

Empirical Finance

module 4, 2017-2018

TBA

TA: TBA

Course description

The goal of this course is to provide you experience applying the econometric techniques you have learned Econometrics I to practical situations in the financial arena. A particular focus is on techniques that will help you develop and test models of stock returns (class 3), assess the performance of fund managers (Class 4), develop trading strategies based on corporate events (class 1), forecast aggregate stock returns (class 5), learn to use simulation methods to test trading strategies and evaluate investment decisions (class 2), learn methods to evaluate trading strategies to increase the likelihood of uncovering truly successful trading strategies (class 2), and, if time, develop models to measure stock return volatility (class 6).

Course requirements, grading, and attendance policies

Theoretical background, econometric methodology, and main empirical findings will be studied during the lectures. It is anticipated that students prepare these articles in advance to be ready for the discussion. Active class participation will be rewarded by adjusting the grade upwards when it is on the margin (not to mention the indirect benefits from learning the material in time).

The course grade will be based on

- a) three empirical home-work projects in groups of two people (60%)
- b) a closed-book final exam. (40%).

The projects will be on common topics; however, each group is expected to work independently. The exam will be mainly based on the material covered in the class and required readings; the problems will be on the understanding of the main theoretical concepts, methodological issues, and interpretation of the empirical evidence.

Course contents

Day	Topic
1	<p>Part 1: Trading Strategies Based on Firm Events – overview of event studies, their intuition and uses. Derivation of normal return. Basic mechanics of event studies.</p>
	<p>Part 2: Event studies tests, Long horizon event studies and examples of event study applications – Testing the abnormal return due to events, calculation of appropriate standard errors, examples of event studies.</p>
	<p>Reading: <u>Required</u> – [12] (easier) Welch (2011) Section 11.7. Also skim [1b] the appendix for chapter 11 [9] (more technical) Kothari and Warner (2004), “Econometrics of Event Studies”</p> <p><i>Recommended</i> – [F] Fama, Fisher, Jensen and Roll (1969) [K] Kim and Meschke (2012)</p>
2	<p>Part 1: Simulation Methods – Monte Carlo Simulation – An over view of sampling methods for estimating the frequency of outcomes. Bootstrapping – Estimation of sampling distributions, when the underlying distribution is unknown</p>
	<p>Part 2: Evaluating Trading Strategies – Developing and testing trading strategies poses problems when many strategies are examined. It is very easy to uncover trading strategies that look like they should be successful, but in truth are extremely unlikely to be successful. In this class we review examples of this type of problem and strategies for adjusting our testing methods for correcting for this problem.</p>
	<p>Reading: <u>Required</u> – [3] Brooks, Chapter 12 [7] Harvey and Liu (2014)</p> <p><i>Recommended</i> – [M] White (2000) Reality Check</p>

3	<p>Part 1: Developing and Testing of Asset pricing models – (basic techniques) measuring beta for illiquid stocks, testing asset pricing models, testing whether factors are useful.</p> <p>Part 2: Multi-factor models, and the development of asset pricing factors and models (advanced/additional techniques) – theoretical foundation, factor –mimicking portfolios, the Fama-French model (in brief) and the Carhart model, the MSCI-Barra model, model performance and international evidence.</p> <p>Reading: <u>Required</u> – [6] Guerard (2010), Sections 2.2 and 2.3, pgs. 38-49.</p> <p><i>Recommended</i> – [L] Roll (1977) [E] Fama and French (2010) – strongly recommended reading [D] Daniel and Titman (1997) [G] Hou, Karolyi and Kho (2011)</p>
4	<p>Part 1: Mutual Fund Performance evaluation (basic) – style analysis, risk adjustment with and without asset pricing models, selection vs. timing ability, return-based vs. portfolio based methods.</p> <p>Part 2: Mutual Fund Performance evaluation (extended) – assessing mutual fund style, performance persistence and evidence of skill, mutual fund rating systems.</p> <p>Reading: <u>Required</u> – [10] Le Sourd (2007), Chpt. 2 and 3.</p> <p><i>Recommended</i> – [C] Cremers and Petajisto (2009) [J] Khorana, Servaes, and Wedge (2007) [A] Amihud and Goyenko (2012)</p>
5	<p>Part 1: Forecasting Aggregate Stock Returns: Valuation Ratios and Long-term Predictability – Graham, Shiller, Cochrane long-term stock return predictability. Assessing the direction of the market and reasons for the success of these valuation measures</p> <p>Part 2: Rational Predictability – Modeling expected returns: predicting changes in risk (not changes in return).</p> <p>Reading: <u>Required</u> – [12] (easier) Welch (2011) read – Chpt. 11 (especially 11.2 & 11.5) [8] Henkel, Martin and Nardari (2011) Read sections 1, 2 and 3.1 and 3.2. [11] Shiller, Chapter 1 and 10.</p> <p><i>Recommended</i> – [B] Cochrane (2010) – “Discount Rates”</p>

6	<p>Part 1: Volatility modeling – methods to measure volatility, both univariate and multivariate Generalized Autoregressive Conditional Heteroskedasticity (GARCH), persistence and predictability of risk. If time modeling correlations based [11].</p> <p>Part 2: Time varying correlation and covariance – like volatility, covariance can change with time affecting portfolio risk and measurement of CAPM beta. This lecture surveys methods for measuring time-varying correlations and betas.</p> <p>Reading: <u>Required</u> – [3] Brooks, Chapter 8</p> <p><i>Recommended</i> – [5] Engle (2009) Chpt. 1.</p>
7	<p>Part 1: Behavioral Finance (basic) – overview of systematic errors in human judgment and how they may impact individual wealth and aggregate behavior.</p> <p>Part 2: Behavioral Finance (extended) – Limits to Arbitrage – overview of the evidence of the impact of behavioral biases on wealth and stock prices, profitable strategies derived from the trading behavior of individual investors, assessing the impact of behavior on stock prices.</p> <p>Reading: <u>Required</u> – [2] Barberis and Thaler (2003) [1] Barber and Odean (2011)</p> <p><i>Recommended</i> – [H] Kamstra, Kremer and Levi (2003) [I] Kelly and Mechke (2010)</p>

Course materials

Required textbooks and materials

1. Barber and Odean (2011), “The Behavior of Individual Investors” (<http://ssrn.com/abstract=1872211>)
2. Barberis and Thaler (2003), “A Survey of Behavioral Finance,” Chapter 18 in the *Handbook of the Economics of Finance*. (<http://www.nber.org/papers/w9222.pdf>)
3. Brooks, Chris, 2008, *Introductory Econometrics for Finance*, (Cambridge University Press, Cambridge)
4. Cochrane (2005): “Asset Pricing: Revised Edition”, Chapter 12 and 20 (introduction of chpt. 20 plus section 20.1, pgs. 389 – 400).
5. Engle, Robert, 2009, *Anticipating Correlations: A New Paradigm for Risk Management* (Princeton University Press, Princeton). Chpt 1: (<http://press.princeton.edu/chapters/s8768.pdf>)

6. Guerard (2010) in the *Handbook of Portfolio Construction*, Chpt. 2, "Markowitz and the Expanding Definition of Risk: Applications of Multi-factor Risk Models," pgs. 38-49, Section 2.2 and 2.3 only.
7. Harvey, Campbell R. and Yan Liu, 2014, Evaluating Trading Strategies, working paper, available at (<http://ssrn.com/abstract=2474755>)
8. Henkel, Sam J., J. Spencer Martin, and Federico Nardari, 2011, "Time-varying short-horizon predictability," *Journal of Financial Economics*, Volume 99, Issue 3, March 2011, Pages 560-580. Read section 1 through 3.2.
(http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1101944)
9. Kothari, S. P. and Jerold B. Warner, 2004, "The Econometrics of Event Studies," *Handbook in Empirical Corporate Finance* (North-Holland), B. Espen Eckbo, Editor, 2007.
(<http://papers.ssrn.com/abstract=608601>)
10. Le Sourd (2007), "Performance Measurement for Traditional Investment: Literature Survey". Chapters 2 and 3. (http://www.edhec-risk.com/performance_and_style_analysis/perf_measurement/index_html/attachments/EDHEC%20Publi%20performance%20measurement%20for%20traditional%20investment.pdf)
11. Shiller, Robert, 2005, *Irrational Exuberance*, Princeton University Press, Princeton.
12. Welch (2014) on-line Corporate Finance textbook second edition
 - a. Chapter 11(<http://book.ivo-welch.info/ed3/>)
 - b. Appendix to Chapter 11(<http://book.ivo-welch.info/ed3/companion.pdf>)

Recommended, but not required

- A. Amihud, Yakov, and Ruslan Goyenko, 2012, Mutual Fund R^2 as a Predictor of Performance, forthcoming in the *Review of Financial Studies*.
- B. Cochrane (2010) – "Discount Rates"
(http://faculty.chicagobooth.edu/john.cochrane/research/papers/discount_rates.pdf)
- C. Cremers, Martijn, and Antti Petajisto, 2009, How Active is Your Fund Manager? A New Measure That Predicts Performance, *Review of Financial Studies*, Vol. 22, No. 9, 3329-3365.
- D. Daniel, K., Titman, S., 1997. Evidence on the characteristics of cross sectional variation in stock returns. *Journal of Finance* 52, 1–33.
- E. Fama, Eugene F., and Kenneth R. French, 2010, Luck versus Skill in the Cross-Section of Mutual Fund Returns, *Journal of Finance* 65, 1915–47.
- F. Fama, E., L. Fisher, M. Jensen and R. Roll, 1969, The Adjustment of Prices to New Information, *International Economic Review* 10, 1-21.
- G. Hou, Kewei, G. Andrew Karolyi, and Bong-Chan Kho, 2011, What Factors Drive Global Stock Returns? *Review Financial Studies* 24(8): 2527-2574.
- H. Kamstra, M.J., Kramer, L.A., Levi, M.D., 2003. Winter blues: a SAD stock market cycle. *American Economic Review* 93, 324–343.
- I. Kelly, Patrick J. and J. Felix Meschke, 2010. Sentiment and stock returns: The SAD anomaly revisited, *Journal of Banking & Finance* 34 1308–1326.

- J. Khorana, Ajay, Henri Servaes, Lei Wedge, 2007, "Portfolio Manager Ownership and Fund Performance", *Journal of Financial Economics*, Vol. 85, No.1, 2007, 179-204.
- K. Kim, Y. Han (Andy), and J. Felix Meschke, 2012, CEO Interviews on CNBC, *University of Kansas Working Paper*. <http://ssrn.com/abstract=1745085>
- L. Roll, R., 1977, A Critique of the Asset Pricing Theory's Tests, *Journal of Financial Economics* 4, 129-176.
- M. White, Halbert, 2000, A Reality Check for Data Snooping, *Econometrica* 68 (5), 1097-1126. Available at: (<http://www.ssc.wisc.edu/~bhansen/718/White2000.pdf>)

Additional materials

You will need Excel or a similar spreadsheet program. You may also need access to an econometrics package such as Gretl or EViews.

Please check my.nes.ru for updates to the lectures, homework, exam and course.

Academic integrity policy

You are to do nothing to gain an unfair advantage over your fellow students. Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated. This means that if you ever represent someone else's work as your own or you give someone your work so that he or she may represent it as his or her own, then you will receive a zero for the entire assignment or exam and NES's academic council will be informed and will review your case.