

# Search FRED for data on the U.S. deficit and debt.

1. Go to <http://research.stlouisfed.org/fred2/>
2. This FRED lesson begins by looking at the federal deficit. The federal deficit is the amount by which the government's expenditures exceed its tax revenue. When there is a deficit, the government makes up the difference by issuing debt. Using the Search box, type **deficit**. The search box will provide suggested terms, in this case, the search box suggests the data series: **Federal Surplus or Deficit [-]**. Choose that series or just hit enter.



The screenshot shows the FRED website interface. At the top, there is a navigation bar with links for 'St. Louis Fed', 'Careers', and 'More'. On the right, there are links for 'Register' and 'Sign in'. The main header features the FRED logo and the text 'ECONOMIC RESEARCH FEDERAL RESERVE BANK of ST. LOUIS Advancing Economic Knowledge Through Research & Data'. A search bar is located on the right side of the header, with a red arrow pointing to it. The search bar contains the text 'deficit' and a search icon. Below the search bar, a dropdown menu shows the suggestion 'Federal Surplus or Deficit [-]'. Below the header, there is a navigation bar with links for 'FRED Economic Data', 'Publications', 'Working Papers', 'Economists', and 'DATA TOOLS'. The main content area is titled 'Home' and 'Federal Reserve Economic Data'. It features a list of categories: 'Money, Banking, & Finance (3,617)', 'National Accounts (704)', 'Population, Employment, & Labor Markets (2,210)', 'Production & Business Activity (1,325)', 'Prices (1,599)', 'International Data (5,051)', and 'U.S. Regional Data (27,444)'. There is also a 'FRED News' section with several items. Below the news, there are sections for 'Popular Series', 'FRED At a Glance', and 'Latest Releases'. The 'Popular Series' section lists 'Consumer Price Index for All Urban Consumers: All Items', 'Real Gross Domestic Product, 1 Decimal', 'St. Louis Financial Stress Index', and 'Civilian Unemployment Rate'. The 'FRED At a Glance' section shows 'CPI' with a +3.0% change in Dec 2011, 'Real GDP' with a +2.8% change in 2011Q4, and 'IP'. The 'Latest Releases' section lists 'Gross Domestic Product', 'H.4.1 Factors Affecting Reserve Balances', 'M2 Related Series', and 'Money Zero Maturity (MZM)'. On the left side of the page, there is a sidebar with the FRED logo and a list of tools: 'Download All Data', 'Notify Me of Updates', 'My Data Lists', 'FRED Graph', 'FRED iPhone/iPad App', and 'FRED Add-In for Microsoft Excel'.

3. Below is a screenshot of the graph of the data, along with the options that include viewing and downloading the data and editing (customizing) the graph. To see the historical data for the series, choose **View Data** (to left of graph).



The screenshot shows the FRED website interface. At the top, there is a navigation bar with 'St. Louis Fed | Careers | More' and 'Register | Sign in'. Below this is the 'ECONOMIC RESEARCH' header for the 'FEDERAL RESERVE BANK of ST. LOUIS' with the tagline 'Advancing Economic Knowledge Through Research & Data'. A search bar and social media links are also present. The main navigation includes 'FRED Economic Data', 'Publications', 'Working Papers', and 'Economists', with a 'DATA TOOLS' link on the right.

The left sidebar contains the 'FRED ECONOMIC DATA | ST. LOUIS FED' logo and a 'Tools' section. A red arrow points to the 'View Data' button, which is circled in red. Other tools include 'Download Data', 'Notify Me of Updates', 'Add to My Data List', and 'Vintage Series in ALFRED'. Below the tools are 'Latest Observations' for the years 2011 through 2007, and 'Related Categories' including 'National Accounts' and 'Federal Government Debt'. A 'Need Help?' link is at the bottom of the sidebar.

The main content area displays the title 'Federal Surplus or Deficit [-] (FYFSD)' with a 'SHARE' button and social media icons. Below the title is a line graph showing the data from 1895 to 2015. The y-axis is labeled '(Millions of Dollars)' and ranges from -1,600,000 to 400,000. The x-axis shows years from 1895 to 2015. The graph shows a blue line representing the surplus or deficit, with shaded vertical bars indicating US recessions. The data shows a significant deficit starting around 1980, peaking around 2000, and then dropping sharply to a large deficit by 2015. The source is cited as 'The White House: Office of Management and Budget'.

Below the graph are options to 'Edit Graph', 'Print', 'PDF', and 'Save'. At the bottom, there are settings for 'Type: Line', 'Size: Medium', 'Range: Max', 'Log Scale: Left', and 'Units: Levels'. A 'Notes' section includes 'Growth Rate Calculations | US recession dates'.

4. Below is a screenshot of the earliest years of the **Federal Surplus or Deficit** data. Looking at the data online, in what year did the United States last experience a federal budget surplus, and how much was it?

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Title: Federal Surplus or Deficit [-]  
Series ID: FYFSD  
Source: The White House: Office of Management and Budget  
Release: Fiscal Year Budget Data (Not a Press Release)  
Seasonal Adjustment: Not Applicable  
Frequency: Annual, Fiscal Year  
Units: Millions of Dollars  
Date Range: 1901-06-30 to 2011-09-30  
Last Updated: 2011-10-14 3:16 PM CDT  
Notes: Dates represent the end of the fiscal year. Fiscal year series are updated with official OMB figures in January or February. In October, the latest fiscal year is updated with figures from the Treasury Department (September figures from the Treasury's fiscal year to date series).

DATE	VALUE
1901-06-30	63
1902-06-30	77
1903-06-30	45
1904-06-30	-43
1905-06-30	-23
1906-06-30	25
1907-06-30	87
1908-06-30	-57
1909-06-30	-89
1910-06-30	-18
1911-06-30	11
1912-06-30	3
1913-06-30	0
1914-06-30	0
1915-06-30	-63
1916-06-30	48
1917-06-30	-853
1918-06-30	-9032
1919-06-30	-13363
1920-06-30	291
1921-06-30	509
1922-06-30	736
1923-06-30	713
1924-06-30	963
1925-06-30	717
1926-06-30	865
1927-06-30	1155
1928-06-30	939
1929-06-30	734
1930-06-30	738
1931-06-30	-462
1932-06-30	-2735

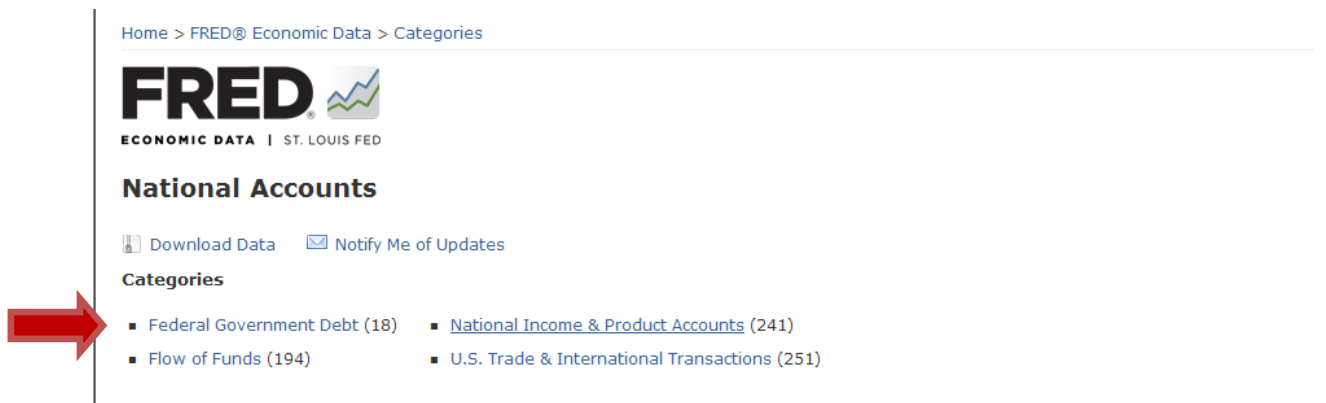
5. The deficit is one measure of the government's financial situation. Another measure is the debt of the country as a percent of the gross domestic product (GDP). GDP is the total market value of all final goods and services produced in an economy in a given year; the debt is the sum of accumulated budget deficits.

To create this graph, first locate the government debt data in FRED. Start with the FRED homepage. Under Data Categories, click on **National Accounts**.



The screenshot shows the FRED homepage. On the left is a navigation menu with 'Browse Data' and 'Tools' sections. The 'Browse Data' section includes links for Categories, Releases, Sources, Updates, Release Calendar, and Published Data Lists. The 'Tools' section is currently empty. The main content area is titled 'Federal Reserve Economic Data' and lists 41,000 economic time series from 38 sources. A list of categories is shown, with 'National Accounts (704)' highlighted by a red arrow. Other categories include Money, Banking, & Finance (3,617), Prices (1,599), International Data (5,051), Population, Employment, & Labor Markets (2,210), U.S. Regional Data (27,444), and Production & Business Activity (1,325). Below the categories is a 'FRED News' section with three recent updates.

6. In that category, choose **Federal Government Debt**.



The screenshot shows the 'National Accounts' page on FRED. The breadcrumb trail is 'Home > FRED® Economic Data > Categories'. The page title is 'National Accounts'. Below the title are links for 'Download Data' and 'Notify Me of Updates'. The 'Categories' section lists four items: 'Federal Government Debt (18)', 'National Income & Product Accounts (241)', 'Flow of Funds (194)', and 'U.S. Trade & International Transactions (251)'. A red arrow points to 'Federal Government Debt (18)'.

7. The data are sorted by popularity. Choose the “**Gross Federal Debt Held by the Public**” series. This series includes holdings of the Federal Reserve System and excludes holdings of the social security and other federal trust funds.\* These are annual data and go back to 1939.

Home > FRED® Economic Data > Categories > National Accounts



## Federal Government Debt

Download Data Notify Me of Updates

Selected Series:

Show All Filter

Series 1 - 18 of 18

<input type="checkbox"/> Title	Series ID	Observation Range Start End	Freq	Units	Seas Adj	Popularity
<input type="checkbox"/> Federal Government Debt: Total Public Debt	GFDEBTN	1966:Q1 2011:Q3	Q	Mil. of \$	NSA	
<input type="checkbox"/> Federal Surplus or Deficit [-]	FYFSD	1901 2011	A	Mil. of \$	NA	
<input type="checkbox"/> Gross Federal Debt	FYGFD	1939 2010	A	Bil. of \$	NA	
<input type="checkbox"/> Federal Debt Held by the Public	FYGFDPU	1970:Q1 2011:Q3	Q	Mil. of \$	NSA	
<input type="checkbox"/> Federal Debt Held by Foreign & International Investors	FDHBFIN	1970:Q1 2011:Q3	Q	Bil. of \$	NSA	
<input type="checkbox"/> Federal Debt Held by Federal Reserve Banks	FDHBFBN	1970:Q1 2011:Q3	Q	Bil. of \$	NSA	
<input type="checkbox"/> Federal Outlays: Interest	FYOINT	1940 2011	A	Mil. of \$	NA	
<input type="checkbox"/> Federal Receipts	FYFR	1901 2011	A	Mil. of \$	NA	
<input type="checkbox"/> Gross Federal Debt Held by the Public	FYGFDPU	1939 2010	A	Bil. of \$	NA	
<input type="checkbox"/> Federal Net Outlays	FYONET	1901 2011	A	Mil. of \$	NA	
<input type="checkbox"/> Federal Debt Held by Private Investors	FDHBPIN	1970:Q1 2011:Q3	Q	Bil. of \$	NSA	



**\*NOTE:** Every year, the Council of Economic Advisors issues the [Economic Report of the President](#).

That document contains the amount of gross federal debt held by the public. You can also find historical debt series at the Congressional Budget Office at

[http://www.cbo.gov/ftpdocs/120xx/doc12039/historicalTables\[1\].xls](http://www.cbo.gov/ftpdocs/120xx/doc12039/historicalTables[1].xls) or from the Office of

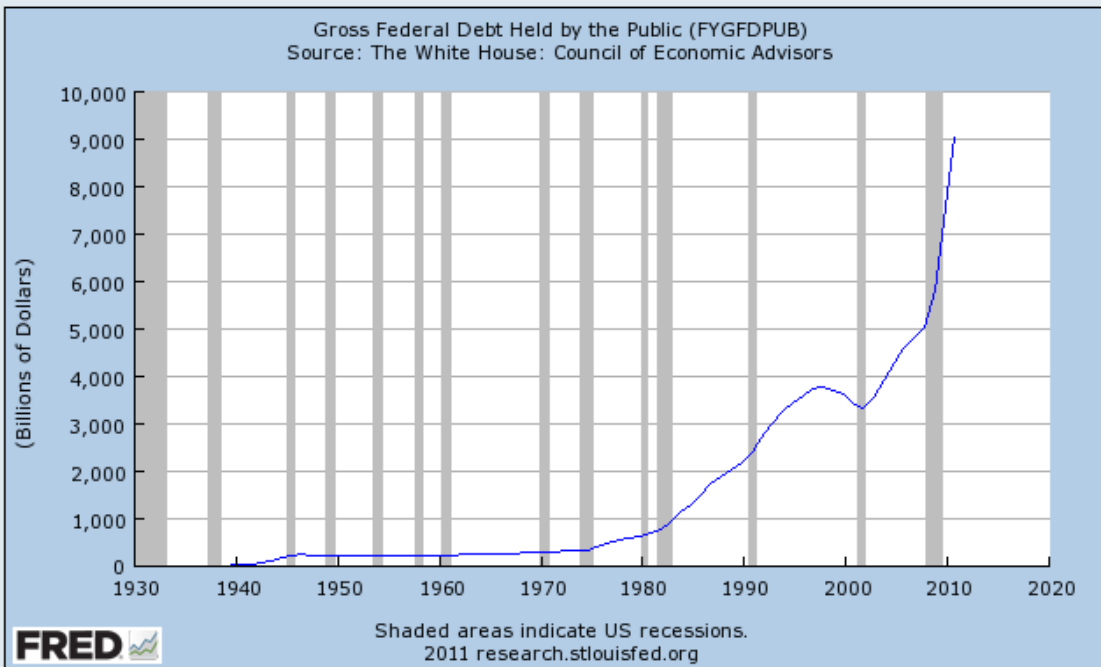
Management and Budget at

<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/hist07z1.xls>.

8. Choose **Edit Graph** to make changes to the graph (which will involve adding the GDP data and creating a new graph that shows the percent of debt to GDP).

## Gross Federal Debt Held by the Public (FYGFDPUB)

SHARE   



 [Edit Graph](#)  [Print](#)  [PDF](#)  [Save](#)

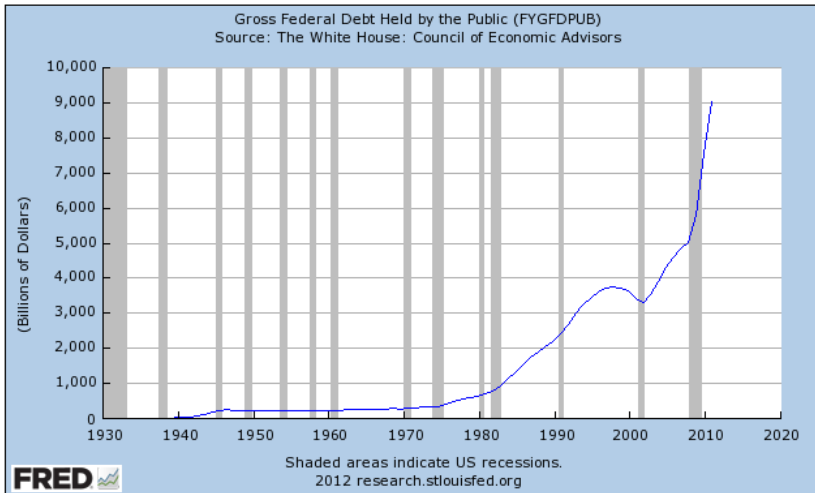
Type: [Line](#) Size: [Medium](#) Range: [Max](#) Log Scale: [Left](#) Units: [Levels](#)

Notes: [Growth Rate Calculations](#) | [US recession dates](#)

9. The new graph may be edited—for this exercise, you will add the gross public debt data to the same line as the GDP data, and then divide the debt by GDP to get the ratio (percentage). First click on the **Add Data Series** section.

### Graph: Gross Federal Debt Held by the Public (FYGFDPUB)

[Download Data in Graph](#) | [Print](#) | [PDF](#) | [Link](#) | [View Saved Graphs](#) | [Save Graph](#) | [Help](#)



Settings [Restore Defaults](#) | [Save Settings](#) | [Apply Saved Settings](#)

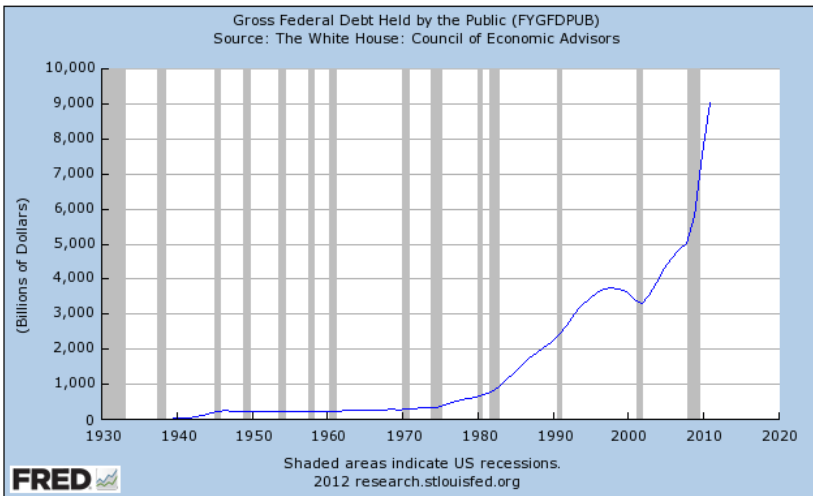
- ▶ Graph
- ▶ Line 1: Gross Federal Debt Held by the Public (FYGFDPUB)
- ▶ Add Data Series



10. Then, toggle the button to “Line 1”. This will allow you to create a single line with the formula of debt/GDP. In the search box, type **gross domestic product annual** (or just type GDPA) to retrieve the series “Gross Domestic Product (GDPA)”.

### Graph: Gross Federal Debt Held by the Public (FYGFDPUB)

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Settings [Restore Defaults](#) | [Save Settings](#) | [Apply Saved Settings](#)

► **Graph**

► **Line 1: Gross Federal Debt Held by the Public (FYGFDPUB)**

▼ **Add Data Series**

To:  New Line  Line 1 [What's This?](#)

Search:  [Browse](#)

- Real Gross Domestic Product  
GDPCA, A, Bil. of Chn. 2005 \$, NA
- Gross Domestic Product**  
GDPA, A, Bil. of \$, NA
- U.S. Total Gross Domestic Product by State  
USNGSP, A, Mil. of \$, NA

[Notes on arc](#) [aggregation](#)

Once you begin typing the term in the search box, you will be presented with suggested data series. Choose Gross Domestic Product (GDPA).



11. You will then see a Formula Box. Type in the correct formula to calculate the debt/GDP ratio (a/b), and then click **Redraw Graph**.

Graph

Line 1: Gross Federal Debt Held by the Public (YGFDPUB)

Scale:  Line Style:  Line Width:  Mark Type:  Mark Width:  Color:

Observation Date Range:  to   
Observation Quick Range:  Custom  1yr  5yrs  10yrs  Max

Frequency:  Aggregation Method:

(a) Gross Federal Debt Held by the Public (YGFDPUB), Annual, Fiscal Year, 1939-06-30 to 2010-09-30  
Units:   
[Remove Data Series](#)

(b) Gross Domestic Product (GDP), Annual, 1929-01-01 to 2011-01-01  
Units:   
[Remove Data Series](#)

Create Your Own Data Transformation

Use a formula to modify and combine data series into a single line. For example, invert an exchange rate **a** by using formula  $1/a$ , or calculate the spread between 2 interest rates **a** and **b** by using formula  $a - b$ .

Use the assigned data series variables above (e.g. **a**, **b**, ...) together with operators {+, -, \*, /, ^}, braces {}, and constants {e.g. 2, 1.5} to create your own formula {e.g.  $1/a$ ,  $a-b$ ,  $(a+b)/2$ ,  $(a/(a+b+c))*100$ }. The default formula 'a' displays only the first data series added to this line. You may also [add data series to this line](#) before entering a formula.

Need help? Read the step by step [tutorial with screenshots](#).

Formula:

Apply a Transformation to the Formula Result:

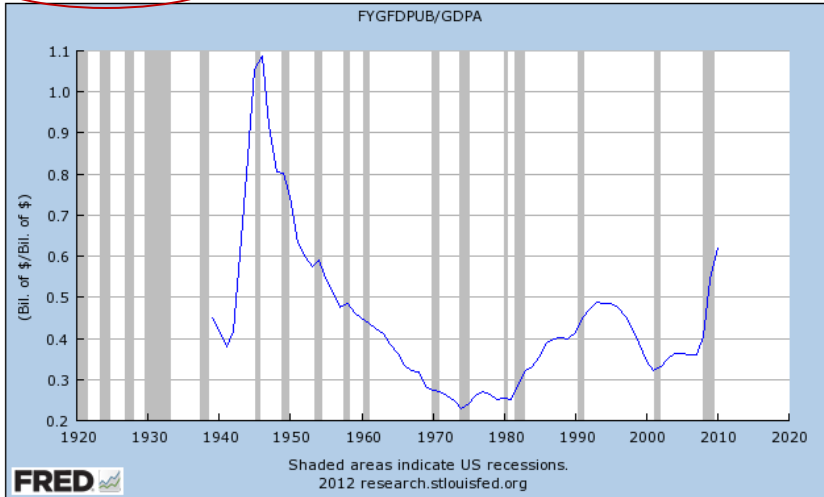
12. This is the graph of the debt/GDP ratio for publicly held debt. Download the data in the graph.



SHARE   

### FRED Graph

[Download Data in Graph](#) | [Print](#) | [PDF](#) | [Link](#) | [View Saved Graphs](#) | [Save Graph](#) | [Help](#)



Settings [Restore Defaults](#) | [Save Settings](#) | [Apply Saved Settings](#)

- ▶ Graph
- ▶ Line 1: FYGDPUB/GDPA
- ▶ Add Data Series

21. For 2010, what is the ratio?