Taking FRED to the Next Level

Yvetta Fortova
FRED Product Owner
Yvetta.Fortova@stls.frb.org

The views expressed in the presentation are mine and not the views of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
Agenda

• FRED
  • Graphing capabilities
  • Tables
  • Data customization

• Alfred

• GeoFRED
  • Create, customize, and share maps of data found in FRED

• Dashboards

• Keeping up with FRED ecosystem
Major Data Sources

• Census
  • population, housing, income, foreign trade, ACS data

• BEA
  • GDP, personal income

• BLS
  • inflation, prices, employment, unemployment, labor force, wages, productivity, QCEW

• Equifax
  • Subprime population

• Board of Governors
  • monetary data, financial accounts of the US

• Treasury
  • interest rates, treasury statement, public debt

• FBI
  • crime statistics

• FHFA
  • housing
FRED Adds Quarterly Summary of State and Local Government Tax Revenue

Posted on August 2, 2019

FRED has added 1,398 quarterly series on state and local government tax revenue at a national level as well as detailed tax revenue data for individual states. This quarterly summary, which has been published by the U.S. Census Bureau since 1962, is the most current national information available for government tax collections. The data are also available in release tables.

Posted in FRED Announcements
FRED has added 1,144 series from the U.S. Census Bureau’s Business Formation Statistics release. The Census Bureau developed this release in collaboration with economists affiliated with the Federal Reserve Board, Federal Reserve Bank of Atlanta, University of Maryland, and University of Notre Dame. The data represent the number of business applications, actual and projected business formations originating from business applications, and the delay in business formations as indicated by the average duration between business applications and business formations for the United States, including each state.
FRED blog: The price of a BLT

Suggested by Diego Mendez-Carbajo and Maria Arias.
Multi Line Graphs

- Unemployment Rate in Savannah, GA (MSA)
- Unemployment Rate
- Natural Rate of Unemployment (Long-Term)

Shaded areas indicate U.S. recessions
Sources: BLS, CBO
federalreserve.gov
Kitchen Sinks and Lavatories Scatter Plot
Nominal Becomes Real

Shaded areas indicate U.S. recessions

Sources: BLS, St. Louis Fed

myf.red/g/p5QQ
Download data and visuals
Example of PPT download
Is there a map?
Take the trip around the world
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<th>C</th>
<th>D</th>
<th>E</th>
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Cross-Sectional Data by Geographies
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<th>Single parent household</th>
<th>Homeownership rate</th>
<th>Premature death</th>
<th>Mean Commute Time</th>
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<td>Racial dissimilarity index</td>
<td>Median age</td>
<td>Subprime population</td>
<td>House price index</td>
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<td>Unemployment rate</td>
<td>SNAP recipients</td>
<td>Disconnected Youth</td>
<td>Crime Incidents</td>
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Release Tables

Total Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over (T160C2)

- Observation: 2018: 1,711 (+ more)
- Updated: Apr 30, 2019
- Units: Thousands of Persons, Not Seasonally Adjusted
- Frequency: Annual
- 1Y | 5Y | 10Y | Max
- 1979-01-01 to 2018-01-01

Source: U.S. Bureau of Labor Statistics
fred.stlouisfed.org

Shaded areas indicate U.S. recessions
Wage and salary workers are workers age 16 and older who receive wages, salaries, commissions, tips, payments in kind, or piece rates on their sole or principal job. This group includes employees in both the private and public sectors. Workers paid by the hour are employed wage and salary workers who report that they are paid at an hourly rate on their job. Estimates of workers paid by the hour include both full-time and part-time workers unless otherwise specified. All self-employed workers are excluded whether or not their businesses are incorporated.

The estimates of workers paid at or below the federal minimum wage are based solely on the hourly wage they report (which does not include overtime pay, tips, or commissions). Salaried workers and other nonhourly paid workers are also excluded. It should be noted that some respondents might round hourly earnings when answering survey questions. As a result, some workers might be reported as having hourly earnings above or below the federal minimum wage when, in fact, they earn the minimum wage.

For more information see https://www.bls.gov/cps/earnings.htm#minwage

Suggested Citation:
## Release Tables:
Number of Workers Paid Hourly Rates with Earnings At or Below Prevailing Federal Minimum Wage by Educational Attainment, Annual, Not Seasonally Adjusted

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<thead>
<tr>
<th>Name</th>
<th>2018</th>
<th>Preceding Period</th>
<th>Year Ago from Period</th>
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<tbody>
<tr>
<td>Total, 16 Years and Over</td>
<td>1,711</td>
<td>1,824</td>
<td>1,824</td>
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<tr>
<td>Less than a High School Diploma</td>
<td>330</td>
<td>415</td>
<td>415</td>
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<tr>
<td>Less than 1 Year of High School</td>
<td>39</td>
<td>46</td>
<td>46</td>
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<tr>
<td>1 to 3 Years of High School</td>
<td>242</td>
<td>325</td>
<td>325</td>
</tr>
<tr>
<td>4 Years of High School, no Diploma</td>
<td>49</td>
<td>43</td>
<td>43</td>
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<tr>
<td>High School Graduates or More</td>
<td>1,381</td>
<td>1,408</td>
<td>1,408</td>
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<tr>
<td>High School Graduates, no College</td>
<td>538</td>
<td>554</td>
<td>554</td>
</tr>
<tr>
<td>Some College or Associate Degree</td>
<td>606</td>
<td>672</td>
<td>672</td>
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<tr>
<td>Some College, no Degree</td>
<td>469</td>
<td>526</td>
<td>526</td>
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<tr>
<td>Associate Degree</td>
<td>137</td>
<td>146</td>
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<td>Occupational Program</td>
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<td>Academic Program</td>
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<tr>
<td>Bachelor's Degree and Higher</td>
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<td>Bachelor's Degree</td>
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<td>Master's Degree</td>
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<td>Professional Degree</td>
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<td>Doctoral Degree</td>
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## Stored Data List

### Workers paid below minimum wage by education attainment

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: Bachelor’s Degree</td>
<td>198.0 Thousands of Persons 2018</td>
</tr>
<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: Doctoral Degree</td>
<td>4.0 Thousands of Persons 2018</td>
</tr>
<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: High School Graduates or more</td>
<td>1381.0 Thousands of Persons 2018</td>
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<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: Less than a High School Diploma</td>
<td>330.0 Thousands of Persons 2018</td>
</tr>
<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: Master’s Degree</td>
<td>32.0 Thousands of Persons 2018</td>
</tr>
<tr>
<td>Wage and Salary Workers Paid at or Below Prevailing Federal Minimum Wage: 16 Years and Over: Some College or Associate Degree</td>
<td>606.0 Thousands of Persons 2018</td>
</tr>
</tbody>
</table>
Current vs. Real-time data
Real Gross Domestic Product (A191RL1Q225SBEA)

**Observations:**
- Q2 2019: 2.0 (+ more)
- Updated: Aug 29, 2019

**Units:**
- Percent Change from Preceding Period, Seasonally Adjusted Annual Rate

**Frequency:**
- Quarterly

**Graph Details:**
- **Title:** Real Gross Domestic Product Vintage: 2019-07-26
- **Subtitle:** Real Gross Domestic Product Vintage: 2019-08-29

**Y-Axis:** Percent Change from Preceding Period

**X-Axis:**
- Q1 2019
- Q2 2019

**Additional Information:**
- Shaded areas indicate U.S. recessions
- Source: U.S. Bureau of Economic Analysis
- alfred.stlouisfed.org

**Graph Elements:**
- Bar charts for Q1 2019 and Q2 2019
- Comparison between two data points
Real Gross Domestic Product (A191RL1Q225SBEA)

Observation:
Q2 2019: 2.0 (+ more)
Updated: Aug 29, 2019

Units:
Percent Change from Preceding Period, Seasonally Adjusted Annual Rate

Frequency:
Quarterly

As-of date:
2019-07-26
or select a vintage:

Modify frequency:
Quarterly

Customize data:
Write a custom formula to transform one or more series or combine two or more series.
You can begin by adding a series to combine with your existing series.
Select...
Add

Now create a custom formula to combine or transform the series.
Need help? [+] Formula: a

Finally, you can change the units of your new series.
Units:
Real Gross Domestic Product (A191RL1Q225SBEA)

Observation:
Q2 2019: 2.0 (+ more)
Updated: Aug 29, 2019

Units:
Percent Change from Preceding Period,
Seasonally Adjusted Annual Rate

Frequency:
Quarterly

1Y | 5Y | 10Y | Max 2018-12-31 to 2019-04-01

Real Gross Domestic Product Vintage: 2019-07-26
Real Gross Domestic Product Vintage: 2019-08-29
Real Gross Domestic Product Vintage: 2019-09-28

Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis
alfred.stlouisfed.org
Making a Dashboard

• Log into your FRED account and save content to a custom dashboard.
  • Easy access
  • Auto-Updates
  • Share
  • Widgets
    • Graphs
    • Maps
    • Data Lists
    • Single Values
    • Notes
    • Data Tables

Get it here: https://fredhelp.stlouisfed.org/fred/account/dashboard-features/new-dashboard/
Today’s Dashboard

- Easily shared
- Customize Using Widgets

Get it here: https://research.stlouisfed.org/dashboard/41363
FRED Breaks a Record
The FRED® API is a web service that allows developers to write programs and build applications that retrieve economic data from the FRED® and ALFRED® websites hosted by the Economic Research Division of the Federal Reserve Bank of St. Louis. Requests can be customized according to data source, release, category, series, and other preferences.

General Documentation
- Overview
- What is FRED®?
- What is ALFRED®?
- FRED® versus ALFRED®
- Real-Time Periods
- Errors

Python
- avelkoski/FRB (third-party software, external link)
- mortada/fredapi (third-party software, external link)
- zachwill/fred (third-party software, external link)

R
- jcizel/FredR (third-party software, external link)
- onnokleen/alfred (third-party software, external link)
- sboysel/fredr (third-party software, external link)

https://research.stlouisfed.org/docs/api/fred/
Keep up with FRED