

FRED Data Practice: “U.S. deficit and debt” Objectives

In this FRED data practice, you will learn:

- Several different ways to measure the government’s financial situation (Federal Deficit, Debt as a % of GDP)
- The definition of the U.S. federal deficit, gross domestic product (GDP), and debt
- Many ways to locate data time series in the FRED database (search box, categories, series ID,) (steps 2, & 5-7)
- Other sources of government financial data (step 7)

You will also learn how to:

- View and interpret data in a FRED series (steps 3-4, & 13)
- Edit graphs in FRED (step 8)
- Add a series to a FRED graph (steps 9-10)
- Perform a data transformation (steps 11-13)

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.



MY ACCOUNT | REGISTER | SIGN IN |

deficit

Federal Surplus or Deficit [-] Search FRED

Cash surplus/deficit (% of GDP) for the United States

Cash surplus/deficit (% of GDP) for Greece

Cash surplus/deficit (% of GDP) for the World

Cash surplus/deficit (% of GDP) for the Democratic Republic of the Congo

Cash surplus/deficit (% of GDP) for Argentina

General government net lending/borrowing for Spain

ECONOMIC RESEARCH
FEDERAL RESERVE BANK OF ST. LOUIS

FRED® Economic Data | Data Tools | Publications | Working Papers | Economists | More |

Federal Reserve Economic Data

Download, graph, and track
45,000 economic time series from **40** sources.

View data by:

TAGS | CATEGORIES | RELEASES | SOURCES | UPDATES | RELEASE CALENDAR |

FRED NEWS FEATURES

2 Series Added to FRED from the Federal Highway Administration
posted on May 4

FRED Gets a New Look and New Features!
posted on Apr 25

20 Purchase Only House Price Indexes Added to FRED
posted on Apr 18

FRED App Now Available for iOS and Android Devices

Our FRED app is now available for iOS and Android-compatible smartphones and tablets, giving data users greater access to economic data on the go — anytime, anywhere.

Learn More

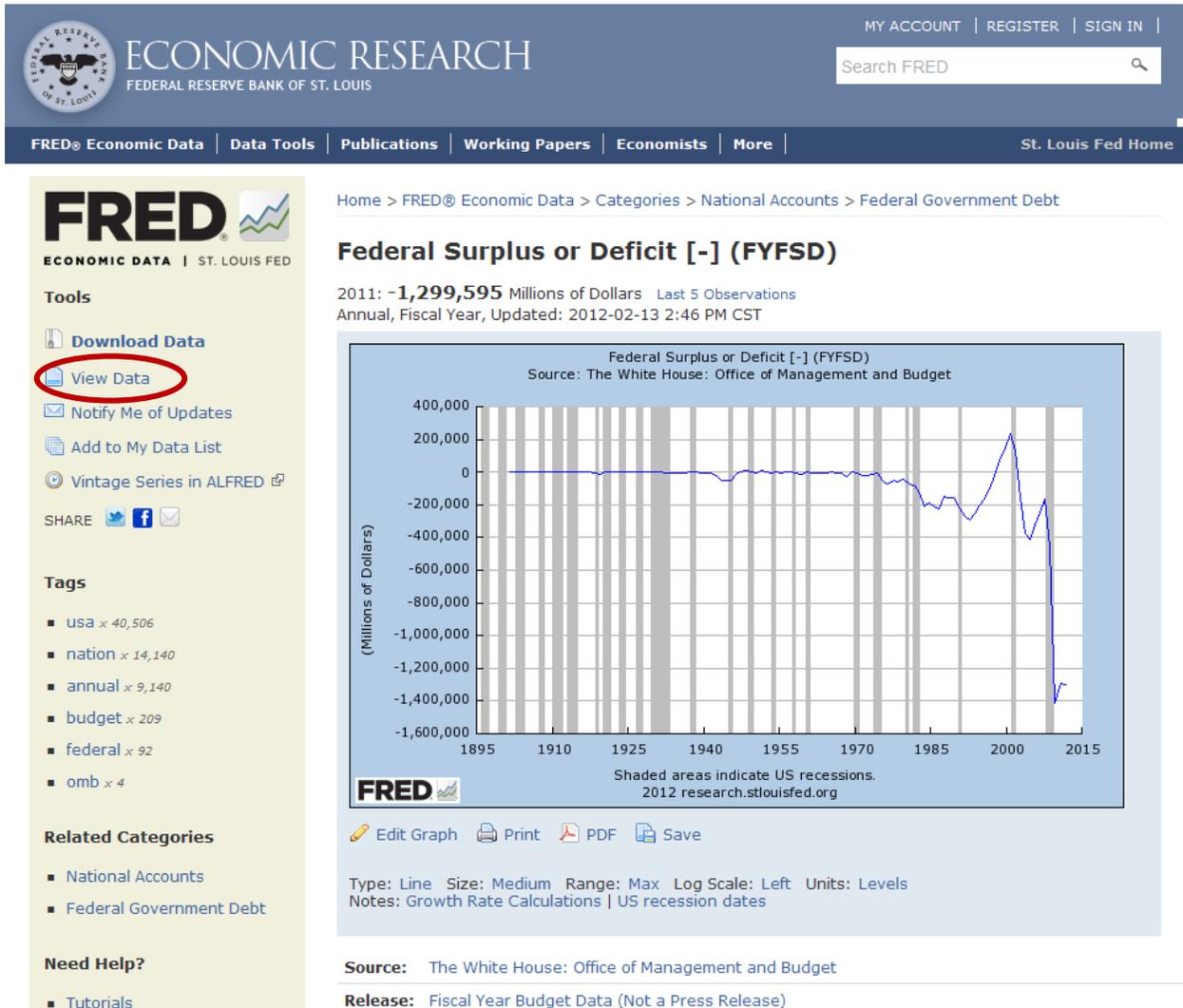
AT A GLANCE | POPULAR SERIES | LATEST RELEASES | TOOLS | NEED HELP?

rollover graph icon for an expanded view

CPI
+2.6 % Chg. from Yr. Ago on 2012-03

US/Euro FX Rate
1.3091 U.S. \$ to 1 Euro on 2012-05-04

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 Economic Data interface. At the top, there is a navigation bar with the Federal Reserve Bank of St. Louis logo and the text 'ECONOMIC RESEARCH FEDERAL RESERVE BANK OF ST. LOUIS'. To the right, there are links for 'MY ACCOUNT', 'REGISTER', and 'SIGN IN', along with a search box labeled 'Search FRED'. Below this is a secondary navigation bar with links for 'FRED® Economic Data', 'Data Tools', 'Publications', 'Working Papers', 'Economists', and 'More', and a link for 'St. Louis Fed Home'.

The main content area is titled 'Federal Surplus or Deficit [-] (FYFSD)'. It shows the current value as '2011: -1,299,595 Millions of Dollars' and 'Last 5 Observations'. The data is updated as of '2012-02-13 2:46 PM CST'. The graph displays the data from 1895 to 2015, with shaded areas indicating US recessions. 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 line representing the federal surplus or deficit, which is mostly near zero until the late 1980s, then shows a significant deficit, peaking around 2000 and reaching a low point around 2010.

On the left side of the page, there is a sidebar with the 'FRED' logo and 'ECONOMIC DATA | ST. LOUIS FED'. Under 'Tools', there are several options: 'Download Data', 'View Data' (highlighted with a red circle and a red arrow), 'Notify Me of Updates', 'Add to My Data List', and 'Vintage Series in ALFRED'. There are also social media share buttons for Twitter, Facebook, and Email. Below 'Tags', there are several categories listed, such as 'usa x 40,506', 'nation x 14,140', 'annual x 9,140', 'budget x 209', 'federal x 92', and 'omb x 4'. Under 'Related Categories', there are 'National Accounts' and 'Federal Government Debt'. At the bottom, there is a 'Need Help?' section with a link to 'Tutorials'.

Below the graph, there are options to 'Edit Graph', 'Print', 'PDF', and 'Save'. The graph type is 'Line', size is 'Medium', range is 'Max', log scale is 'Left', and units are 'Levels'. Notes include 'Growth Rate Calculations' and 'US recession dates'. The source is 'The White House: Office of Management and Budget' and the release is 'Fiscal Year Budget Data (Not a Press Release)'.

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?

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).

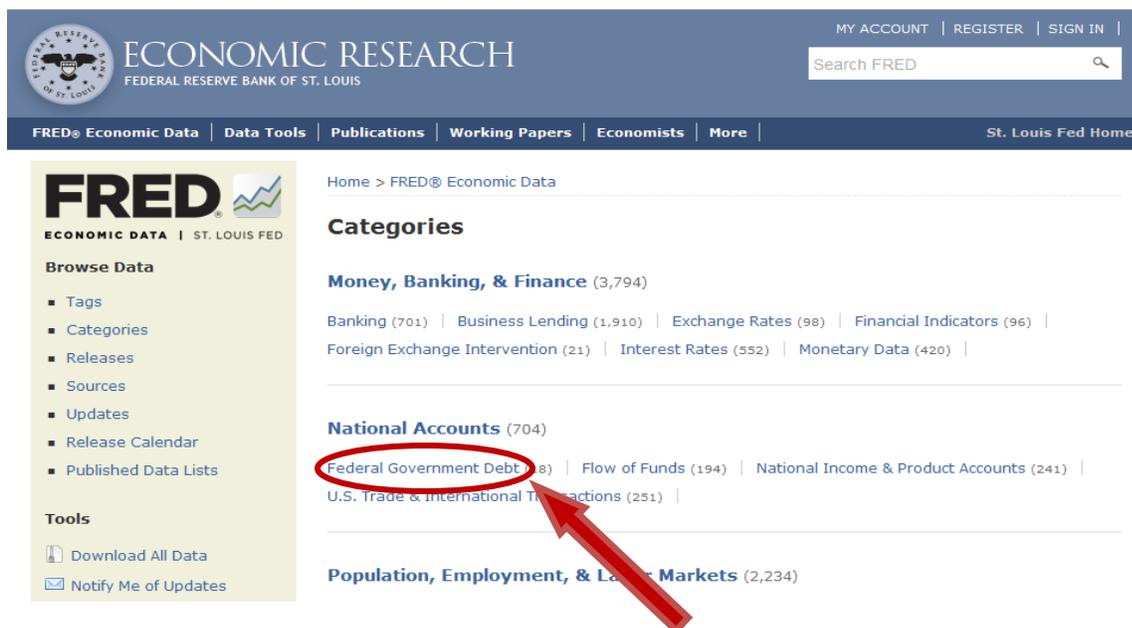
DATE	VALUE
1901-06-30	63
1902-06-30	77
1903-06-30	45
1904-06-30	-43
1905-06-30	-23
1906-06-30	25
1907-06-30	87
1908-06-30	-57
1909-06-30	-89
1910-06-30	-18
1911-06-30	11
1912-06-30	3
1913-06-30	0
1914-06-30	0
1915-06-30	-63
1916-06-30	48
1917-06-30	-853
1918-06-30	-9032
1919-06-30	-13363
1920-06-30	291
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. Click the Categories tab.



6. Under **National Accounts**, choose **Federal Government Debt**.



7. The data are sorted by popularity. You will need to scroll down the page. 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.

The screenshot shows the FRED website interface. At the top, there's a navigation bar with 'ECONOMIC RESEARCH FEDERAL RESERVE BANK OF ST. LOUIS' and a search bar. Below that, a menu includes 'FRED Economic Data', 'Data Tools', 'Publications', 'Working Papers', 'Economists', and 'More'. The main content area is titled 'Federal Government Debt' and shows a list of series sorted by popularity. A red arrow points to the series 'Gross Federal Debt Held by the Public' (FYGFDPUB, 1939 to 2010, Annual, Billions of Dollars (2011-02-24)).

Related Tags:

- debt x 14
- fms x 12
- quarterly x 12
- annual x 6
- discontinued x 6
- nsa x 6
- sa x 6
- omb x 4

Series List:

- Federal Government Debt: Total Public Debt**
GFDEBTN, 1966:Q1 to 2011:Q4, Quarterly, Millions of Dollars, Not Seasonally Adjusted (Mar 8)
usa nation nsa quarterly federal government debt fms public
- Federal Surplus or Deficit**
FYFSD, 1901 to 2011, Annual, Millions of Dollars (Feb 13)
usa nation annual federal b
- Gross Federal Debt**
FYGFD, 1939 to 2010, Annual, Billions of Dollars (2011-02-24)
usa nation annual federal c
- Federal Debt Held by Foreigners**
FDHBFIN, 1970:Q1 to 2011:Q4, Quarterly, Billions of Dollars, Not Seasonally Adjusted (Mar 8)
usa nation nsa quarterly fe
- Federal Debt Held by the Public**
FYGFDPUN, 1970:Q1 to 2011:Q4, Quarterly, Billions of Dollars, Not Seasonally Adjusted (Mar 8)
usa nation nsa quarterly fe
- Federal Net Outlays**
FYONET, 1901 to 2011, Annual, Millions of Dollars (Feb 13)
usa nation annual federal net omb outlays
- Federal Debt Held by Federal Reserve Banks**
FDHBFBN, 1970:Q1 to 2011:Q4, Quarterly, Billions of Dollars, Not Seasonally Adjusted (Mar 8)
usa nation frb nsa quarterly federal banks debt fms
- Federal Receipts**
FYFR, 1901 to 2011, Annual, Millions of Dollars (Feb 13)
usa nation annual federal omb receipts
- Federal Outlays: Interest**
FYOINT, 1940 to 2011, Annual, Millions of Dollars (Feb 13)
usa nation annual federal interest omb outlays
- Federal Debt Held by Private Investors**
FDHBPIN, 1970:Q1 to 2011:Q4, Quarterly, Billions of Dollars, Not Seasonally Adjusted (Mar 8)
usa nation nsa quarterly federal debt private fms
- Gross Federal Debt Held by the Public**
FYGFDPUB, 1939 to 2010, Annual, Billions of Dollars (2011-02-24)
usa nation annual federal debt gross public cea

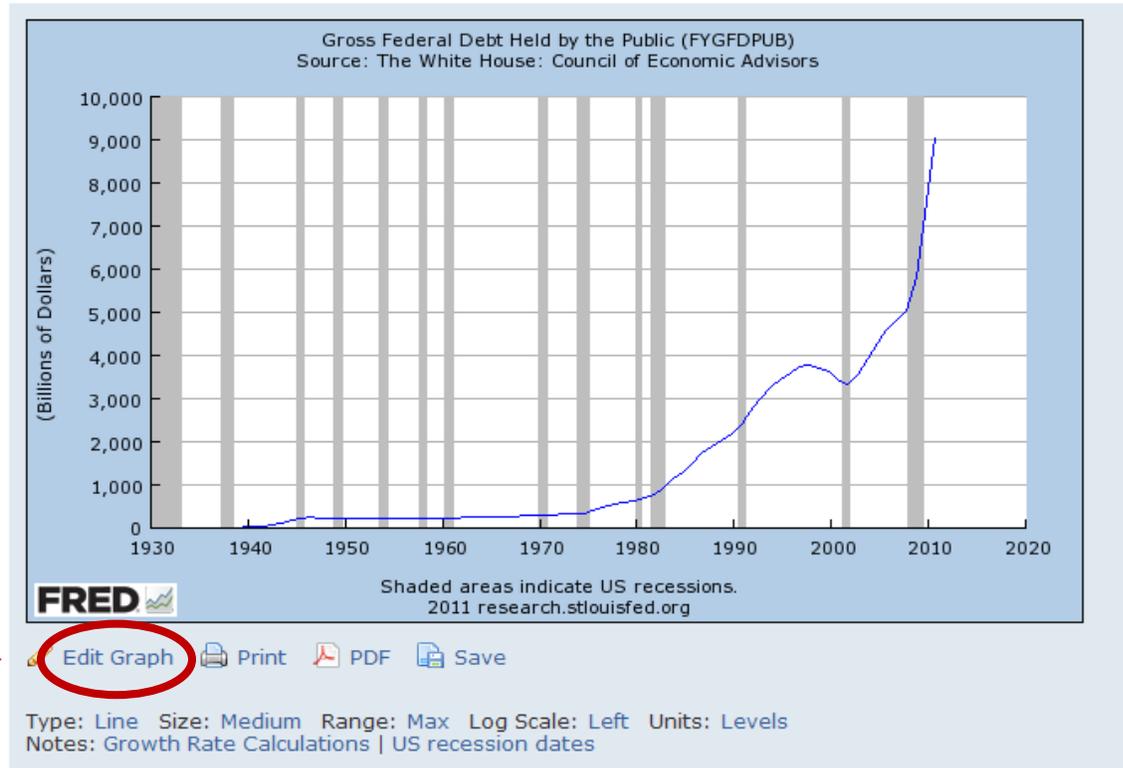
***NOTE:** Every year, the Council of Economic Advisors issues the [Economic Report of the President](#). That document contains the amount of gross federal debt held by the public. You can also find historical debt series at the Congressional Budget Office at [http://www.cbo.gov/ftpdocs/120xx/doc12039/historicalTables\[1\].xls](http://www.cbo.gov/ftpdocs/120xx/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).

[Home](#) > [FRED® Economic Data](#) > [Categories](#) > [National Accounts](#) > [Federal Government Debt](#)

Gross Federal Debt Held by the Public (FYGFDPUB)

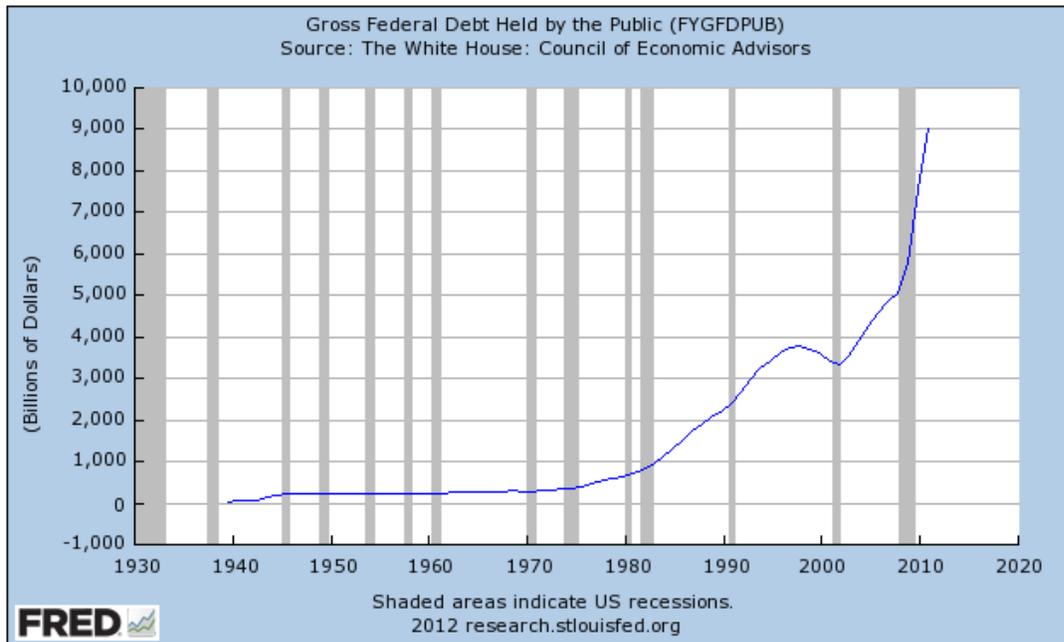
2010: **9,018.9** Billions of Dollars [Last 5 Observations](#)
Annual, Fiscal Year, Updated: 2011-02-24 12:01 PM CST



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)

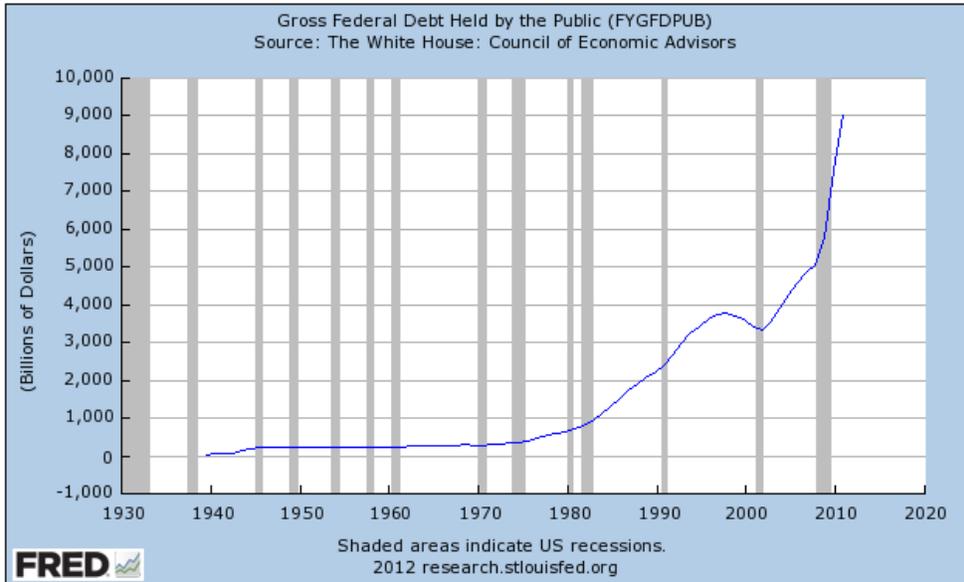


Add Data Series

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)

[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**

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

Search: [Browse](#)

- Real GDP per Capita in the United States
USARGDPC, A, 2010 U.S. \$, NSA
- Gross Domestic Product**
GDPA, A, Bil. of \$, NA

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

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 (FYGFDPUB)

Scale: Left Line Style: Solid Line Width: 1 Mark Type: None Mark Width: 4 Color: Blue

Observation Date Range: 1929-01-01 to 2011-01-01
Observation Quick Range: Custom 1yr 5yrs 10yrs Max

Frequency: Annual Aggregation Method: Average

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

(b) Gross Domestic Product (GDP), Annual, 1929-01-01 to 2011-01-01
Units: Billions of Dollars
[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: a/b

Apply a Transformation to the Formula Result:

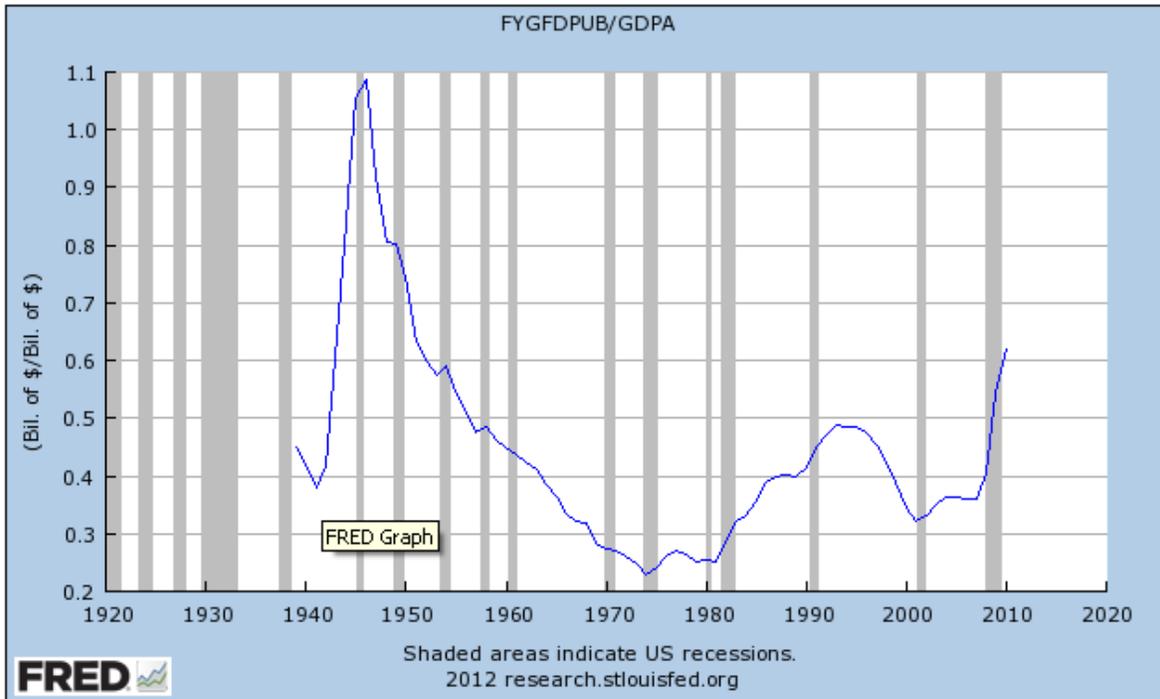
Redraw Graph Remove Line

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



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: FYGFD PUB/GDPA

13. For 2010, what is the ratio?