

12F013

3 ECTS

Trading and Financial Markets

Overview and Objectives

This course is an introduction to market microstructure and trading strategy. It deals with the process of price formation in organized markets as the outcome of the interaction of different types of traders under different trading rules.

The first part of the course covers recent research topics in Market Microstructure. We will analyze theoretical models on the following topics: information disclosure, market transparency and information choice.

The objectives of the course are:

- i) To illustrate the recent theoretical models in market microstructure.
- ii) To provide the analytical tools to analyze this class of models.
- iii) To identify relevant questions remained unanswered and stimulate new ideas for research.

The second part of the course introduces students to the models commonly used in the empirical analysis of market microstructure.

Course Outline

1. Asset Pricing under Asymmetric Information

Competitive Rational Expectations Models

- Admati, A., 1985, A Noisy Rational Expectations Equilibrium for Multiple Asset Securities Markets, *Econometrica* 53, 629-657.
- Diamond, D. and R. Verrecchia, 1981, Information Aggregation in a Noisy Rational Expectations Economy, *Journal of Financial Economics* 9, 221-235.
- Hellwig, M., 1980, On the Aggregation of Information in Competitive Markets, *Journal of Economic Theory* 22, 477-498.
- Grossman, S., 1976, On the Efficiency of Competitive Stock Markets where Trades have Diverse Information, *Journal of Finance* 31(2), 573-584.
- Grossman, S., 1978, Further Results on the Informational Efficiency of Competitive Stock Markets, *Journal of Economic Theory* 18, 81-101.

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n Grossman, S. and J. Stiglitz, 1980, On the Impossibility of Informationally Efficient Markets, American Economic Review 70 (3), 393-408.

- Grossman, S., 1981, An Introduction to the Theory of Rational Expectations under Asymmetric Information, Review of Economics Studies 48(4), 541-559.
- Verrecchia, R.E., 1982, Information Acquisition in a Noisy Rational Expectations Economy, Econometrica 50(6), 1415-1430.

Sequential Trade Models of Asymmetric Information

n Glosten, L., and P. Milgrom, 1985, Bid, ask, and transaction prices in a specialist market with heterogeneously informed traders, Journal of Financial Economics 14, 71-100.

- Easley, D., and M. O'Hara, 1987, Price, Trade Size, and Information in Securities Markets, Journal of Financial Economics 19, 69-90.

Strategic Trade Models of Asymmetric Information

- Admati, A. and P. Pfleiderer, 1988, A theory of intraday trading patterns: volume and price variability, Review of Financial Studies 1, 3-40.
- Foster, F. and S. Viswanathan, 1996, Strategic trading when agents forecast the forecasts of others, Journal of Finance 51, 1437-1478.

n Kyle, A., 1985, Continuous auctions and insider trading, Econometrica 53, 1315-1336.

- Kyle, A.S., 1989, Informed Speculation with Imperfect Competition, Review of Economic Studies 56, 317-356.

2. Information Disclosure

n Admati, A. and Pfleiderer, P., 1990, Direct and Indirect Sale of Information, Econometrica 58: 901-928.

n Admati, A., and P. Pfleiderer, 1986, A Monopolistic Market for Information, Journal of Economic Theory 39, 400-438.

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- Dumitrescu, Ariadna, Corporate Governance and Market Liquidity, Available at SSRN: <http://ssrn.com/abstract=1356204>.
- Huddart, S., Hughes, J.S. and C. Levine, 2001, Public Disclosure and Dissimulation of Insider Trades, *Econometrica* 69 (3), 665-681.

3. High Frequency Trading

- Biais, Bruno., Hombert, Johan., Weil, Pierre-Olivier. "Trading and Liquidity with Limited Cognition", Working Paper
- Brogaard, Jonathan. "High Frequency Trading and its Impact on Market Quality" Working Paper, November 2010
- Cartea, Alvaro., Penalva, José. "Where is the Value of High Frequency Trading" Working Paper, February 2011
- Kirilenko, Andrei., Kyle, Albert., Samadi, Mehrdad., Tugkan, Tuzun. "The Flash card: The impact of High Frequency Trading on a Electronic Market", Working Paper, January 2011
- Menkveld, Albert. "High Frequency Trading and the New-Market Makers", Working Paper, January 2011

n indicates a leading reference

Topics for presentations

1. Multi-asset Trading

- Baruch, S., A. Karolyi, and M. Lemmon, 2007, Multi-market Trading and Liquidity: Theory and Evidence. *Journal of Finance* 62(5), 2169–2200.
- Caballe, J., and M. Krishnan, 1994, Imperfect Competition in a Multi-security Market with Risk Neutrality, *Econometrica* 62(3), 695-704.
- Chowdhry, B. and Nanda, V., 1991, Multimarket Trading and Market Liquidity. *Review of Financial Studies* 4(3), 483-511.
- Pasquariello, P., 2007, Imperfect Competition, Information Heterogeneity, and Financial Contagion. *Review of Financial Studies*, 20(2), 391-426.

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- Pasquariello, P. and C. Vega, 2009, Strategic Cross-Trading in the U.S. Stock Market. Working Paper, Available at SSRN: <http://ssrn.com/abstract=1333747>.
- Yuan, K., 2005, Asymmetric Price Movements and Borrowing Constraints: A Rational Expectations Equilibrium Model of Crisis, Contagion, and Confusion. *Journal of Finance* 60(1), 379-411.

2. Manipulation, Predatory Trading, and Cash Settlement

- B. Carlin, M. Lobo, and S. Viswanathan, 2007, Episodic Liquidity Crises: The Effect of Predatory and Cooperative Trading. *Journal of Finance* 62, 2235–2274.
- Brunnermeier, M. K., and L. H. Pedersen, 2005, Predatory Trading, *Journal of Finance* 60(4), 1825-1863.
- Goldstein, I., and A. Guembel, 2008, Manipulation and the Allocational Role of Prices. *Review of Economic Studies* 75(1): 133–64.
- Kyle, A. and S. Viswanathan, 2008, How to Define Illegal Price Manipulation, *AEA Papers and Proceedings*, 98(2), 274–279
- Peng, L. and Roell, A., 2008, Manipulation and equity-based compensation, *American Economic Review* 98, pp. 285–90.

3. Short Sales

- Boehmer, E., Jones, C. and Zhang, X., Shackling Short Sellers: The 2008 Shorting Ban. Johnson School Research Paper Series No. 34-09. Available at SSRN: <http://ssrn.com/abstract=1412844> .
- Boehmer, E. and Wu, J. , Short Selling and the Informational Efficiency of Prices (January 8, 2009). Available at SSRN: <http://ssrn.com/abstract=972620>.
- Boehmer, E., Jordan, B. and Z. Huszar, 2010, The good news in short interest, *Journal of Financial Economics*, Forthcoming.
- Beber, A. and M. Pagano, 2009, Short-selling Bans Around the World: Evidence from the 2007-2009 Crisis, Available at:
<http://www1.fee.uva.nl/fm/PEOPLE/Alessandro/research/short.pdf>
- Christophe, S., Ferri, M., and J. Hsieh, 2010, Informed trading before analyst downgrades: evidence from short sellers, *Journal of Financial Economics* 95, 85-106.
- Diether, K.B., Lee, K-H, and I.M. Werner, 2009, It's SHO Time! Short Sale Price Tests and Market Quality, *Journal of Finance*, 64 (1), page 37-73.

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- Edwards, A., and K. Hanley, 2010, Short selling in initial public offering, Journal of Financial Economics, Forthcoming.
- Henry, T. and J. Koski, Short Selling Around Seasoned Equity Offerings, AFA 2009 San Francisco Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=972076>.
- Karpoff, J., and L. Xiaoxia, 2010, Short sellers and financial misconduct, Journal of Finance, Forthcoming.
- Kolasinski, A., Reed, A. and J. Thornock, 2010, Prohibitions versus Constraints: The 2008 Short Sales Regulations. AFA 2010 Atlanta Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=1365037>.

4. Information Choice

n Huang, J., K.D. Wei, and H. Yan, 2007, Participation Costs and the Sensitivity of Fund Flows to Past Performance, Journal of Finance 62,1273–1311.

- Van Nieuwerburgh, S., Veldkamp, L., Information Acquisition and Under-Diversification, Review of Economic Studies, forthcoming 2010. Available at SSRN: <http://ssrn.com/abstract=619362>.
- Van Nieuwerburgh, S., Veldkamp, L., 2009, Information Immobility and the Home Bias Puzzle, Journal of Finance 64, 1187-1215.

5. Market Microstructure and Corporate Finance

- Admati, A. and P. Pfleiderer, 2009, The Wall Street Walk and Shareholder Activism: Exit as a Form of Voice. The Review of Financial Studies 22, 2645-2685.
- Edmans, A., 2009, Blockholder Trading, Market Efficiency, and Managerial Mopia. Journal of Finance 64, 2481-2513.
- Faure-Grimaud, A. and D. Gromb, 2004, Public Trading and Private Incentives, The Review of Financial Studies 17, 985-1014.
- Holmstrom, B., and J. Tirole, 1993, Market Liquidity and Performance Monitoring, Journal of Political Economy 10, 678-709.

6. Market Microstructure and Portfolio Management Performance

- Admati, A., Bhattacharya, S., Pfleiderer, P. and S. Ross, 1986, On Timing and Selectivity, Journal of Finance, 41, 715–730.

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- Edelen, R., Evans R. and Kadlec, G., 2007, Scale Effects in Mutual Fund Performance: The Role of Trading Costs. Available at SSRN: <http://ssrn.com/abstract=951367>.
- Kacperczyk, M. and A. Seru 2007, Fund Manager Use of Public Information: New Evidence on Managerial Skills, Journal of Finance, 62: 485-528.

Kacperczyk, M., Van Nieuwerburgh, S., Veldkamp, L., 2009, Attention Allocation Over the Business Cycle: Evidence from the Mutual Fund Industry, Working Paper,

New York University. Available at SSRN: <http://ssrn.com/abstract=1411367>

Required Activities

TO BE DETERMINED BY PROFESSOR

Evaluation

Grading will be based on a presentation of a paper, a research proposal and the final exam. The presentation of a paper should include (i) the model's key assumptions, the main results, and the robustness of the results to deviations in the assumptions, (ii) the technique used to derive the results, (iii) the economic intuition behind the results, (iv) and possible steps for future research (testable implications, policy implications). The research proposal should be two pages long and contain an interesting and novel research question (that may be either theoretical or empirical). The final exam is going to contain a number of questions on the topics covered in the two parts of the course.

Books useful for background reading include the following:

Brunnermeier, M., 2001, Asset Pricing Under Asymmetric Information: Bubbles, Crashes, Technical Analysis, and Herding, Oxford University Press.

Harris, L. 2003., Trading and Exchanges: Market Microstructure for Practitioners, Oxford University Press.

Hasbrouck, J. 2007, Empirical Market Microstructure: The Institutions, Economics, and Econometrics of Securities Trading, Oxford University Press.

O'Hara, M., 1995, Market Microstructure Theory, Blackwell Publishing.

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Vives, X. 2008, Information and Learning in Markets: The Impact of Market Microstructure, Princeton University Press.

Materials

Brunnermeier, M., 2001, Asset Pricing Under Asymmetric Information: Bubbles, Crashes, Technical Analysis, and Herding, Oxford University Press.

Harris, L. 2003., Trading and Exchanges: Market Microstructure for Practitioners, Oxford University Press.

Hasbrouck, J. 2007, Empirical Market Microstructure: The Institutions, Economics, and

Econometrics of Securities Trading, Oxford University Press.

O'Hara, M., 1995, Market Microstructure Theory, Blackwell Publishing.

Vives, X. 2008, Information and Learning in Markets: The Impact of Market Microstructure, Princeton University Press.