Employment and the Labor Force

May 2011

FRED Data Classroom Application

Prepared by the Research Division of the
Federal Reserve Bank of St. Louis

FRED in the Classroom:
Employment and the Labor Force

Employment is an important measure of an economy's health. Economists and policymakers examine several data sources to assess the state of employment in the United States. The data are available on the Federal Reserve Bank of St. Louis' FRED database. The following steps give you an opportunity to access the data and make some observations.

The most important FRED data source for employment is the Employment Situation Report. This report is probably the most anticipated of all economic reports—it has meaning for the nation's economy and is relevant to the lives of citizens. The Employment Situation Report measures the growth (or loss) of jobs, whether individuals are in the workforce, and household earnings. The report consists of two parts: the Household Survey and the Establishment Survey. As you may have guessed, the Household Survey questions households about their participation in the workforce and wages earned. The Establishment Survey (sometimes called the payroll survey) questions private businesses, companies, and government agencies about their changes in staffing. This exercise begins with the Household Survey portion (it is much smaller) and then moves to the Establishment Survey portion of the report.

1. The first step in this exercise is to find the data from the Employment Situation Report. **Start at the FRED website**, http://research.stlouisfed.org/fred2.

2. As you follow along in this exercise, the red arrows and circles show you where to access the information. To begin looking at employment data, find **Employment & Population in the Categories section on the FRED website.**

3. Choose the **Household Survey Data** (circled in red below) on the list. The number in parentheses after each category listed (in this case, 25) indicates how many series are available in that category.

4. Now, you will see a list of possible data series. In this exercise, you will quickly look at several of them and be asked a question or two for each series. The data are sorted initially by popularity. They can also be sorted several other ways—by start   or end date, units, seasonal adjustment, and update date. After clicking on the   Household Survey Data category, choose **Civilian Unemployment Rate**, usually the first (the most popular) series**.** To bring up the series, click on the title.

Household Survey Data

📄 Download Data   ✉ Notify Me of Updates

Show Only : Show All ▾ ▾ Go

Selected Series : [Add to Data List]   [Add to New Graph]   Series 1 - 25 of 25

☐	Title	Observation Range Start	End	Freq.	Units	Seas. Adj.	Popularity ▼
☐	Civilian Unemployment Rate	1948-01	2011-04	M	%	SA	▬▬▬▬
☐	Civilian Employment-Population Ratio	1948-01	2011-04	M	%	SA	▬▬▬▬
☐	Unemployed	1948-01	2011-04	M	Thous.	SA	▬▬▬▬
☐	Civilian Employment	1948-01	2011-04	M	Thous.	SA	▬▬▬▬
☐	Civilian Participation Rate	1948-01	2011-04	M	%	SA	▬▬▬▬
☐	Average (Mean) Duration of Unemployment	1948-01	2011-04	M	Weeks	SA	▬▬▬▬
☐	Civilian Labor Force	1948-01	2011-04	M	Thous.	SA	▬▬▬▬
☐	Total unemployed, plus all marginally attached workers plus total employed part time for economic reasons	1994-01	2011-04	M	%	SA	▬▬▬
☐	Median Duration of Unemployment	1967-07	2011-04	M	Weeks	SA	▬▬▬
☐	Civilian Noninstitutional Population	1948-01	2011-04	M	Thous.	NSA	▬▬▬
☐	Civilian Unemployment Rate	1948-01	2011-04	M	%	NSA	▬▬▬
☐	Civilians Unemployed for 27 Weeks and Over	1948-01	2011-04	M	Thous.	SA	▬▬▬
☐	Unemployment Rate - Job Losers	1967-01	2011-04	M	%	SA	▬▬
☐	Total unemployed, plus all marginally attached workers plus total employed part time for economic reasons	1994-01	2011-04	M	%	NSA	▬▬
☐	Persons Unemployed 15 weeks or longer, as a percent of the civilian labor force	1948-01	2011-04	M	%	SA	▬▬
☐	Special Unemployment Rate: Unemployed and Discouraged Workers	1994-01	2011-04	M	%	SA	▬▬
☐	Special Unemployment Rate: Unemployed and Marginally Attached	1994-01	2011-04	M	%	SA	▬▬

5. The graph shows the entire history of the series (this can be changed to show a shorter period) and allows options to view or download the data. See the information under the graph for more information about the series (e.g. the source, date observation range, last updated information and the latest observations). This information also appears as the first sheet of the Excel spreadsheet when you download the data.

Tools

- View Data
- Download Data
- Notify Me of Updates
- Add to My Data List
- Vintage Series in ALFRED

Latest Observations

2011-04: 9.0

2011-03: 8.8

2011-02: 8.9

2011-01: 9.0

2010-12: 9.4

Other Formats

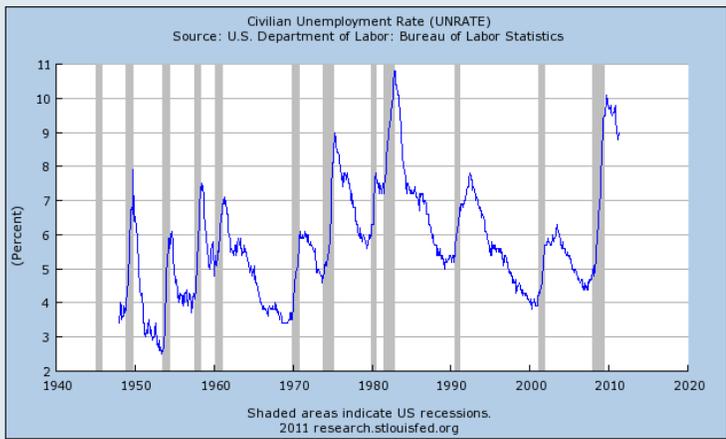- Monthly, Not Seasonally Adjusted

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- Household Survey Data

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Civilian Unemployment Rate (UNRATE)

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Civilian Unemployment Rate (UNRATE)
Source: U.S. Department of Labor: Bureau of Labor Statistics

Shaded areas indicate US recessions.
2011 research.stlouisfed.org

Graph of Civilian Unemployment Rate   PDF   Save

Type: Line Size: Medium Range: Max Recession Bars: On Units: Levels
Notes: Growth Rate Calculations | US recession dates

Series ID:	UNRATE
Source(s):	U.S. Department of Labor: Bureau of Labor Statistics
Release:	Employment Situation
Units:	Percent
Frequency:	Monthly
Seasonal Adjustment:	Seasonally Adjusted
Observation Range:	1948-01 to 2011-04
Last Updated:	2011-05-06 8:53 AM CDT
Notes:	Persons 16 years of age and older.
	The Bureau of Labor Statistics (BLS) announced several revisions to the Household Survey on Friday Feb.7th 2003, with the release of the January 2003 Data. They introduced the Census 2000 population controls (which affect data back to 2000 and cause a break in the data in January 2000), a new seasonal adjustment procedure, and new seasonal factors back to January 1998. For further information contact the Current Employment Statistics (CES) homepage at www.bls.gov/ces or by calling 202-691-6555.

6. Notice the gray vertical bars on the graph that indicate U. S. recessions. How do recessions affect the unemployment rate? Compared with other recessions, how would you rate the severity of the most recent recession based on the change in the unemployment rate?

7. Does the unemployment rate decrease immediately after a recession end?

8. Now, choose **View Data** under the Tools section in the upper left corner of the page.

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◎ Vintage Series in ALFRED ⌐

Latest Observations

Home > FRED® Economic Data > Categories > Employment & Population > Household Survey Data >
Civilian Unemployment Rate (UNRATE)

Civilian Unemployment Rate (UNRATE)

Download Data

Series ID:	UNRATE
Title:	Civilian Unemployment Rate
Source(s):	U.S. Department of Labor: Bureau of Labor Statistics
Release:	Employment Situation

9. Look at the data and then answer the following question: What is the highest unemployment rate recorded since 1948 and when did it occur?

The screenshot below shows some of the earliest measures of the unemployment rate.

```
Title:                 Civilian Unemployment Rate
Series ID:             UNRATE
Source:                U.S. Department of Labor: Bureau of Labor Statistics
Release:               Employment Situation
Seasonal Adjustment:   Seasonally Adjusted
Frequency:             Monthly
Units:                 Percent
Date Range:            1948-01-01 to 2011-03-01
Last Updated:          2011-04-01 9:09 AM CDT
Notes:                 Persons 16 years of age and older.

                       The Bureau of Labor Statistics (BLS) announced several revisions to
                       the Household Survey on Friday Feb.7th 2003, with the release of the
                       January 2003 Data. They introduced the Census 2000 population controls
                       (which affect data back to 2000 and cause a break in the data in
                       January 2000), a new seasonal adjustment procedure, and new seasonal
                       factors back to January 1998. For further information contact the
                       Current Employment Statistics (CES) homepage at www.bls.gov/ces or by
                       calling 202-691-6555.

DATE       VALUE
1948-01-01  3.4
1948-02-01  3.8
1948-03-01  4.0
1948-04-01  3.9
1948-05-01  3.5
1948-06-01  3.6
1948-07-01  3.6
1948-08-01  3.9
1948-09-01  3.8
1948-10-01  3.7
```

10. Use your back arrow to return to the **Civilian Unemployment Rate** and then click on the **Household Survey Data** link in the left column.

Home > FRED® Economic Data > Categories > Employment & Population > Household Survey Data

Civilian Unemployment Rate (UNRATE)

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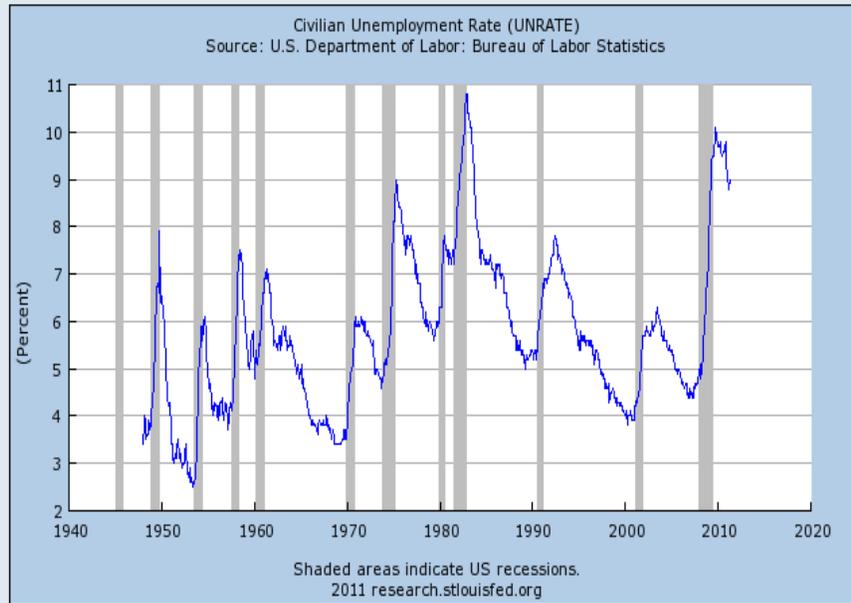
Type: Line Size: Medium Range: Max Recession Bars: On Units: Levels
Notes: Growth Rate Calculations | US recession dates

11. From this page, click on **Civilian Employment-Population Ratio** (typically the second choice on the list).

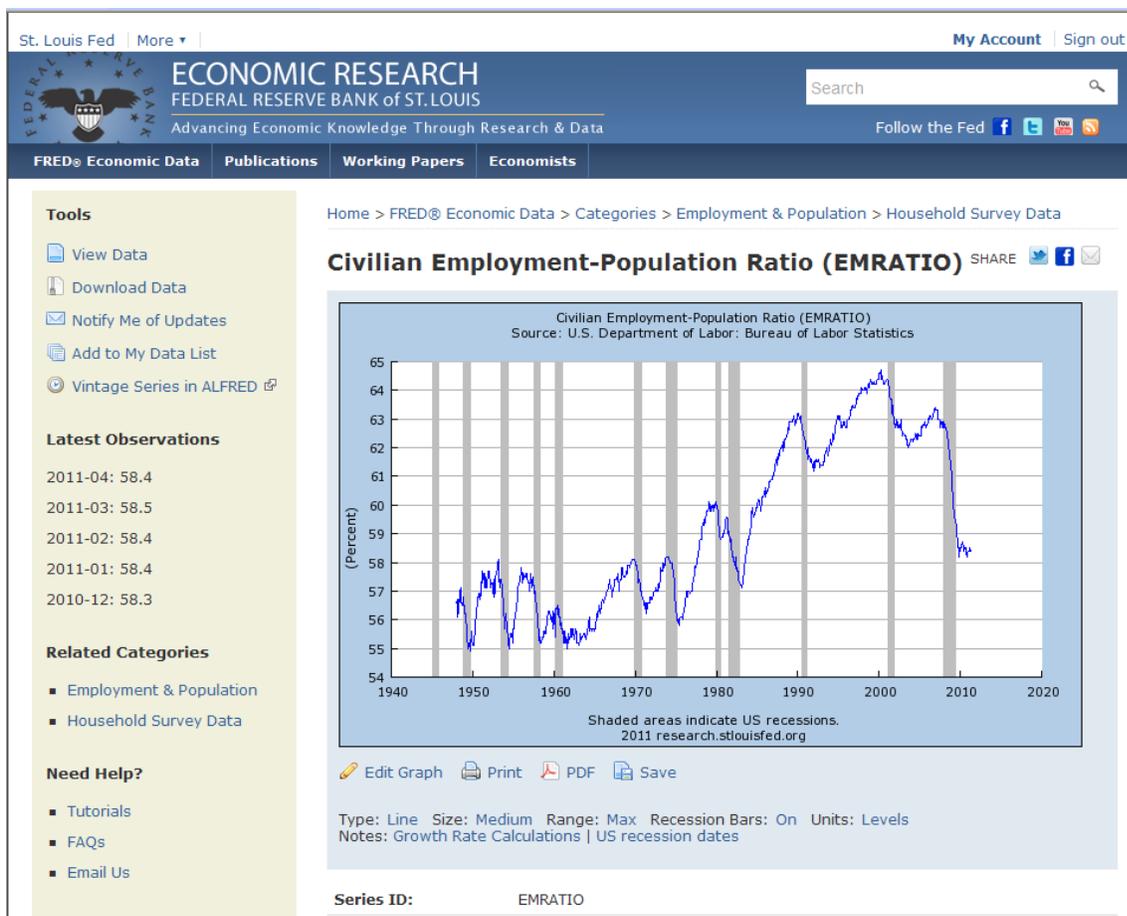Home > FRED® Economic Data > Categories > Employment & Population

Household Survey Data

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Show Only : Show All   Go

Selected Series : [Add to Data List] [Add to New Graph]   Series 1 - 25 of 25

	Title	Observation Range Start	End	Freq.	Units	Seas. Adj.	Popularity ▼
☐	Civilian Unemployment Rate	1948-01	2011-04	M	%	SA	
☐	Civilian Employment-Population Ratio	1948-01	2011-04	M	%	SA	
☐	Unemployed	1948-01	2011-04	M	Thous.	SA	
☐	Civilian Employment	1948-01	2011-04	M	Thous.	SA	
☐	Civilian Participation Rate	1948-01	2011-04	M	%	SA	
☐	Average (Mean) Duration of Unemployment	1948-01	2011-04	M	Weeks	SA	
☐	Civilian Labor Force	1948-01	2011-04	M	Thous.	SA	

Tools

📄 View Data
📄 Download Data
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📋 Add to My Data List
◎ Vintage Series in ALFRED ⌲

Latest Observations

2011-04: 58.4
2011-03: 58.5
2011-02: 58.4
2011-01: 58.4
2010-12: 58.3

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Civilian Employment-Population Ratio (EMRATIO) SHARE ▶ f ✉

Civilian Employment-Population Ratio (EMRATIO)
Source: U.S. Department of Labor: Bureau of Labor Statistics

Shaded areas indicate US recessions.
2011 research.stlouisfed.org

✏ Edit Graph   🖨 Print   📄 PDF   💾 Save

Type: Line Size: Medium Range: Max Recession Bars: On Units: Levels
Notes: Growth Rate Calculations | US recession dates

Series ID: EMRATIO

12. What does the Civilian Employment-Population Ratio measure?

Discuss at least one factor that led to the general increase in the employment to population ratio starting in the early 1980s.

Then, suggest at least one reason (beyond an increase in the unemployment rate) for the decrease during the last recession.

Finally, using the **View Data** or **Download Data** option, what is the date of the highest employment-population ratio?

13. Next, go back to the Household Survey Data list and choose **Unemployed.**

Household Survey Data

Download Data   Notify Me of Updates

Show Only : Show All   Go

Selected Series :   Add to Data List   Add to New Graph   Series 1 - 48 of 48

	Title	Observation Range Start	End	Freq.	Units	Seas. Adj.	Popularity ▼
☐	Civilian Unemployment Rate	1948-01	2011-04	M	%	SA	────
☐	Civilian Employment-Population Ratio	1948-01	2011-04	M	%	SA	────
☐	Unemployed	1948-01	2011-04	M	Thous. of Persons	SA	────
☐	Civilian Employment	1948-01	2011-04	M	Thous. of Persons	SA	────
☐	Civilian Participation Rate	1948-01	2011-04	M	%	SA	────

14. Just looking at the graph and thinking about the earlier unemployment rate data, can you explain why the number of unemployed people is so much higher than at any time in the past, but the unemployment rate is not the highest it has ever been?

15. Next, go back to the original **Employment & Population** category, and choose the **Establishment Survey Data**.

Employment & Population

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Categories

- Establishment Survey Data (794)
- Population (3)
- Job Openings and Labor Turnover (JOLTS) (423)
- Household Survey Data (25)
- Weekly Initial Claims (9)
- ADP Employment (13)

16. Within that category, choose the **Total Nonfarm** category.

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Establishment Survey Data

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Categories:

Total Nonfarm (5)	Durable Goods (61)	Financial Activities (51)
Total Private (27)	Nondurable Goods (53)	Professional and Business Services (55)
Goods-Producing (27)	Trade, Transportation, and Utilities (27)	Education and Health Services (51)
Service-Providing (1)	Wholesale Trade (33)	Leisure and Hospitality (41)
Private Service-Providing (27)	Retail Trade (55)	Other Services (33)
Mining and Logging (39)	Transportation and Warehousing (47)	Government (23)
Construction (41)	Utilities (27)	
Manufacturing (31)	Information (39)	

*Note that the number of series in a category and its subcategories is shown above in parentheses.

17. Within the **Total Nonfarm** category, choose **All Employees: Total nonfarm.** This series represents the number of people reported as employed by companies (so, if a person has two jobs, they are counted as two employed persons).

Home > FRED® Economic Data > Categories > Employment & Population > Establishment Survey Data

Total Nonfarm

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Show Only : Show All   Go

Selected Series :   Add to Data List   Add to New Graph

Series 1 - 5 of 5

Title	Observation Range Start	End	Freq.	Units	Seas. Adj.	Popularity ▼
All Employees: Total nonfarm	1939-01	2011-04	M	Thous.	SA	
All Employees: Total nonfarm	1939-01	2011-04	M	Thous.	NSA	
Women Employees-To-All Employees Ratio: Total Nonfarm	1964-01	2011-04	M	%	SA	
Women Employees: Total Nonfarm	1964-01	2011-04	M	Thous.	SA	
Women Employees: Total Nonfarm	1964-01	2011-04	M	Thous.	NSA	

18. Below is an example of the graph of **All Employees: Total nonfarm**. The data are in thousands (see the label on the *y*-axis). Economists are often interested in the change of the number on a month-to-month basis. To show the data as a **change**, click on **Levels** under the graph in the **Units** section, then choose **Chg.**

19. The graph below shows the monthly change in the number of employees. For a better idea of what has happened recently, we can change the date range to the past 10 yrs.
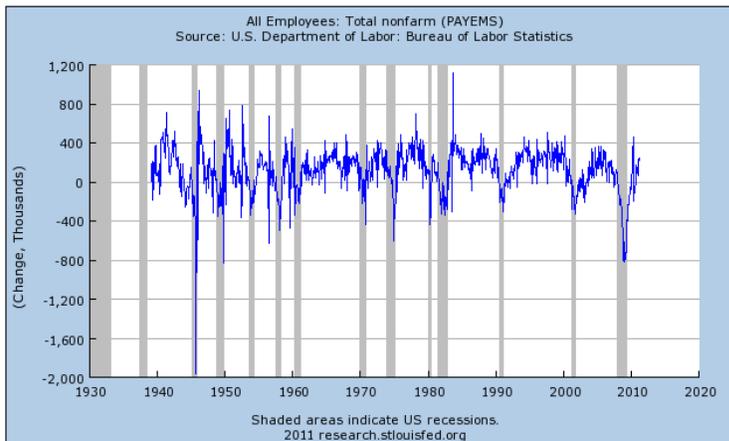
20. Now, scroll down to see the options for **Line 1**. Note the **Observation Date Range** and **Observation Quick Range** options.

To see the past 10 years, click the button next to **10yrs**. Scroll down.

21. Click **Redraw Graph** box to see the change.

22. Below is the graph of the change, in thousands, over the past 10 years. Use the redrawn graph to compare the recession of 2001 and the most recent recession. What do the data reveal about the severity of the most recent recession?

23. Going back to the category of **Establishment Survey Data,** we can compare the number of jobs from several different areas of the economy (for this lesson, we'll use construction and retail). This requires locating one series and then adding others to the graph. To do this, first choose **Construction** as a category.

24. Choose the **All Employees: Construction** series in the category (again, sorted by popularity).

Construction

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Show Only : Show All ▾ ▾ Go

Selected Series : | Add to Data List | | Add to New Graph | Series 1 - 41 of 41

☐	Title	Observation Range Start	End	Freq.	Units	Seas. Adj.	Popularity ▼
☐	All Employees: Construction	1939-01	2011-04	M	Thous.	SA	▬▬▬
☐	All Employees: Construction: Residential Building	1985-01	2011-04	M	Thous.	SA	▬▬
☐	Average Hourly Earnings Of Production And Nonsupervisory Employees: Construction	1947-01	2011-04	M	$ per Hour	NSA	▬
☐	Average Weekly Earnings of All Employees: Construction	2006-03	2011-04	M	$ per Week	NSA	▬
☐	All Employees: Construction: Nonresidential Building	1990-01	2011-04	M	Thous.	NSA	▬
☐	Average Weekly Hours Of All Employees: Construction	2006-03	2011-04	M	Hours	SA	▬

25. Below is the graph of the number of employees in construction, in thousands. Quick question: What happened to construction in the last recession? Is this a common event during a recession?

Tools

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⊙ Vintage Series in ALFRED ⊠

Latest Observations

2011-04: 5524
2011-03: 5519
2011-02: 5517
2011-01: 5478
2010-12: 5498

Other Formats

▪ Monthly, Not Seasonally Adjusted

Related Categories

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▪ Establishment Survey Data
▪ Construction

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All Employees: Construction (USCONS)

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All Employees: Construction (USCONS)
Source: U.S. Department of Labor: Bureau of Labor Statistics

Graph of All Employees: Construction

Shaded areas indicate US recessions.
2011 research.stlouisfed.org

✏ Edit Graph   🖨 Print   📄 PDF   💾 Save

Type: Line   Size: Medium   Range: Max   Recession Bars: On   Log Scale: Left   Units: Levels
Notes: Growth Rate Calculations | US recession dates

Series ID:	USCONS
Source(s):	U.S. Department of Labor: Bureau of Labor Statistics

26.   To add another series for comparison, choose the **Edit Graph** link below the graph.

27. This brings up the editable graph. Scroll down and click on the green triangle to expand the **Add Data Series section**. The default option is to **add a new line** (which is what you want to do). To add a line showing the number of employees in the retail trade industry, begin typing **Employees Retail Trade**. **FRED** will suggest likely data series as you type. Choose **All Employees: Retail Trade (USTRADE)** and either   click on it or hit <enter>.

Graph: All Employees: Construction (USCONS)
Download Data in Graph | Print | PDF | Link | View Saved Graphs | Save Graph | Help

All Employees: Construction (USCONS)
Source: U.S. Department of Labor: Bureau of Labor Statistics

Shaded areas indicate US recessions.
2011 research.stlouisfed.org
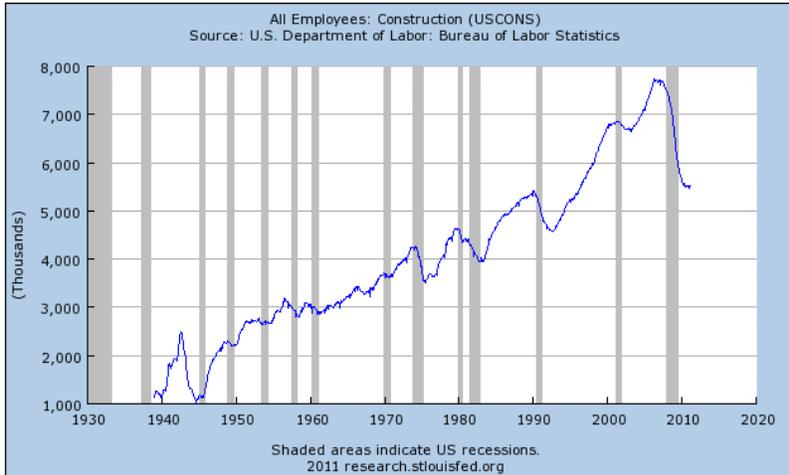
Settings   Restore Defaults | Save Settings | Apply Saved Settings

▸ **Graph**

▸ **Line 1: All Employees: Construction (USCONS)**

▾ **Add Data Series**

To: ⦿ New Line   ○ Line 1   What's This?

Search: employees retail tr   Browse

All Employees: Retail Trade
USTRADE, M, Thous., SA

Notes on grow   All Employees: Retail Trade
CEU4200000001, M, Thous., NSA

All Employees: Retail Trade: Clothing and Clothing Accessories Stores

28. Now you have a graph with the number of **construction** employees in **blue**, and the number of **retail trade** employees in **red**.

Consider adding other industries to the graph. You may want to add **All Employees: Financial Activities** or **All Employees: Professional and Business Services**. Compare at least three different industries and suggest reasons for the number of employees or the recent change in the number of employees.
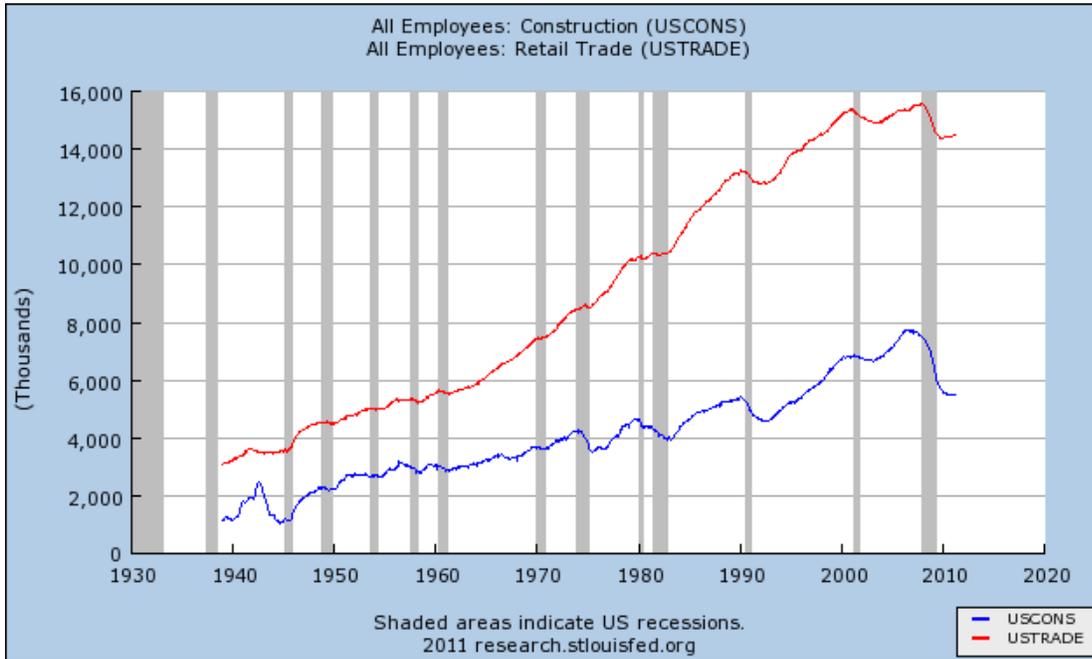
29. As a final way of studying employment, let's look at the average hourly earnings of employees in different industries. Because the data are organized by industry, the easiest way to get a list of the data series with hourly earnings is to use the search   box. Type **average hourly earnings** in the Search box at the top of the page and <enter>.

30. **You can filter** the results to show only those series that are **seasonally adjusted** by using the pull-down **Show Only** box, and then choose Seasonal Adjustment.

31. A second pull down box will then pop up, choose **Seasonally Adjusted** from the list.

32. Click on **Title** to sort the series by title and then use the **check boxes** next to the series to choose three series to compare—**information**, **manufacturing**, and **retail trade.** (Hint: Look at the end of the Title line for the words "information," "manufacturing, "and "retail trade." The choices are arranged alphabetically.) Then click **Add to New Graph**.

33. The graph for this example is below:
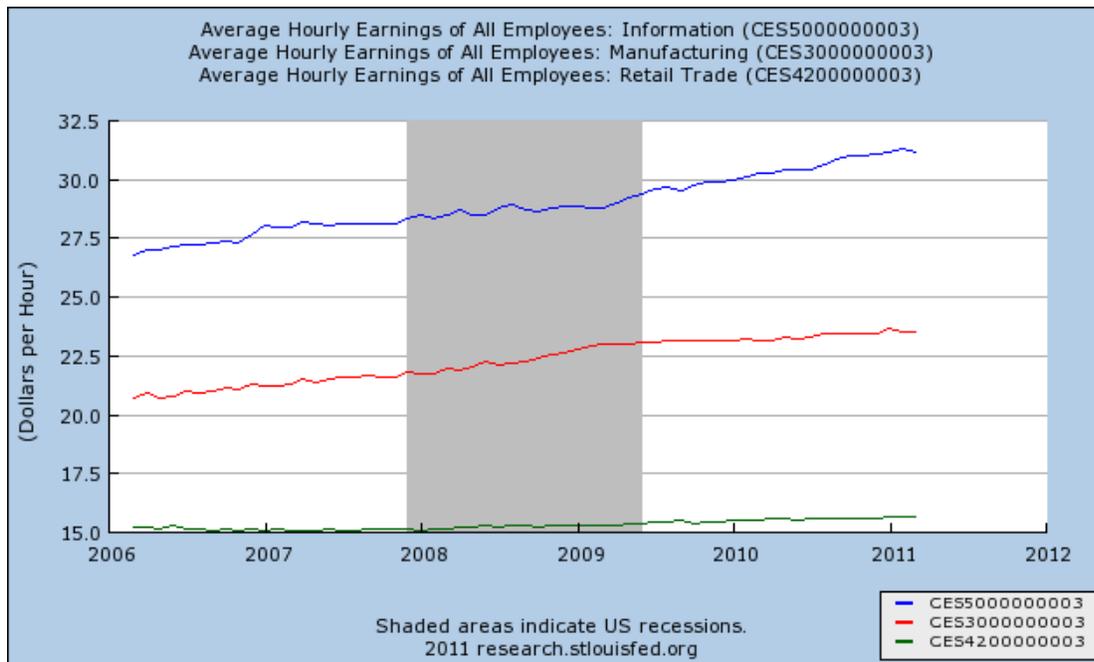
Using your economic reasoning, speculate on reasons for the difference in average hourly earnings for employees in the **Information**, **Manufacturing**, and **Retail Trade** industries.