

# Unemployment and Health Insurance Coverage by Census Division



FRED® Map  
APPLICATION EXERCISE

---

## Lesson Author

Diego Mendez-Carbajo, PhD, Federal Reserve Bank of St. Louis

---

## Standards and Benchmarks (see page 7)

---

## Description

Students will search for data on unemployment and health insurance coverage, mapping them and underscoring the reasons for decreasing health insurance coverage when unemployment increases.

Students search for data and visualize them in FRED®, the Federal Reserve Bank of St. Louis's online database. The goals are for students to (1) observe patterns in economic data and note differences across geographical areas, and (2) hypothesize the reasons for those patterns and differences.

The intended outcome of the activity is for students to use mapped data to identify the relationship between unemployment and health insurance coverage and provide potential explanations for this relationship.

---

## Economic Concepts

Unemployment

---

## Objectives

Students will be able to

- define unemployment;
- observe patterns in economic data;
- note differences in economic data across geographical areas;
- hypothesize reasons for patterns in data and differences in data across geographical areas;
- identify the relationship between unemployment and health insurance coverage across US regions; and
- evaluate potential reasons for the observed relationship between unemployment and health insurance coverage.

## Grade Level

High School, College

---

## Compelling Question

How does becoming unemployed affect people's ability to have health insurance?

---

## Time Required

30-40 minutes

---

## Materials

- Visual 1, one copy for the teacher's reference
  - Handout 1, one copy for each student
- 

## Preparation

- Make sure you are comfortable navigating around FRED®, finding values for data series used in this lesson. A demonstration is located at <https://fredhelp.stlouisfed.org/>.
  - Go to <https://www.stlouisfed.org/education/economic-lowdown-video-series/episode-10-unemployment> to review the definition of unemployment rate.
  - Go to <https://www.healthcare.gov/unemployed/coverage/> to learn about health insurance coverage for the unemployed.
  - Go to <https://fredblog.stlouisfed.org/2016/09/wages-with-benefits/> to learn about employment compensation in the form of retirement pensions, health insurance, and life insurance.
  - Follow the instructions in Handout 1 to use FRED® to create the maps for this activity. URLs to final versions of the maps are provided.
- 

## Procedure

1. Tell the students they are going to create two maps of the US—one showing the percent change in **unemployment** and one showing the percent change in population with health insurance coverage.
  2. Explain that unemployment is the condition where people at least 16 years old are without jobs and actively seeking work. Some people may not be employed, but if they aren't looking for work, they aren't counted as unemployed. Also, someone waiting to be recalled to a job from which they had been temporarily laid off is considered unemployed.
-

3. Explain that the decision to purchase health insurance coverage depends on preferences, price, income, and price of related services.
4. Explain that instead of lecturing about decisionmaking, you want students to look at some data about unemployment and health insurance coverage, draw conclusions about the relationship, and develop their own explanations.
5. Divide the class into small groups of three or four for the remainder of the lesson. Groups with diverse skill sets are preferred. If short on time, randomly assign students to groups. Distribute a copy of *Handout 1: Group Instructions* to each student. Allow time for students to work.
6. Invite students from different groups to share their answers. Discuss the following:
  - On the first map, the darker green color indicates geographical areas where the number of unemployed people increased.
  - On the second map, the lighter green color indicates geographical areas where the number of people with health insurance coverage decreased.
  - Health insurance can be expensive for some people, depending on age or pre-existing conditions. Some people may not be able to fit health insurance premiums within their budget.
  - Some people may prefer to forego health insurance and purchase other services (e.g., vacations).
  - Although access to health insurance is not determined by employment status, becoming unemployed generally reduces one's income.
7. Ask a student from each group to identify and discuss the most important determining factor and then identify and discuss the least important determining factor. As the students discuss their choices, explain the following:
  - "Health insurance coverage is not widely available to purchase": Although some people with pre-existing conditions might not be able to access the type of health insurance they want, there is no information about limited availability of health insurance in the data presented in the maps.
  - "Some people prefer not to purchase health insurance": Although this might well be the case, there is no information about consumer preferences concerning health insurance in the data presented in the maps.
  - "Changes in the demand for health insurance coverage are proportional to changes in its price": Because the maps do not present information about changes in the price of health insurance, we can't make a claim about its impact on the quantity demanded.
  - "Employed people can easily obtain health insurance coverage": Although being employed does not automatically guarantee access to affordable health insurance, becoming unemployed generally reduces one's income and puts health insurance—among other purchases—out of people's reach.

## Closure

8. Conclude the exercise by asking the following questions:
- What is unemployment? (*The condition where people at least 16 years old are without jobs and actively seeking work.*)
  - What differences or similarities do you see between changes in unemployment and changes in health insurance coverage across regions in the US? (*Regions where unemployment increases are regions where health insurance coverage decreases.*)
  - Why do you think these patterns exist? (*Losing one's employment makes buying health insurance more difficult.*)
  - What relationship do you see between these two variables? (*Where unemployment increases, health insurance coverage decreases.*)
  - Is this a direct or an inverse relationship? (*This is an inverse relationship.*)
  - Why does this relationship exist? (*When unemployment increases, people have lower income and lose access to health insurance through their employers. As a result, there is less demand for health insurance and coverage decreases.*)

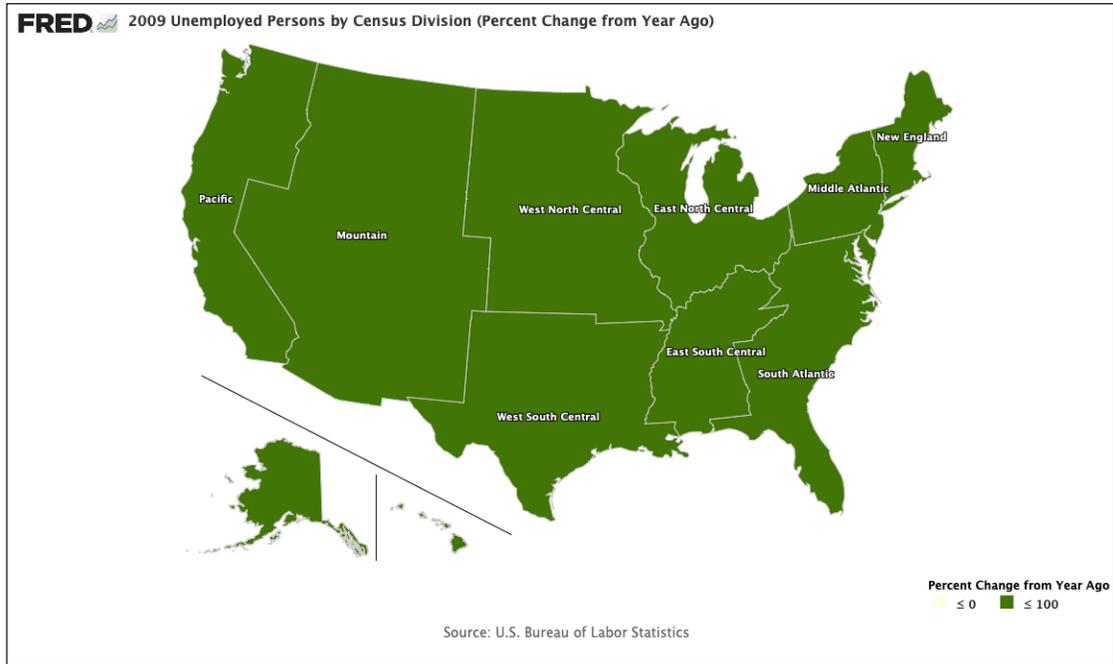
---

## Assessment

9. The following essay prompt could be used as a follow-up to the exercise:
- The increase in unemployment in 2009 was correlated with a decrease in the proportion of people with health insurance coverage. What economic argument(s) can explain this relationship? Explain your argument(s) carefully and use an example.  
*A sample answer could describe how people change the things they buy when they become unemployed. An example illustrating the relationship between employment, unemployment, income, and spending could include that while a person is out of a job, their income decreases and they put off some purchases, such as vacations.*

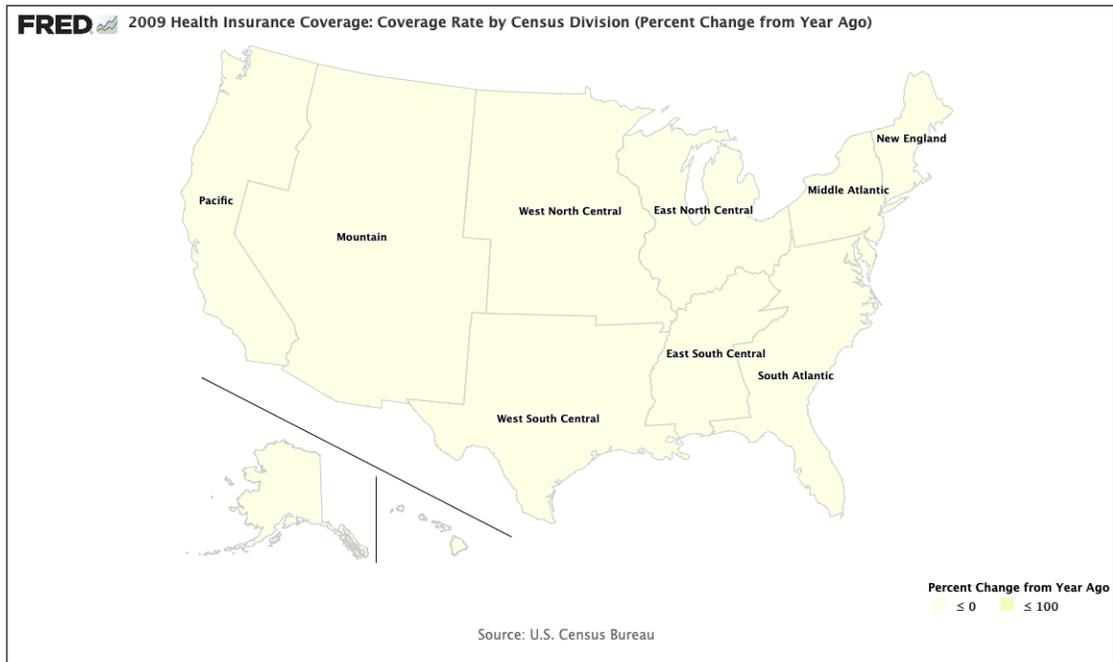
## Visual 1: FRED® Maps

**Figure 1: 2009 Unemployed Persons by Census Division**



SOURCE: FRED®, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/graph/?m=T1Ww>.

**Figure 2: 2009 Health Insurance Coverage: Coverage Rate by Census Division**



SOURCE: FRED®, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/graph/?m=T1Wz>.

## Handout 1: Group Instructions

1. On the FRED® website, <https://fred.stlouisfed.org/>, create a map by following the instructions below.
  - Search for “Unemployed Persons in Pacific Census Division.”
  - Click on “View Map.”
  - Click on “Edit Map” and select “Modify frequency: Annual” and “Average.” Next, select “Units: Percent Change from Year Ago.” Last, select “Number of color groups: 2” and “Data grouped by: User Defined Method.”
  - Enter “0” in the top value box and “100” in the bottom value box.
  - Select “Date: 2009-01-01.”
2. Open a new browser tab, go to the FRED® website, and create a second map by following the instructions below.
  - Search for “Health Insurance Coverage: Coverage Rate in the Pacific Census Division.”
  - Click on “View Map.”
  - Click on “Edit Map” and select “Units: Percent Change from Year Ago.” Next, select “Number of color groups: 2” and “Data grouped by: User Defined Method.”
  - Enter “0” in the top value box and “100” in the bottom value box.
  - Select “Date: 2009-01-01.”
3. Examine the maps and hypothesize the reasons for the observed relationship between changes in unemployed persons and changes in health insurance coverage. Rank the following factors in order from the most likely to influence the observed relationship between unemployment and health insurance coverage to the factors least likely to influence the observed relationship:
  - A. Health insurance coverage is not widely available to purchase.
  - B. Some people prefer not to purchase health insurance.
  - C. Changes in the demand for health insurance coverage are proportional to changes in its price.
  - D. Employed people can easily obtain health insurance coverage.

NOTE: Work in two phases: First, identify and discuss the most important factor; second, identify and discuss the least important factor.

## **Standards and Benchmarks**

### **Voluntary National Content Standards in Economics**

#### **Standard 19: Unemployment and Inflation**

- **Benchmarks: Grade 4**

1. Unemployment exists when adults can't find jobs.