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.

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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

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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.
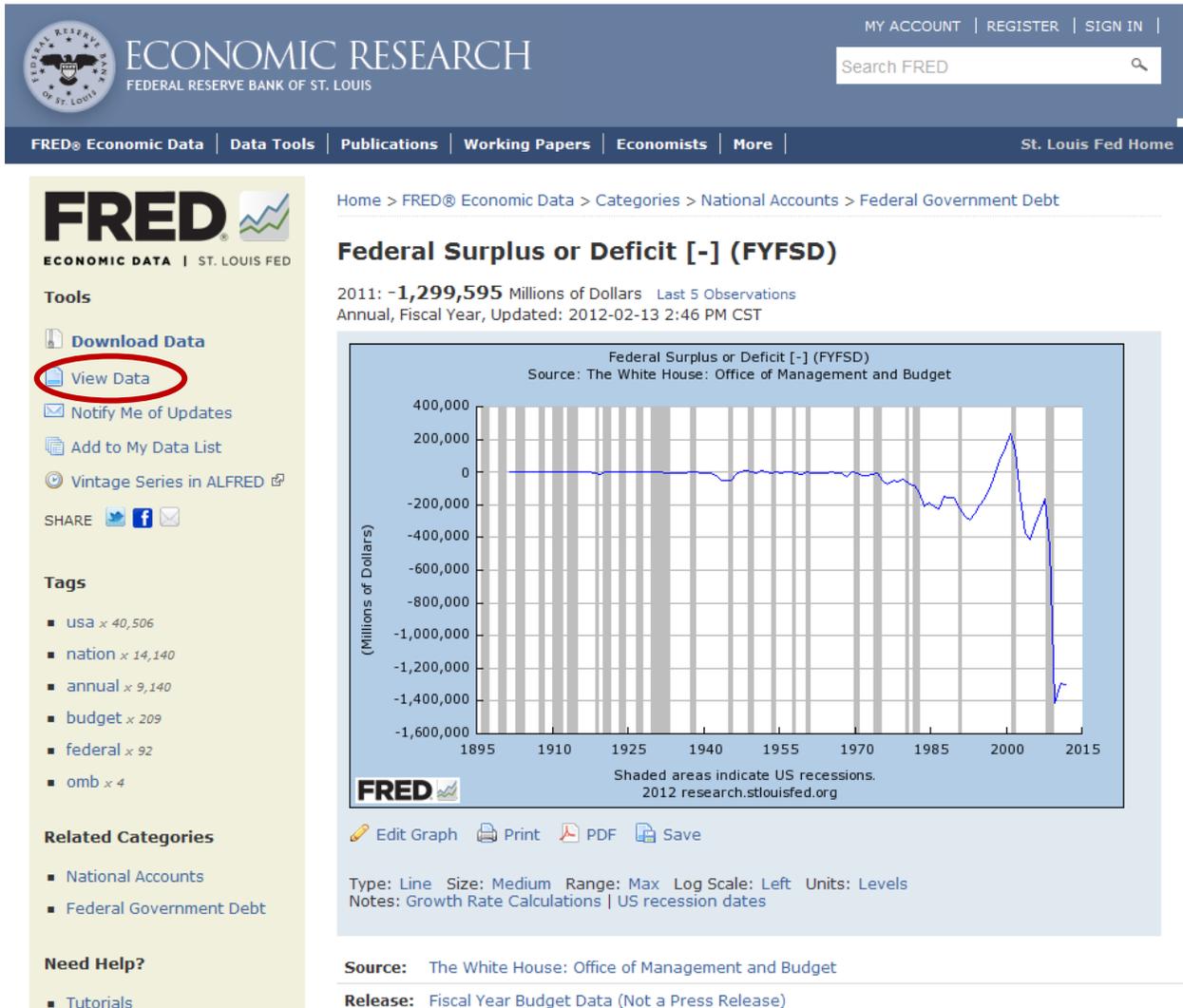
Learn More

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).

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**.
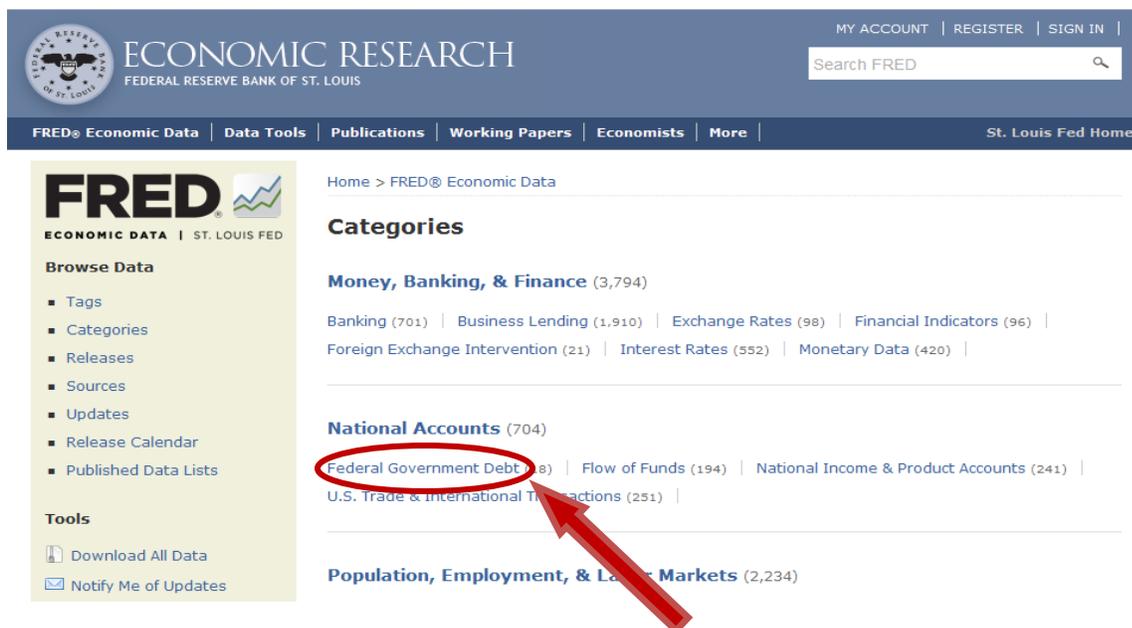
7.   The data are sorted by popularity. You will need to scroll down the page. Choose the "**Gross Federal Debt Held by the Public**" series. This series includes holdings of the Federal Reserve System and excludes holdings of the social security and other federal trust funds.* These are annual data and go back to 1939.

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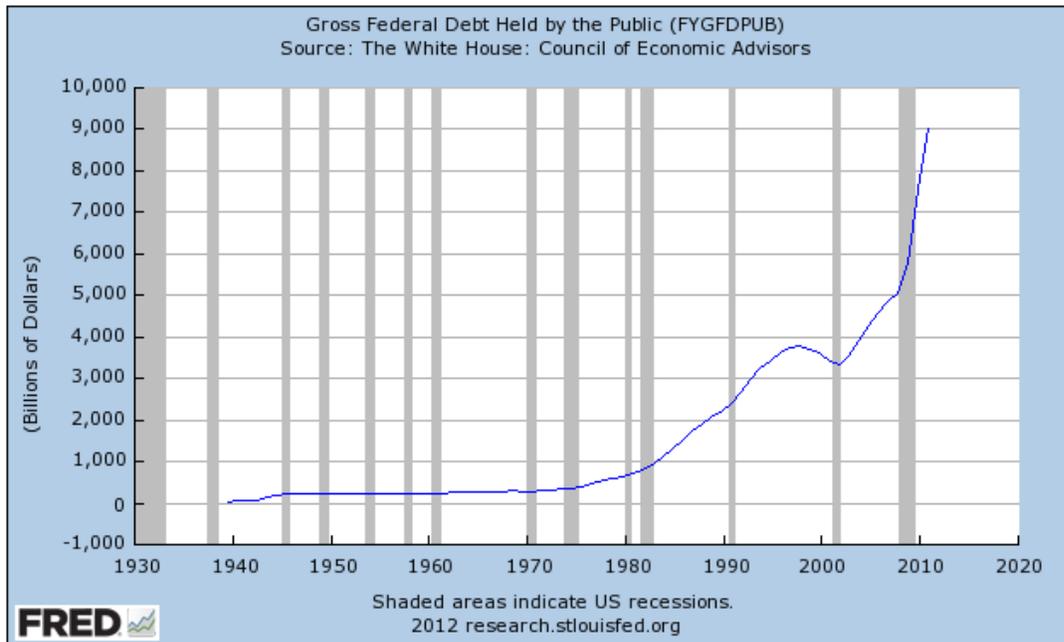
2010: **9,018.9** Billions of Dollars   Last 5 Observations
Annual, Fiscal Year, Updated: 2011-02-24 12:01 PM CST

Edit Graph   🖨 Print   📄 PDF   📋 Save

Type: Line   Size: Medium   Range: Max   Log Scale: Left   Units: Levels
Notes: Growth Rate Calculations | US recession dates
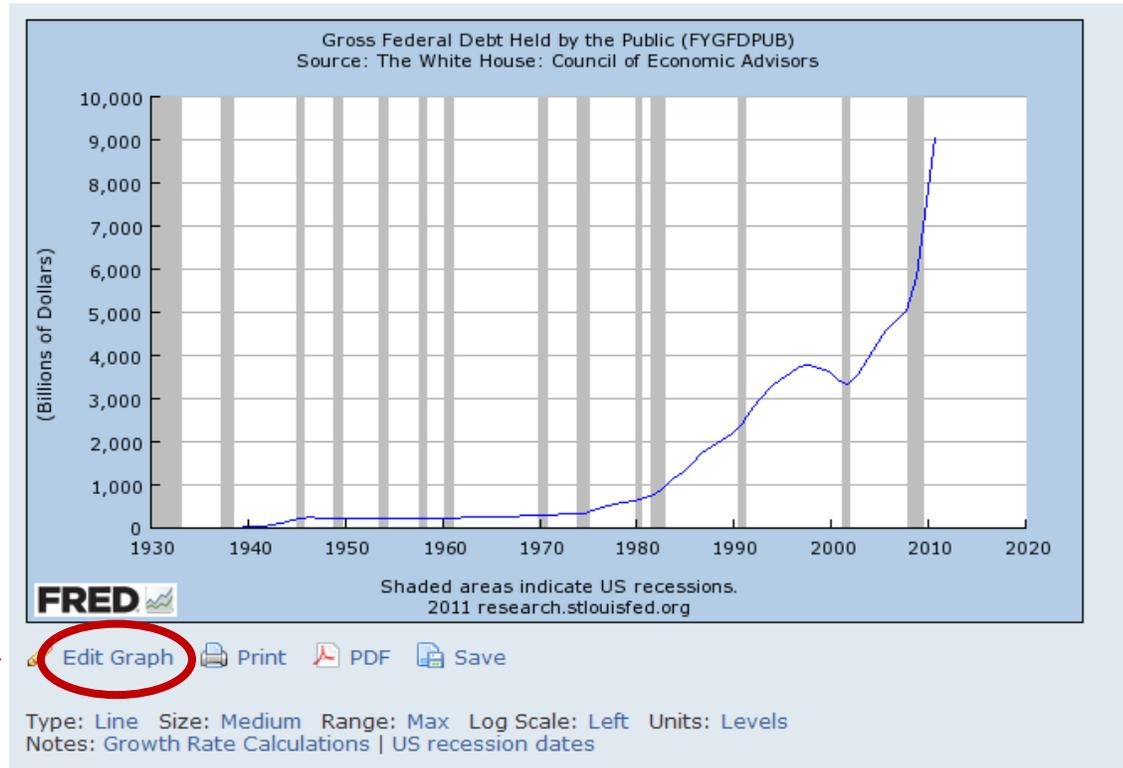
9.	The new graph may be edited—for this exercise, you will add the gross public debt data to the same line as the GDP data, and then divide the debt by GDP to get the ratio (percentage). First click on the **Add Data Series** section.

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

Download Data in Graph | Print | PDF | Link | View Saved Graphs | Save Graph | Help

Gross Federal Debt Held by the Public (FYGFDPUB)
Source: The White House: Council of Economic Advisors

Shaded areas indicate US recessions.
2012 research.stlouisfed.org

Settings Restore Defaults | Save Settings | Apply Saved Settings

▸ Graph

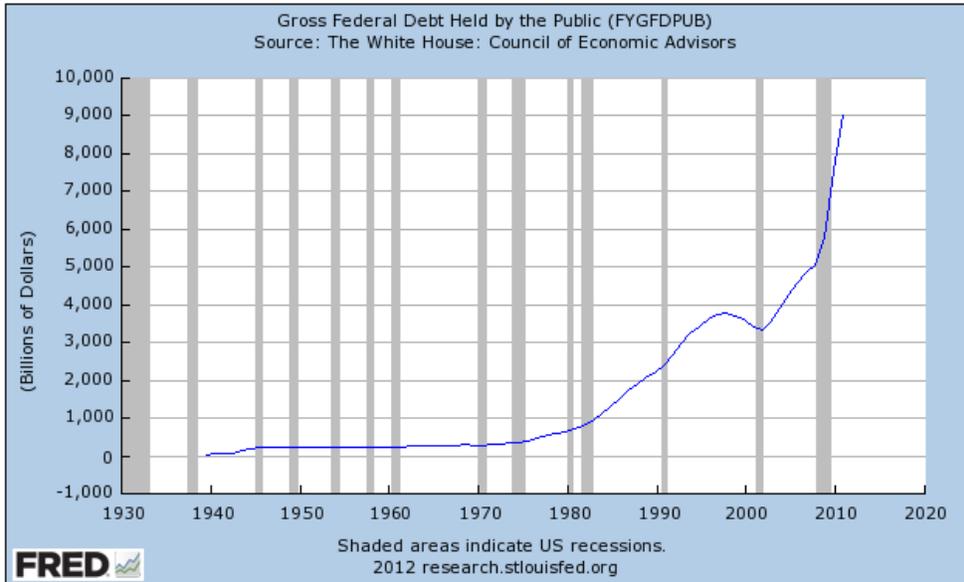▸ Line 1: Gross Federal Debt Held by the Public (FYGFDPUB)

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: Gross Domestic Product   Browse

Real GDP per Capita in the United States
USARGDPC, A, 2010 U.S. $, NSA

Notes on gr[o]   Gross Domestic Product   [a]tion
                    GDPA, A, Bil. of $, NA

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: ■

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 (GDPA), 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]

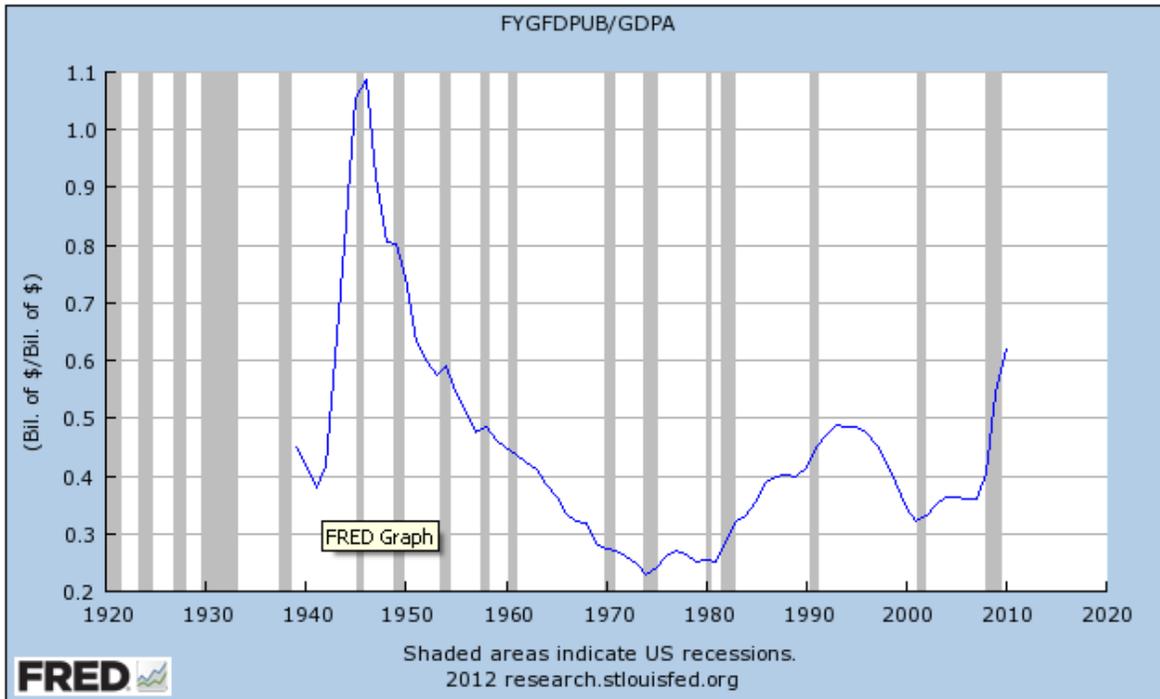**Apply a Transformation to the Formula Result:** [▾]

[Redraw Graph]   [Remove Line]

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

13.   For 2010, what is the ratio?