

Chicago Fed Letter

How much debt does the U.S. government owe?

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The U.S. government is often referred to as the world's biggest debtor. But how much debt does it owe? A visit to the website of the U.S. Department of the Treasury yields a bewildering array of different measures of U.S. federal government debt. Although the gross debt of the U.S. federal government is approaching \$18 trillion, the debt that is subject to the debt limit is a few billion dollars smaller, while debt in the hands of the public is less than \$13 trillion.

All measures agree that the U.S. government has accumulated liabilities at a rate faster than the rate of economic growth over the past decade and a half, with the increase being especially notable after the financial crisis of 2008.

How do these measures differ from one another? Is one of them more useful than the others? Or are there better measures available of the financial strength of the U.S. government? In this *Chicago Fed Letter*, we provide a guide to the range of data available on U.S. government debt, explaining each measure's strengths and weaknesses. We also explore some alternative measures that examine a government's entire fiscal position, including some liabilities that do not appear on the government's balance sheet.

Equipped with an understanding of these different measures, we show that the U.S. federal government has been relatively more indebted in the past than it is today, although current debt levels are remarkably high, and that the government sector as a whole has more liabilities, relative to the size of the economy, than most other advanced economies.

How do alternative measures of government debt differ?

When interpreting different measures of government debt, it is helpful to keep in mind that there are four basic dimensions along which the measures differ. The first is the unit of government covered by the measure. Gross federal government debt covers only the federal

government, while other measures include the debts of state and local governments. State-owned enterprises are also factored into some reports of government debt, while others may include debts owed by private organizations but guaranteed by the government of a country.

The second dimension derives from the fact that governments own substantial amounts of assets. Some of these assets are things such as land and buildings, while others are financial assets such as money in bank accounts or government securities. In particular, some parts of the government own the debts issued by other parts of the government. As a consequence, rather than focusing on gross debt, it is often of interest to net out financial assets, including those debts owned by other parts of the government.

The third dimension relates to the fact that debt itself may be too limiting a concept when thinking about a government's financial health. Debt excludes other liabilities, including debt-like derivative securities on the balance sheet, as well as off-balance sheet items such as pension and health care liabilities, which are relevant for evaluating a government's financial position.

1. Alternative measures of U.S. government debt and liabilities

	2000		2007		2014	
	\$ billion	% GDP	\$ billion	% GDP	\$ billion	% GDP
Gross federal government debt						
1. Public debt outstanding	5,629	54.7	8,951	61.8	17,794	102.6
2. Debt subject to the limit	5,592	54.5	8,921	61.6	17,781	102.5
3. Debt in the hands of the public	3,410	33.2	5,035	34.8	12,780	73.7
4. Excl. debt held by Federal Reserve	2,898	28.2	4,255	29.4	10,328	59.5
5. Debt owned by foreign residents	1,015	9.9	2,353	16.3	6,156	35.5
Gross state and local government debt						
6. State and local government debt (OECD)	1,198	11.6	2,837	19.6	2,941*	17.7*
Nondebt liabilities						
7. Nondebt liabilities on balance sheet	1,358	13.2	2,710	18.7	4,528*	27.2*
a. Central	1,356	13.2	1,978	13.7	2,413*	14.5*
b. State and local	2	0.0	732	5.1	2,114*	12.7*
8. NPV of pension liabilities	N/A	N/A	N/A	N/A	6,349	36.6
9. NPV of health care liabilities	N/A	N/A	N/A	N/A	27,896	160.8
Gross government assets						
10. Central government assets	570	5.5	704	4.9	1,701*	10.2*
11. State government assets	1,661	16.2	2,783	19.2	2,895*	17.4*
Overall measures						
12. Gross general government debt (3 + 6)	4,608	44.8	7,872	54.4	15,721	91.4
13. Gross general government liabilities (12 + 7)	5,966	58.0	10,582	73.1	20,249	118.6
14. Net general government liabilities (13 – 10 – 11)	3,735	36.3	7,095	49.0	15,652	91.0
15. Net general government liabilities, including pensions and health care (14 + 8 + 9)	N/A	N/A	N/A	N/A	49,898	288.4

NOTES: Data refer to end of calendar year unless otherwise noted. * Denotes data from 2013. NPV indicates net present value.

SOURCES: Authors' calculations based on data from the U.S. Department of the Treasury, Organisation for Economic Co-operation and Development, International Monetary Fund, and Federal Reserve Bank of St. Louis.

Fourth and finally, the quantity of debt can vary depending on the precise measurement concept employed. Most statistics measure debt at face value, which refers to the actual dollar amount printed on the face of the government bond and is equal to the amount of debt to be repaid (typically at maturity). Other statistics measure the accrued value of the debt, an accounting concept under which, roughly speaking, the value of debts issued at a discount or premium to par value is imputed based on their market value at issuance.

What do different measures of U.S. government debt show?

The measure of U.S. government debt most often cited in the press is the gross public debt outstanding of the federal government. This measure covers only debt (and not wider liabilities) owed by the federal government (excluding

state and local government debt), without netting out any assets or debts owed to other parts of the government. The data are also measured at face value. As shown in row 1 of figure 1, in 2014 the gross debt of the federal government stood at just under \$18 trillion, or about 103% of gross domestic product (GDP), up from 55% of GDP in 2000.

Gross debt subject to the federal debt limit (figure 1, row 2) differs from the gross debt of the federal government by excluding a few special types of debt, including old debt issued before 1917, United States notes, debt held by the Federal Financing Bank, and guaranteed debt. The method of measurement also differs from the gross debt of the federal government by measuring (since 1989) the stock of debt on an accrual basis. In 2014, the difference between gross debt and the debt subject to the debt

limit was very small, although it was as high as 2% in 1991.

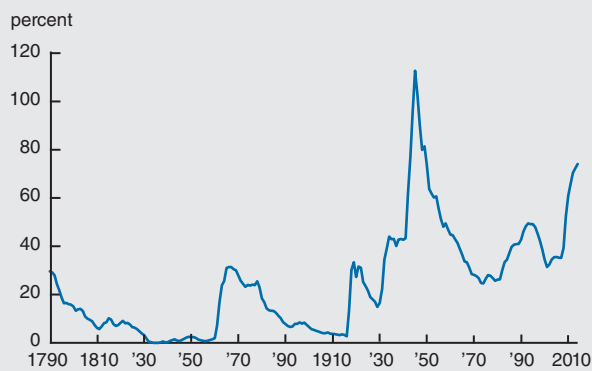
The two previous measures include all debts of the U.S. federal government, including those debts that it owes to itself. To correct for this, the Treasury also nets out debts held by other parts of the federal government to arrive at gross federal government debt in the hands of the public (figure 1, row 3). In 2014, this stood at 74% of GDP, up from 33% in 2000. When debts held by the Federal Reserve are excluded from the data, the measure of debt decreases even further, standing at 60% of GDP in 2014, up from 28% in 2000 (figure 1, row 4).

A substantial share of the remaining debt is owned by U.S. citizens, and hence does not represent a debt for the nation as a whole. The extent to which foreign investors hold a country's debt is also of interest when looking at issues such as exchange rate movements and investor flows to and from emerging markets. Gross federal government debt in the hands of foreign investors (figure 1, row 5) reached 36% of GDP in 2014, up from 10% in 2000.

The measurements discussed up to this point refer only to the federal government. A comprehensive analysis of U.S. government debt should also take into account the debts of state and local governments. The Organisation for Economic Co-operation and Development (OECD) provides data on the debts owed by state and local governments in the United States (figure 1, row 6); these were worth roughly an additional 18% of GDP in 2014, up from 12% in 2000. When we combine federal, state, and local governments, we refer to this as general government debt.

So far, we have focused only on government debt. However, governments often have other liabilities on their balance sheets that are not debts. These can include financial derivatives, bills that need to be paid (known as accounts payable), as well as the amounts that state and local governments owe to pension funds. If these additional liabilities are included (figure 1, row 7), we find

2. Federal debt held by the public as a share of GDP



Sources: Congressional Budget Office and Office of Management and Budget.

that in 2014 they amounted to roughly 27% of GDP, up from 13% in 2000. Almost all of this increase is due to pensions and other benefits owed by state and local governments.

Combining the debts and nondebt liabilities on the balance sheet of the U.S. general government puts total liabilities at just under 120% of GDP, according to the OECD. But governments also have large liabilities that do not appear on their balance sheets. The most important of these off-balance-sheet liabilities are unfunded pensions and health care entitlements promised by the federal government. As illustrated in rows 8 and 9 of figure 1, the International Monetary Fund (IMF) estimated the net present value (NPV) of U.S. pension and health care benefits for 2014 at almost 200% of GDP, or one and one-half times larger than the liabilities that appear on the balance sheet. The bulk of these costs are coming from health care benefits, due to increasing Medicaid and Medicare costs.

Up to this point, we have only discussed measurements that net out debts owed to other parts of the government but that do not net out other assets. Indeed, governments typically own large stocks of assets including land, mineral rights, buildings, and cultural treasures. Most of these nonfinancial assets would never be sold to pay down debt. However, the federal, state, and local governments could conceivably use their financial assets—including money in bank accounts, accounts receivable, and equity

holdings—to pay down their debts. Together, U.S. general government financial assets amounted to roughly 28% of GDP in 2014 (figure 1, rows 10 and 11).

The last four rows of figure 1 summarize how these different measures can be used to paint vastly different pictures of the financial position of the U.S. government. Whereas federal government gross debt

subject to the debt limit stood at around 103% of GDP in 2014 (row 2 of figure 1), general government gross liabilities were measured at 119% of GDP (row 13), rising to roughly 320% once pensions and health care were included. Assets amounting to roughly 30% of GDP offset these liabilities.

Despite these differences in levels, all measures agree that the U.S. government has accumulated liabilities at a rate faster than the rate of economic growth over the past decade and a half, with the increase being especially notable after the global financial crisis of 2008. To give a longer-term perspective on government debt, figure 2 depicts one measure of debt—gross federal government debt held by the public—as a share of GDP from 1790 to the present. As shown in the figure, this measure of debt peaked in 1945 at about 113% of GDP due to debts issued during World War II and fell to under 30% of GDP by the 1970s. Today, this measure of debt has risen to roughly 74% of GDP, the highest level observed outside of the years around World War II.

How does the U.S. compare with other advanced economies?

The previously discussed measurement issues become more important when comparing the government debt of the United States to debt levels in other economies. Not only does the availability of data vary across countries, but countries differ dramatically in the structure of their governments. For example, it

may be misleading to compare U.S. federal government debt to the debt of nations that do not have states, provinces, or other subnational governments. Furthermore, even in countries that do have subnational governments, these state or local units may take on very different roles from those played by similarly labeled governments in the United States, making it unclear how to interpret debt comparisons. State-owned enterprises and government guarantees are also typically more common outside the United States, altering relative measures of debt depending on what components are included in the calculation. Furthermore, measurement standards vary, given that many countries still have not adopted the International Public Sector Accounting Standard.

Bearing these caveats in mind, the most comprehensive data available for advanced economies comes from the OECD, which provides measurements of gross and net debt and liabilities across different levels of government for its member countries. These measures are summarized in figure 3 for the year 2007 (before the global financial crisis) and 2013. Looking at gross

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ISSN 0895-0164

3. Cross-country comparisons of government indebtedness (% of GDP)

	U.S.		Japan		UK		Germany		Greece	
	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Gross central government debt	42.0	82.3	139.6	196.7	36.9	83.5	38.8	54.6*	115.1	173.2
Gross general government debt	61.6	99.9	174.9	234.6	41.2	88.5	63.7	85.8*	115.9	174.3
Gross general government liabilities	80.3	127.1	184.5	244.3	48.4	97.0	64.1	86.3*	125.2	185.6
Net general government liabilities	56.2	99.5	127.4	168.1	25.2	61.6	44.1	52.7*	99.1	130.3
Net general government liabilities, including pensions and health care	N/A	305.0	N/A	217.2	N/A	131.0	N/A	118.2*	N/A	188.3

NOTES: The OECD definition of debt includes accounts payable and hence does not exactly correspond to the data on debt in figure 1. * Denotes 2012 data.

SOURCES: Authors' calculations based on data from the Organisation for Economic Co-operation and Development and the International Monetary Fund.

general government debt, the U.S. is less than half as indebted as Japan and between 10% and 15% of GDP more indebted than the United Kingdom (UK) or Germany. However, the U.S. government sector has more nondebt liabilities, fewer financial assets, and much larger estimated pension and health care liabilities than these countries. When all of these are included, the U.S. appears to be in a worse fiscal position than Japan, the UK, or Germany.

According to these numbers alone, the U.S. also appears to be in a worse fiscal position than Greece, a country that is

notorious for its fiscal difficulties. This is a powerful reminder that looking at debt numbers alone is not sufficient to assess a government's fiscal strength. For whereas economic growth in the U.S. is expected to be quite strong in the future, prospects for growth in Greece are much slimmer. Likewise, the ability of U.S. governments to raise taxes seems greater than that of Greece. Perhaps most importantly, whereas the U.S. issues debt denominated in its own currency, Greece issues debt denominated in a foreign currency (the euro) and is therefore subject to monetary policy decisions made for the eurozone as a whole.

Conclusion

How much does the U.S. government owe? As the discussion above indicates, the answer can vary widely depending on the statistics used to measure debts and liabilities. For many purposes, it is probably best to look at net general government liabilities, which include nondebt liabilities, net out financial assets, and include state and local governments. In 2014, this measure stood at 100% of GDP, rising to roughly 300% when pension and health care liabilities are included. These numbers are large by world standards, and they have grown rapidly in recent years.

However, this does not necessarily imply that the U.S. government has "too much" debt. If our experience with high debt levels in the years around World War II teaches us anything, it is that debt levels, although important, are only one factor in fiscal decision making. At least as important as the level of debt itself are the prospects for the country to be able to raise revenue to repay the debt, which in turn relies on the economic returns from debt-financed expenditures and investments. In other words, it is important to look beyond simple summary numbers about debt levels when evaluating a government's financial position.