Forecasting state-level unemployment

- Brief note: we're meeting 9 to 10 on Friday in this room
- This week's team assignment is a forecasting competition. You can find state-level unemployment from the St Louis Fed here: https://research.stlouisfed.org/fred2/release?rid=112 (But I'll give you a function to download the data directly into R.)
- The next data release is scheduled for 9am on Friday the 20th.
  - October's data will be released.
- Your job is to forecast the unemployment rate for all 50 states.
- We are going to forecast the **seasonally adjusted** numbers

Deliverables

- Your team must produce forecasts for the Friday release of each state's unemployment rate.
- The forecasts will be due at 9:35 on Thursday and must be submitted as a csv file with two columns; the first giving the state abbreviation and the second giving the forecast.
- If you mess up your csv file (i.e. list forecasts next to the wrong states) it absolutely still counts.
- You are allowed to use any additional data you would like
- You must also provide any code you use to generate your forecasts at 9.35 on Thursday.
- Your forecasting model must be estimated by OLS or ~~GLS~~ WLS.

Schedule

- **Tuesday (today!):** Teams are given the assignment, work on forecasts for the class period
- In between classes: you can work *as much as you want*! :)
- **Thursday** (approximate)
  - 9 - 9:30, teams finish estimating forecasts
  - 9:30 - 9:40, teams submit forecasts and models
  - 9:40 - 10:20, teams see each others' forecasts and models, decide on weighting scheme
    - 10 min to review models and code
    - 10 min to question other teams
    - 20 min to discuss internally
  - 10:20 - 10:30, teams submit weights
  - 10:30, discuss collectively
- **Friday:** Unemployment data released right at the start of class. We'll see who wins and discuss results collectively

Point assignments

- 25 points total for this exercise
  - 5 points for completing the Hayashi exercise
  - 4 points for data usage and collection
  - 4 points for modeling strategy
  - 4 for weighting strategy
  - 8 points for accuracy:
    - 8 points to winner
    - 6 points for 2nd place
    - 5 points for 3rd place
    - 4 points for 4th place (i.e. participation)
- Weighted MSE criterion

$$\text{score} = \left(\sum_i (\text{unemployment}_i - \text{forecast}_i)^2 \times \text{weight}_i \right)^{1/2}$$

- The weights are chosen collectively by your teams.
- After all of the forecasts and code have been collected, each team gets to choose a set of weights and will submit them to me. The average of those weights will be used to calculate the teams scores.
- I hope it's obvious, but you want to put high weights on states that you will forecast better than the other teams and low weights on the states that you will forecast worse.