

Empirical Methods in Finance
Winter 2008
T/Th 9-11am; Room #4214 Jacobs Center

Syllabus

Course Description: This course will cover a number of current topics in empirical finance and related econometric methods: econometric evaluation of asset pricing models; interplay between economic theory, statistical assumptions and relevant econometric techniques; interpreting financial market facts based on traditional and neo-behavioral models. A list of topics that I plan to cover is given below – the list is tentative and subject to change.

Readings: We will use two main textbooks:

- 📖 Campbell, Lo and MacKinlay: "The econometrics of financial markets", Princeton University Press 1997
- 📖 Cochrane: "Asset Pricing", Princeton University Press 2005 (2ed)

The course will rely on basic time series concepts as can be found in standard textbooks, e.g. Hamilton's "Time Series Analysis" Princeton Univ. Press 1994.

It is highly recommended that you sit in on Patricia Ledesma's workshops on SAS and the CRSP/COMPUSTAT databases (to be held in late Jan and early Feb).

Homeworks: *There will be homework due almost every week. These are to be solved and handed in individually.*

Referee report: A final referee report will be due by Monday March 17th. You may choose one of the following papers:

- Lettau & Ludvigson: "Resurrecting the (C)CAPM: A Cross-Sectional Test When Risk Premia Are Time-Varying," JPE 109(6), 2001, pp.1238-87
- Julliard & Parker: "Consumption Risk and the Cross Section of Expected Returns," JPE 113(1), 2005, pp.185-222
- Daniel and Titman (2006), "Market Reactions to Tangible and Intangible Information," Forthcoming, Journal of Finance
- "Risks for the Long Run: A Potential Resolution of Asset Pricing Puzzles," (with Amir Yaron), *Journal of Finance* 59, August 2004: 1481-1509
- Or any other paper with my prior approval

Class Presentations: Each student must sign up to do a 30 minute class presentation of a paper. You should hand out copies of your slides (not handwritten) before the presentation. The following is a list of available papers:

1. Chordia and Shivakumar JF 2002
2. Moskowitz and Grinblatt JF 1999
3. Hansen, L.P. and K. J. Singleton, JPE vol 91, p.249-265 (1983)
4. Chan, Hameed, and Lau, JF 2003
5. Ferson and Khang (JFE, 2002)
6. Daniel, Hirshleifer and Subramayam (2006) <http://www.nber.org/papers/w7615.pdf>
7. Or any other paper with my prior approval

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TA: The TA for the course is Grant Farnsworth: g-farnsworth@kellogg.northwestern.edu.

TOPIC 0: "Introduction"

1. Consumption based asset pricing
2. Some empirical facts

📖 *Book readings: Cochrane 1,2*

Topic 1: "On the distributional characteristics of speculative prices"

1. Basic time series concepts
2. Martingale/Random walk tests
3. Return predictability, Momentum

📖 *Book readings: CLM 2, Cochrane 20*
📖 *Jegadeesh and Titman JF 1993, 2001*
📖 *Chordia and Shivakumar JF 2002*
📖 *Moskowitz and Grinblatt JF 1999*

Topic 2: "GMM estimation"

1. Econometric foundation
2. MLE
3. Application: Testing Euler equations

📖 *Book readings: CLM App A1-A4, Cochrane 10-12*
📖 *Hall, A "Some aspects of generalized method of moments estimation", in Maddala, G.S., C.R. Rao and H.D. Vinod (eds.) Handbook of Statistics Vol 11, p.393-417 (1993)*
📖 *Jagannathan, Skoulakis & Wang JBES (2002)*
📖 *Hansen, L.P. and K. J. Singleton "Stochastic consumption, risk aversion and the temporal behavior of asset returns", JPE vol 91, p.249-265 (1983)*

Topic 3: "Time varying volatility models"

1. ARCH/GARCH
2. Estimating and forecasting realized volatility

📖 *Book readings: CLM 12.2*
📖 *Bollerslev, Chou and Kroner Journal of Econometrics 52, p.5-52*
📖 *GJR model, Glosten, Jagannathan and Runkle, Journal of Finance, 1993.*
📖 *Realized Volatility, Andersen et. al. (Econometrica, 2005)*

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📖 Andersen, Torben G., Tim Bollerslev, and Nour Meddahi, 2005, *Correcting the Errors: Volatility Forecast Evaluation Using High-Frequency Data and Realized Volatilities*, *Econometrica* 73, 279-296.

Topic 4: “Linear Factor Pricing Models”

1. Efficient Frontier Mathematics
2. Testing the CAPM – Empirical evidence

📖 Book readings: CLM 5,8, Cochrane 5,6
📖 Fama-MacBeth (1973)
📖 Fama-French (1992,1996)
📖 Mitchell Petersen: “Estimating standard errors in Finance Panel Data sets: Comparing approaches”, Working paper Northwestern Univ. 2005 (Download from Mitch’s homepage)

Topic 5: “Conditioning Information”

1. Conditional vs. Unconditional CAPM models
2. Empirical Evidence

📖 Book readings: Cochrane 8
📖 Jagannathan and Wang JF 1996
📖 Llewellen and Nagel 2004
📖 Chan, Hameed, and Lau, JF 2003
📖 Ferson and Khang (JFE, 2002)
📖 Glosten and Jagannathan (JEF, 1994).

Topic 6: “Multifactor Models” (November 2nd and 9th)

1. Multifactor models
2. Testing multifactor models

📖 Book readings: CLM 6, Cochrane 9
📖 Connor and Korajczyk JFE vol 21, 1988
📖 Daniel, Hirshleifer and Subramayam (2006) <http://www.nber.org/papers/w7615.pdf>

Topic 7: “Yield curve models”

1. The expectations hypothesis
2. Arbitrage free models of the yield curve


📖 Book readings: Cochrane 19
📖 Litterman & Scheinkman: “Common Factors Affecting Bond Returns”

Topic 8: Market Microstructure

1. Univariate models

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2. Multivariate models

 *Hasbrouck notes:*

<http://pages.stern.nyu.edu/~jhasbrou/Empirical%20Market%20Microstructure/Microstructure%20Notes%2002%20Full.pdf>

Topic 9: Initial Public Offerings and Seasoned Equity Offerings

Readings will be made available later