



Advanced Econometrics 3 (40405)

(Forecasting in Finance and Asset Pricing)

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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 (required readings are indicated by a *)

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

*Lecture Slides.

Clark, Todd, and Michael McCracken. "Advances in forecast evaluation." *Handbook of Economic Forecasting* 2, no. Part B (2013): 1107-1201.

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

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.

*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.

Van Binsbergen, Jules H., and Ralph SJ Koijen. "Predictive regressions: A present-value approach." *Journal of Finance* 65 (2010): 1439-1471.

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.

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.

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

ASSESSMENT

Two options are available. I just ask to communicate either personally or by e-mail your selection by the end of February.

Option A:

— **Class attendance** (20%); two referee reports of papers from a list that I will distribute (15% each): the first is due on March 6, 2020 and the second on March 20, 2020.

— One 20-25 page literature review (according a format to be distributed) on a topic related to the lectures, of literature post-2005, to be agreed with me, due on April 3, 2020; weight 50%.

Option B: **Class attendance** (20%); replica of an empirical forecasting paper agreed upon with me by March 6, 2020; **the deadline is TBA**. This usually requires intensive coding – I am ready to provide help or even starting codes, please speak to me about how to proceed. Extending in significant ways one of the codes presented/commented during the lectures is acceptable and encouraged.