

FRED ADD-IN

MAC USER'S GUIDE

VERSION 1.4 (BETA)



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INTRODUCTION

The FRED® (Federal Reserve Economic Data) database contains over 30,000 economic time series. On the FRED website users can view data, create charts, and download data. The FRED Add-In provides data users with an additional means of accessing the FRED database.* After downloading and adding the FRED Add-In to Microsoft® Excel®, users can download any FRED data series directly into an Excel worksheet in seconds. In addition to downloading the data, the FRED Add-In allows users to: choose a data manipulation (i.e., growth rate), specify a date range (i.e., 1960:Q1 to 2010:Q4), aggregate data to lower frequency (i.e., weekly to monthly), search for data, and browse the most popular data series.


*The FRED Add-In uses the FRED API, additional information about the API can be found at:

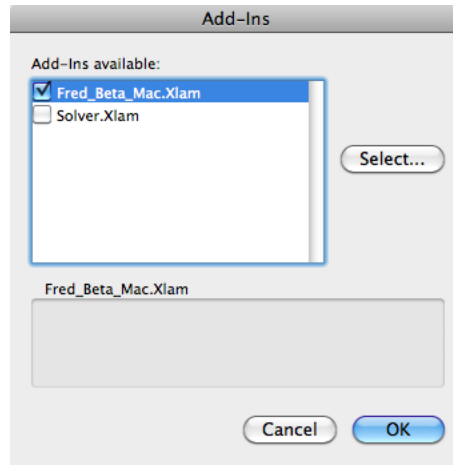
<http://api.stlouisfed.org/docs/fred/>

GETTING STARTED

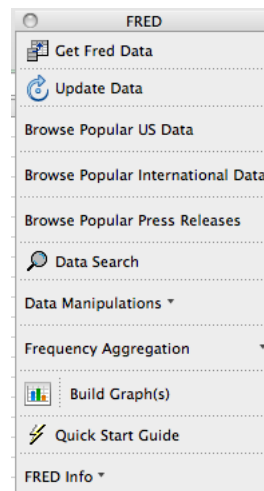
FRED was designed to make accessing and using economic data as easy as possible. The FRED Spreadsheet Add-In is the next step toward improving the usability of economic data for students, researchers, and businesspeople alike. The FRED Add-In has been designed with a simple interface that provides users with a fast way to get economic data from FRED into Excel for conducting analysis using all of the tools Excel has to offer. Just follow the installation procedures and in minutes you'll be downloading FRED data directly into Excel.

INSTALLATION

1. Extract the Add-In folder (Fred) on to your computer. You should not move this folder after you install the Add-In.
2. Open a blank Excel workbook and choose *Tools* from the top toolbar.
3. Choose *Add-Ins* from the dropdown menu.
4. A pop-up window will appear. Hit the  button and browse for the FRED_mac.xlam file. Make sure the check box next to the Add-In file is checked:



5. Click *OK*.
6. If you are prompted with a security warning asking if you want to allow Macro's and data connections from the Add-In. Click *OK*.
7. Close Excel and re-open it so the Add-In has been installed correctly.
8. To check to see if the FRED Add-In was installed correctly hit *Option + Command + T* and the FRED toolbar should appear.

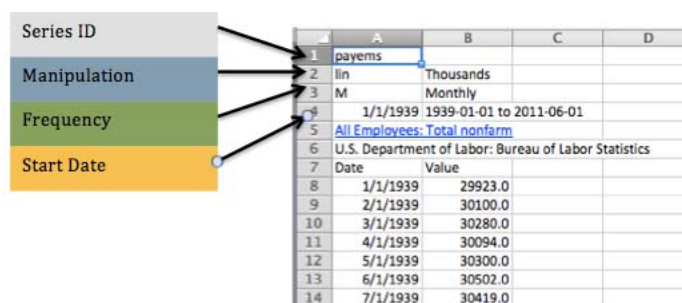


Important Security Note: You may need to change your Excel security settings to avoid the need to allow data connections and macros each time you open Excel. Security settings can be changes under Excel preferences (Command + , → Security → Macro settings).

QUICK-START GUIDE*

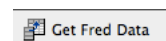
To open the FRED toolbar type: *Option + Command + T*

Downloading FRED data into Excel is very simple: the key is understanding which rows of the Excel worksheet to input a Series ID, manipulation, frequency, and start date. The only information necessary to *Get FRED Data* is the Series ID, if the other cells are blank, default settings will be used.



	A	B	C	D
1	payems			
2	lin	Thousands		
3	M	Monthly		
4	1/1/1939	1939-01-01 to 2011-06-01		
5	All Employees: Total nonfarm			
6	U.S. Department of Labor: Bureau of Labor Statistics			
7	Date	Value		
8	1/1/1939	29923.0		
9	2/1/1939	30100.0		
10	3/1/1939	30280.0		
11	4/1/1939	30094.0		
12	5/1/1939	30300.0		
13	6/1/1939	30502.0		
14	7/1/1939	30419.0		

After you have input the desired information, click the Get FRED Data button.



Series IDs

Regular FRED users may be familiar with the FRED Series ID's, (for example *payems* is the Series ID for Nonfarm Payroll Employment). If you know the Series ID, simply type it into a cell in the first row of your worksheet. If not, It is possible to browse the popular FRED data using the *Find Data* menu on the FRED-Excel toolbar.

Data Manipulations

If row 2 is empty, by default the FRED Add-In will download your data "in levels" (without any manipulation). If you would prefer to download the growth rate of a series, enter the desired manipulation into the second row. If you don't know the manipulation IDs, click on the calculator icon on the FRED-Excel toolbar and choose the desired manipulation.

Frequency Aggregation

If row 3 is empty, by default the FRED Add-In will download your data "as reported" by the primary source. For example, Nonfarm Payroll Employment is reported at a monthly frequency. However, you can choose to aggregate your FRED data to a lower frequency by entering your desired frequency ID. If you don't know the frequency IDs just click on the Σ icon on the FRED-Excel toolbar and choose your desired frequency. Important Note: The FRED Add-In will not disaggregate data (i.e., you cannot download monthly data at a daily frequency).

Choose a Start Date

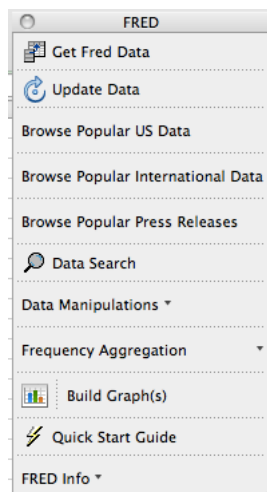
If row 4 is empty, by default the FRED Add-In will download the entire available history of the series. If you only want the last 10 years of data, enter your own starting date in the fourth row and a shorter history of data will be downloaded. Don't worry about the date format, the Excel auto-format takes care of this. The FRED Add-In will make the necessary adjustments if the starting date you entered doesn't exactly match the data series.

*You can always access this quick start guide by clicking on this icon on the Excel toolbar.



DOWNLOADING DATA

Before downloading any data make sure your computer is connected to the internet. If the FRED Add-In has been successfully installed a you can enter *Option+ Command + T* and a toolbar labeled FRED should appear on your screen. On the FRED toolbar you will find a series of buttons.



Downloading FRED data is as simple as typing a FRED *Series ID* (e.g., UNRATE) into the first row of the workbook and clicking the *Get FRED Data* icon.¹

	A	B	C	D
1	unrate			
2	lin	Percent		
3	M	Monthly		
4	1/1/1948	1948-01-01 to 2011-06-01		
5	Civilian Unemployment Rate			
6	U.S. Department of Labor: Bureau of Labor Statistics			
7	date	value		
8	1/1/1948	3.4		
9	2/1/1948	3.8		
10	3/1/1948	4.0		
11	4/1/1948	3.9		
12	5/1/1948	3.5		
13	6/1/1948	3.6		

Once you click *Get FRED Data*, Excel will automatically download the requested data from the FRED website. If no other options (i.e., manipulation, start date, frequency) are specified, by default, all available observations will be downloaded and no data manipulations will occur. The series name, units, and data source are also downloaded with the data. The series name is automatically converted into a hyperlink to the series information on FRED (e.g., research.stlouisfed.org/fred2/series/unrate).

If an invalid *Series ID* is entered, an error message appears and a link with search results on the FRED is created. Search for the correct *Series ID*, edit the contents of the cell, and click the *Get FRED Data* button.

¹ In order to maintain a reasonable processing speed, up to 50 *Series IDs* can be downloaded into a single worksheet.

A	B
money	
lin	
money is not a valid series id	

To add an additional FRED series, move to the next column (in the first row) and type in another *Series ID*.

	A	B	C	D	E	F	G	H
1	unrate		payems		m2			
2	lin	Percent	lin	Thousands	lin	Billions of Dollars		
3	M	Monthly	M	Monthly	W	Weekly, Ending Monday		
4	1/1/1948	1948-01-01 to	1/1/1939	1939-01-01 to	11/3/1980	1980-11-03 to 2011-07-18		
5	Civilian Unemployment Rate		All Employees: Total nonfarm		M2 Money Stock			
6	U.S. Department of Labor: Bureau of Economic Analysis; U.S. Department of Labor: Bureau of Economic Analysis; Board of Governors of the Federal Reserve System							
7	<u>date</u>	<u>value</u>	date	value	date	value		
8	1/1/1948	3.4	1/1/1939	29923.0	11/3/1980	1591.4		
9	2/1/1948	3.8	2/1/1939	30100.0	11/10/1980	1592.9		
10	3/1/1948	4.0	3/1/1939	30280.0	11/17/1980	1596.3		
11	4/1/1948	3.9	4/1/1939	30094.0	11/24/1980	1597.2		
12	5/1/1948	3.5	5/1/1939	30300.0	12/1/1980	1596.1		

The next section reviews the available features in the FRED Add-In.

FEATURES

The features of the FRED Add-In are designed with the general-user in mind. The Add-In offers some basic conveniences without unnecessary complexity. Future versions of the Add-In may include more advanced settings. Until then, advanced users should rely on the tools in Excel.

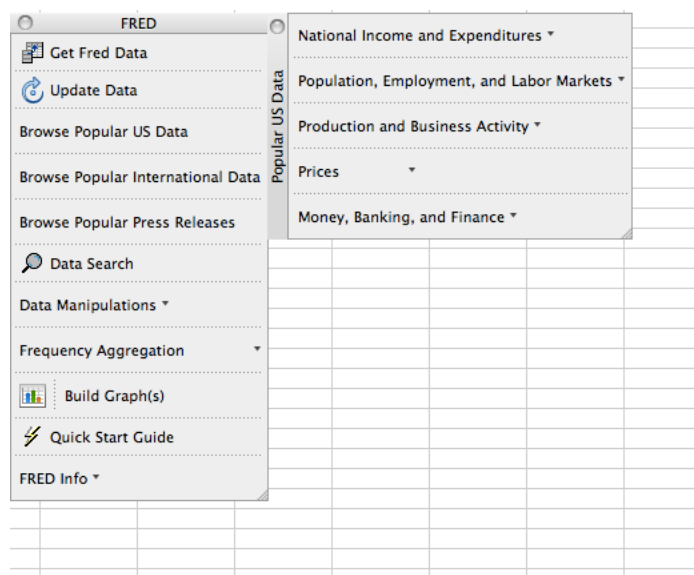
FINDING DATA SERIES ON FRED

Each economic data series in FRED has a unique *Series ID*. The FRED Add-In requires users to input a series ID into the first row of cells in their workbook.

There are two ways to find a data series using the FRED Add-In: (1) Browsing data using the drop-down lists on the Excel toolbar; (2) Searching for data on the FRED website. Browsing is fastest and easiest way to locate the most popular data in FRED because this option is limited to approximately the 100 most popular economic data series and 15 major economic press releases. Searching, on the other hand, provides access to over 30,000 data series in the FRED database.

BROWSING FOR DATA


If you are not familiar with the FRED *Series IDs*, browsing is the easiest way to locate data. Click on one of the *Browse* buttons in the toolbar (e.g., Browse Popular U.S. Data) and you'll find the data series have been organized into major groups. For example, popular U.S. data are organized into five sections, and popular international data are organized by-country.



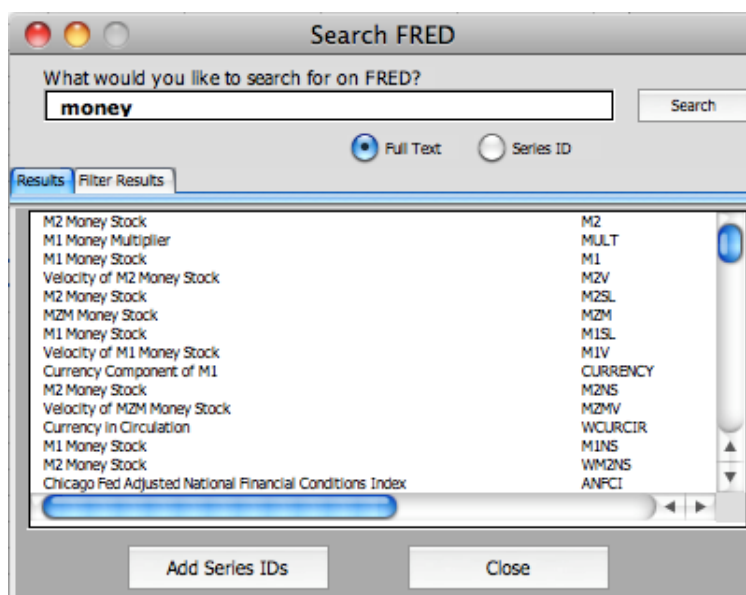
Once you've located the data series of interest, click on the name and the FRED *Series ID* is automatically input into the active cell.² Click the *Get Data* button and your data will be retrieved. Once a data series has been selected and input into the active cell, the active cell will automatically move one column to the right so numerous series can easily be selected one-after-another.

² FRED *Series ID's* need to be entered into the first row of the active worksheet, if the active cell is not in the first row you will receive an error message.

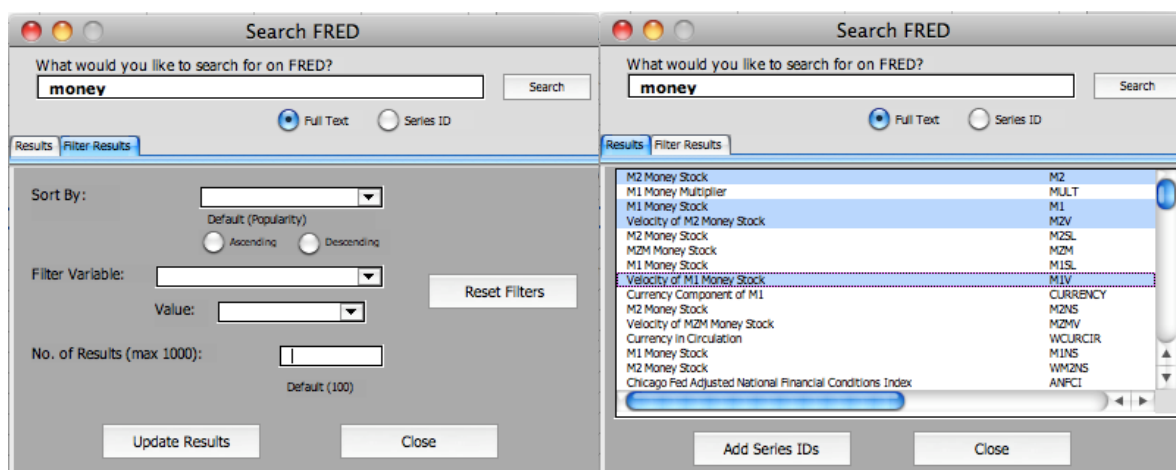
SEARCHING FOR DATA

To search for data in FRED simply click on the magnifying glass icon on the ribbon.  Data Search

A pop-up window will appear: Input a query here to search the FRED database.



Search results are sorted by popularity (based on the number of downloads) to help users identify the series they are most likely interested in. The results window displays the series name, id, units, seasonal adjustment, and frequency: Scroll to the right to see additional information. The search results can be filtered and re-sorted using the second tab on the search menu.



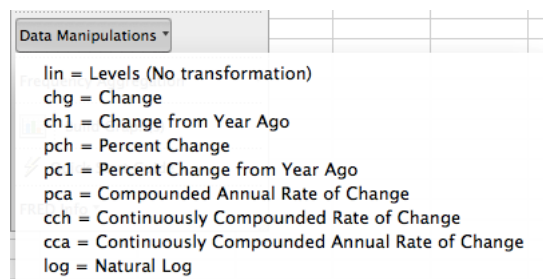
Add the IDs to your spreadsheet by selecting the variable(s) of interest and click *Add Series ID*.

DATA MANIPULATIONS

One of the challenges for many users of economic data is manipulating data series into growth rates. The FRED Add-In makes this easy by allowing users to select their desired data manipulation. Just like row 1 is reserved for a *Series ID*, row 2 is reserved for a data manipulation. Type the desired data manipulation (e.g., chg) directly below the *Series ID* and click the *Get FRED Data* button (see below). If no manipulation is specified, the data will be downloaded with no transformation.

	A	B
1	PAYEMS	
2	chg	
3		
4		

If you're unfamiliar with the data manipulation ID's, the FRED Add-In will help you: The *Data Manipulations* button includes commands for all the data manipulations. Click on desired manipulation and the ID will appear in the active cell.



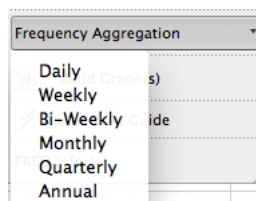
The manipulations, abbreviations, and formulas are:

- Levels (lin): x_t
- Change (chg): $x_t - x_{t-1}$
- Change from Year Ago (ch1): $x_t - x_{t-n}$
- Percent Change (pch): $((x_t / x_{t-1}) - 1) * 100$
- Percent Change from Year Ago (pc1): $((x_t / x_{t-n}) - 1) * 100$
- Compound Annual Rate of Change (pca): $((x_t / x_{t-1})^n - 1) * 100$
- Continuously Compounded Rate of Change (cch): $(\ln(x_t) - \ln(x_{t-1})) * 100$
- Continuously Compounded Annual Rate of Change (cca): $((\ln(x_t) - \ln(x_{t-1})) * 100) * n$
- Natural Log (log): $\ln(x_t)$

Where x_t is the value of the FRED series x at time t and n is the number of observations per calendar year. For example $n = 12$ for monthly data and $n = 4$ for quarterly data.

FREQUENCY AGGREGATION

Sometimes it is useful to create a data worksheet of series with matching frequencies. With the FRED Add-In it is easy to aggregate data to lower frequencies (i.e., daily to monthly) using the frequency aggregation option. The data frequencies are input in the third row of the worksheet. Available frequencies include: **Daily**, **Weekly** (ending Friday),³ **Biweekly**, **Monthly**, **Quarterly**, and **Annual** (Aggregation ID's in bold). The aggregation button on the toolbar can be used for easy browsing and cell input.



After selecting a frequency and clicking the *Get FRED Data*, the following results will appear:

	A	B	C	D
1	payems			
2	lin	Thousands		
3	a	Monthly		
4	1/1/1939	1939-01-01 to 2011-06-01		
5	All Employees: Total nonfarm			
6	U.S. Department of Labor: Bureau of Labor Statistics			
7	date	value		
8	1/1/1939	30644.0		
9	1/1/1940	32409.0		
10	1/1/1941	36609.0		
11	1/1/1942	40230.0		

By default, averages are used as the aggregation method. Alternative aggregation methods include the sum (sum) and end of period (eop). To use a different aggregation method, type a comma and the method into the cell (e.g., a,sum) and then update your data. Users who use other aggregation methods can become familiar with this notation and can type *a,sum* or *a,eop* directly into the cell. The menu options have been limited for ease of use.

³Weekly data series are not necessarily released over the same time intervals (e.g., weekly, ending Monday; weekly, ending Wednesday). See the series frequency on FRED or check the observation dates. At this time daily data are always aggregated to *weekly, ending Friday*.

SET CUSTOM DATE RANGES

If you don't want the entire history of a series, the FRED Add-In lets you specify the start date. Just like row 1, row 2, and row 3, are reserved for the FRED *Series ID*, data manipulation, and frequency, row 4 is reserved for a start date.

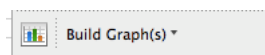
	A	B	C	D
1	payems			
2	lin	Thousands		
3	a	Monthly		
4	1/1/1939	1939-01-01 to 2011-06-01		
5	All Employees: Total nonfarm			
6	U.S. Department of Labor: Bureau of Labor Statistics			
7	date	value		
8	1/1/1939	30644.0		
9	1/1/1940	32409.0		
10	1/1/1941	36609.0		

In order to add a starting date type the date below the *Series ID* in row 4 and click *Get FRED Data*. If a start date is older than the first observation, the Add-In returns entire history of the series. The standard Excel auto-formats will occur on the input date (e.g., if no year is entered Excel will use the current year as default). The FRED Add-In will automatically make adjustments if the date entered does not correspond to a specific observation date. For reference, the date range of the data series is also returned in the cell above the series values.

You can also download a fixed number observations by typing "N=*Number*." For example if you enter N=20 into the date cell the FRED add-in will only download the most recent 20 observations. This feature can be very useful when generating custom tables and charts that can update automatically.

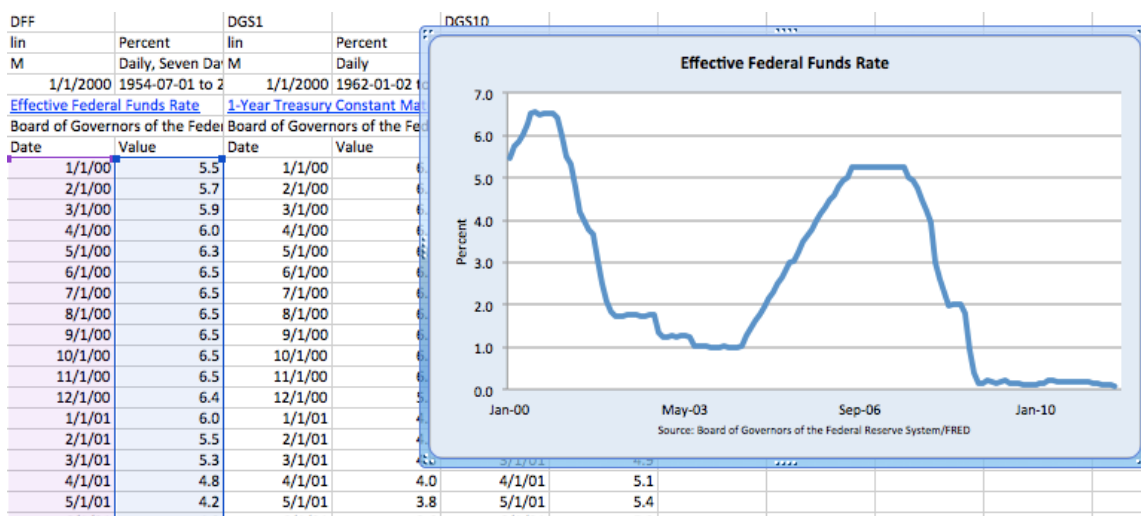
CREATE FRED GRAPHS IN EXCEL

The FRED Add-In also has the ability to create a FRED graph with the simple click of a button. The *Build Graph* button has been included on the FRED toolbar of the Excel workbook.

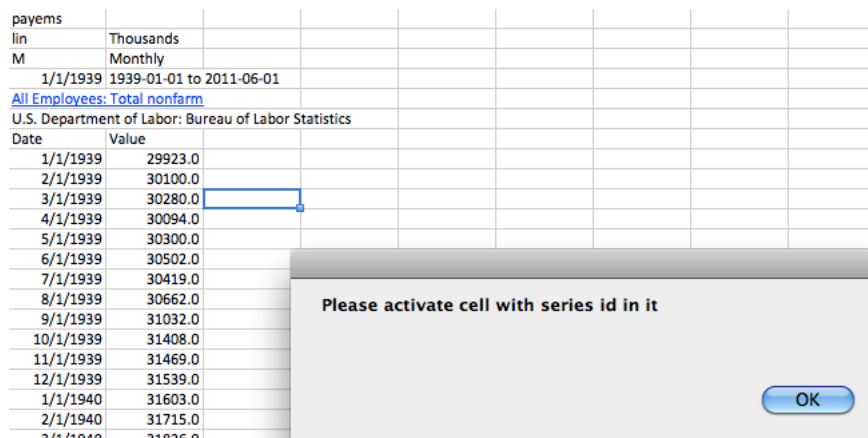


There are two options on this button:

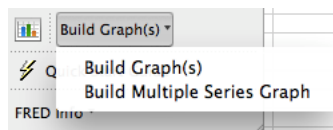
The FRED icon at the top of the button is the *Quick Graph* button; if the active cell is a FRED *Series ID* (and the data have been downloaded) a graph automatically appears.



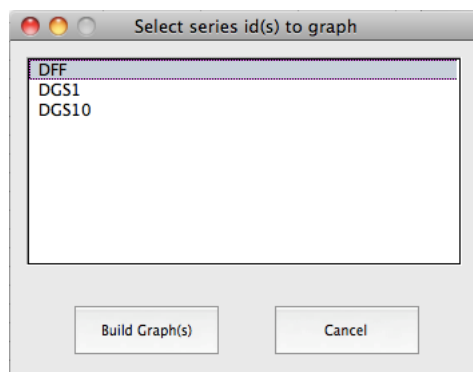
If the active cell is not a FRED *Series ID* you will be prompted to move to an active cell.



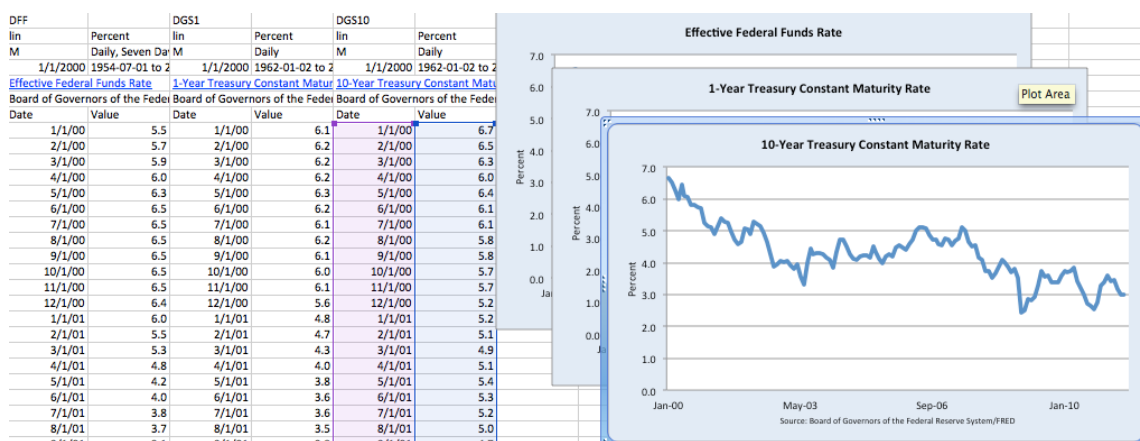
To create multiple graphs use the dropdown menu on the button. *Build Graph(s)*, allows creation of one or more graphs.



Clicking on this button will generate a pop-up window allowing you to choose the downloaded FRED *Series IDs* to Graph.

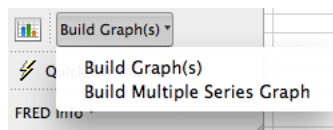


Chose your desired data series and click on the OK button. Your graphs will be created cascading down the page in a few seconds.



Right-clicking on any graph allows the use of the normal Excel chart options.

To create a single graph with more than one line, use the dropdown menu on the button. *Build Multiple Series Graph* makes it easy to graph up two three series on a single chart.

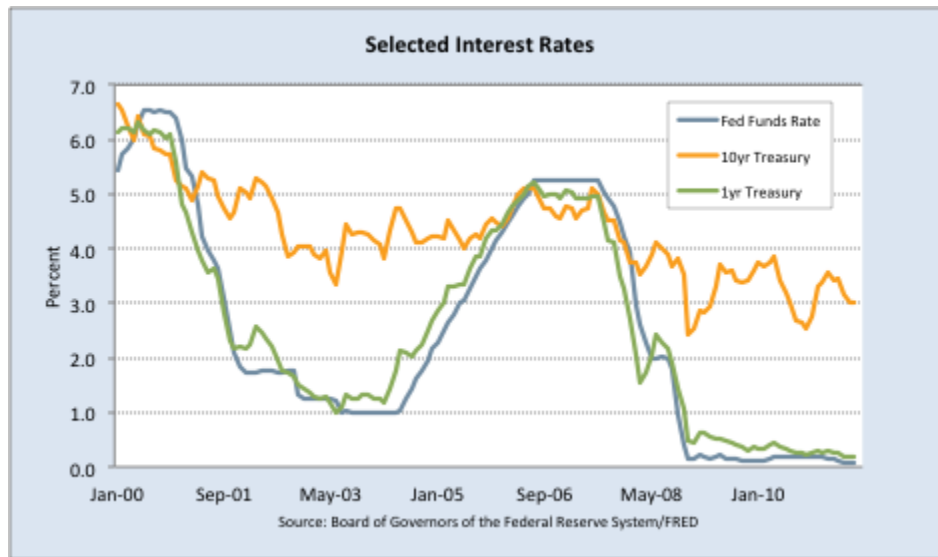


Clicking on this button will generate a pop-up window that allows you to choose the downloaded FRED series IDs to graph.

**In order to reduce the possibility of Excel inaccurately depicting the data, the data in the graph must have (1) the same frequency (2) start on the same date. Although it is possible to create graphs in Excel with data that do not meet these criteria, they need to be handled on a case-by-case basis, making an automatic procedure susceptible to errors.*

Chose your desired data series, set your titles (optional), legend labels (optional) and click on the *Build Graph* button.

And the following graph is created:



Another great feature! The graphs created with the FRED graphing buttons will automatically update whenever you click the *Update Data* button.⁴

⁴ Automatic updating will not occur with any graph created with FRED data, only those graphs that have been created using the FRED *Build Graph* buttons. Graphs may not update if they are moved to another worksheet.

UPDATING FRED DATA

The FRED Add-In allows users to create workbooks that can be automatically updated with new data. Using this feature FRED users can create charts and tables that will automatically update as data are released. In order to update FRED data correctly, it is important to distinguish between the characteristics of the *Get FRED Data* button and the *Update Data* button.

The *Get FRED Data* button is used to download new FRED *Series IDs*. Once the button is selected, the Add-In will search the first 100 columns of the workbook for *Series IDs*. If other information is contained in these cells, an error message is sent and no and search results are returned.

The *Update Data* button should be used to update existing FRED *Series IDs*. Unlike the *Get FRED Data* button, the *Update Data* button will not look for new *Series IDs*. It will only update the existing data.

SUPPORT

If you are having trouble using the FRED Add-In please refer to the frequently asked questions before contacting us. We also ask that you limit your inquiries to questions about FRED and the Excel Add-In. Data descriptions and hyperlinks to the primary data providers website are available on FRED. If you are having difficulties using Microsoft Excel please use the Help menu or contact Microsoft.

We continually strive to improve FRED users experience and your suggestions for additional features or data series are always welcome.

FAQS

This section will be populated with frequently asked questions about the FRED Add-In.

FRED FAQs are available at: research.stlouisfed.org/fred2/help-faq/

CONTACT US

If you have questions about the data in the FRED® database, the Research staff prefers that you send an email to fred.addin@stls.frb.org. If your question necessitates a phone discussion, please call a Research staff member. Staff are available Monday through Friday, 8 a.m. to 4:30 p.m. CST.

Staff will respond to all inquiries within one business day.

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