

Activity 6: Real Interest Rates

This activity focuses on real interest rates, and you will use FRED® to find data that pertain to them. FRED® is a great and simple tool for finding, viewing, and transforming official data.

1. Go to <https://fred.stlouisfed.org/> and sign in to your personal FRED® account.
2. In the search bar, type in “30 year mortgage.” One of the first results should be **30-Year Fixed Rate Mortgage Average in the United States, Percent, Weekly, Not Seasonally Adjusted**. Click on this.
3. What is the source of this data? What are the units?
4. View the graph. This is the fixed rate that a typical homeowner would pay for a house loan on a 30-year term. What is the current reported rate and date?
5. Look at the upper right of the screen for an orange button that says EDIT GRAPH. Click it and make sure the ADD LINE tab is highlighted. In the search bar, type in “30 year mortgage.” (Yes, the same series as above.) One of the first few options should be **30-Year Fixed Rate Mortgage Average in the United States**. Click on this, and then click the **Add data series** button. The second series will display in red and, for the moment, will be graphed on top of the blue line.
6. You are going to add one more data series in a new way. Look at the upper right of the screen for the orange button that says EDIT GRAPH. Click it and make sure the EDIT LINES tab is highlighted and select EDIT LINE 2. Halfway down the editing panel, there is a **Customize data** section. Below this is a box for adding a series to combine with your existing series. In the search bar, type in “CPI.” One of the first few options should be **Consumer Price Index for All Urban Consumers: All Items in U.S. City Average, Monthly, Index 1982-1984 = 100, Seasonally Adjusted**. Click on this, and then click the **Add** button (on the right).
7. Notice that LINE 2 now has an **(a)** series and a **(b)** series. For the **(b)** series, change the units from **Index 1982-1984 = 100** to **Percent Change from Year Ago**. Changing the units turns CPI from a level into an inflation rate estimate.
8. FRED® lets users input a formula to combine two data series into a single line. In this step of the activity, you will type in a formula for calculating the real interest rate (nominal interest rate – inflation rate). In the **Formula** box type “a-b.” Click **Apply**.

Tools for Teaching with FRED®

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9. Make an observation about how these two measures of interest rates (your nominal rate and real rate) have moved. Look at the period from February-October 2009. What must have occurred for the real interest rate to rise above the nominal 30-year fixed mortgage?

10. What other observations can you make?

11. Save the graph to your FRED® account: Find the **Account Tools** button under the graph and click it. Select **Save Graph**. Select an **Observation Range**. The middle choice—**Always chart from YYYY-00-00 to the last value available**—will ensure that your graph updates whenever new data are added to the series. Type in a title and click **Save Graph**. You may create a **Category** folder first, if you wish, and save the graph in the folder.

12. Dashboard option: Add the completed graph to your FRED® dashboard. Click the **Account Tools** button under the graph and select **Add to Dashboard**. Select your dashboard and in the **Graph Name** box, type “Activity 6-Real Interest Rates—30 Year.” Select an **Observation Range**. Click **Add to Dashboard**.

13. Repeat steps 1-6 above, making sure to type “fedfunds” in the search bar instead of “30 year mortgage.” (You are substituting series ID: FEDFUNDS for the 30-Year Fixed Mortgage Rate.)

14. Make an observation about how these two measures of interest rates (your nominal rate and real rate) have moved. Look at the period from March-October 2009. What must have occurred for the real interest rate to rise above the nominal federal funds rate?

15. Save the graph to your FRED® account: Find the **Account Tools** button under the graph and click it. Select **Save Graph**. Select an **Observation Range**. The middle choice—**Always chart from YYYY-00-00 to the last value available**—will ensure that your graph updates whenever new data are added to the series. Type in a title and click **Save Graph**. You may create a **Category** folder first, if you wish, and save the graph in the folder.

16. Dashboard option: Add the completed graph to your FRED® dashboard. Click the **Account Tools** button under the graph and select **Add to Dashboard**. Select your dashboard and in the **Graph Name** box, type “Activity 6-Real Interest Rates—Fed Funds.” Select an **Observation Range**. Click **Add to Dashboard**. For additional instructions, see Activity 1.