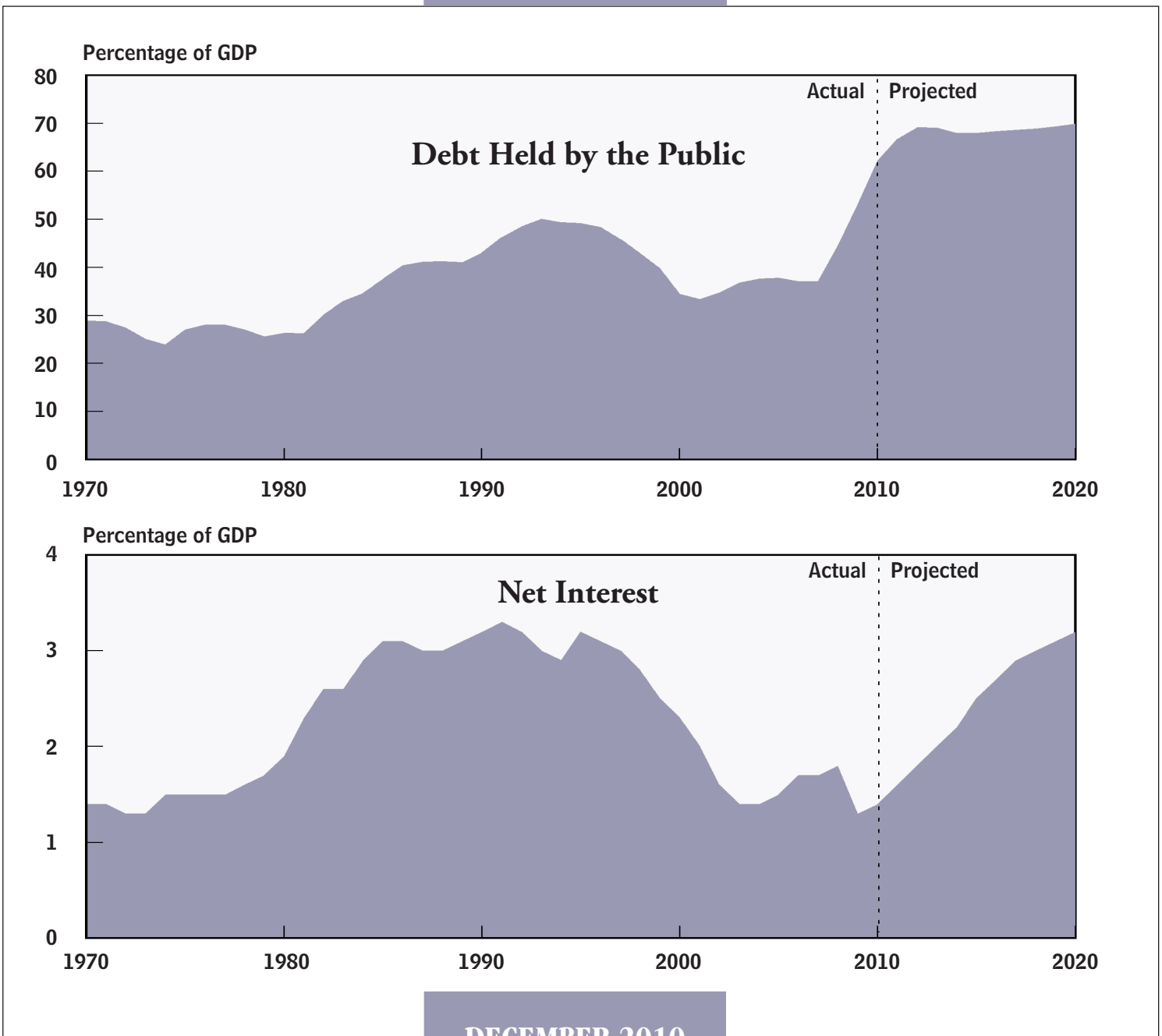
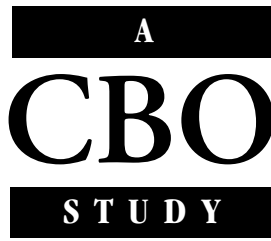


CBO

Federal Debt and Interest Costs



DECEMBER 2010



Federal Debt and Interest Costs

December 2010

Notes

Unless otherwise indicated, the years referred to in this report are federal fiscal years (which run from October 1 to September 30).

Numbers in the text and tables may not add up to totals because of rounding.

Budget projections reported in this study come from Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010), but may differ slightly because they incorporate actual results for fiscal year 2010.

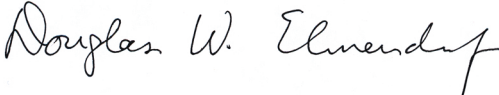


Preface

Recently, the federal government has been recording the largest budget deficits, as a share of gross domestic product (GDP), since the end of World War II. As a result of those deficits, the amount of federal debt held by the public has soared—surpassing \$9 trillion at the end of fiscal year 2010 and equal to 62 percent of GDP. The interest the government pays on that debt is currently low by historical standards as a percentage of GDP but is expected to grow rapidly over the next several years as interest rates rise. In response to a request from the Chairman and Ranking Member of the Senate Budget Committee, this study provides background material on federal debt and interest costs.

Jared Brewster and Amber Marcellino of the Congressional Budget Office's (CBO's) Budget Analysis Division wrote the study under the supervision of Theresa Gullo and Jeffrey Holland. Jared Brewster wrote the Summary and Chapters 1 and 2; Amber Marcellino and Jared Brewster wrote Chapter 3. Jonathan Huntley and Avi Lerner of CBO also contributed to the study. Staff of the Office of Management and Budget provided valuable assistance. (The assistance of external participants implies no responsibility for the final product, which rests solely with the authors and CBO.)

Sherry Snyder edited the manuscript, Kate Kelly proofread it, Jeanine Rees prepared the study for publication, and Maureen Costantino designed the cover. Monte Ruffin oversaw the printing of the study, Linda Schimmel handled the print distribution, and Simone Thomas prepared the electronic version for CBO's Web site (www.cbo.gov).



Douglas W. Elmendorf
Director

December 2010



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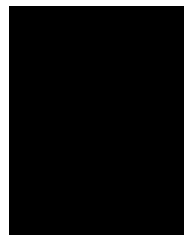
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Summary

The past few years have seen a sharp rise in the debt of the federal government. At the end of fiscal year 2008, debt held by the public amounted to \$5.8 trillion—equal to 40 percent of the nation’s annual economic output (gross domestic product, or GDP), a little above the 40-year average of 35 percent.¹ Since then, debt held by the public has shot upward, surpassing \$9 trillion by the end of fiscal year 2010—equal to 62 percent of GDP, the highest percentage since shortly after World War II (see Summary Figure 1). The surge in debt stems partly from lower tax revenues and higher federal spending related to the recent severe recession and turmoil in financial markets. However, the growing debt also reflects an imbalance between spending and revenues that predated those economic developments.

At the same time, a sharp drop in interest rates has held down the amount of interest that the government pays on that debt. In 2010, net interest outlays totaled \$197 billion, or 1.4 percent of GDP—a smaller share of GDP than they accounted for during most of the past decade.

The Congressional Budget Office (CBO) projects that, under current law, debt held by the public will exceed \$16 trillion by 2020, reaching nearly 70 percent of GDP. CBO also projects that interest rates will go up. The combination of rising debt and rising interest rates is projected to cause net interest payments to balloon to nearly \$800 billion, or 3.4 percent of GDP, by 2020.

Many other outcomes are possible, however. If, for example, the tax reductions enacted earlier in the decade were continued, the alternative minimum tax was indexed for inflation, and future annual appropriations remained the same share of GDP that they were in 2010, debt held by

the public would total nearly 100 percent of GDP by 2020. Interest costs would be correspondingly higher.

This CBO study describes historical trends in borrowing by the federal government and the interest the government pays on that borrowing. The study takes an in-depth look at the most commonly used measure of the government’s debt—debt held by the public—and also discusses several other measures of the debt, such as debt held by the public net of financial assets, gross federal debt, and debt subject to limit. In addition, the study examines the government’s net interest costs and the types of transactions that generate interest payments and collections.

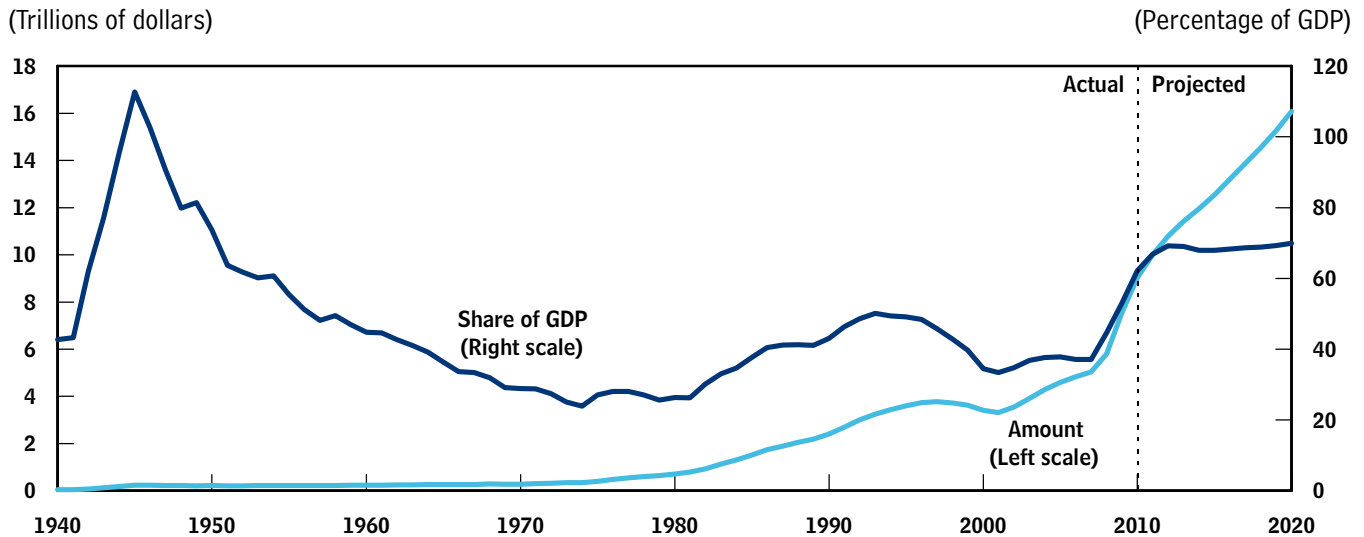
Debt Held by the Public

To finance the government’s activities, the Treasury issues numerous types of securities that vary in their maturity, how they are sold, and how their payments are structured. Marketable securities—bills, notes, bonds, and inflation-protected securities—are auctioned at regular intervals during the year and accounted for nearly 95 percent of outstanding debt held by the public at the end of 2010. Nearly two-thirds of that marketable debt was in Treasury notes, which have an original maturity of 2 to 10 years.

A small percentage of debt held by the public is in the form of nonmarketable securities, which cannot be resold by the original purchasers. Those securities include savings bonds, securities issued to state and local governments, and securities used for investments of the government’s Thrift Savings Plan (a retirement savings program for civil service employees and members of the uniformed services).

The government’s net borrowing for each year (that is, the new cash it must raise, over and above the amount required to pay off maturing securities) is determined

1. Debt held by the public consists mostly of securities that the Department of the Treasury issues to raise cash to fund the activities of the government, including the securities sold to pay off maturing securities; it also includes a small amount of securities issued by other agencies, mainly the Tennessee Valley Authority.

Summary Figure 1.**Debt Held by the Public, 1940 to 2020**

Sources: Congressional Budget Office; historical data are based on information from the Office of Management and Budget.

Note: GDP = gross domestic product.

largely by the size of the federal deficit. However, a number of other factors—collectively labeled “other means of financing” and not directly included in budget totals—also affect the amount of debt that the government issues. Those factors include changes in the government’s cash balances and the cash flows of federal credit programs (mostly programs that provide loans and loan guarantees).

Many investors consider federal debt to be an attractive investment, in part because it is essentially free of any risk of default. At the end of 2010, domestic entities owned about 53 percent of the outstanding public debt, and foreign entities owned about 47 percent. Central banks and private entities in China, Japan, and the United Kingdom are the largest foreign investors.

Other Measures of Federal Debt

In addition to debt held by the public, a number of other measures of federal debt are used for various purposes.

Debt held by the public net of financial assets is a measure that reflects the fact that the government affects financial markets not only by borrowing but also by acquiring financial assets. Those assets affect the government’s financial condition: If sold, the proceeds could be used to pay down a portion of the federal debt; if retained by the government, they will generate inflows from

interest, dividends, and repayments of principal that will reduce the government’s future borrowing needs.

Debt held by the public net of financial assets is calculated by subtracting from debt held by the public the value of assets the government has acquired through its various activities in the credit markets (such as loans made by federal programs) and through its efforts to address the recent financial crisis (such as preferred stock in financial institutions), as well as its cash balances. At the end of 2010, debt net of financial assets totaled \$8.0 trillion—\$1.0 trillion less than debt held by the public and 55 percent of GDP (compared with 62 percent of GDP when financial assets are not taken into account). Debt held by the public net of financial assets provides a more comprehensive picture of the government’s financial condition and its overall impact on credit markets than debt held by the public, but calculating it is not straightforward because neither the universe of such assets nor the method for valuing them is well defined.

Assessing the government’s overall financial condition requires accounting not only for debt that the government has already incurred (and financial assets it has acquired) but also for commitments the government has made for the future. Debt held by the public, with or without an adjustment for the government’s financial assets, does not account for such future obligations. One

useful barometer of the future fiscal situation is **projections of changes in debt held by the public relative to GDP**; that measure indicates whether the government's participation in credit markets is expected to grow faster or slower than economic output. Another useful gauge is the **fiscal gap**, which measures the immediate change in spending or revenues that would be necessary to keep the projected debt-to-GDP ratio the same at the end of a given period as at the beginning of the period. The fiscal gap quantifies the projected long-term shortfall of revenues relative to outlays in present-value terms—that is, as a single number that describes a flow of future revenues or outlays in terms of an equivalent lump sum received or spent today. These forward-looking measures are not addressed in this study but are used extensively in other CBO publications.²

Gross debt, which comprises federal debt held by the public plus Treasury securities held by federal trust funds and other government accounts, is sometimes used to evaluate the government's overall fiscal situation. At the end of 2010, gross federal debt totaled \$13.5 trillion—the \$9.0 trillion in debt held by the public plus \$4.5 trillion in debt held by government accounts. More than half of the latter amount is held by the Social Security trust funds. Because those trust funds and other government accounts are part of the federal government, transactions between them and the Treasury are intragovernmental; that is, the government securities in those funds are an asset to the individual programs but a liability to the rest of the government. The resources needed to redeem the government securities in the trust funds and other accounts in some future year must be generated from taxes, income from other government sources, or borrowing by the government in that year.

Gross debt is not a good indicator of the government's fiscal condition, however (nor is **debt subject to limit**, the amount of federal debt that is subject to the overall limit set in law and is roughly equal to gross debt). The value of Treasury securities held by trust funds and other government accounts measures only some of the commitments the government has made for the future, and it includes some amounts that may not represent future obligations at all. Moreover, because those securities represent internal transactions of the government, they have no direct effect on credit markets.

2. See, for example, Congressional Budget Office, *The Long-Term Budget Outlook* (June 2010, revised August 2010).

Interest Payments and Receipts

The government pays and collects interest in various ways. Its net interest outlays are equal to the interest it pays minus the interest it receives. Net interest outlays are dominated by the interest paid to holders of the debt that the Treasury issues to the public. Although the Treasury also issues debt to trust funds and other government accounts, the payment of interest to those accounts is an intragovernmental transaction that has no effect on net interest outlays or on the budget deficit.

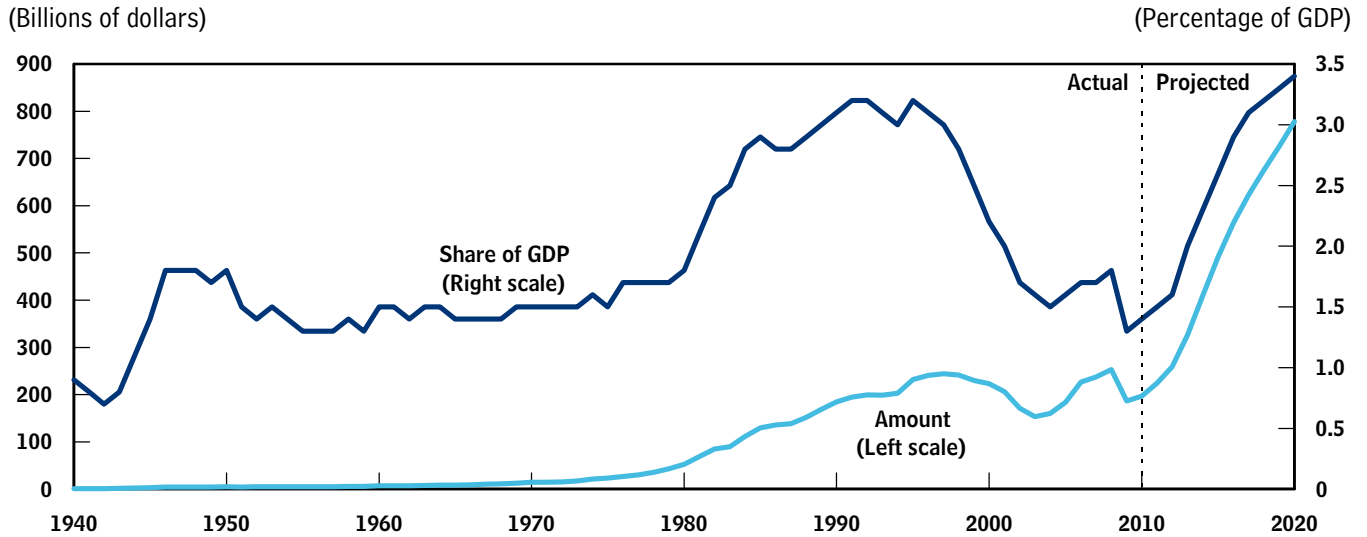
The federal government's interest payments depend primarily on interest rates and the amount of debt held by the public. Other factors, such as the rate of inflation and the maturity structure of outstanding securities, also affect interest costs (for example, long-term bonds generally carry higher interest rates than do short-term bills). Interest rates are determined by a combination of market forces and the policies of the Federal Reserve. Debt held by the public is determined mostly by cumulative budget deficits, which depend on policy choices about spending and revenues and on economic conditions and other factors.

Although the federal government has increased its net borrowing by more than \$3 trillion in the past two years, net interest costs dropped from \$253 billion in 2008 to \$197 billion in 2010 because of remarkably low interest rates (see Summary Figure 2). The amounts of net interest shown in the budget include interest paid on all Treasury securities (\$413 billion in 2010), minus the portion of that interest that is received by trust funds (\$186 billion in 2010) and the net amount of other interest received by the government (\$30 billion in 2010). The last category consists primarily of net receipts to the Treasury from the financing accounts for federal loan programs (those accounts are not included in the federal budget).

In CBO's most recent projections, which assume that current laws remain the same, annual deficits decline from the \$1.3 trillion recorded in 2010, but the cumulative deficit from 2011 through 2020 exceeds \$6.2 trillion. Borrowing to finance that deficit—in combination with an expected rise in interest rates—would lead to a fourfold increase in net interest payments over the next 10 years, from \$197 billion in 2010 to \$778 billion in 2020. As a percentage of GDP, net interest outlays would more than double during that period, rising from 1.4 percent to 3.4 percent.

Summary Figure 2.

Net Interest Outlays, 1940 to 2020



Sources: Congressional Budget Office; historical data are based on information from the Office of Management and Budget.

Note: GDP = gross domestic product.

Debt Held by the Public

When the federal government's spending exceeds its revenues, which has been the case in all but 4 of the past 40 years, the Department of the Treasury must raise cash to finance the resulting budget deficit. It does so by selling securities in the capital markets. Debt held by the public consists almost entirely of those securities, including those sold to pay off securities as they mature.

Recently, the federal government has been recording the largest budget deficits, as a share of the economy, since the end of World War II. As a result of those deficits, the amount of federal debt held by the public has surged. At the end of 2008, that debt amounted to \$5.8 trillion—equal to 40 percent of the nation's annual economic output (as measured by gross domestic product, or GDP), above the average over the previous 40 years of 35 percent. Since then, large budget deficits and increased borrowing to fund programs that address the recent financial crisis have caused debt held by the public to shoot upward, surpassing \$9 trillion by the end of fiscal year 2010—equal to 62 percent of GDP, the highest percentage since shortly after World War II (see Figure 1-1 on page 4). The sharp rise in debt stems partly from lower tax revenues and higher federal spending related to the recent severe recession and turmoil in financial markets. However, the growing debt also reflects an imbalance between spending and revenues that predated those economic developments.

To finance the government's activities, the Treasury issues numerous types of securities that vary in their maturity, how they are sold, and how their interest payments are structured. Those differences directly affect the interest rates on those securities, which are a key determinant of the amount of interest the government pays on its outstanding debt.

The size of the federal deficit largely determines the government's net borrowing for each year (that is, the new cash it must raise, above the amount required to pay off maturing securities). However, several other factors—collectively labeled “other means of financing” and not directly included in budget totals—also affect the amount of debt that the government issues each year. Those factors include changes in the government's cash balances and the cash flows of federal credit programs, mostly programs that provide loans and loan guarantees. Also, a small amount of debt held by the public (less than 1 percent) is issued by agencies other than the Treasury (such as the Tennessee Valley Authority). Debt issued by Fannie Mae and Freddie Mac—the two government-sponsored enterprises now under federal conservatorship—is not included in debt held by the public (see Box 1-1).

Publicly issued Treasury securities are held by various buyers in the United States, including the Federal Reserve, private investors, and state and local governments. Those securities also are acquired by foreign investors, including foreign central banks and individuals.

Compared with a similar measure of debt held by the public, the amount of debt in the United States is substantially lower than that in Japan and Italy and close to that in Hungary and Portugal.

Trends in Debt Held by the Public

During World War II, the federal government borrowed heavily to finance the war effort and, as a result, debt reached 109 percent of GDP in 1946. For the next quarter century, however, debt hardly grew—inching up, by an average of about \$2 billion a year, from \$242 billion in 1946 to \$283 billion in 1970. During that period, on balance, the government neither paid off the debt

Box 1-1.**Accounting for Debt and Guarantees Issued by Fannie Mae and Freddie Mac**

In September 2008, the Director of the Federal Housing Finance Agency placed into conservatorship two large government-sponsored enterprises, Fannie Mae and Freddie Mac.¹ At the same time, the Secretary of the Treasury took a major ownership interest in both entities in the form of preferred stock. In the judgment of the Congressional Budget Office (CBO), those actions make Fannie Mae and Freddie Mac part of the government and imply that their operations should be reflected in the federal budget.²

Fannie Mae and Freddie Mac were chartered by the Congress four decades ago as private companies with a public mission to provide liquidity and stability to the secondary market for residential mortgages (the market in which those mortgages are bought and sold). In carrying out their charters, the two entities

purchase mortgage loans made by lenders and package them into mortgage-backed securities (MBSs) that carry guarantees that principal and interest on the underlying mortgages will be paid in full; those securities are then sold to investors. The two entities also invest directly in mortgages and MBSs, which they hold in their portfolios. To fund those holdings, they issue debt and sell it in the international capital markets. As of September 2010, Fannie Mae and Freddie Mac held or guaranteed about \$4.4 trillion in MBSs; they also had issued \$1.6 trillion in debt.

Despite having a unique legal status and a long history linking them closely to the federal government, Fannie Mae and Freddie Mac had been considered private firms owned by their shareholders. Now, however, the federal government controls both entities and is operating them to fulfill the public purpose of supporting the housing and mortgage markets.³

1. Conservatorship is the legal process by which an entity (in this case, the government) establishes control and oversight of a company to put it in a sound and solvent condition.
2. See Congressional Budget Office, *CBO's Budgetary Treatment of Fannie Mae and Freddie Mac*, Background Paper (January 2010).

3. For more information about the various ways in which the federal government helps the housing market, see Congressional Budget Office, *An Overview of Federal Support for Housing*, Issue Brief (November 2009).

Continued

incurred from the war nor added much to it. With the economy growing, debt dropped steadily as a share of GDP, reaching 28 percent in 1970 (see Figure 1-1).

The era of slow growth of debt ended in the 1970s. Federal budgets were unbalanced for the entire decade, and debt held by the public more than doubled in dollar terms between 1970 and 1980. But rapid inflation swelled GDP, and the debt as a percentage of GDP actually decreased somewhat during the decade, falling to 26 percent by 1980.

Between 1980 and 1993, debt held by the public expanded more rapidly than the economy, rising from 26 percent of GDP to 49 percent. However, policies adopted during the 1990s to tackle budget deficits, and

the surge in tax revenues associated with robust economic growth seen throughout most of the decade, led to budget surpluses between 1998 and 2001. Those surpluses decreased debt held by the public by more than \$450 billion between the end of 1997 and the end of 2001 and lowered debt as a share of GDP to 33 percent by the end of 2001, a level not seen since the early 1980s. Those surpluses were short-lived, though, as budget deficits between 2002 and 2007 boosted debt held by the public by more than \$1.7 trillion, but economic growth kept debt as a percentage of GDP fairly steady in that period, around 37 percent.

In 2008, the United States experienced the most severe financial crisis since the Great Depression. The following year, revenues dropped sharply and outlays increased

Box 1-1.**Continued****Accounting for Debt and Guarantees Issued by Fannie Mae and Freddie Mac**

Moreover, both entities rely on federal backing to maintain their low-cost access to financial markets. Although they are not legally government agencies and their employees are not civil servants, CBO believes it is appropriate and useful to policymakers to include Fannie Mae's and Freddie Mac's financial transactions with other federal activities in the budget.⁴

That budgetary treatment raises the question of how the conservatorship of Fannie Mae and Freddie Mac should be reflected in measures of the government's financial position. Neither CBO nor the Administration currently incorporates debt or MBSs issued by Fannie Mae and Freddie Mac in estimates of federal

debt held by the public, nor does CBO currently include the value of the preferred shares held by the Department of the Treasury in its estimate of the value of financial assets owned by the government.

In taking over Fannie Mae and Freddie Mac, the government obtained both assets and liabilities. The assets consist mostly of the mortgages and MBSs held in the entities' portfolios and the claim to the revenue stream generated by guarantee fees. The liabilities consist mostly of debt issued by Fannie Mae and Freddie Mac and the obligation to honor their guarantees. In CBO's judgment, the liabilities are larger, on balance, than the assets because of elevated losses from defaults. Consequently, the two entities do not represent a net asset to the government but a net liability—that is, their impact on the government's financial position is a negative one. CBO estimated the amount of that negative impact when the entities were taken into conservatorship, but it has not updated that estimate nor included such an amount in debt held by the public or any other measures of debt referenced in this study.

4. The Administration's Office of Management and Budget (OMB) makes the ultimate decision about whether the activities of Fannie Mae and Freddie Mac will be included in the federal budget. Although OMB's budget documents have not included those activities in the budget totals, they have provided financial information about the two entities for several years; see, for example, *Budget of the United States Government, Fiscal Year 2011: Appendix*, pp. 1373–1375.

substantially, pushing the deficit to \$1.4 trillion, equal to 10 percent of GDP (the highest level since 1945). The budget deficit in 2010 reached nearly \$1.3 trillion (or 9 percent of GDP) because of continued low revenues and elevated spending. Overall, in the three years between 2008 and 2010, the Treasury added nearly \$4 trillion to its borrowing, increasing debt held by the public as a percentage of GDP from 36 percent at the end of 2007 to 40 percent at the end of 2008 and to 62 percent at the end of 2010.

Types and Amounts of Treasury Debt Held by the Public

The Treasury issues two broad types of securities to the public: marketable and nonmarketable. Marketable issues—bills, notes, bonds, and inflation-protected securities—

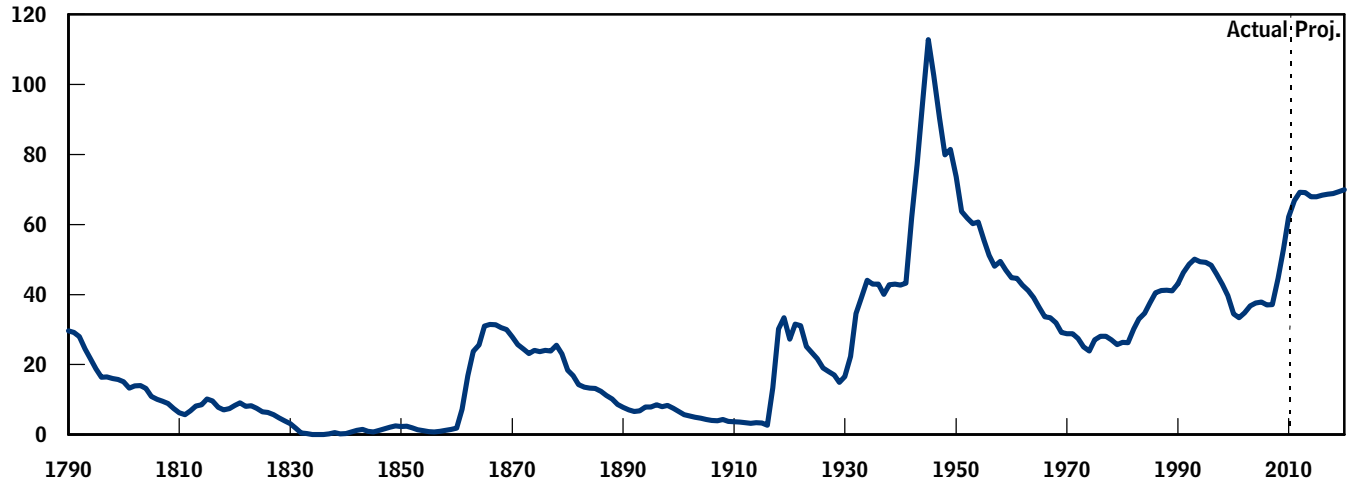
are auctioned at regular intervals during the year and can be resold on the secondary market (where previously issued Treasury securities can be bought and resold). Such securities accounted for \$8.5 trillion, or 94 percent, of debt held by the public at the end of 2010. Nonmarketable issues, such as savings bonds, are not sold at auction and cannot be traded in the secondary market. Those issues accounted for \$526 billion, or 6 percent, of debt held by the public at the end of 2010 (see Figure 1-2).

Marketable Securities

Marketable securities comprise bills (original maturity of 1 year or less), notes (original maturity of 2 to 10 years), bonds (original maturity of longer than 10 years), and Treasury inflation-protected securities, or TIPS (original maturity of 5, 10, or 30 years). Bills are offered on a

Figure 1-1.**Debt Held by the Public, 1790 to 2020**

(Percentage of gross domestic product)



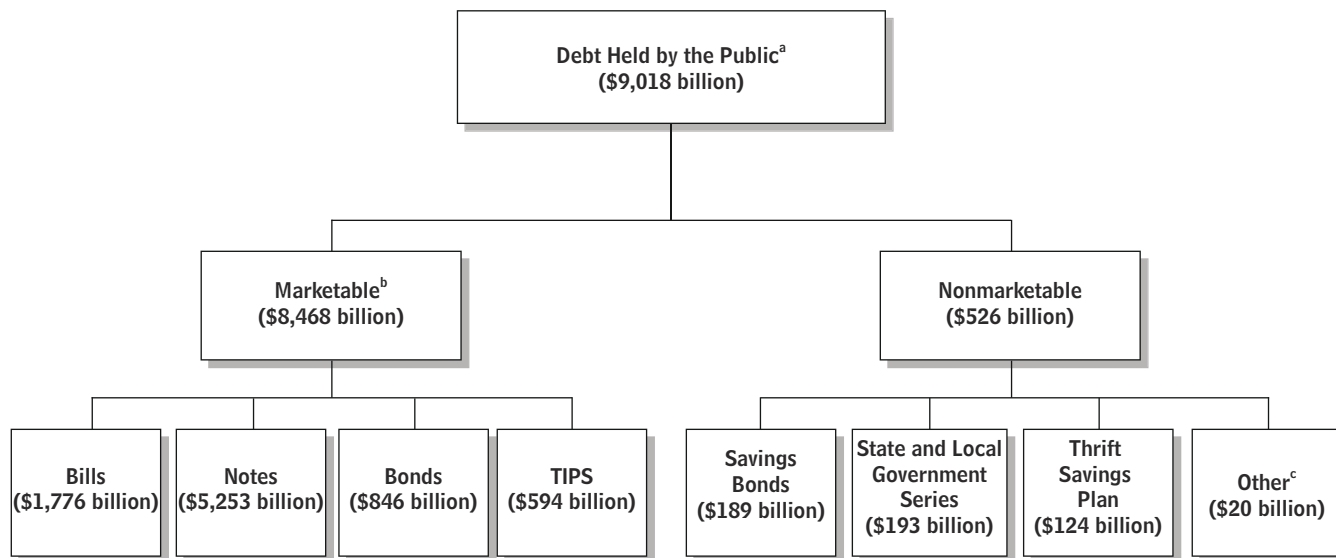
Sources: Congressional Budget Office based on data on federal debt from the Department of the Treasury and the Board of Governors of the Federal Reserve System. Estimates of gross domestic product come from the U.S. Census Bureau; Thomas Berry, *Revised Annual Estimates of American Gross National Product* (Richmond, Va.: Bostwick Press, 1978); Robert E. Gallman, "Economic Growth and Structural Change in the Long Nineteenth Century," in Gallman and Stanley L. Engerman, eds., *The Cambridge Economic History of the United States*, vol. 2, *The Long Nineteenth Century* (Cambridge, England: Cambridge University Press, 2000), pp. 1–55; Nathan S. Balke and Robert J. Gordon, "The Estimation of Prewar Gross National Product: Methodology and New Evidence," *Journal of Political Economy*, vol. 97, no. 1 (February 1989), pp. 38–92; and the Department of Commerce, Bureau of Economic Analysis.

discount basis—that is, the purchaser generally pays less than the face value for a security and receives the face value at maturity; the difference between the purchase price and the value at maturity is the amount of interest earned on the security. In contrast, notes and bonds are referred to as “coupon” securities; the purchaser receives semiannual interest payments (the coupon) based on a fixed rate and receives the principal at maturity. TIPS provide purchasers with an inflation adjustment to the principal and a semiannual interest payment.¹ The interest rate on TIPS is a fixed rate determined at auction, but the interest payments vary because the rate is applied to the inflation-adjusted principal. TIPS mitigate the risk to investors that inflation will turn out to be higher than expected and tend to attract a somewhat different type of investor than those interested in other types of Treasury securities.

1. The inflation adjustment to principal is based on the non-seasonally adjusted consumer price index for all urban consumers (CPI-U). The adjustment to the value of outstanding TIPS is made on a daily basis but is not paid until maturity. For more information, see Treasury Direct, “TIPS: Rates and Terms,” www.treasurydirect.gov/indiv/research/indepth/tips/res_tips_rates.htm.

Over the past two decades, Treasury notes have generally accounted for the majority of outstanding marketable securities; the current share of 62 percent is the highest since 1997 (see Figure 1-3; also see Table A-1 in the appendix for amounts outstanding for each type of security for the past 20 years). Bills have generally accounted for between 20 percent and 30 percent of marketable debt; the current share is at the lower end of that range. Bonds now account for 10 percent of outstanding marketable debt, about half of their share in the 1990s and early 2000s. The share in the form of TIPS increased over the 10 years from their inception to 2007; that share peaked at 10 percent of outstanding marketable securities but has fallen over the past three years.

In choosing the mix of maturities to offer, the Treasury must weigh several considerations. Short-term securities generally have lower interest costs, but they also incur the cost of more frequent refinancing, and they expose the government to the risk of having to pay higher interest rates when it refinances those issues. Conversely, long-term securities involve higher rates, on average, but provide more certainty about future costs of interest payments and reduce the frequency of refinancing. The

Figure 1-2.**Components of Debt Held by the Public at the End of Fiscal Year 2010**

Source: Congressional Budget Office based on data from the Department of the Treasury.

Note: TIPS = Treasury inflation-protected securities.

- The \$9,018 billion includes \$24 billion in debt issued by agencies other than the Treasury, such as the Tennessee Valley Authority, which is not shown separately in this figure.
- The current value of marketable securities reflects an adjustment for premiums and discounts that CBO has included in the total for Treasury bills.
- Other nonmarketable securities include foreign and domestic series zero-coupon bonds (current value), foreign series bills, claims funds and asset forfeitures funds, tax and loss bonds issued by the Mortgage Guaranty Insurance Corporation, U.S. notes and silver certificates, and various other small securities.

preferences of investors are a further consideration in setting the maturity structure; offerings that best meet the needs of investors will lower the Treasury's overall cost of borrowing.

Auctions. The Treasury sells securities on a regular basis through "single-price" auctions, in which successful bidders buy securities at the highest accepted discount rate (for bills) or yield (for notes and bonds). Bidding can be either competitive or noncompetitive. Most competitive bidding is done by large financial institutions for their own accounts or on behalf of customers in the secondary (resale) market. Investors make a competitive bid by specifying the price they are willing to pay for a particular security at auction, but such bids are not guaranteed to be accepted.

Noncompetitive bids are made by investors through the Treasury or through certain banks, brokers, or dealers. Noncompetitive buyers specify an amount to purchase

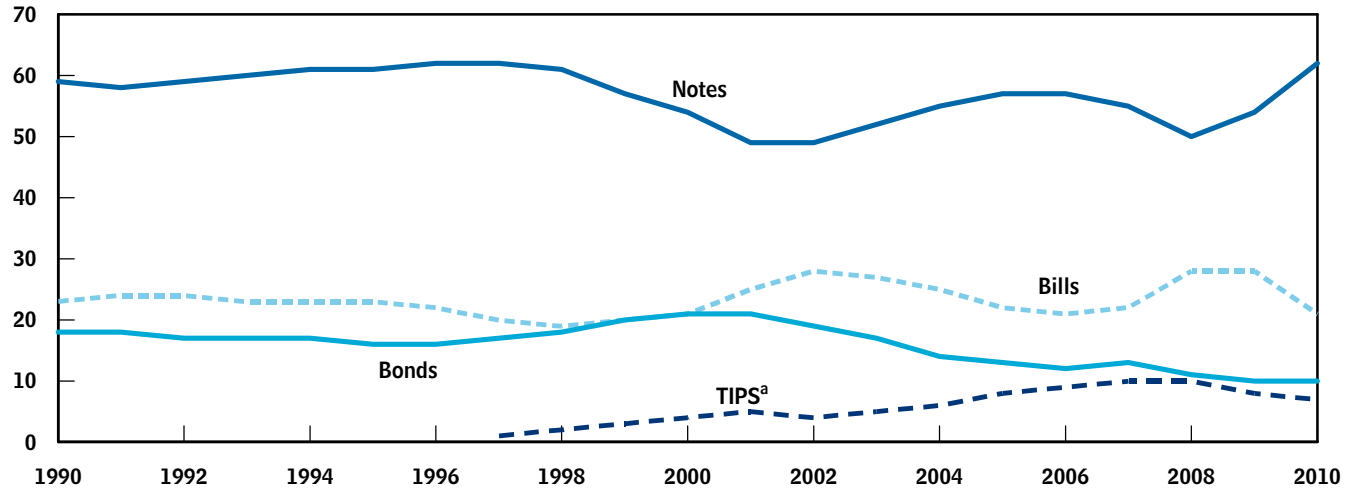
before an auction but are not allowed to specify a yield; instead, their bid is guaranteed to be fulfilled at the highest accepted yield. Those buyers are assured of receiving the full amount of their order up to the current maximum of \$5 million.

Borrowing Schedule. Treasury securities are issued on a regular schedule, and the amount to be auctioned is determined by the federal government's borrowing needs. The auction schedule and the mix of maturities are also designed to enhance the liquidity of Treasury issues so that investors can buy or sell them quickly and in large amounts without affecting the price of the securities. Treasury issues that are relatively liquid are more valuable to most investors, who are therefore willing to pay more for them.

With the rapid increase in the deficit over the past few years, the auction schedule has been expanded. In particular, the Treasury has increased the number of auctions,

Figure 1-3.**Percentage of Marketable Debt Outstanding, by Type of Security, 1990 to 2010**

(Percent)



Source: Congressional Budget Office based on data from the Department of the Treasury.

a. Treasury inflation-protected securities (TIPS) were first issued in 1997.

raised the dollar amount of individual issuances, and reintroduced a variety of previously retired maturities (see Table 1-1 for the Treasury's recent auction schedule). Most of the recent borrowing has been done in securities with a maturity of greater than a year, which has allowed the Treasury to lock in historically low rates on those securities.

Bills. The Treasury offers bills in 1-month, 3-month, and 6-month maturities on a weekly basis. It also offers a 1-year bill every four weeks; that issue, which had not been offered since 2001, was reintroduced in 2008. The Treasury also offers cash management bills (CMBs) to fund the government's short-term cash needs; CMBs have no uniform maturity date and are offered as needed. At the end of fiscal year 2010, the outstanding face value of Treasury bills totaled roughly \$1.8 trillion, representing about 21 percent of all marketable Treasury debt.

Notes. The Treasury's portfolio of notes has changed significantly over the past decade. At the beginning of 2000, following a string of annual surpluses, notes were offered only in maturities of 2, 5, and 10 years. In 2003, after two years of deficits, the 3-year note was reintroduced; in 2008, with debt continuing to grow, the Treasury reintroduced the 7-year note. Notes are currently offered monthly in maturities of 2, 3, 5, and 7 years, and quar-

terly in a maturity of 10 years. In the months between the quarterly auctions, the 10-year notes are sold in a "reopening."² At the end of 2010, the outstanding value of notes was roughly \$5.3 trillion, accounting for about 62 percent of all marketable debt.

Bonds. The Treasury temporarily stopped issuing bonds in 2001 in light of the improvement in the budget balance over the previous few years. That hiatus was short-lived, however, and in 2006 the Treasury announced that it would again offer 30-year bonds. Such bonds are now issued quarterly, with interim reopenings on a monthly basis. At the end of 2010, \$846 billion in bonds was outstanding, representing about 10 percent of all marketable debt.

Treasury Inflation-Protected Securities. In 1997, the Treasury added TIPS to its auction schedule, beginning with maturities of 10 and 30 years. It discontinued issuing 30-year TIPS in 2001, began issuing TIPS with maturities of 5 and 20 years in 2004, but reverted to issuing 30-year TIPS in lieu of the 20-year security in 2010.

2. In a reopening, the Treasury issues an additional amount of a previously issued security. The reopened security has the same maturity date and interest rate as the original security but has a different issue date and, usually, a different purchase price.

Table 1-1.**Schedule of Treasury Auctions of Marketable Debt**

Type of Issue and Maturity	Issues per Year	Timing of Auctions	Size of Recent Auctions (Billions of dollars)
Bills			
One month (28 days)	52	Weekly	34 ^a
Three months (91 days)	52	Weekly	29 ^a
Six months (182 days)	52	Weekly	29 ^a
One year (364 days)	13	Every four weeks	25
Cash management	Variable	As needed	Variable
Notes			
Two years	12	Monthly	37
Three years	12	Monthly	33
Five years	12	Monthly	36
Seven years	12	Monthly	30
Ten years	12	Quarterly, with interim reopenings	25 ^b
Bonds (Thirty years)	12	Quarterly, with interim reopenings	17 ^c
Treasury Inflation-Protected Securities			
Five years	2	Annually, with an interim reopening	11 ^d
Ten years	6	Semiannually, with interim reopenings	12 ^e
Thirty years	2	Annually, with an interim reopening	8 ^f

Source: Congressional Budget Office based on data from the Department of the Treasury.

Note: In a reopening, the Treasury issues an additional amount of a previously issued security. The reopened security has the same maturity date and interest rate as the original security but has a different issue date and, usually, a different purchase price.

- a. The average amount issued in September 2010.
- b. Interim reopenings were \$21 billion each.
- c. Interim reopenings were \$13 billion each.
- d. Interim reopening was \$10 billion.
- e. Interim reopenings were \$10 billion each.
- f. Interim reopening was \$7 billion.

Outstanding TIPS totaled \$594 billion at the end of 2010, or about 7 percent of all marketable debt.

Maturity. The average remaining maturity of outstanding marketable securities has fluctuated over the past decade, from a high of almost 6 years at the end of 2000 to a low of close to 4 years in 2008 (Figure 1-4). Increased borrowing in notes and bonds raised the average maturity of outstanding debt to nearly 5 years at the end of 2010.

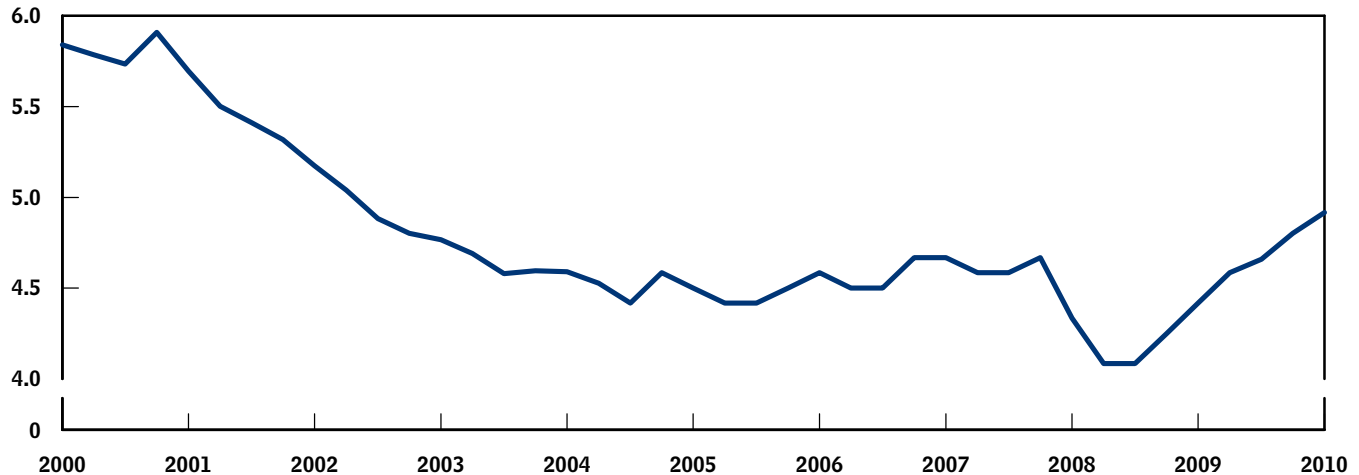
Seasonality. Federal borrowing has a pronounced seasonal pattern and is typically highest in the second quarter of the fiscal year (January through March) and lowest in the third quarter (April through June), coincid-

ing with the April deadline for filing individual income tax returns. That pattern is sometimes obscured by changes in fiscal policy and fluctuations in economic conditions; it can also be affected if the Congress fails to approve a higher debt ceiling sufficiently in advance to avoid disrupting Treasury auctions. (The debt ceiling is described in Chapter 2.)

Seasonal fluctuations in borrowing are more pronounced for Treasury bills than they are for notes and bonds (see Figure 1-5). Because bills are issued more frequently and have shorter maturities, the Treasury can quickly adjust the size of such auctions in response to fluctuations in the government's funding requirements. Net issuance of bills

Figure 1-4.**Average Remaining Maturity of Marketable Public Debt, 2000 to 2010**

(Years)



Source: Congressional Budget Office based on data from the Department of the Treasury.

(the amount of new issuances minus the amount of maturing bills) varies greatly from quarter to quarter. Including cash management bills, the net quarterly issuance of bills during the past five years has ranged from a net paydown of almost \$200 billion to a net issuance of roughly \$430 billion.

Nonmarketable Securities

Nonmarketable securities are nontransferable debt instruments that are not traded in secondary markets. Savings bonds and securities issued to the federal government's Thrift Savings Plan (TSP) and to state and local governments account for most of the outstanding nonmarketable securities; foreign and domestic zero-coupon bonds and other issues account for a much smaller portion.³ Unlike the issuance of marketable securities, which is directly tied to the size of the federal deficit, the issuance of nonmarketable securities depends on the demand for them by investors. From 2000 to 2001, for example, the government experienced a budget surplus, yet nonmarketable debt grew from \$374 billion to \$386 billion. Outstanding nonmarketable debt totaled \$526 billion at the end of 2010 (see Figure 1-2 on page 5; also see Table A-2 in the appendix for amounts outstanding for each type of security for the past 20 years).

3. Zero-coupon bonds do not provide coupon payments over the life of the security. Instead, they are sold at a discount to face value, and the full face value is paid at maturity.

Savings Bonds. Savings bonds originated in 1935 but became popular during World War II as a means of helping to finance the war effort. Formerly purchased out of a sense of patriotism, savings bonds are now generally purchased as gifts or through payroll deductions by individual investors; they come in several series with varying characteristics.⁴ The amount of outstanding savings bonds totaled almost \$190 billion at the end of 2010.

EE/E Bonds. EE bonds are currently offered as coupon securities (if purchased electronically) and on a discount basis (if a paper version is purchased). Bonds sold as a coupon security accumulate interest in monthly installments and can earn interest for up to 30 years. Those sold as a discount security are purchased at half of their face value and are paid in full at maturity. The face value of outstanding EE bonds (and E bonds, their predecessors) totaled about \$122 billion at the end of 2010.

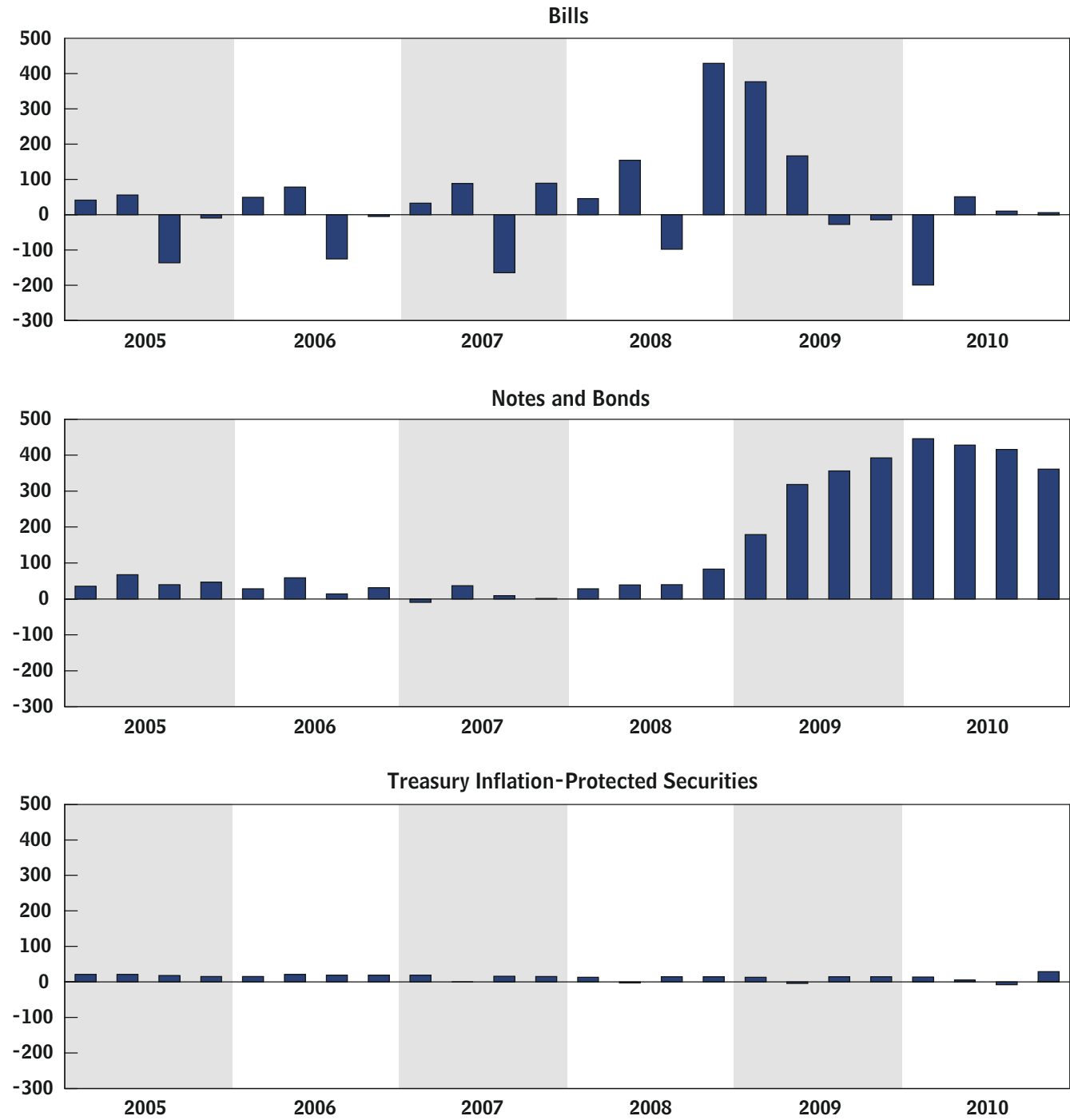
Other Types of Savings Bonds. The Treasury also issues inflation-indexed savings bonds, known as the I series; about \$41 billion in I bonds was outstanding at the end of 2010. The HH/H series, which was discontinued in 2004, makes coupon payments to bond holders every six months; the face value of outstanding HH/H bonds

4. For additional details on savings bonds, see Treasury Direct, "Products in Depth," <http://treasurydirect.gov/indiv/research/indepth/indepth.htm>.

Figure 1-5.

Quarterly Change in Outstanding Treasury Securities, 2005 to 2010

(Billions of dollars)



Source: Congressional Budget Office based on data from the Department of the Treasury.

totaled \$9 billion at the end of 2010. Individual investors also hold savings bonds that have matured but have not been redeemed; those securities do not accrue any additional interest. The outstanding amount of such bonds was about \$16 billion at the end of 2010 (savings bonds that have matured are not included in the amounts listed for the various types of savings bonds).

State and Local Government Series. The Treasury offers state and local government series (SLGS) securities as part of its regulation of the tax-exemption privilege accorded to such governments. States and municipalities may issue tax-exempt bonds, which typically carry interest rates below those of taxable instruments, such as marketable Treasury securities or corporate bonds. In the absence of rules to the contrary, issuers of those tax-exempt bonds would have an incentive to borrow at tax-exempt rates and reinvest the funds at higher, taxable rates, thereby making a profit. To bar that practice, known as tax arbitrage, federal law allows state and local governments to borrow only for legitimate public purposes (to build infrastructure, for example). However, funds that are borrowed for such purposes might sit idle for some time (before construction of infrastructure begins, say), so issuers are allowed to invest the funds in SLGS securities for that period without violating the ban on arbitrage. SLGS securities carry an interest rate of one basis point (one one-hundredth of a percentage point) below a Treasury security with a similar maturity. The Treasury also offers state and local governments the opportunity to place their funds in demand deposit accounts with the Treasury; interest accrues on those deposits each day, with the rate keyed to the yield in the most recent auction of the 3-month Treasury bill.⁵

Because of increased financial strain at the state and local level in recent years, demand for SLGS securities has declined substantially. In 2007, the face value of outstanding SLGS securities reached a peak of nearly \$300 billion. By the end of 2010, their value had fallen to just over \$190 billion, a 35 percent decrease since 2007.

Thrift Savings Plan. The TSP is a retirement savings program for civil service employees and members of the uniformed services. The TSP is designed to be similar to 401(k) plans found in the private sector by providing federal employees with opportunities to invest in funds that track different sorts of financial assets, including

domestic and foreign equities, fixed-income securities, and U.S. government securities. Those government securities are nonmarketable Treasury securities issued specifically to the TSP. They have short maturities but earn a long-term interest rate equal to the weighted average market yield on outstanding marketable Treasury securities with 4 or more years to maturity. In total, the value of those securities was \$124 billion at the end of 2010.

Zero-Coupon Bonds and Other Nonmarketable

Securities. The government issued zero-coupon bonds with a face value of \$30 billion to the Resolution Funding Corporation, a government-sponsored enterprise, as part of a plan to resolve the savings and loan crisis of the 1980s. The outstanding value of that issuance at the end of 2010 was \$11 billion. The government also issued \$14 billion in zero-coupon bonds to Argentina and Venezuela in the late 1980s to help ease their debt burden; less than \$2 billion remained outstanding at the end of 2010. (The Treasury issued more than \$30 billion in such bonds to Mexico; those bonds have already been paid off.) In addition, the federal government has numerous other small accounts with nonmarketable securities that totaled \$7 billion in 2010. The total value of zero-coupon bonds and other nonmarketable securities was \$20 billion at the end of 2010.

Reasons for Borrowing Other Than Budget Deficits

The amount the Treasury borrows or redeems is determined primarily by the budget deficit or surplus in a given year. However, other factors, collectively referred to as “other means of financing,” also affect the government’s need to borrow from the public. Before the recent financial crisis, those other factors had a relatively small effect on total borrowing—ranging, between 2000 and 2007, from a reduction of about \$40 billion to an increase of roughly \$60 billion. The effects on borrowing arose mostly from changes in the Treasury’s cash balances and from the differences between the cash flows associated with federal credit programs and the costs of those programs on a present-value basis, which is how they are recorded in the budget.⁶ However, borrowing for reasons other than budget deficits rose sharply in 2008 and 2009

5. Demand deposits may be withdrawn at any time without advance notice.

6. Present value is defined as a single number that expresses a flow of current and future income (or payments) in terms of an equivalent lump sum received (or paid) today.

Table 1-2.**Deficits and Means of Financing, 2000 to 2010**

(Billions of dollars)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Surplus or Deficit (-)	236	128	-158	-378	-413	-318	-248	-161	-459	-1,413	-1,294
Other means of financing											
Changes to the Treasury's cash balance ^a	4	8	-17	26	-1	1	-16	-23	-296	96	-35
Other ^b	-17	-46	-46	-21	32	21	28	-22	-13	-425	-145
Subtotal	-14	-38	-63	5	31	22	11	-45	-309	-329	-180
Net Treasury Borrowing from the Public ^c	223	90	-221	-373	-382	-297	-237	-206	-768	-1,742	-1,474

Source: Congressional Budget Office based on data from the Department of the Treasury and the Office of Management and Budget.

- a. Negative numbers represent increases in cash balances.
- b. Includes primarily cash flows for student loan programs, the Troubled Asset Relief Program, and purchases of mortgage-backed securities.
- c. Negative numbers represent additional borrowing.

as a result of policies enacted during the financial crisis; specifically, additional borrowing by the Treasury totaled more than \$300 billion each year for programs such as the Troubled Asset Relief Program (TARP) and the Supplementary Financing Program (SFP), which are discussed below. In 2010, the amount of borrowing for reasons other than the budget deficit totaled \$180 billion, mainly to fund lending to students (see Table 1-2).

Credit Programs. The federal budget does not record the cash flows of federal credit programs; instead, it recognizes the net subsidy costs associated with such activities.⁷ Subsidy costs are the expected lifetime cost to the government of a loan, loan guarantee, or asset purchase and are recorded in the budget when the transaction occurs. That treatment results in a disconnect between the budget and the Treasury's borrowing, because the Treasury's borrowing needs are determined by the cash flows of the transactions. For loans made directly by the government, for example, the amount the government must borrow is generally greater than the cost recorded in the budget; for a loan program with a 10 percent subsidy rate, the government might disburse \$1,000 in cash for a loan and then receive cash repayments later, but the budget would record a \$100 cost in the year of disbursement and nothing in future years

(unless the estimated subsidy rate turned out to be incorrect).

To reconcile those transactions, the government uses "credit financing accounts," which are not part of the budget. Those accounts are credited with the program's subsidy payments (that is, the subsidy amounts shown in the budget) and record all the cash flows associated with the program. If the financing accounts need up-front cash (for example, to cover disbursements on direct loans), those funds are borrowed from the Treasury, which in turn borrows them from the public.

Before the recent financial crisis, net cash flows through the financing accounts were relatively small and driven mainly by student loan programs. In 2009, net cash disbursements from the financing accounts increased substantially, exceeding \$400 billion, mainly because of the TARP and the Treasury's purchases of mortgage-backed securities (MBSs).⁸ Net cash disbursements in 2010 dropped to just over \$150 billion, mostly for student loans (partially offset by repayments and dividends from recipients of TARP funds).

As of November 2010, three programs accounted for the vast majority of the outstanding debt used to finance

7. In this study, the term "credit programs" generally refers to direct loans and loan guarantees and to some purchases of financial assets (such as the acquisition of preferred stock by the TARP).

8. Mortgage-backed securities are issued by financial institutions to investors. The payments of interest and principal on the MBSs are backed by the payments on a package of mortgages.

government credit programs: student loans, the TARP, and purchases of MBSs by the Treasury.

Student Loans. The student loan program is the largest direct loan program administered by the federal government. Until recently, the Department of Education provided direct loans to students and also guaranteed loans made to students by lenders in the private sector. In March 2010, the Health Care and Education Reconciliation Act of 2010 (Public Law 111-152) eliminated the program that provided federal guarantees for student loans, replacing future guarantees with direct loans made by the federal government.

The Treasury's net borrowing needs for student loans are driven by the up-front disbursements and periodic repayments that are recorded in the financing accounts. The Congressional Budget Office (CBO) estimates that in 2011—the first full year in which direct loans are the only type being made—the Treasury's net disbursements (total disbursements minus collections from existing loans) will exceed the subsidy cost recorded in the budget by \$112 billion. More broadly, the shift to direct loans will increase the Treasury's borrowing needs in the next several years as the loans are disbursed, but it will decrease net borrowing in later years as borrowers repay the interest and principal. Part of the additional borrowing also stems from defaults on outstanding guaranteed loans. CBO estimates that those guarantees will cost roughly \$10 billion annually over the next 10 years.

Troubled Asset Relief Program. The Emergency Economic Stabilization Act of 2008 (Division A of P.L. 110-343) created a program, known as the TARP, to promote stability in financial markets by purchasing or guaranteeing up to \$700 billion in “troubled assets.”⁹ The Treasury made large cash outlays to fund investments in financial institutions and certain other firms, and the estimated subsidy costs of those transactions were recorded in the budget. Therefore, the Treasury's net borrowing needs at the outset of the program were significantly greater than the costs recorded in the budget. As of

November 18, 2010, the Treasury had disbursed \$389 billion to TARP participants, and \$166 billion of that funding remained outstanding. Future dividend and interest payments to the Treasury and the proceeds from the sale of its investments in preferred stock are expected to reduce the Treasury's borrowing needs over the next several years. (CBO now estimates that the net cost of the program will be about \$25 billion.)

Purchases of Mortgage-Backed Securities. In September 2008, the Treasury announced that it would purchase MBSs from private holders to promote stability in the mortgage market and lessen upward pressure on mortgage rates. The Treasury needed to borrow to finance the initial purchases of such securities, and it will receive cash payments of interest and principal while holding those securities; at the time of the purchase, however, the budget reflected only the estimated net earnings (which were subsequently updated and now total about \$14 billion on a present-value basis) over the life of the program. In 2008 and 2009, the Treasury made net disbursements of \$5 billion and \$171 billion, respectively, for the MBS program. In 2010, net inflows related to MBS purchases yielded more than \$3 billion in cash to the Treasury. CBO projects annual cash inflows of about \$9 billion per year through 2020.

Supplementary Financing Program

The SFP was established in September 2008 to help the Federal Reserve conduct monetary policy and stabilize the financial system during the financial crisis.¹⁰ The Treasury auctioned CMBs as part of its normal operations and placed the cash raised into an account at the Federal Reserve. That account held more than \$550 billion in cash at its peak in November 2008, but the balance had dropped to about \$200 billion by the end of 2010. The deposits that built up the SFP account added to the Treasury's borrowing requirements at the time, but the decline in the balance has reduced those requirements more recently; none of those cash flows affected the budget deficit. CBO anticipates that the SFP will be phased out in 2011.

9. The Dodd-Frank Wall Street Reform Act of 2010 (P.L. 111-203) reduced the Treasury's authority under the TARP to \$475 billion. For more information on the TARP, see Congressional Budget Office, *Report on the Troubled Asset Relief Program—November 2010* (November 2010).

10. For more information, see Federal Reserve Bank of New York, “Statement Regarding Supplementary Financing Program,” www.ny.frb.org/markets/statement_091708.html.

Table 1-3.**Holders of Public Debt at the End of Fiscal Years 2005 and 2010**

	2005		2010	
	Billions of Dollars	Percentage of Total	Billions of Dollars	Percentage of Total
Domestic Holders				
Individuals	501	10.9	1,083	12.0
Federal Reserve	736	16.0	812	9.0
Pension and retirement funds	311	6.8	775	8.6
Mutual funds	238	5.2	603	6.7
State and local governments	448	9.8	509	5.6
Other	367	8.0	977	10.8
Subtotal	2,602	56.7	4,759	52.8
Foreign Holders^a				
China	306	6.7	884	9.8
Japan	673	14.7	865	9.6
United Kingdom	96	2.1	459	5.1
Oil exporters ^b	66	1.4	231	2.6
Brazil	28	0.6	165	1.8
Other	822	17.9	1,656	18.4
Subtotal	1,990	43.3	4,259	47.2
Total	4,592	100.0	9,018	100.0

Source: Congressional Budget Office based on Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States: Flows and Outstandings*, December 9, 2010 (for domestic holders and total foreign holders), and Treasury International Capital Survey, November 16, 2010 (for individual foreign countries).

- a. Data for foreign countries include holdings by individuals, businesses, and government entities. Data for individual foreign countries were estimated by the Federal Reserve on the basis of its survey of holdings.
- b. Includes Algeria, Bahrain, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Oman, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Other Factors Affecting the Treasury's Borrowing

A few government agencies other than the Treasury issue their own debt; the Tennessee Valley Authority accounts for almost all of the \$24 billion in non-Treasury debt included in debt held by the public at the end of 2010.¹¹ Agencies' borrowing affects the Treasury's borrowing needs; all other things being equal, if agencies can borrow on their own behalf, then the Treasury does not need to do so. Other factors that the Treasury weighs when deciding how much to borrow include reductions (or increases) in its cash balances, changes in the amount of checks outstanding, and changes in accrued interest costs

that are included in budget outlays but have not yet been paid.¹²

Ownership of Federal Debt Held by the Public

Investors consider federal debt to be an attractive investment because they view it as being essentially free of any risk of default. Treasury securities also are valued for their liquidity—they can be bought and sold quickly and in large quantities without affecting their price. Domestic investors owned about \$4.8 trillion of debt held by the public outstanding at the end of 2010, and foreign investors owned about \$4.3 trillion (see Table 1-3).

11. Fannie Mae and Freddie Mac, both of which are in federal conservatorship, also are permitted to issue debt independently of the Treasury.

12. Unlike most other costs in the budget, interest costs are recorded as outlays when they accrue, not when they are paid.

Domestic Ownership. Domestic holdings of U.S. public debt have increased substantially in the past five years, from about \$2.6 trillion in 2005 to \$4.8 trillion in 2010. Individuals, including personal trusts and estates, own almost \$1.1 trillion in Treasury securities, about 12 percent of the total.

A significant amount of federal debt is held by the Federal Reserve—the nation’s central bank and an independent entity within the government that is responsible for conducting monetary policy, among other activities. The Federal Reserve typically has implemented monetary policy by buying and selling securities issued by the Treasury in the open market (or by borrowing or lending with such securities as collateral).¹³ When the Federal Reserve wants to lower interest rates, it purchases Treasury securities (or lends funds with Treasury securities as collateral), which raises the amount of funds available to banks for lending. Conversely, when the Federal Reserve wants to raise interest rates, it sells some of its holdings of securities (or borrows funds with such securities as collateral). At the end of 2010, the Federal Reserve held \$812 billion in outstanding Treasury securities, accounting for about 9 percent of debt held by the public. In 2005, it held \$736 billion—a slightly smaller amount than in 2010 but a substantially higher percentage of the total (16 percent).

Other major holders of debt include pension and retirement funds, mutual funds, and state and local governments. Mutual funds’ holdings have grown the most rapidly of that group over the past five years, more than doubling from \$238 billion in 2005 to \$603 billion in 2010. Pension funds also boosted their holdings of Treasury securities, from \$311 billion to \$775 billion over the same period. State and local governments increased their holdings from \$448 billion to \$509 billion.

Foreign Ownership. Foreign holdings of U.S. debt also have increased substantially in the past five years, from about \$2.0 trillion in 2005 to \$4.3 trillion in 2010. As a percentage of debt held by the public, foreign holdings have edged up, from about 43 percent to about 47 percent, during that period. Overall, the central banks and private entities in China, Japan, and the United Kingdom

are the largest foreign investors, holding more than \$2.2 trillion in Treasury securities, or nearly 25 percent of outstanding debt held by the public. Investors in China now hold significantly more debt than in earlier years, and the share of debt held by entities in Japan has declined noticeably. (Information about foreign holders of Treasury debt should be viewed as approximate. In many cases, it is impossible to accurately determine the home country of a foreign holder of U.S. securities because intermediaries may be involved in the custody, management, purchase, or sale of the securities.)

U.S. Debt Compared with That of Other Countries

Currently, no measure of debt for other countries completely mirrors U.S. debt held by the public. However, a calculation by the Organisation for Economic Co-operation and Development (OECD) of general government debt net of financial liabilities, although not a perfect equivalent to U.S. debt held by the public, historically has been similar to that measure.¹⁴ Among the 33 OECD member countries, the 10 countries with the largest debt as a percentage of GDP had debt at the end of calendar year 2009 that ranged from about 40 percent of GDP for Iceland to more than 100 percent for Japan (see Figure 1-6). By comparison, the U.S. debt, as reported by the OECD, was 60 percent of GDP at the end of calendar year 2009—similar to that found in Hungary and Portugal.¹⁵

At the end of 2000, the U.S. debt—as calculated by the OECD—was equal to 35 percent of GDP, about 25 percentage points lower than in 2009. The increase in U.S. debt relative to GDP between 2000 and 2009 is larger than the growth seen in the United Kingdom (17 percentage points of GDP), France (16 percentage points), or Germany (14 percentage points) but smaller than increases in Japan (48 percentage points) and Portugal (30 percentage points).

13. For information on other duties of the Federal Reserve, see Box 1 in Congressional Budget Office, *The Budgetary Impact and Subsidy Costs of the Federal Reserve’s Actions During the Financial Crisis* (May 2010). That study also discusses the other methods the Federal Reserve has used to conduct monetary policy during the recent financial crisis and severe recession.

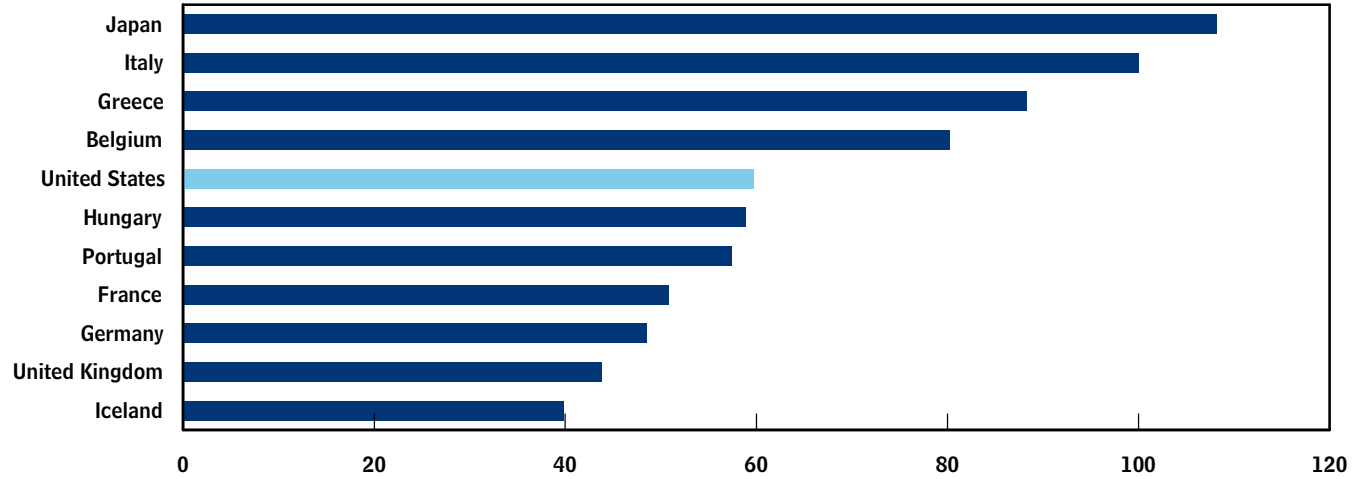
14. For more information on general government debt net of financial liabilities, see Organisation for Economic Co-operation and Development, “EO Sources—Notes to statistical annex tables 25–33: Fiscal balances and public indebtedness,” Annex Table 33, www.oecd.org/document/25/0,3343,en_2649_34109_33702745_1_1_1_1,00.html.

15. U.S. debt held by the public was 53 percent of GDP at the end of fiscal year 2009. Using the OECD’s measure of debt—general government debt net of financial liabilities—that share was 60 percent at the end of calendar year 2009.

Figure 1-6.

Debt of Selected Countries at the End of Calendar Year 2009

(Percentage of gross domestic product)



Source: Congressional Budget Office based on data from the Organisation for Economic Co-operation and Development.

Other Measures of Federal Debt

A number of other measures of federal debt are used for various purposes. Two important purposes are to assess the impact of borrowing by the federal government on financial markets and to assess the government's overall financial condition.

Regarding the first purpose, assessing the impact of the government's borrowing on financial markets is necessary for determining how the government is affecting the availability of funds for other borrowers. One measure of federal borrowing—**debt held by the public**—provides a straightforward assessment of that borrowing and captures most of the impact on the availability of funds for other borrowers; it is roughly equivalent to the sum of all previous annual budget deficits minus surpluses (see Chapter 1). All else being equal, an increase in the government's borrowing reduces the funds available for others, putting upward pressure on interest rates and reducing private investment.

Another measure—**debt held by the public net of financial assets**—is a more complicated measure; it reflects the fact that when the government lends money or acquires financial assets, such as debt and equity securities issued by private firms, those funds flow into investment activities. Therefore, that measure subtracts from debt held by the public the value of assets the government has acquired through its various lending activities and through efforts to address the recent financial crisis. Debt held by the public net of financial assets provides a more comprehensive picture of the government's financial condition and its overall impact on credit markets than does debt held by the public. Calculating that measure is not straightforward, however, because neither the universe of such assets nor the method for valuing them is well defined.

Another important purpose for which measures of debt are helpful is to assess the government's overall financial condition, taking into account not only debt that the

government has already incurred (and the assets it has purchased) but also commitments the government has made for the future. Debt held by the public, with or without an adjustment for the government's financial assets, does not account for future obligations. Assessing the government's future financial status requires additional information. Measures that have been used for that purpose include gross federal debt and debt subject to limit; however, two other measures—projected changes in debt held by the public as a share of gross domestic product and the fiscal gap—provide a clearer picture of the government's future obligations.

Gross debt equals federal debt held by the public plus Treasury securities held by federal trust funds and other government accounts. That measure is not a good indicator of the government's future obligations because the value of Treasury securities held by trust funds and other government accounts measures only some of the commitments the government has made for the future, and it includes some amounts that may not represent future commitments at all. Moreover, those securities represent internal transactions of the government and thus have no direct effect on credit markets.

Debt subject to limit is the amount of gross federal debt subject to the ceiling on the issuance of debt established by law. It differs in only small ways from gross federal debt. It too includes internal transactions of the government that have no direct effect on credit markets and is not a meaningful measure of the government's future commitments.

Measures that explicitly account for the government's future fiscal condition are better indicators of that condition than are either gross debt or debt subject to limit. One useful barometer is **projections of changes in debt held by the public relative to gross domestic product**; such projections indicate whether the government's

participation in credit markets is expected to grow faster or slower than economic output. Another useful gauge is the **fiscal gap**, which measures the immediate change in spending or revenues that would be necessary to make the projected debt-to-GDP ratio the same at the end of a given period as at the beginning of the period. The fiscal gap quantifies the projected long-term shortfall of revenues relative to outlays in present-value terms—that is, as a single number that describes a set of future flows in terms of an equivalent lump sum received or spent today. Those two measures are not addressed in this report but are used extensively in other Congressional Budget Office publications.¹

Debt Held by the Public Net of Financial Assets

Until a few years ago, financial assets held by the government were relatively small and largely composed of the Treasury's cash balances, loans made by various federal credit programs, and private equities owned by the National Railroad Retirement Investment Trust. During the past five years, however, the volume of direct loans made to students—which represent an asset to the government in the form of future payments of principal and interest—has more than doubled, and it is projected to expand greatly in the next decade. In addition, the government's holdings of financial assets grew substantially during the recent financial crisis.

The assets the government has acquired affect its financial position, and the effect can be viewed in several ways. If those assets are sold, the proceeds can be used to pay down a portion of the federal debt. If, instead, the government retains those assets, they will generate inflows from interest, dividends, and repayments of principal that will reduce the government's future need to borrow.

Because federal asset holdings have increased relative to debt held by the public, debt held by the public net of financial assets has taken on increased importance as a measure of the government's financial position. In total, at the end of 2010, the government held financial assets with an estimated value of more than \$1 trillion.² Subtracting that amount from the \$9.0 trillion in debt held by the public results in debt held by the public net of

financial assets of about \$8.0 trillion. Debt held by the public is currently equal to about 62 percent of GDP, and debt net of financial assets amounts to about 55 percent of GDP. A difference of 5 to 8 percentage points between the two measures persists through 2020 in CBO's most recent baseline projections (see Table 2-1).

Cash

One of the largest financial assets that the Treasury currently holds is cash. The Treasury's cash flows fluctuate during the year according to the timing of tax collections and spending; as a result, the Treasury maintains deposits of varying amounts at the Federal Reserve and in banks throughout the country. Between 2000 and 2007, the Treasury ended the fiscal year with an average balance of about \$50 billion. However, balances have been much higher over the past three years because, since September 2008, the Treasury has deposited additional funds with the Federal Reserve to help it conduct monetary policy and stabilize the financial system. The balance for the Treasury's deposits through that program—known as the Supplementary Financing Program—reached a high of more than \$550 billion in November 2008. As of the end of 2010, the SFP had a balance of \$200 billion and the Treasury's total operating cash balance was \$310 billion. CBO expects that the SFP will be eliminated by the end of 2011.

Credit Programs

The value of loans, guarantees, and asset purchases of federal credit programs at the end of 2010 totaled \$712 billion. That amount represents the present value of the expected future cash flows from those assets and obligations. For loan guarantees—such as those made by the Federal Housing Administration—the present value is based on expected income from fees to be received net of payouts to cover losses from defaults. The value of direct loans and asset purchases totaled \$745 billion at the end of 2010; that amount was partially offset by net liabilities of \$32 billion from guaranteed loan programs.

1. See, for example, Congressional Budget Office, *The Long-Term Budget Outlook* (June 2010, revised August 2010).

2. That total does not include assets held by the Federal Reserve. Because of its need for flexibility and independence in setting monetary policy, the Federal Reserve is not part of the executive branch but is considered an independent entity within the government; its receipts and expenditures are not included directly in the federal budget, although it remits its excess earnings to the Treasury.

Table 2-1.**CBO's Projections of Debt Held by the Public Net of Financial Assets, 2010 to 2020**

	Actual 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
In Billions of Dollars											
Debt Held by the Public	9,018	9,958	10,742	11,373	11,902	12,495	13,165	13,837	14,497	15,232	16,024
Financial Assets (Net of liabilities)											
Treasury's operating cash balance	310	40	40	40	40	40	40	40	40	40	40
Credit programs											
Department of Education programs	341	453	564	670	769	868	964	1,060	1,159	1,263	1,374
Mortgage-backed securities	173	164	156	148	141	134	127	121	115	109	103
Troubled Asset Relief Program	122	97	82	67	52	37	22	7	0	0	0
Other	77	95	118	134	144	153	156	160	168	177	185
Subtotal, credit programs	712	809	921	1,019	1,106	1,192	1,269	1,347	1,442	1,549	1,663
National Railroad Retirement Investment Trust	21	19	18	17	15	14	13	12	10	9	8
Other ^a	-29	-29	-29	-29	-29	-29	-29	-29	-29	-29	-29
Total	1,014	840	950	1,046	1,132	1,217	1,293	1,370	1,463	1,569	1,681
Debt Held by the Public Net of Financial Assets	8,003	9,119	9,793	10,327	10,770	11,279	11,873	12,467	13,034	13,663	14,343
As a Percentage of Gross Domestic Product											
Debt Held by the Public	62.2	65.7	68.1	68.1	67.0	67.1	67.5	67.8	68.1	68.6	69.2
Debt Held by the Public Net of Financial Assets	55.2	60.2	62.1	61.8	60.6	60.5	60.9	61.1	61.2	61.5	61.9

Sources: Congressional Budget Office; Department of the Treasury.

a. Includes other cash and monetary assets (mostly related to transactions with the International Monetary Fund) offset by liabilities such as interest accrued but not yet paid to the public.

Most of the government's direct loans are made by the Department of Education to students pursuing post-secondary education. At the end of 2010, based on data reported by the Department of the Treasury, the estimated value of student loans outstanding was \$341 billion. CBO projects that, with the recent expansion of that program in the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152), those assets will grow to nearly \$1.4 trillion by the end of 2020.

To help promote stability in the mortgage market and lessen upward pressure on mortgage rates, from September 2008 to December 2009 the Treasury purchased mortgage-backed securities issued by Fannie Mae and Freddie Mac in the open market. Those securities, which have various maturity dates, generate payments of interest and principal. CBO assumes that the Treasury will hold those securities until they mature. Overall, the Treasury purchased more than \$200 billion in such securities; the

present value of the remaining holdings was \$173 billion at the end of 2010.

As part of its activities related to the recent financial crisis, the Treasury also acquired numerous assets through the Troubled Asset Relief Program. Such assets were valued by the Treasury (using a present-value calculation that includes an adjustment for market risk) at \$122 billion at the end of 2010. The assets were obtained through three kinds of transactions:

- Capital purchases and other support for financial institutions;
- Financial assistance to automakers and related businesses; and
- Investment partnerships designed to increase liquidity in the securitization markets.

The three largest sets of assets outstanding are preferred stock and warrants obtained in the Capital Purchase Program, securities of the American International Group, and securities of the automotive industry.³ The Treasury expects that a large share of those assets will eventually be repurchased by the issuers or sold to other market participants.

The outstanding value of assets related to other credit activities is projected to increase from \$77 billion in 2010 to \$185 billion in 2020. Those totals include other direct loan programs (such as those for rural areas and small businesses) and guaranteed loan programs (such as those for housing).

Gross Federal Debt

In addition to selling securities to the public, the Treasury issues securities to various accounts of the federal government. Gross federal debt consists of the debt held by the public plus debt issued to such government accounts.

Trust funds hold about 90 percent of the debt issued to government accounts. Although trust funds are designated as such by law, there is no substantive difference between them and other types of funds. Those other types include special funds (such as the fund the Department of Defense uses to finance its health care program for military retirees), revolving funds (such as the Federal Employees' Group Life Insurance fund), and public enterprise funds (such as the Postal Service fund). All of the major trust funds in the budget and many other government funds invest in special, nonmarketable Treasury securities known as the government account series.

At the end of 2010, gross federal debt totaled \$13.5 trillion—about \$9.0 trillion in debt held by the public and \$4.5 trillion in debt held by government accounts. CBO projects that, under current law, gross federal debt will increase in every year of the 2011–2020 period, reaching \$23.1 trillion in 2020 (see Table 2-2). That increase stems primarily from the projected growth in debt held by the public, which is projected to exceed \$15.2 trillion by the end of that year.

3. For more information on the TARP, see Chapter 1 of this report and Congressional Budget Office, *Report on the Troubled Asset Relief Program—November 2010* (November 2010).

The largest balances among the government accounts are in the two Social Security trust funds—the Old-Age and Survivors Insurance and Disability Insurance trust funds. By the end of 2010, those trust funds had accrued close to \$2.6 trillion; in CBO's projections, that combined balance rises to \$3.8 trillion by the end of 2020 (see Table 2-3). In addition, the retirement funds for federal civilian and military employees held a combined \$1.1 trillion in government account securities at the end of 2010; those balances will increase to slightly more than \$2 trillion over the next 10 years, CBO projects. By the end of 2020, the total balance of all trust funds will climb to more than \$6 trillion, and the total held by all government accounts will reach \$7 trillion.

Because the trust funds are part of the federal government, transactions between them and the Treasury are intragovernmental and have no net effect on federal borrowing from the public or on the total budget. Different sorts of transactions occur: Any surplus cash flow during the year from the activities of a program with a trust fund is retained by the Treasury, and the trust fund is credited with a corresponding amount of nonmarketable Treasury securities. The Treasury then uses the cash to finance the government's ongoing activities. When a trust fund's expenses exceed its cash income, the agency administering the trust fund redeems its Treasury securities for cash as needed; the Treasury must obtain that cash from tax revenues or other sources of income or by borrowing from the public. In addition, most securities in the government account series earn interest at rates similar to those on publicly issued debt, and the Treasury issues additional debt to the trust funds in the amount of the interest payments. However, the issuance of the securities, the payments of interest, and any other transactions between the Treasury and the trust funds have no net effect on the budget.

Federal trust funds, then, are essentially an accounting mechanism. The balances in the trust funds (in the form of government securities) are assets to the individual programs (such as Social Security) but liabilities to the rest of the government. The resources to redeem government securities in the trust funds and thereby pay for benefits or other spending in some future year must be generated from taxes, income from other government sources, or borrowing from the public in that year. Trust funds have an important legal meaning in that their balances are a measure of the amounts that the government has the legal authority to spend for certain purposes under current

Table 2-2.**CBO's Projections of Federal Debt, 2010 to 2020**

(Billions of dollars)

	Actual										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Debt Held by the Public at the Beginning of the Fiscal Year	7,545	9,018	9,958	10,742	11,373	11,902	12,495	13,165	13,837	14,497	15,232
Changes to Debt Held by the Public											
Deficit	1,294	1,066	665	525	438	507	585	579	562	634	685
Other means of financing	<u>179</u>	<u>-126</u>	<u>118</u>	<u>107</u>	<u>90</u>	<u>86</u>	<u>86</u>	<u>93</u>	<u>99</u>	<u>101</u>	<u>107</u>
Debt Held by the Public at the End of the Fiscal Year	9,018	9,958	10,742	11,373	11,902	12,495	13,165	13,837	14,497	15,232	16,024
Debt Held by Government Accounts	<u>4,509</u>	<u>4,638</u>	<u>4,803</u>	<u>5,002</u>	<u>5,236</u>	<u>5,510</u>	<u>5,796</u>	<u>6,095</u>	<u>6,413</u>	<u>6,740</u>	<u>7,062</u>
Gross Federal Debt	13,527	14,596	15,545	16,376	17,138	18,005	18,961	19,932	20,911	21,972	23,086
Debt Subject to Limit ^a	13,511	14,581	15,530	16,361	17,123	17,992	18,948	19,919	20,898	21,960	23,073
Memorandum:											
Debt Held by the Public as a Percentage of Gross Domestic Product	62.2	65.7	68.1	68.1	67.0	67.1	67.5	67.8	68.1	68.6	69.2

Source: Congressional Budget Office.

a. Differs from gross federal debt primarily because most debt issued by agencies other than the Treasury and the Federal Financing Bank is excluded from the debt limit. The current limit is \$14,294 billion.

law, but they have little relevance in an economic or budgetary sense.

More than 200 trust funds exist in the federal budget, but the bulk of holdings of government securities is concentrated in just a few funds. Most of the difference between gross federal debt and debt held by the public is that the former includes balances held by the Social Security trust funds. Those balances reflect a decision by policymakers to set the payroll tax dedicated to Social Security over the past few decades such that the program's revenues would be greater than the program's outlays in anticipation of rising benefit costs as the baby-boom generation retires. The debt held by those trust funds measures the amount by which Social Security revenues have exceeded outlays in the past, but it does not measure the program's future financial burden. Even with the securities held by the trust funds and with a dedicated future stream of revenues, by 2039 those resources will be insufficient to pay the full benefits that will accrue under current law, CBO projects. At the same time, the balances in the Social Security trust funds have significant legal implications: By law, total Social Security benefits cannot exceed

amounts available in the trust funds, and the benefits projected to be paid will be smaller in 2039 and beyond than the benefits specified in law.⁴

Beyond Social Security, the amount of government debt held by trust funds and other government accounts bears even less of a relationship to the government's future financial burdens: For example, the Medicare program holds little government debt relative to its expected future costs.

Debt Subject to Limit

The Congress has traditionally placed a limit on the amount of debt the Treasury can issue. Before World War I, the Congress generally had to approve each separate debt issue. Since the passage of the Second Liberty Bond Act in 1917, the limit has gradually evolved into an overall dollar ceiling on debt. The modern concept of debt subject to limit was created in 1941, when the

4. See Congressional Budget Office, *Social Security Policy Options* (July 2010).

Table 2-3.**CBO's Projections of Trust Fund Balances, 2010 to 2020**

(Billions of dollars)

	Actual										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Social Security	2,586	2,675	2,675	2,787	2,916	3,055	3,200	3,344	3,490	3,629	3,757
Civilian Retirement ^a	797	816	835	855	876	897	920	944	970	997	1,026
Military Retirement	282	330	382	439	501	569	644	725	813	909	1,012
Medicare	350	314	294	278	269	268	264	265	273	278	279
Unemployment Insurance	19	24	27	29	31	41	50	61	75	95	114
Highway and Airport	37	30	18	7	-3	-13	-22	-30	-37	-45	-52
Other ^b	86	87	88	90	91	93	96	99	102	105	108
Total	4,157	4,276	4,320	4,485	4,680	4,912	5,152	5,408	5,685	5,968	6,244
Memorandum:											
Railroad Retirement (Non-Treasury holdings) ^c	21	20	19	18	17	16	15	13	12	11	9

Source: Congressional Budget Office.

- Includes the Civil Service Retirement and Disability Fund and the Employees and Retired Employees Health Benefits Fund.
- Primarily the federal employees' life insurance fund, Superfund, and various insurance trust funds for veterans.
- The Railroad Retirement and Survivors' Improvement Act of 2001 established an entity, the National Railroad Retirement Investment Trust, that is allowed to invest in securities not issued by the Treasury, such as stocks and corporate bonds. The trust holds a small amount of Treasury securities, included in the "Other" category.

Congress placed a limit on the total amount of federal debt that could be outstanding at any given time. Since then, the Congress has passed numerous increases to the debt limit—commonly known as the “debt ceiling”—some of which have been temporary and many of which have been permanent.

What the Debt Limit Covers

Debt subject to limit includes virtually all of gross federal debt. It excludes debt issued by other federal agencies that the Treasury does not control and that generally lack the full faith and credit of the U.S. government (such as securities issued by the Tennessee Valley Authority). It also excludes debt issued by Fannie Mae, Freddie Mac, and the Federal Financing Bank (FFB)—an arm of the Treasury created in 1973 and authorized to issue up to \$15 billion of its own debt. (Debt issued by Fannie Mae and Freddie Mac is also not included in other standard measures of federal debt; see Box 1-1 in Chapter 1).

Options for the Treasury When Debt Approaches the Limit

CBO estimates that the debt ceiling, which was raised to \$14.294 trillion in February 2010, will be reached in the next several months. At that point, barring Congressional

action to raise the ceiling, the Treasury would have to stop issuing additional debt for a period of time and, instead, use alternative strategies for managing its cash and debt to continue to fund government activities. Because the government will be running a significant deficit in 2011, such strategies will allow the government to continue operating for only a limited time without further borrowing.

Suspending Sales of Nonmarketable Securities. One of the first actions the Treasury has often taken when the debt limit was about to be reached has been to suspend the sale of securities in the state and local government series.⁵ That action does not immediately clear any room under the debt ceiling and has virtually no impact on the markets for public debt because securities in the state and local government series are not sold or traded in secondary markets. However, suspending sales of those securities removes some uncertainty about the future path of debt because the timing and amounts of issuances to state and local governments is difficult to predict.

5. For more information on state and local government securities, see Chapter 1.

Trimming or Delaying Auctions of Marketable Securities.

In the weeks leading up to a point at which the debt would reach the limit, the Treasury may pare back auction amounts for marketable securities or postpone one or more auctions. Although the delay of a small number of auctions in the past has not led to significant increases in the cost of borrowing, continuous delays could adversely affect the willingness of credit markets to absorb the issuance of debt.

Suspending Issuance of Maturing Cash Management Bills in the Supplementary Financing Program. The Treasury currently has \$200 billion outstanding in cash management bills allocated to the SFP. If total borrowing approached the debt limit, the Treasury could decide not to refinance those bills when they mature. That option would give the Treasury up to an additional \$200 billion in borrowing room.

Suspending Flows and Redeeming Securities in Government Accounts. When the debt limit is close to being reached, the Treasury has the option to delay the addition of deposits to certain accounts and to redeem securities in three funds: the Thrift Savings Plan's G Fund, the Civil Service Retirement and Disability Fund (CSRDF), and the Exchange Stabilization Fund (ESF).⁶ Because the G Fund is invested in 1-day securities, the Secretary of the Treasury is able, at any time, to disinvest up to the full balance of the fund (that is, to withdraw or reduce the balance); that balance was \$124 billion at the end of 2010. The CSRDF has special rules regarding balances and how they can be disinvested;

6. The TSP is a retirement program for federal employees similar to a private-sector 401(k) plan; the G Fund is one component of the TSP and is solely invested in Treasury securities. The CSRDF is the trust fund for federal employees' retirement plans. The ESF is a fund controlled by the Treasury for the purpose of stabilizing exchange rates.

the amount that can be redeemed early cannot exceed the amount of benefit payments expected during the period until a new debt ceiling is enacted. The Treasury also can suspend investment of all additional receipts to the fund if they will cause a breach of the debt limit. The ESF currently holds \$20 billion in Treasury securities, which the Treasury can decide not to reinvest when they mature. After the debt limit has been raised, the Treasury must restore any losses of interest (as well as principal) to the G Fund and CSRDF but has no such obligation to the ESF.

Swapping Debt with the Federal Financing Bank. Debt issued by the FFB, which cannot exceed \$15 billion, is not subject to the debt limit.⁷ The Treasury can swap securities that are counted toward the debt limit for securities issued by the FFB, thus decreasing the debt subject to limit, and has used that option in the past. About \$10 billion in outstanding FFB securities are currently held by the CSRDF; issuing an additional \$5 billion in FFB securities to that fund in exchange for Treasury securities would currently give the Treasury about \$5 billion of additional room for borrowing from the public.

Consequences of Having a Limit on Debt

By itself, setting a limit on the debt is an ineffective means of controlling deficits because the decisions that necessitate borrowing are made through other legislative actions. By the time an increase in the debt ceiling comes up for approval, it is too late to avoid paying the government's pending bills without incurring serious negative consequences. However, because increases in the debt limit have been essential, the process of considering such increases tends to bring debt levels to the forefront of policy debate.

7. For more information on the Federal Financing Bank, see Chapter 3.

Interest Payments and Receipts

The government pays and collects interest in various ways; its net interest outlays are equal to interest paid minus interest received. Net interest outlays are dominated by the interest paid to holders of the debt that the Department of the Treasury issues to the public. The Treasury also issues debt to trust funds and other federal government accounts, but the payment of interest to those accounts is an intragovernmental transaction that has no effect on net interest and no effect on the budget deficit. Other federal accounts also pay and receive interest for a variety of reasons.

Historical and Projected Net Interest Outlays

The federal government's net interest payments depend primarily on interest rates and the amount of debt held by the public. Other factors, such as the rate of inflation and the maturity structure of outstanding securities, also affect interest costs (for example, long-term bonds generally carry higher interest rates than do short-term bills). Interest rates are determined by a combination of market forces and the policies of the Federal Reserve. Debt held by the public is mostly determined by cumulative budget deficits, which reflect policy choices about spending and revenues, economic conditions, and other factors. The maturity structure of the debt is determined by the borrowing policy implemented by the Treasury, which issues a variety of short- and long-term debt securities (as described in Chapter 1).

Historical Trends in Net Interest Outlays

Net interest outlays as a percentage of gross domestic product have fluctuated over the past 40 years, from a low of 1.3 percent to a high of 3.3 percent (see Figure 3-1). Through most of the 1970s, net interest totaled no more than 1.5 percent of GDP. At the end of that decade, however, the growing amount of debt relative to the size of the economy and higher real (inflation-adjusted) interest

rates began to boost interest costs; by 1985, net interest outlays as a percentage of GDP were twice as large as they had been in the mid-1970s. For the following decade, net interest payments remained at about 3 percent of GDP, but narrower budget deficits (and then surpluses) and lower interest rates for many securities pushed that figure down in the late 1990s. Net interest outlays continued to decline as a percentage of GDP in the early 2000s, returning to a level similar to that in the early 1970s.

Although debt held by the public has surged in the past few years to its highest level relative to GDP since the early 1950s, net interest outlays have remained low relative to GDP because interest rates on Treasury securities have fallen to remarkably low levels (see Figure 3-2). Rates on 3-month Treasury bills plummeted from an average of almost 5 percent in 2007 to an average of just over 0.1 percent in 2010. Similarly, rates on 10-year Treasury notes and 30-year bonds have dropped from an average of close to 5 percent in 2007 to an average of about 3 percent and 4 percent, respectively, in 2010. As a result, despite the dramatic increase in debt held by the public—from 36 percent of GDP at the end of 2007 to 62 percent at the end of 2010—net interest outlays as a percentage of GDP fell from 1.7 percent in 2007 to 1.3 percent in 2009 and rose only marginally, to 1.4 percent, in 2010.

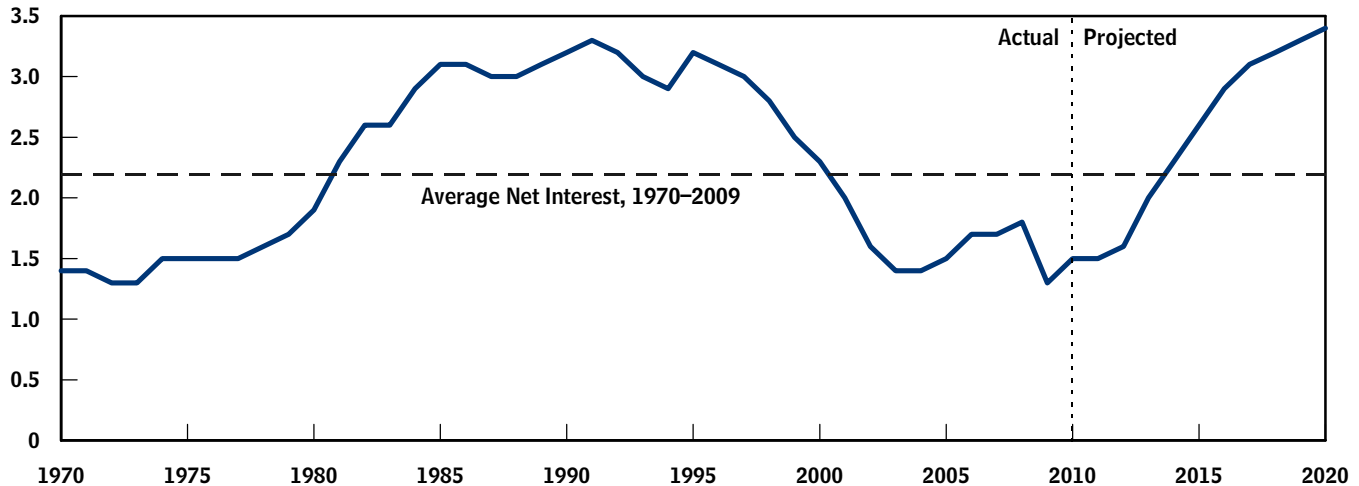
CBO's Baseline Projections

Under the Congressional Budget Office's August 2010 baseline budget projections, which reflect the assumption that current laws and policies affecting the budget will remain unchanged, growing debt and rising interest rates are projected to substantially boost the cost of interest on the government's debt.¹ In those projections, debt held by

1. See Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010).

Figure 3-1.**Net Interest, 1970 to 2020**

(Percentage of gross domestic product)



Source: Congressional Budget Office; historical data are based on information from the Office of Management and Budget.

the public increases to almost 70 percent in 2020. Moreover, interest rates climb from their current levels to levels similar to those in the late 1990s. The rate on 3-month Treasury bills is forecast to increase from an average of about 0.2 percent in 2010 to 5.0 percent in 2016 and then to stay at that rate through 2020. The rate on 10-year Treasury notes is projected to rise from an average of 3.4 percent in 2010 to 5.9 percent in 2016 and to remain there through the end of the decade.

Given those projections, spending on net interest would rise from \$197 billion in 2010 to \$778 billion in 2020 (see Table 3-1). Relative to GDP, net interest outlays would increase to 3.4 percent in 2020, more than double the percentage in 2010 and the highest percentage since 1991 (see Figure 3-1).

Alternative Scenarios

Future interest rates and deficits are uncertain and will be affected by legislative actions, economic developments, and other factors. To illustrate how changes in those variables would affect interest costs, CBO has estimated those costs under different assumptions regarding interest rates and future deficits.²

Higher Interest Rates. Interest rates on government securities that were higher than CBO projects would raise interest outlays on new borrowing and on debt that must be refinanced. If interest rates for all newly issued

Treasury securities were 1 percentage point higher in each year than the rates in the August baseline, net interest payments would be higher in each year of the projection period, CBO estimates, by amounts rising from \$13 billion in 2011 to \$185 billion in 2020. From 2011 through 2020, interest costs would be higher by more than \$1 trillion (see Table 3-2). (Lower interest rates would have the opposite effect.)

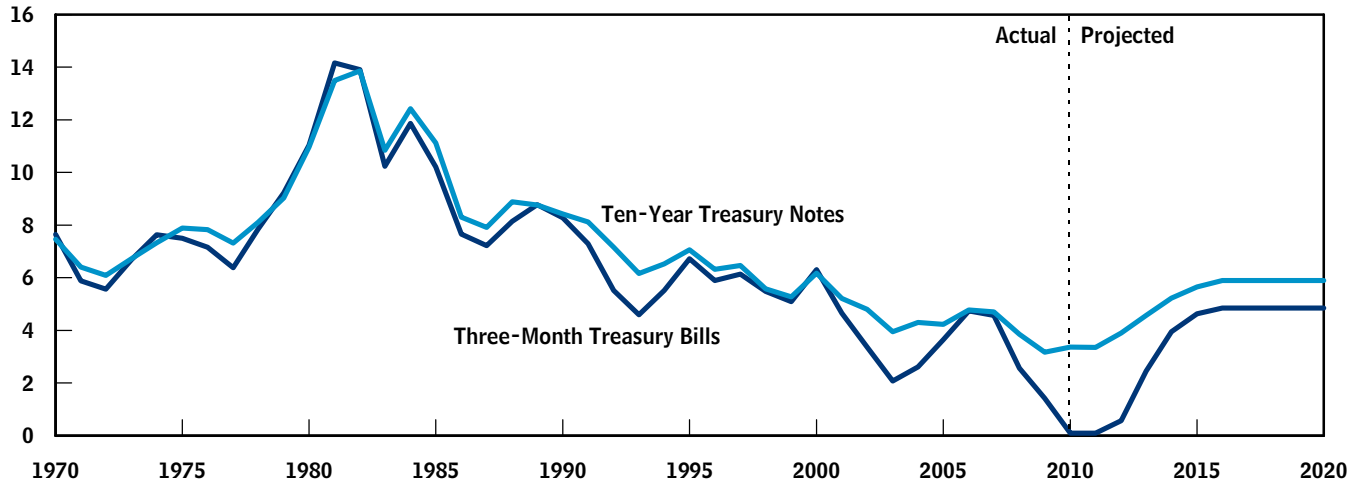
That increase in interest payments would stem from two sources: the cost of applying higher rates to the debt projected in the baseline (the direct effect) and the interest paid on the additional sums borrowed to pay those higher rates. The \$13 billion in additional outlays in 2011 would stem mostly from the direct effect on rates. Of that amount, more than \$8 billion would be attributable to short-term securities and \$4 billion to medium- and long-term securities (including savings bonds and state and local government securities).³ In later years, the

2. The alternative scenarios do not take into account any changes in GDP, inflation, or other economic factors; as a result, revenues and noninterest outlays are unchanged. The interest-rate scenario also does not reflect the effect of higher interest rates on interest-sensitive programs, such as student loans.
3. Changes in interest rates have the greatest impact on shorter-term securities in the first year because those securities will be refinanced much more often in that year than will medium- and long-term securities. Within a given year, all bills outstanding will have to be refinanced at least once.

Figure 3-2.

Interest Rates on Three-Month Treasury Bills and Ten-Year Treasury Notes, 1970 to 2020

(Percent)



Source: Congressional Budget Office; historical data are based on information from the Federal Reserve.

effect of a change in rates would become much more pronounced for medium- and long-term securities. Added interest for those securities would amount to \$605 billion over the period, compared with \$220 billion for short-term securities. The larger deficits generated by the higher interest payments would require the Treasury to borrow additional funds. That extra borrowing would result in further increases in the annual cost of servicing the debt, which would grow to \$50 billion in 2020 and would total \$185 billion over the 10-year period.

Additional Borrowing. If budget deficits were higher than CBO projects, net interest payments also would be higher. (Lower deficits would have the opposite effect.) To illustrate the effect of higher deficits (and therefore higher debt) on interest costs, CBO estimated the impact of two different increases in the government's borrowing.

First, CBO examined a \$100 billion increase in borrowing in 2011. That borrowing also would boost interest outlays in the same year by \$1 billion, excluding any potential effects on interest rates. The effect of that additional borrowing would increase interest outlays by a cumulative total of \$43 billion from 2011 through 2020. (Costs in later years would stem from the compounding effect of increasing the debt in 2011.)

Second, the agency calculated the effect on interest payments of borrowing that was \$100 billion greater in each year of the projection period (excluding additional interest costs). That borrowing would lead to additional interest outlays of \$272 billion over the 10-year period, if interest rates were not affected.

Gross Interest on Treasury Debt Securities

In 2010, interest paid by the Treasury on all of its debt issuances totaled \$413 billion (see Table 3-1). Nearly half of that total represents payments to other entities (such as trust funds) within the federal government; the remainder is paid to owners of Treasury debt issued to the public. CBO projects that, under current law, gross interest will exceed \$1.1 trillion by 2020; the majority of that growth stems from increased interest paid on debt held by the public, which is projected to almost quadruple under current law during the coming decade.

Interest Received by Trust Funds

Federal trust funds and other government accounts hold about \$4.5 trillion in Treasury securities; more than 90 percent of that total is held by trust funds. Similar in composition to debt held by the public, the securities held by trust funds and other government accounts

Table 3-1.**CBO's Baseline Projections of Federal Interest Outlays, 2010 to 2020**

(Billions of dollars)

	Actual										Total		
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2011-2015	2011-2020
Gross Interest on Treasury Debt Securities ^a	413	438	463	543	637	739	835	915	995	1,070	1,149	2,820	7,783
Interest Received by Trust Funds													
Social Security	-119	-116	-114	-116	-122	-130	-140	-152	-163	-175	-186	-598	-1,415
Other trust funds ^b	-67	-67	-55	-59	-52	-54	-55	-55	-61	-65	-70	-287	-593
Subtotal	-186	-183	-169	-174	-174	-184	-195	-206	-224	-240	-256	-884	-2,007
Other Interest ^c	-28	-30	-35	-42	-52	-63	-74	-85	-95	-104	-114	-221	-693
Other Investment Income ^d	-2	*	*	*	-1	-1	-1	-1	-1	*	*	-2	-5
Total, Net Interest	197	225	259	326	410	492	564	623	676	726	778	1,712	5,079

Source: Congressional Budget Office.

Note: * = between -\$500 million and zero.

- Gross interest is the total interest paid by the Treasury; it does not include interest costs on debt issued by agencies other than the Treasury (primarily the Tennessee Valley Authority).
- Mainly the Civil Service Retirement, Military Retirement, Medicare, and Unemployment Insurance trust funds.
- Primarily interest from the financing accounts for federal credit programs.
- Earnings on private investments by the National Railroad Retirement Investment Trust.

consist of bills, notes, bonds, inflation-protected securities, and zero-coupon bonds. However, the interest paid on those securities has no net budgetary impact because it is credited to accounts elsewhere in the budget.

In 2010, trust funds were credited with \$186 billion of such intragovernmental interest, CBO estimates, mostly for the Social Security trust funds and the Civil Service Retirement and Disability Fund (see Table 3-1). Over the 2011–2020 projection period, CBO estimates, the trust funds' interest receipts will total about \$2 trillion.

Other Interest

Although federal net interest outlays are dominated by interest on the Treasury's borrowing from the public, the government also pays and receives interest from other transactions. The federal budget includes about 50 accounts that reflect those interest payments and collections. Collections of interest are shown in the budget as negative outlays—that is, as offsets to spending. Some of those 50 accounts have no net effect on the budget because they are intragovernmental and reflect payments or receipts from other federal budget accounts.

Overall, the government receives more interest in the category of “other interest” than it pays out, primarily because of interest received from nonbudgetary financing accounts, which track the cash flows of credit programs. Net receipts to accounts in that category have risen from more than \$7 billion in 2006 to \$15 billion in 2009 and to more than \$28 billion in 2010 (see Table 3-3). CBO projects that those receipts will continue to climb, surpassing \$100 billion by 2019. Most of the projected increase stems from larger payments of interest from credit financing accounts, particularly payments from the financing accounts for the federal student loan program.

Interest Paid to and Collected from the Credit Financing Accounts

Under the Federal Credit Reform Act of 1990, the budget shows the subsidy costs of the government's direct loans and loan guarantees rather than the cash flows associated with those activities. The subsidy is the discounted present value of all future cash flows: generally, disbursements and repayments net of default losses in the case of direct loans; and fees, payments for defaults, and recoveries in the case of loan guarantees.

Table 3-2.**Alternative Scenarios for Net Interest Outlays, 2011 to 2020**

(Billions of dollars)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total, 2011- 2020
August 2010 Baseline (Net interest)	225	259	326	410	492	564	623	676	726	778	5,079
Effect of Higher Interest Rates											
Direct Effect of an Increase of 1 Percentage Point in Interest Rates ^a											
Short-term securities	8	17	18	19	21	23	25	27	30	33	220
Medium- and long-term securities ^b	4	23	40	52	61	71	79	86	91	98	605
Treasury inflation-protected securities	*	1	1	2	2	3	3	3	4	4	24
Subtotal	12	40	59	73	84	96	107	116	125	135	849
Debt Service ^c	*	1	2	6	11	17	24	32	40	50	184
Total	13	41	62	79	95	113	131	149	165	185	1,033
Effect of Additional Borrowing											
One-Time Increase in Borrowing of \$100 Billion in 2011	1	2	2	4	4	5	6	6	7	7	43
Annual Increase in Borrowing of \$100 Billion	1	3	7	13	21	29	37	45	54	63	272

Source: Congressional Budget Office.

Note: * = between zero and \$500 million.

a. Costs on the amount of new borrowing and refinancing of maturing securities.

b. Includes savings bonds and securities issued to state and local governments.

c. Additional borrowing needed to cover additional interest costs.

To track those cash flows and reconcile them with subsidy costs that are recorded in the budget, the Treasury created credit financing accounts (see Chapter 1). Although the cash flows for those accounts are not included in the budget totals, they influence the Treasury's borrowing requirements.

How the Accounts Work. For a direct loan made by the government, a financing account receives a subsidy payment from the budget account for that loan program (recorded in the budget as an outlay) and borrows from the Treasury the rest of the funds needed to make the loan. Some or all of that borrowing by the financing account is repaid to the Treasury over time as the direct loan made by the government is repaid. Meanwhile, the financing account pays interest to the Treasury on any outstanding balance. Those interest receipts are recorded in the budget as negative outlays.

Therefore, direct loans result in three interest flows:

- Borrowers pay interest on their loans, which is credited to the financing account;
- The financing account, in turn, pays interest to the Treasury on the money it borrowed to make the loans; and
- The Treasury pays interest on the public debt that it issued to provide the necessary resources for the financing account.

Loan guarantees operate differently from direct loans. With a guarantee, the government agrees to repay, in the event of default, loans made by nongovernmental institutions. Financing accounts for guaranteed loan programs usually receive cash inflows when a loan is made; the inflows often include guarantee fees from lenders and subsidy payments from the budget account for that

Table 3-3.**Other Interest, 2006 to 2010**

(Billions of dollars)

	2006	2007	2008	2009	2010
Interest Paid to and Collected from Credit Financing Accounts	-5.4	-5.0	-5.7	-13.4	-22.8
Interest Receipts					
Interest earned on deposits in tax and loan accounts	-0.9	-1.2	-0.6	*	*
Interest from unemployment loans to states	*	*	*	0	0
Other	-0.8	-1.0	-0.8	-0.5	-0.4
Interest Expenses					
Interest paid on tax refunds	4.2	3.3	4.5	2.4	2.2
Interest paid to Resolution Funding Corporation	2.0	2.0	1.4	2.1	2.3
Other	0.2	*	*	*	*
Intragovernmental Interest					
Interest from the Federal Financing Bank	-0.4	-0.7	-0.8	-0.6	-1.0
Earnings on MERHCF investments	-3.8	-4.0	-7.8	-1.1	-5.1
Earnings on USPS Retiree Health Care Fund	0	*	-1.2	-1.4	-1.5
Interest from the Nuclear Waste Fund	-0.5	-0.8	*	-1.1	-1.2
Other	-1.8	-2.6	-1.8	-1.4	-0.9
Total	-7.3	-10.1	-12.9	-15.0	-28.5

Source: Congressional Budget Office based on data from the Office of Management and Budget.

Notes: Negative numbers represent the government's interest income; positive numbers represent its interest expenses.

* = between -\$500 million and \$500 million.

MERCHF = Medicare-Eligible Retiree Health Care Fund; USPS = U.S. Postal Service.

guarantee program. Any defaults on loans that would require a payment from the account typically occur later. As a result, a financing account for a guarantee program generally runs a surplus with the Treasury, which credits the financing account with interest on that sum, generating positive outlays in the budget.

Amounts of Interest Received from the Financing Accounts. In 2010, the interest transactions between the Treasury and the financing accounts yielded net receipts to the Treasury of almost \$23 billion, up from about \$13 billion in 2009. (Interest flows between the Treasury and credit financing accounts, like other intragovernmental transfers, have no effect on borrowing by the Treasury.) The student loan program currently represents the bulk of the balances in financing accounts and, therefore, the largest volume of interest flowing to the Treasury (a net receipt to the Treasury of \$11 billion for 2010).

The flows of interest payments to the Treasury related to direct student loans will steadily increase in coming years

because the Health Care and Education Reconciliation Act of 2010 (Public Law 111-152) terminated the Federal Family Education Loan program, which guaranteed loans to student borrowers made through private lenders such as banks, credit unions, and some post-secondary institutions. As new activity occurs entirely through direct loans rather than guaranteed loans, the additional borrowing that the financing account requires to fund the additional loans will result in higher interest payments from that account to the Treasury.

Two other financing accounts that make sizable interest payments to the Treasury are those for the Troubled Asset Relief Program and for the Treasury's purchase of mortgage-backed securities. Both programs were created in the fall of 2008 in response to the financial crisis, and in each case the budget recorded only the estimated subsidy provided to the program. To carry out their missions, however, both programs required funding that was not directly recorded in the budget. The TARP was established to purchase or insure troubled assets to promote

stability in financial markets. Funding from the Treasury was used to purchase preferred stock from financial institutions; to provide assistance to American International Group, General Motors, and Chrysler; and for a number of other purposes.⁴ The MBS purchase program sought to increase liquidity in the secondary mortgage market by increasing the demand for those securities. In terms of the federal budget, both programs operate like direct loan programs: The Treasury provided funds to their respective financing accounts for disbursement, and the financing accounts now pay interest to the Treasury on that borrowing. The budget recorded net receipts of \$10 billion in interest from the financing accounts for the TARP and MBS purchases in 2010.

Other credit financing accounts include those for the Rural Utilities Service, for several housing programs under the Department of Housing and Urban Development, and for many other, smaller credit programs.

Other Interest Receipts

Most other accounts in the category of “other interest” record inflows to the government from interest payments or earnings on investments; such collections are recorded as negative outlays in the budget. Historically, the largest collection accounts have been those that record interest earnings on deposits in so-called tax and loan accounts at banks. Interest on loans to states’ unemployment funds are another source of such receipts.

Interest Earned on Deposits in Tax and Loan Accounts.

The federal government, like individuals and businesses, maintains a working balance of cash to cover current expenditures. Because the timing and amount of receipts never precisely match disbursements, the amount of funds at the Treasury’s disposal varies widely over short periods, especially around quarterly tax dates and payment dates for Social Security, Medicare, and veterans’ benefits.

The Treasury generally holds its cash balances in two types of accounts—demand deposits (similar to non-interest-bearing checking accounts) at Federal Reserve Banks and tax and loan accounts at commercial banks located throughout the country. Those commercial banks qualify as special depositories to maintain tax and loan

accounts for the Treasury; businesses can use the accounts to deposit taxes withheld from employees’ paychecks, corporate income taxes, and other recurring payments. In exchange for the short-term use of those funds, the participating banks pay interest to the Treasury at the greater of zero and the federal funds rate minus one-quarter of one percentage point.⁵

Balances in the tax and loan accounts are highly volatile. During 2010, overall daily closing balances ranged from a low of \$62 million to a high of roughly \$3 billion and averaged just under \$2 billion. Interest received from the tax and loan accounts has declined significantly in the past two years: The total interest received in 2010 was close to zero, down from about \$40 million in 2009 and about \$600 million in 2008—the result of a significantly lower federal funds rate (which declined from 2.9 percent in 2008 to 0.3 percent in 2009 and to 0.2 percent in 2010) and the Treasury’s decision in 2008 to limit the balances being held in the tax and loan depositories to \$2 billion.

Interest from Unemployment Loans to States. When states have insufficient funds in their Unemployment Trust Fund accounts, they may receive advances from the federal government to pay unemployment benefits. States pay no interest on those advances if they repay them within a fiscal year, but after that they generally are charged interest. However, provisions of the American Recovery and Reinvestment Act (P.L. 111-5) made borrowing interest-free through December 2010. As of October 2010, balances on the unemployment loans to states exceeded \$40 billion, and CBO projects that interest payments on such balances will total \$1 billion to \$2 billion per year beginning in 2011 if interest forgiveness is not extended beyond 2010.

Other Interest Expenses

A few accounts in the category of “other interest” track interest payments to individuals or organizations outside the federal budget. The largest of such accounts include interest payments on certain tax refunds and the interest paid on bonds sold in the 1980s and 1990s to help resolve the savings and loan crisis.

Interest Paid on Tax Refunds. The Treasury pays interest on individual, corporate, and excise tax refunds that are

4. For more information on the TARP, see Congressional Budget Office, *Report on the Troubled Asset Relief Program—November 2010* (November 2010).

5. The federal funds rate is the interest rate that financial institutions charge each other for overnight loans of their monetary reserves.

paid more than 45 days after the filing date. Interest on such refunds is generally dominated by interest on income tax returns that have been amended or audited. Corporate and individual taxpayers can file an amended return for a previous year; if a refund is due, the Internal Revenue Service calculates interest from the initial filing date. Over the 2011–2020 period, CBO estimates, such payments will total between \$2 billion and \$4 billion a year.

Interest Paid to the Resolution Funding Corporation.

REFCORP is a government-sponsored enterprise created in 1989 to provide initial funding for the Resolution Trust Corporation (RTC). REFCORP issued \$31.2 billion in bonds to finance the RTC's efforts to resolve the savings and loan crisis in the late 1980s and early 1990s. The interest owed on those obligations totals \$2.6 billion annually and is paid quarterly by several entities. The Federal Home Loan Banks (FHLBanks) are currently required by statute to contribute 20 percent of their annual net earnings (about \$500 million to \$700 million per year) toward REFCORP's interest payment. The Treasury pays the remainder of the interest due, roughly \$2.1 billion annually, or about 80 percent of the total. The Federal Deposit Insurance Corporation has also made periodic contributions to REFCORP's interest payments, but the amount and frequency of such payments are not statutorily mandated.

CBO currently projects that the FHLBanks will complete their required interest payments on REFCORP bonds in 2011 and, as a result, that the Treasury will begin to make the full annual interest payment of \$2.6 billion in 2012. The REFCORP bonds begin to mature in 2019, and all will have matured by April 2030, at which point interest payments will cease.

Intragovernmental Interest

Some accounts in the "other interest" category have no net effect on the budget because they are intragovernmental and reflect receipts from other federal budget accounts. Such accounts include the Federal Financing Bank (FFB), the retiree health care funds for certain members of the military and employees of the U.S. Postal Service (USPS), the Nuclear Waste Fund, and some other federal entities.

Interest from the Federal Financing Bank. The FFB is an arm of the Treasury Department that acts as a financial intermediary for a few federal agencies, government cor-

porations, and government-sponsored enterprises; it was created in 1973 to reduce federal borrowing costs and improve debt management by assisting with borrowing by those entities. The FFB borrows directly from the Treasury and charges the agencies its own cost of borrowing plus one-eighth of one percentage point. Payments of interest from the FFB to the Treasury have been less than \$1 billion annually in recent years but are projected to increase (to as much as \$6 billion) because of higher loan activity (particularly by the Department of Energy's Advanced Technology Vehicles Manufacturing program and the Rural Utilities Service). Those interest payments have no net effect on the budget; they appear as outlays in the FFB's budget account and as offsetting receipts in "other interest." As of September 30, 2010, the FFB portfolio totaled \$60 billion.

Medicare-Eligible Retiree Health Care Fund.

MERCHF was established by the National Defense Authorization Act for 2001 and began operation in 2003. The fund pays for the health care costs of retirees of the uniformed services and their dependents and survivors, once those individuals are eligible for Medicare. The Treasury makes payments into the fund to cover future benefits and also pays interest on the balance in the fund. Those balances are therefore increasing rapidly. In 2009, payments to the fund (excluding interest) totaled \$21.3 billion, and outlays to cover health care expenses totaled \$8.4 billion. Through 2020, CBO projects, payments to the fund will continue to be significantly higher than outlays. In 2020, those payments into the fund (other than interest) will be about \$34 billion, compared with \$16 billion in outlays. As a result, the interest credited to the fund will also grow dramatically, from \$5 billion in 2010 to almost \$22 billion by 2020, CBO projects.

U.S. Postal Service Retiree Health Benefits Fund. This fund was established in 2006 as a way of financing the health benefits of USPS retirees beginning in 2017. (The costs of health benefits for USPS retirees are currently paid from the annual operating funds of the Postal Service.) The USPS is required to make annual payments of between \$5 billion and \$6 billion to the fund through 2016, and those payments are used to purchase Treasury securities. As of September 30, 2010, the fund had a balance of nearly \$42 billion, and its interest earnings in 2010 totaled \$1.5 billion. CBO projects that interest earnings over the 2011–2020 period will total about \$42 billion.

Nuclear Waste Fund. This fund pays for activities related to the permanent disposal of high-level nuclear waste from commercial and defense-related sources. The income it receives from fees paid by commercial producers of nuclear power is invested in long-term Treasury securities. The fund's portfolio consists primarily of zero-coupon Treasury bonds; the interest credited to the fund totaled about \$1 billion in 2010 and, CBO projects, will average about \$2 billion per year over the 2011–2020 period.

Other Intragovernmental Interest Receipts. The Congress allows certain government corporations and federal entities to borrow from the Treasury to finance part of the costs of their programs. That borrowing authority is conferred through either permanent authorizing language or annual appropriations. The Treasury and the individual agencies decide on the terms of the loan, depending on the needs of the program being financed. The agencies' borrowing includes long- and short-term debt, and interest rates vary by program.

Both the payment and the receipt of those intragovernmental interest transactions are accounted for in the federal budget, but because those amounts are offsetting, they do not affect the budget deficit. In particular, the interest payment is booked as an outlay for the participating agency, and the receipt of that payment is recorded as an offsetting receipt in the Treasury's intragovernmental interest account. Interest on loans to the Bonneville Power Administration, the National Flood Insurance Fund, and the Helium Fund accounted for nearly

two-thirds of the other \$915 million in intragovernmental interest paid to the Treasury in 2010.

Other Investment Income

The National Railroad Retirement Investment Trust (NRRIT), a tax-exempt entity that is independent of the federal government, is charged with managing and investing the assets of the Railroad Retirement program. However, because the functions of the NRRIT are considered to be federal in nature, the earnings and losses of the program are accounted for in the budget in the general category of net interest.

The NRRIT is authorized to invest the assets of the Railroad Retirement fund in a diversified investment portfolio, like the portfolios of private-sector retirement plans. About 95 percent of the current portfolio is invested in private holdings that are actively managed by the NRRIT; the remaining 5 percent is invested in nonmarketable Treasury securities. The trust's average earnings for 2004 through 2007 totaled about \$3 billion a year, but market declines in recent years have produced losses from the NRRIT's investments. In 2008 and 2009, the trust had losses of \$6 billion and \$350 million, respectively. At the end of 2009, the balance in the Railroad Retirement fund was about \$23 billion, down from a high of nearly \$33 billion in 2007. To project the NRRIT's future earnings, CBO assumes a rate of return equal to the average projected rate on new Treasury issues; under that assumption, CBO projects that earnings will average about \$500 million per year through 2020 (see Table 3-1 on page 28).



Appendix: Public Debt Outstanding at the End of the Fiscal Year

The Department of the Treasury issues two broad types of securities to the public: marketable and non-marketable. Marketable securities—bills, notes, bonds, and Treasury inflation-protected securities—are auctioned at regular intervals during the year and can be

resold. Nonmarketable securities, such as savings bonds, are not sold at auction and cannot be resold. Tables A-1 and A-2 show the outstanding value of each type of debt at the end of fiscal years 1990 through 2010.

Table A-1.**Marketable Public Debt Outstanding at the End of the Fiscal Year, 1990 to 2010**

Fiscal Year	Bills ^a		Notes		Bonds		Treasury Inflation-Protected Securities ^b		Total (Billions of dollars)
	Billions of Dollars	Percentage of Total	Billions of Dollars	Percentage of Total	Billions of Dollars	Percentage of Total	Billions of Dollars	Percentage of Total	
1990	482	23	1,218	59	377	18	n.a.	n.a.	2,078
1991	565	24	1,388	58	423	18	n.a.	n.a.	2,376
1992	634	24	1,566	59	462	17	n.a.	n.a.	2,647
1993	658	23	1,734	60	497	17	n.a.	n.a.	2,840
1994	697	23	1,868	61	512	17	n.a.	n.a.	3,077
1995	742	23	1,980	61	523	16	n.a.	n.a.	3,245
1996	761	22	2,099	62	543	16	n.a.	n.a.	3,403
1997	702	20	2,122	62	576	17	24	1	3,425
1998	638	19	2,009	61	610	18	59	2	3,316
1999	653	20	1,829	57	644	20	92	3	3,218
2000	616	21	1,611	54	635	21	115	4	2,978
2001	735	25	1,433	49	613	21	135	5	2,915
2002	868	28	1,522	49	593	19	139	4	3,121
2003	918	27	1,799	52	577	17	166	5	3,460
2004	961	25	2,109	55	552	14	223	6	3,846
2005	910	22	2,328	57	521	13	307	8	4,066
2006	908	21	2,445	57	534	12	396	9	4,284
2007	955	22	2,456	55	561	13	457	10	4,428
2008	1,484	28	2,623	50	579	11	524	10	5,210
2009	1,986	28	3,773	54	677	10	551	8	6,988
2010	1,784	21	5,253	62	846	10	594	7	8,476

Source: Congressional Budget Office based on data from the Department of the Treasury.

Note: n.a. = not applicable.

a. Reported at face value.

b. Inflation-adjusted amount.

Table A-2.

Nonmarketable Public Debt Outstanding at the End of the Fiscal Year, 1990 to 2010

(Billions of dollars)

Fiscal Year	Savings Bonds	State and Local Government Series	Thrift Savings Plan	Zero-Coupon Bonds ^a		Other ^b	Total
				Foreign	Domestic		
1990	122	161	7	4	2	3	299
1991	134	158	9	5	3	3	311
1992	148	158	12	4	4	*	326
1993	167	149	15	6	3	1	341
1994	176	137	18	6	3	1	342
1995	181	113	21	7	4	1	327
1996	184	96	23	6	4	3	316
1997	183	112	25	6	4	1	331
1998	181	164	26	8	5	1	386
1999	180	168	29	6	5	1	390
2000	178	153	32	5	5	1	374
2001	186	146	37	4	6	6	386
2002	193	144	45	3	6	7	398
2003	202	148	51	4	7	22	434
2004	204	158	56	3	7	7	436
2005	204	225	64	3	8	10	513
2006	204	239	72	2	8	10	535
2007	197	297	81	2	9	12	598
2008	194	260	101	2	10	10	578
2009	192	216	113	2	11	7	542
2010	189	193	124	2	11	7	526

Source: Congressional Budget Office based on data from the Department of the Treasury.

Note: * = between zero and \$500 million.

a. CBO's estimate of current economic value.

b. Includes mostly claims funds and asset forfeiture funds (starting in 2001), foreign series bills, tax and loss bonds issued by the Mortgage Guaranty Insurance Corporation, U.S. notes and silver certificates, and, in 2003, depository compensation securities.