

Homework 8 (18 Points)

Note. This homework needs to be written in `R Markdown` and submitted in either `html` or `pdf` format.

Problem Only (18 Points)

The FRED database at the Federal Reserve Bank of St. Louis contains monthly data on U.S. **unemployment rates** and **job vacancy rates** (also called the “job openings rate”). You can either download the monthly data or average the monthly data into quarterly or annual data¹.

1. Plot U.S. unemployment rate from 2001 to 2017². (2 Points)
2. Plot U.S. job vacancy rate from 2001 to 2018³. (2 Points)
3. Describe the movement of unemployment and vacancy rates during this time period. (2 Points)
4. What is the correlation between the two rates over this time period? (2 Points)
5. Plot the Beveridge curve for the U.S. labor market using a *connected scatter plot*⁴. (2 Points)
6. Describe the movement along the Beveridge curve. What does the curve say about the U.S. economy during this time period? (2 Points)
7. Has the curve shifted during this period? If so, what might be the reason? (2 Points)

¹To do so, on the FRED website, click “Edit Graph” and then choose “Modify frequency”.

²If you use monthly data, plot from Jan. 2001 to Dec. 2017. If you use quarterly data, plot from 2001.Q1 to 2017.Q4.

³See footnote to question 1.

⁴See **An Introduction to Connected Scatterplots**.

8. Read the following notes on **unemployment** and **job openings**. Then,

- **in 1 – 2 paragraphs**, clearly define the concept of unemployment and describe how unemployment rates are measured in practice. (2 Points)
- **in 1 – 2 paragraphs**, clearly define the concept of job openings and describe how job openings rates are measured in practice. (2 Points)