deficits in every year through FY2026. Federal debt totaled \$18.922 trillion at the end of calendar year 2015, and as a percentage of GDP is at its highest value since the end of World War II; \$13.673 trillion of that debt was held by the public.

Over time, persistent budget deficits can hamper economic growth. Federal debt, either publicly held or intragovernmental, is funded through private capital. In the absence of federal debt, a portion of such funding would likely have been used on private investment projects that could increase the future productive capabilities of the economy. Large or rapidly increasing debt levels could also make the economy more susceptible to a recession, although that dynamic has not manifested itself in the United States.

Contents

Introduction	1
Background	1
What Is a Deficit?.....	1
What Is the Debt?.....	2
Comparing Debt Held by the Public and Intragovernmental Debt	2
Deficit and Debt Interaction	4
How Deficits Contribute to Debt	4
How Debt Contributes to Deficits.....	5
Economic Effects of Deficits and Debt	6
Historical Trends	6
Possible Explanations for Deficits	7
Effects of Persistent Deficits	8
Deficit and Debt Outlook	8

Figures

Figure 1. Contribution of Deficits to Debt, FY1962-FY2015	5
-----------------------------------------------------------------	---

Tables

Table 1. Features of Debt Held by the Public and Intragovernmental Debt.....	3
Table 2. Trends in Deficits and Debt, FY1941-FY2015.....	7

Contacts

Author Contact Information	9
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Introduction

The combination of persistent budget deficits and a large and increasing federal debt has generated discussions over the long-term sustainability of current budget projections. Federal budget deficits have declined from 9.8% of gross domestic product (GDP) in FY2009 to 2.5% of GDP in FY2015. However, recent estimates forecast that the government will run deficits (i.e., federal expenditures will exceed revenues) in every year through FY2026. Federal debt totaled \$18.922 trillion at the end of calendar year 2015, and as a percentage of GDP is at its highest value since the end of World War II; \$13.673 trillion of that debt was held by the public.

This report explores distinctions in the concept and composition of deficits and debt, explains how these two measures interact, and discusses their possible effects on the economy. Further exploration of these issues may be found in CRS Report R41815, *Overview of the Federal Debt*, by D. Andrew Austin, and CRS Report R43680, *Reducing the Budget Deficit: Overview of Policy Issues*, by Marc Labonte.

Background

What Is a Deficit?

The federal government incurs a deficit (also known as a net deficit) when its total outgoing payments (outlays) exceed the total money it collects (revenues). If instead federal revenues are greater than outlays, then the federal government generates a surplus. A balanced budget describes the case where federal receipts equal federal expenditures.¹ The size of a deficit or surplus is equal to the difference between the levels of spending and receipts. Deficits are measured over the course of a defined period of time—in the case of the federal government, a fiscal year.²

Federal budget outcomes incorporate both “on-budget” activities, which represent the majority of federal taxes and spending, and “off-budget” government activities, which include revenues and outlays from Social Security trust funds and the Postal Service. For federal credit programs, the subsidy cost of government activities is included in deficit and surplus calculations.³

Net deficit levels are dependent upon both economic and legislative conditions. More robust economic periods have generally produced lower net deficits (or higher net surpluses), due to increases in receipts (from greater tax revenues) and reduced expenditures (from decreased demand for public assistance). From FY1962 to FY2015, the average net deficit equaled 2.6% of annual GDP. In FY2015, that amount had a dollar value of just over \$460 billion.⁴ In the FY1962-

¹ For a more thorough discussion of budget concepts, see Office of Management and Budget, *FY 2017 Budget: Analytical Perspectives*, February 2016.

² As compared to the calendar year, the federal fiscal year runs from October of the previous year through September of the current year. For example, FY2016 began on October 1, 2015, and will end on September 30, 2016.

³ The Federal Credit Reform Act of 1992 (P.L. 101-58) defines subsidy costs as “the estimated long-term cost to the government of a loan guarantee, calculated on a net present value basis, excluding administrative costs.” Subsidy costs therefore represent a projection of the final cost to the government of a credit program, and not the inflow or outflow of money for the activity. For more information about subsidy costs and their effect on the federal budget, see CRS Report R44193, *Federal Credit Programs: Comparing Fair Value and the Federal Credit Reform Act (FCRA)*, by Raj Gnanarajah.

⁴ Except where otherwise noted, all deficit and debt figures will be expressed as a percentage of GDP.

FY2015 period, the government generated a surplus on five occasions: in FY1969, and from FY1998 through FY2001. In every other year of the period, the federal government incurred a net deficit.⁵

What Is the Debt?

The federal debt level represents the total amount of money that the government owes to its creditors, which include private citizens, institutions, foreign governments, and other parts of the federal government. Debt measurements may be taken at any point in time and represent the accumulation of all previous government borrowing activity. Federal debt increases when there are net budget deficits, outflows made for federal credit programs (net of the subsidy costs already included in deficit calculations), and increases in intragovernmental borrowing.

Federal debt calculations also include the cost of federal credit programs.⁶ Federal credit programs include loans issued for college tuition payments, small business programs, and other activities the government may seek to support. In those cases, debt levels increase as additional loans are granted, and decrease as money for such programs is repaid.

Intragovernmental debt is generated when trust funds, revolving funds, and special funds receive money from tax payments, fees, or other revenue sources that is not immediately needed to make payments. In those cases, the surpluses are used to finance other government activities, and Government Account Series (GAS) securities are issued to the trust fund. GAS securities may then be redeemed when trust fund expenditures exceed revenue levels. *Intragovernmental debt may be thought of as money that one part of the government owes another part.*

The Department of the Treasury is responsible for managing federal debt. The primary objective of Treasury's debt management strategy is to fulfill the government's borrowing needs at the lowest cost over time.⁷ Treasury finances federal borrowing activities by issuing government-backed securities that generate interest payments for their owners. Treasury securities are typically sold to the public through an auction process, and have maturity periods (the length of time which they are held before repayment) of anywhere from several weeks to 30 years.⁸

Comparing Debt Held by the Public and Intragovernmental Debt

Federal debt may be divided into two major categories: (1) debt held by the public, which is the sum of accrued net deficits and outstanding money from federal credit programs; and (2) intragovernmental debt. As of December 31, 2015, the amount of federal debt outstanding was \$18.922 trillion, with 72.3% of that debt held by the public and 27.7% held as intragovernmental debt.⁹ **Table 1** summarizes the characteristics of debt held by the public and intragovernmental debt.

⁵ Office of Management and Budget, Fiscal Year 2016 Historical Tables, Table 1.1, available at <https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/hist.pdf>.

⁶ For more information about the accounting methods used in deficit and debt calculations, see CRS Report R43811, *Cash Versus Accrual Basis of Accounting: An Introduction*, by Raj Gnanarajah, and CRS Report R44002, *Cash Versus Accrual Accounting: Tax Policy Considerations*, by Raj Gnanarajah and Mark P. Keightley.

⁷ U.S. Department of the Treasury, *Duties & Functions of the U.S. Department of the Treasury*, available at <http://www.treasury.gov/about/role-of-treasury/>.

⁸ For more information about Treasury's debt management practices, see CRS Report R40767, *How Treasury Issues Debt*, by Grant A. Driessen.

⁹ Unless otherwise noted, federal debt totals are taken from U.S. Treasury, Monthly Statement of the Public Debt, (continued...)

Table I. Features of Debt Held by the Public and Intragovernmental Debt

	Publicly Held Debt	Intragovernmental Debt
Origin	Budget deficits and the federal loan portfolio	Federal trust fund surpluses
Ownership	Individuals and institutions (domestic and foreign); state and local governments; foreign governments	Federal government accounts
Debt outstanding	\$13.673 trillion (72.3%)	\$5.250 trillion (27.7%)
Share of marketable securities	\$13.183 trillion (99.8%)	\$0.024 trillion (0.2%)
Financial market presence	Debt issuances may compete for private assets exchanged in the financial market	Debt issuances do not appear in public markets and thus do not compete for private assets

Source: U.S. Treasury, *Monthly Statement of the Public Debt*, December 2015: available at <http://treasurydirect.gov/govt/reports/pd/mspd/2015/opds122015.pdf>.

Notes: Debt values as of December 31, 2015.

Individuals, firms, the Federal Reserve, state and local governments, and foreign governments are eligible to purchase publicly held debt. Such debt may be acquired directly through the auction process from which most publicly held debt is initially sold or on the secondary market if the debt is deemed “marketable”, or eligible for resale.¹⁰ The total amount of publicly held debt outstanding was \$13.673 trillion as of December 31, 2015. The majority of publicly held debt is marketable, and includes all Treasury Notes, Bonds, Bills, Treasury Inflation Protected Securities (TIPS), and Floating Rate Notes (FRNs) issued by Treasury. Non-marketable debt held by the public is comprised of U.S. Savings Bonds, State and Local Government Securities (SLGS), and other, smaller issues. As of December 31, 2015, 96.4% of publicly held issues, or \$13.183 trillion, was marketable.

Intragovernmental debt is held by components of the federal government. Intragovernmental debt issuances are almost exclusively nonmarketable, as marketable debt comprised only \$0.024 trillion (0.5%) of the \$5.250 trillion in total intragovernmental debt on December 31, 2015. The majority of nonmarketable intragovernmental debt was held by trust funds devoted to Social Security and military and federal worker retirement. Marketable intragovernmental debt is composed primarily of debt held by the Federal Financing Bank, which is a government corporation created to reduce the cost of federal borrowing.

Since intragovernmental debt is held only in government accounts, such debt cannot be accessed by the institutions outside the federal government. Conversely, the bonds that finance publicly held debt activity may compete for assets in private and financial markets. Public debt issues may be a particularly attractive collateral option on the secondary market if the federal government is perceived as a safe credit risk.

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December 2015, available at <http://treasurydirect.gov/govt/reports/pd/mspd/2015/opds122015.pdf>.

¹⁰ The Banking Act of 1935 (P.L. 74-305) prohibited the Federal Reserve from purchasing Treasury securities directly (at auction). The Federal Reserve may purchase Treasury securities on the secondary market.

Deficit and Debt Interaction

Federal budgeting practices create a system where deficits and debt are interdependent; budget deficits increase federal debt levels, which in turn increase future net deficits because of the need to service higher interest payments on the nation's debt. The nature of the relationship between deficits and debt varies depending on the type of debt considered. This section describes the relationship between federal deficits and debt.

How Deficits Contribute to Debt

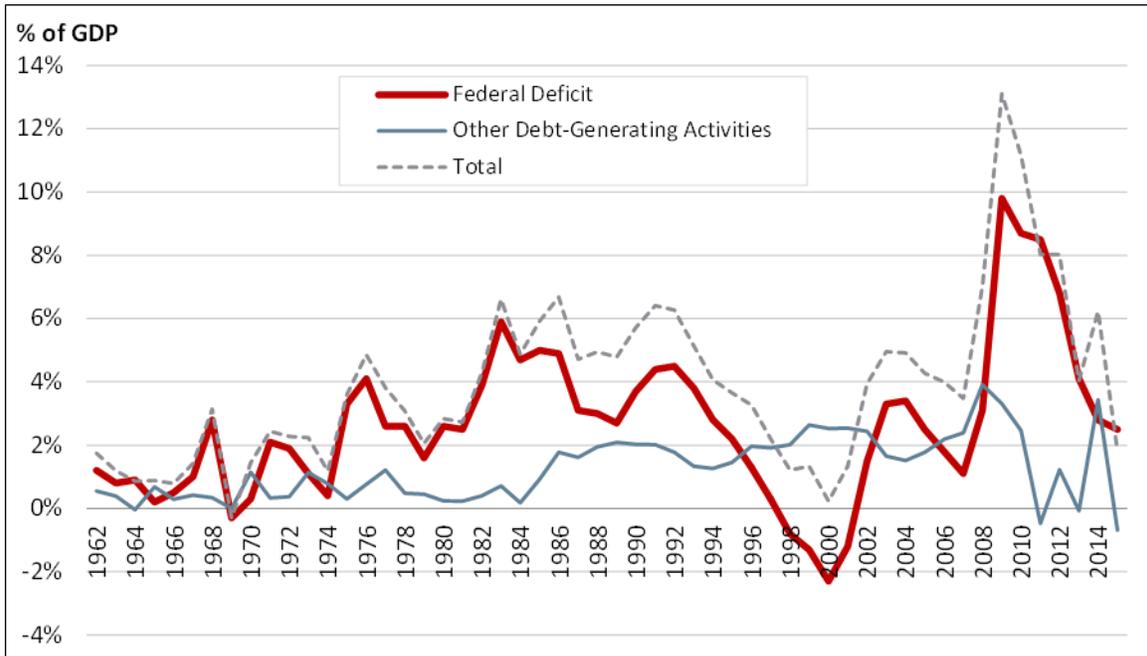
Budget deficits are the principal contributor to debt held by the public. In order to finance budget deficits, Treasury sells debt instruments. The value of those debt holdings (which include interest payments) represents the vast majority of publicly held debt. From FY1962 to FY2015, annual nominal budget deficits of the federal government summed to \$11.772 trillion; over the same period, total debt held by the public increased by \$12.869 trillion.¹¹

The contribution of deficits to intragovernmental debt is less certain than their contribution to debt held by the public. When trust funds run deficits, they require redemptions of intragovernmental debt to remain solvent; this causes total intragovernmental debt to decline. All else equal, when intragovernmental debt declines Treasury increases publicly held debt issuances in order to finance government operations. This scenario changes the composition of federal debt, but the total debt level is held constant. Changes in trust fund financing are one of many potential causes for changes in budget outcomes. The budgetary conditions of trust funds are not necessarily reflective of the budgetary situation of the entire federal government.

Figure 1 shows the relative effect of deficits and other activities on changes in federal debt levels from FY1962 through FY2015. Over that time period, annual contributions of federal deficits to changes in nominal debt have been twice as large (2.6% of GDP) as other contributions to debt (1.3% of GDP). Deficit levels increased over this time period, as the average deficit from FY1989 through FY2015 (3.0% of GDP) was higher than from FY1962 through FY1988 (2.3% of GDP). However, the share of deficit contributions to changes in nominal debt has declined in recent years, as expansions in the federal loan portfolio and in intragovernmental debt have increased the average contribution of other debt-generating activities from 0.7% of GDP from FY1962 through FY1988 to 1.9% of GDP from FY1989 through FY2015.

¹¹ Office of Management and Budget, *Historical Tables 1.1 and 7.1*, available at <https://www.whitehouse.gov/omb/budget/Historicals>.

Figure I. Contribution of Deficits to Debt, FY1962-FY2015
(As a % of GDP)



Source: Office of Management and Budget, *Historical Tables 1.2 and 7.1*. CRS calculations.

Notes: “Total” represents the dollar increase or decrease in debt levels over the course of the year, measured as a percentage of GDP. This notion differs from the change in real federal debt (also measured as a percentage of GDP), which is affected by inflationary forces.

How Debt Contributes to Deficits

Publicly held debt contributes directly to federal deficits through interest payments on debt issuances. Interest payments are made to both debt held by the public and intragovernmental debt. As the government serves as buyer and seller of intragovernmental debt, interest payments on those holdings do not affect the federal budget deficit.¹² However, interest payments made on publicly held debt represent new federal spending, and are recorded in the budget as outlays when payments are made. *Interest represents the cost that the government incurs when it opts to finance spending through borrowing rather than through increased revenues. In budgetary terms, net interest payments represent the total amount of money paid from the government to debt holders in a given time period.*¹³

For investors, the purchase of a debt issuance represents both a loss of liquidity relative to currency holdings (money paid for the debt holding can be used immediately, while the debt

¹² Although intragovernmental debt does not affect net interest payments, shifts in certain types of intragovernmental debt may serve as a signal of future budgetary challenges. A notable example of such signaling may be seen with the increases in intragovernmental debt held by trust funds devoted to Social Security. Intragovernmental debt from those funds began increasing in the 1980s, as the entry of the “Baby Boomer” generation into the workforce increased payments into the Social Security system, and produced surpluses in Social Security trust funds. However, all else equal, the eventual retirement of those same workers has led to payments from Social Security trust funds exceeding revenues, thereby drawing down from excess funds in those accounts.

¹³ The combined interest paid on debt held by the public and intragovernmental debt is known as gross interest payments.

issuance may only be resold on the secondary market or held until the date of maturity) and an opportunity cost (the money used for the purchase could have been spent on other items, invested elsewhere, or saved). Debt holders are compensated for those costs by receiving interest payments from Treasury on their issuances.

Determinants of Net Interest Payments

The amount of net interest payments owed by the federal government depends on the existing stock, or total, of federal debt and the interest rate on outstanding debt instruments. The structure of the interest payments may be fixed or variable, depending on the type of debt holding. In either case, the terms of interest are agreed to in advance of sale. Interest rates on debt vehicles are largely determined by prevailing economic conditions. Situations where the private cost of borrowing (interest rate) is high will raise interest rates on federal debt and thereby increase net interest payments. Increases in the amount of existing debt will also lead to a rise in net interest payments, as it increases the base on which a given interest rate is applied.

From FY1962 to FY2015, net interest payments averaged 1.9% of annual GDP, a figure equivalent to about \$340 billion in 2015 dollars. High interest rates and increasing debt levels caused the net interest burden to peak in the 1980s and 1990s. Recent net interest payments have been lower than their long-term averages; in FY2015, net interest payments were \$223 billion, or 1.3% of annual GDP. Those low payments are the product of historically low interest rates, as real debt levels are at their highest value since the end of World War II. Unless the federal debt is significantly reduced, net interest payments will likely increase significantly if interest rates shift toward their long-term averages. In its most recent forecast, CBO projects that real net interest payments will rise to 3.0% of GDP by FY2026.¹⁴

The level of net interest payments generated by debt holdings can have a significant effect on the federal deficit. One way to measure this effect is through the primary deficit, which is equal to the net budget deficit excluding the effect of net interest payments. The primary deficit averaged 0.7% of GDP from FY1962 to FY2015, a far smaller figure than the 2.6% of GDP average recorded by the budget deficit over the same time period. While the federal government only recorded a budget surplus five times from FY1962 to FY2014, in 16 other years it registered a primary surplus, most recently in 2007.

Economic Effects of Deficits and Debt

Historical Trends

The historical trends of federal deficit and debt levels are displayed in **Table 2**. Along with averages of the real burden of deficits, debt stock, and real GDP growth, there is also a measurement of average growth in nominal GDP, which captures total economic output without adjusting for inflation. All else equal, higher levels of nominal GDP make a given amount of debt easier to repay by eroding its real value. For example, the highest measurement of debt since 1940 occurred in 1946, when the federal debt level was 118.9% of GDP, or \$271 billion in nominal FY1946 dollars. In contrast, \$271 billion was equivalent to only 1.5% of GDP in FY2015.¹⁵ Increases in nominal GDP may be caused by productivity increases, economic inflation—which measures the purchasing power of currency—or a combination of each factor.¹⁶

¹⁴ Congressional Budget Office, *The Budget and Economic Outlook: 2016 to 2026*, January 2016.

¹⁵ With positive economic growth, it is possible to simultaneously experience a year-over-year increase in nominal debt and decrease in real debt. The federal government experienced this most recently from FY2000 to FY2001, when (continued...)

Table 2. Trends in Deficits and Debt, FY1941-FY2015

Time Period	Average Annual Deficit (% of GDP)	Average Annual Growth, Real GDP (%)	Average Annual Growth, Nominal GDP (%)	Stock of Debt, End of Period (% of GDP)
FY1941-FY1955	6.3	5.3	9.9	67.4
FY1956-FY1970	0.6	3.7	6.5	36.3
FY1971-FY1985	3.0	3.2	9.2	42.6
FY1986-FY2000	2.2	3.4	6.0	55.5
FY2001-FY2015	3.9	1.8	4.0	101.7

Source: Office of Management and Budget, *Historical Tables 1.2 and 7.1*; Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.3. CRS calculations.

Notes: Unlike real GDP, nominal GDP is affected by inflationary forces, which increases average growth rates. “Stock of Debt, End of Period” represents the total debt recorded at the end of each time period (e.g., at the end of FY1955 for the FY1941-FY1955 time period).

Of the federal activity shown in **Table 2**, the highest annual deficits were accrued from FY1941 to FY1955, largely due to financing U.S. involvement in World War II. However, nominal economic growth was also relatively high during that time period, which slowed the rise in the stock of debt. From FY1956 to FY1970, average annual growth in nominal GDP slowed to 6.5%, but deficits were roughly one-tenth of those in the previous 15 years, causing average debt to decline over the course of the period. FY1971-FY1985 experienced increases in both deficits and nominal economic growth (driven largely by inflationary forces), holding the stock of debt relatively constant. From FY1984 to FY1999, average deficits were nearly identical to those in the previous 15 years, but nominal economic growth slowed, leading to a rise in the stock of debt as a percentage of GDP. That rise accelerated since FY2001, due to the combination of deficit increases and the decline in nominal economic growth. The debt burden decreased slightly from FY2014 (103.2% of GDP) to FY2015 (101.7% of GDP); before FY2014, the FY2015 debt burden had not been reached since FY1947.

Possible Explanations for Deficits

The government may choose to generate short-run budget deficits for a few reasons. Deficit financing, or payment for federal government activity at least partly through debt increases, increases the total level of spending in the economy. Most economists believe that the implementation of deficit financing can be used to generate a short-term stimulus effect, either for a particular industry or for the entire economy. In their view, increases in expenditures and tax reductions can be used to generate employment opportunities and consumer spending and reduce the intensity of stagnant economic periods. Deficit financing is a less effective countercyclical strategy when it leads to “crowding out.” Crowding out occurs when government financing merely replaces private sector funding instead of inducing new economic activity.

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nominal debt increased by \$141 billion (from \$5.629 trillion to \$5.770 trillion), but real debt decreased by 0.9% of GDP (from 55.5% to 54.6%).

¹⁶ Because real GDP measures adjust for the effects of inflation, average nominal GDP growth from FY1941-FY2015 (7.1%) exceeds measures of real GDP growth over the same period. As measured by the Bureau of Economic Analysis’ National Income and Product Accounts (Table 1.1.3), real GDP grew by an annual average of 3.5% from FY1941 to FY2015.

Deficit financing may also be used as part of a structurally balanced budget strategy, which alters government tax and spending levels to smooth the effect of business cycles. Smoothing budgetary changes may reduce the economic shocks deficits induce among businesses and households.

Governments may also use federal deficits or surpluses to spread the payment burden of long-term projects across generations. This sort of intergenerational redistribution is one justification for the creation of long-run trust funds, such as those devoted to Social Security.

In the long run, the effect of budget deficit outcomes depends on economic conditions, the stock and composition of debt, and the policy goals under consideration.

Effects of Persistent Deficits

Although there are some cases where deficit financing may be advisable, long-run generation of deficits causes publicly held debt accumulation that is generally thought to inhibit economic growth. Deficit financing tends to crowd out greater levels of private investment in better economic conditions. Such debt eventually must be repaid, either through spending reductions, tax increases, or combination of the two, and may also generate crowding out that could reduce future economic productivity.

In extreme cases, large or rapidly increasing debt levels may also have unintended macroeconomic effects. If potential buyers of U.S. debt issuances lose confidence in the ability of the federal government to repay its debt, ensuing increases in the supply of money through debt financing (known as debt monetization) may lead to rising interest costs or price inflation. Such a scenario could harm economic output and increase the chances of a recession. Though it is difficult to predict when such a reduction in market confidence would take place, such an event would likely be related at least in part to the amount of real debt (measured as a percentage of GDP).¹⁷ There are many instances where this phenomenon has occurred abroad, but no examples in modern U.S. history.

Deficit and Debt Outlook

The short-term deficit and debt outlook of the federal government has improved in recent years. The FY2015 real deficit was equal to 2.5% of GDP, and marked the sixth consecutive decline after hitting its post-war peak in FY2009. Moreover, reductions in intragovernmental debt and improved economic growth led to a real decline in total debt in FY2015 for the first time since FY2001. However, both deficits and debt are projected to increase in each year of the current budget window, which runs through FY2026. CBO, GAO, and the Administration agree that the current set of fiscal policies will lead to an unsustainable debt burden if left unchanged in the long run. In its latest economic forecast, the CBO projected that the total burden of U.S. debt held by the public would steadily increase over the course of the budget window, from 75.6% of GDP in FY2016 to 86.1% of GDP in FY2026.¹⁸ Addressing the potential consequences of those projections will likely involve policy adjustments that reduce the occurrences and intensity of budget deficits, either through tax increases, further reductions in spending, or a combination of the two.

¹⁷ For more information on the economic effects of deficits and debt, see CRS Report R40770, *The Sustainability of the Federal Budget Deficit: Market Confidence and Economic Effects*, by Marc Labonte.

¹⁸ Congressional Budget Office, *The Budget and Economic Outlook: 2016 to 2026*, January 2016.

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