Econ 221
Econometric Forecasting
Fall 2013

Instructor: Francesco Bianchi, McNeil building 553, email: bianchif@sas.upenn.edu

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Time and Location: Tuesday and Thursday, 10:30 AM-12:00 PM, McNeil building 167/8.

Office Hours: Tuesday, 9:00-10:00 AM, McNeil building 553.

Description of the Course: This course provides a comprehensive introduction to forecasting in economics and business. Topics covered include statistical graphics, trends, seasonality, cycles, forecast construction, forecast evaluation and forecast combination. If time allows, we will also cover models subject to parameter instability, with a special focus on Markov-switching models, and vector autoregressions (VAR).

Grading: There will be 5/6 problem sets and a final. The problem sets and the final will be worth 60% and 40% of the final grade, respectively. Class participation is strongly encouraged and will be taken into account when defining the final grade. Some of the problem sets will require a substantial amount of work, so you should start work on them early. Under no circumstances will late problem sets be accepted.

Software: EViews or R. EViews can be purchased directly online; alternatively, it is installed in the Undergraduate Data Analysis Lab in the McNeil building, in the library, and perhaps elsewhere. R is public domain. There are issues and trade-offs, which we will discuss, and which you should consider before deciding what to do.

Course material: For large part of the course, we will follow quite closely Diebold (2007). Notes will be provided when analyzing Markov-switching models and VAR's.

Course policies: The departmental course policies apply. The policies are available at:
http://economics.sas.upenn.edu/undergraduate-program/course-information/guidelines/policies

Topics

We will cover the following topics. In some cases we will follow a slightly different order with respect to Diebold (2007).

- Review of Statistics and Econometrics (chapter 2)

- Introduction to forecasting (chapter 3)

- Statistical graphics (chapter 4)

- Trends (chapter 5)

- Seasonality (chapter 6)

- Cycles (chapters 7-8-9)

- Trends+Seasonality+Cycles (chapter 10)

- Regression models (chapter 11)

- Evaluating and combining forecasts (chapter 12)

- State space models, stochastic trends, smoothing (chapter 13)

- Models with parameter instability, special focus on Markov-switching models (notes)

- Vector autoregression (notes)

References

Diebold, F. X. (2007): *Elements of Forecasting.* Thomson, Mason.