Università Commerciale
Luigi Bocconi

Advanced Econometrics 3 (40405)

(Forecasting in Finance and Asset Pricing)

Massimo Guidolin

COURSE OUTLINE/OBJECTIVES

The course introduces a student to the latest developments in the area of financial forecasting and empirical finance. Even though this is an econometrics course, the interaction between economic models, asset pricing theory, and econometric analysis is emphasised.

The course is based on a blend between a few papers that will be presented and discussed in the lectures and a few "hands-on", applied Matlab sessions in which the same papers will be (at least partially) replicated and extended, as appropriate.

COURSE MATERIALS

Lecture slides will be made available through the class web page before the beginning of the course and in any event before each class meeting.

DETAILED SYLLABUS (readings to be selected/presented by students are indicated by a *)

1. Introduction and review of key concepts: Loss functions and decision theory; forecast evaluation. [3 hours]

Lecture Slides.

Granger, Clive WJ, and Mark J. Machina. "Forecasting and decision theory." *Handbook of Economic Forecasting* 1 (2006): 81-98.

*Rossi, Barbara, and Tatevik Sekhposyan. "Understanding models' forecasting performance." *Journal of Econometrics* 164 (2011): 158-172.

West, Kenneth D. "Forecast evaluation." *Handbook of Economic Forecasting* 1 (2006): 99-134.

2. Forecasting stock returns; time-varying parameter models. [5 hours]

Lecture Slides.

Dangl, Thomas, and Michael Halling. "Predictive regressions with time-varying coefficients." *Journal of Financial Economics* 106 (2012): 157-181.

*Li, Jiahan and Ilias, Tsiakas. "Equity premium prediction: the role of economic and statistical constraints." *Journal of Financial Markets* 36 (2017): 56-75.

*Rapach, David E., Jack K. Strauss, and Guofu Zhou. "Out-of-sample equity premium prediction: Combination forecasts and links to the real economy." *Review of Financial Studies* 23 (2010): 821-862.

Rapach, David E., and Guofu Zhou. "Forecasting stock returns." *Handbook of Economic Forecasting* 2, no. Part A (2013): 328-383.

3. Forecasting interest rates and estimation of linear affine models. [6 hours]

Lecture Slides.

*Bauer, Michael D. "Restrictions on risk prices in dynamic term structure models." *Journal of Business & Economic Statistics* 36 (2018): 196-211.

*Bikbov, Ruslan, and Mikhail Chernov. "Monetary policy regimes and the term structure of interest rates." *Journal of Econometrics* 174 (2013): 27-43.

*Coroneo, Laura, Domenico Giannone, and Michele Modugno. "Unspanned macroeconomic factors in the yield curve." *Journal of Business & Economic Statistics* 34 (2016): 472-485.

Duffee, Gregory. "Forecasting interest rates." *Handbook of Economic Forecasting* 2 (2013): 385-426.

*Piazzesi, Monika. "Affine term structure models." *Handbook of Financial Econometrics* 1 (2010): 691-766.

4. Forecasting with option-implied information and conditional heteroscedasticity models [5 hours]

Lecture Slides.

*Bliss, Robert R., and Nikolaos Panigirtzoglou. "Option-implied risk aversion estimates." *Journal of Finance* 59 (2004): 407-446.

*Christoffersen, Peter, Kris Jacobs, and Bo Young Chang. "Forecasting with option-implied information." *Handbook of Economic Forecasting* 2 (2013).

*Christoffersen, Peter, Kris Jacobs, Chayawat Ornthanalai, and Yintian Wang. "Option valuation with long-run and short-run volatility components." *Journal of Financial Economics* 90 (2008): 272-297.

*Rodríguez, María José, and Esther Ruiz. "Revisiting several popular GARCH models with leverage effect: Differences and similarities." *Journal of Financial Econometrics* 10 (2012): 637-668.

Rosenberg, Joshua V., and Robert F. Engle. "Empirical pricing kernels." *Journal of Financial Economics* 64 (2002): 341-372.

5. Estimating and Forecasting Asset Prices with Macroeconomic, Structural Models [5 hours]

Lecture Slides.

*Borovička, Jaroslav, and Lars P. Hansen. "Examining macroeconomic models through the lens of asset pricing." *Journal of Econometrics* 183 (2014), 67-90.

*Garcia, René, and Richard Luger. "Risk aversion, intertemporal substitution, and the term structure of interest rates." *Journal of Applied Econometrics* 27 (2012): 1013-1036.

*Lettau, Martin, and Sydney C. Ludvigson. "Euler equation errors." *Review of Economic Dynamics* 12 (2009): 255-283.

*Li, Erica, Haitao, Li, Shujing,, Wang, and Cindy, Yu. "Macroeconomic risks and asset pricing: evidence from a dynamic stochastic general equilibrium model. *Management Science* 65 (2019): 3585-3604.

*Ludvigson, Sydney. "Advances in consumption-based asset pricing: empirical tests." *Handbook of the Economics of Finance* 2 (2013).

ASSESSMENT

__ **Class attendance** (25%)

__ **Three papers presentations** worth 25% each (75%) and of about 20 minutes each, according to a pre-assigned slide presentation format. The papers and the corresponding deadlines have to be agreed with me ASAP.