

Economics 390

Economic Forecasting

- Prerequisite: Econ 410 or equivalent
- Course information is on website
- Office Hours
 - Tuesdays & Thursdays 2:30-3:30
 - or by appointment

Textbooks

- *Forecasting for Economics and Business*
 - Gloria Gonzalez-Rivera
- *The Signal and the Noise*
 - Nate Silver
 - Supplemental

Computer Software

- STATA
 - Continuity with Econ 410
 - Available in Social Science Computer Labs
- Small STATA can be purchased for \$49
 - One-year license
- Eviews described in textbook, not available here
- Excel useful for graphics
- For advanced users:
 - MATLAB, GAUSS, R

Assessment

- Problem Sets (weekly): 15%
- Reading Reflections: 10%
- Project: 25%
- 2 Midterm exams: 15% each
- Final exam: 20%

Problem Sets

- Weekly
 - First due next Tuesday (1/28)
 - Posted on course website
- Conceptual, algebraic, theoretical, and numerical
- Computer analysis
- You can work together, but also attempt everything yourself

Reading Reflections

- Weekly
 - First due next Thursday (1/30)
- Read one chapter from Silver's book
 - For example, Chapter 1 "A Catastrophic Failure of Prediction" is about the 2008 financial crisis
- Write a few sentences
 - Something you learned, something you found different than in the primary textbook, something you agree with, or something you disagree with.

Exams

- First Midterm: Thursday Feb 20
- Second Midterm: Tuesday April 8
- Final Exam: Thursday May 15
- Exams will have mix of conceptual, theoretical, and interpretive questions

Forecasting Project

- Goal is to everyone to design an individual project, make decisions, and have some fun
- You will choose a specific time series, make a set of forecasts, and evaluate your success
- You will work on this project throughout the semester.
- The Forecasting Project will require 3 reports

Timing

- You will select a time-series to forecast
- It must have at least one new realization between when you turn in your (second) forecast report and when you turn in your evaluation report.
- For example, if you want to forecast the U.S. unemployment rate for April 2014, the number is announced by the BLS on May 2. You can turn in your forecast up until May 1.
- If you want to forecast first quarter U.S. GDP, it is announced by the BEA on April 30. You can turn in your forecast up until April 29.

First Project Report

- Due Tuesday Feb 18
- Describe the variable
 - Source
 - When future observations will be available
 - This constrains the timing for your second report
 - Where you will find the data
 - Present a time-series of the historical series

Second Project Report

- Forecast Report
- Due one full day before your forecast date, latest by Tuesday May 6
- Must include:
 - Description of the data, including plots and time-series properties
 - Description of your forecasting method
 - Description of your forecasting model and parameter estimates

Second Project Report (continued)

- Extrapolation Forecasts
 - A full year of extrapolation forecasts
 - For monthly data, this means a set of 12 forecasts
 - For quarterly data, a set of 4 forecasts
- Point and Interval Forecasts
 - Point forecasts are the expected future values
 - Interval forecasts are possible ranges
 - You will learn these concepts over the semester

Third Project Report

- Due Thursday May 8
- Brief forecast evaluation
- Compare your one-step-ahead forecast with the actual realization
 - Was the actual value close to your forecast?
 - Did the actual value fall in your forecast interval?
 - Would a decision-maker have been wise to listen to you?

Data for Project

- You select your economic series to forecast
- As this is an economics course, it should be an *economic* series.
- Feel free to ask me about possibilities.
- You can pick a standard economic series, or can be creative.
- I advise against financial series. There is little to forecast, and the project will turn out to be uninteresting.

Data Frequency

- Pick an economic series which is available monthly or quarterly
- Annual series are difficult to fit in our evaluation window
- Weekly is possible, but have extra challenges.
- Daily series have special difficulties which we will not cover

Sample Size

- When you select a time-series, check that there is a sufficient historical record for you to fit a forecasting model
- If the sample length is too short, you will not be able to fit an meaningful model, and the project will not be interesting
- I suggest a minimum of 20 years of monthly or quarterly data

Questions

- In the First Project report, you will describe your selected time-series and data availability
- The purpose is so that you will have assessed feasibility, before you get too far along
- It also gives me a chance to review your project to assess feasibility

Finding Data

- Many economic data series are on the web
- Be careful to check for historical availability. Many only post a few years of observations
- Official government sites are very good sources, and have full historical series
- An excellent starting point is the data page at Resources for Economists: rfe.org
- Links on the course webpage

Example

- Wisconsin Unemployment Rate
- Recent History
 - 6.7% in August
 - 6.6% in September
 - 6.5% in October
 - 6.3% in November
- December 2013 will be announced by BLS next Tuesday Jan 28
- Future Releases by Bureau of Labor Statistics (BLS)
 - January 2014: March 17
 - February 2014: March 28
 - March 2014: April 18
 - April 2014: May 16

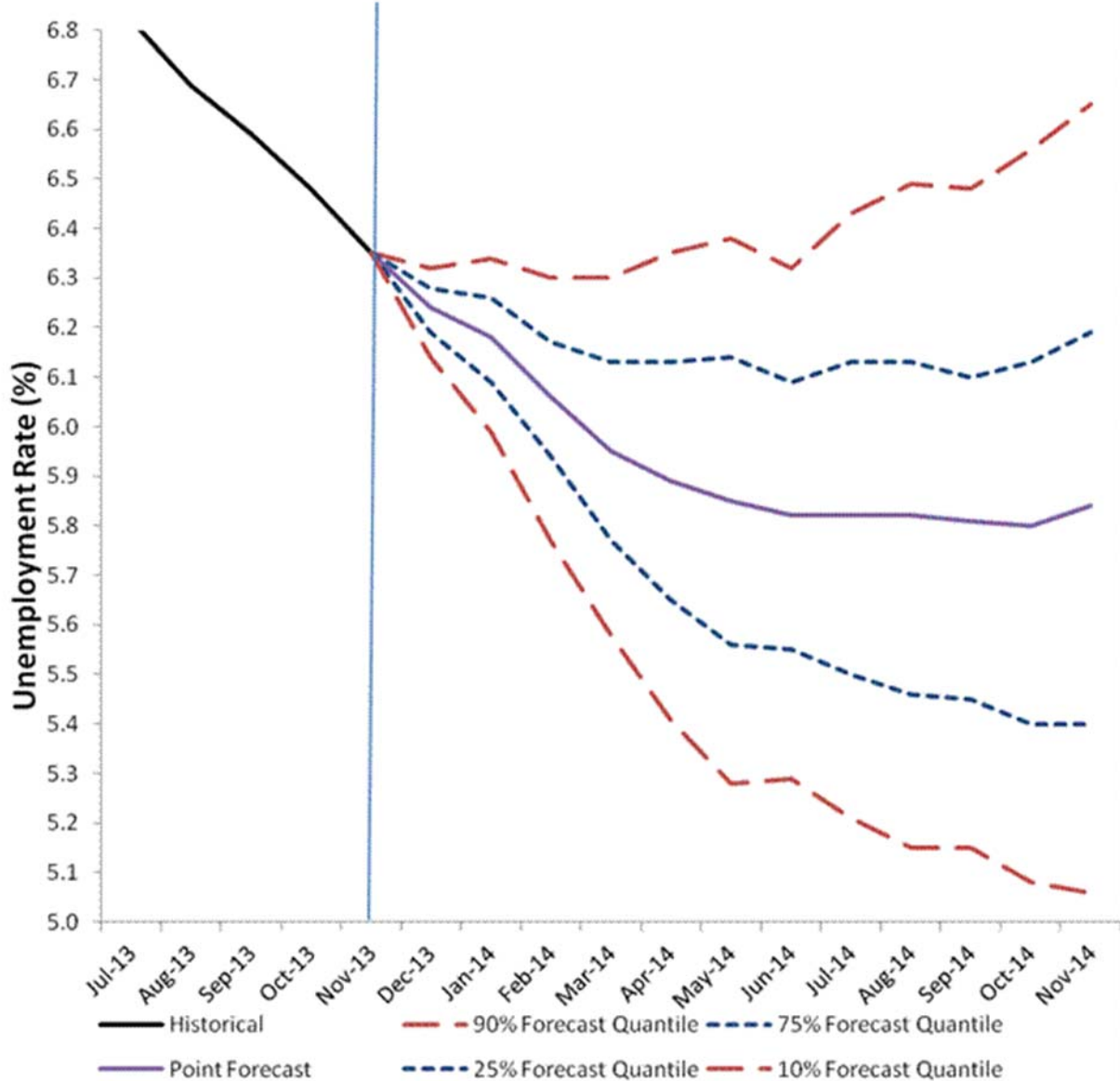
Extrapolative Forecasts

	Point Forecast	50% Interval Forecast	80% Interval Forecast
2013:12	6.2%	(6.2%, 6.3%)	(6.1%, 6.3%)
2014: 1	6.2%	(6.1%, 6.3%)	(6.0%, 6.3%)
2014: 2	6.1%	(5.9%, 6.2%)	(5.8%, 6.3%)
2014: 3	6.0%	(5.8%, 6.1%)	(5.6%, 6.3%)
2014: 4	5.9%	(5.7%, 6.1%)	(5.4%, 6.4%)
2014: 5	5.9%	(5.6%, 6.1%)	(5.3%, 6.4%)
2014: 6	5.8%	(5.6%, 6.1%)	(5.3%, 6.3%)
2014: 7	5.8%	(5.5%, 6.1%)	(5.2%, 6.4%)
2014: 8	5.8%	(5.5%, 6.1%)	(5.2%, 6.5%)
2014: 9	5.8%	(5.5%, 6.1%)	(5.2%, 6.5%)
2014:10	5.8%	(5.4%, 6.1%)	(5.1%, 6.6%)
2014:11	5.8%	(5.4%, 6.2%)	(5.1%, 6.7%)

Forecast for Tuesdays' Release December 2013

- Point Forecast: 6.2%
 - Decline of 0.1% from November
- 50% Forecast Interval
 - [6.2% to 6.3%]
- 80% Forecast Interval
 - [6.1% to 6.3%]

Wisconsin Unemployment Rate



Upcoming Announcements

- Jan 22 (Wed)
 - Usual Weekly Earnings (BLS)
- Jan 28 (Tues)
 - Regional and State Employment and Unemployment (BLS)
- Jan 30 (Thurs)
 - Gross Domestic Product (BEA)
- Jan 31 (Friday)
 - Employment Cost Index (BLS) Feb 1
 - Personal Income (BEA)
- Feb 7 (Friday)
 - Employment Situation (BLS)
- Feb 19 (Wed)
 - Producer Price Index (BLS)
- Feb 20 (Thurs)
 - Consumer Price Index (BLS)

Assignments for the week

- Read Chapter 1 from Gonzalez-Rivera
 - Answer Problem Set 1 questions (from chapter 1)
 - Due next Tuesday (1/28)
- Read Chapter 1 from *The Signal and the Noise*
 - Write Reading Reflection
 - Due next Thursday (1/30)