



Course: Financial Market Microstructure

Organizer: Department of Finance, NHH – Norwegian School of Economics

Instructors: Professor David Easley and Professor Maureen O'Hara (both Cornell University)

Dates: June 6-7, 2016

Place: NHH – Norwegian School of Economics, Bergen, Norway

Audience: PhD students, researchers

Applications: Please register in advance by emailing a CV and a motivation statement of not more than 200 words to Professor Klaus R Schenk-Hoppé (NHH and University of Manchester) Email: klaus.schenk-hoppe@nhh.no

Aim: The course covers the field of financial market microstructure in 6 lectures: 1. Introduction to Market Making: How Markets Work; 2. Information-Based Microstructure Models; 3. PINs and VPINs; 4. Information and the Cost of Capital; 5. Ambiguity in Markets; and 6. The High Frequency World.

The course: Learn how financial markets work from two pioneers in the field of financial market microstructure. David Easley and Maureen O'Hara are two of the most highly cited financial economists with Google Scholar citation counts summing to over 40,000.

Their course moves from an introduction to the basic 'plumbing' of markets, to the role of information and its impact on liquidity and asset pricing, to recent issues on high-frequency trading. Both theoretical and empirical research in the field will be covered.

The course is an excellent preparation for the Jan Mossin Memorial Symposium on Financial Markets at NHH, June 9-10, 2016.

Acknowledgement: The PhD course is sponsored by the Norwegian Finance Initiative under the NFI Lecture Series Programme.

Travel information: Bergen is a busy city in the summer; book early! You can search for cheap accommodation for instance at www.airbnb.com or www.hostels.com.

Reading and lecture schedule:

Background Resources

Resource for theoretical microstructure: O'Hara, M., Market Microstructure Theory (Blackwell: 1995).

Resource for empirical microstructure: Hasbrouck, J., Empirical Market Microstructure (Oxford University Press: 2007).

Lecture Schedule

1. Introduction to Market Making: How Markets Work

O'Hara, M., 2003, Presidential Address: Liquidity and Price Discovery, Journal of Finance.

O'Hara, M., 2015, High Frequency Market Microstructure, Journal of Financial Economics.

Grossman, S. and J. Stiglitz, 1980, On the Impossibility of Informationally Efficient Markets, American Economic Review.

2. Information-Based Microstructure Models

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

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

Easley, D. and M. O'Hara, 1992, Time and the process of security price adjustment, Journal of Finance.

Kyle, Albert S., 1985, Continuous Auctions and Insider Trading, Econometrica.

Additional readings:

Mendelson, H. and A. Tunca, 2002, Strategic Trading, Liquidity, and Information Acquisition, Review of Financial Studies.

Back, K. and S. Baruch, 2004, Information in Securities Markets: Kyle meets Glosten and Milgrom, Econometrica.

Brunnermeier, M., and L. Pederson, 2005, Predatory Trading, Journal of Finance.

3. PINs and VPINs

- Easley, D., N. Kiefer, and M. O'Hara, 1997, One Day in the Life of a Very Common Stock, Review of Financial Studies.
- Easley, D, N. Kiefer, M. O'Hara and J. Paperman, 1996, Liquidity, Information and Infrequently Traded Stocks, Journal of Finance.
- Easley, D., Hvidkjaer, S. and M. O'Hara, 2004, Is Information Risk a Determinant of Asset Returns? Journal of Finance.
- Easley, D., M. Lopez de Prado, and M. O'Hara, 2012, Flow Toxicity and Volatility in a High Frequency World, Review of Financial Studies.

Additional readings:

- Aslan, H., Easley, D., Hvidkjaer, S. and M. O'Hara. 2011, Firm Characteristics and Informed Trading: Implications for Asset Pricing, Journal of Empirical Finance.
- Duarte, J., and L. Young, 2009, Why is PIN Priced? Journal of Financial Economics.
- Easley, D., M. Lopez de Prado, and M. O'Hara, 2011, The microstructure of the flash crash, Journal of Portfolio Management.

4. Information and the Cost of Capital

- Easley, D., Hvidkjaer, S. and M. O'Hara, 2004, Is Information Risk a Determinant of Asset Returns? Journal of Finance.
- Easley, D., M. O'Hara, and L. Yang, Differential Access to Price Information, Journal of Financial and Quantitative Analysis, forthcoming.

Additional readings (and pricing of liquidity):

- Amihud, Y., and H. Mendelson, 1986, Asset Pricing and the Bid-Ask Spread, Journal of Financial Economics
- Pastor, L. and R. Stambaugh, 2003, Liquidity risk and expected stock returns, Journal of Political Economy.
- Bekaert, G., Harvey, C. and C. Ljunblad, 2007, Liquidity and Expected Returns: Evidence from Emerging Markets, Review of Financial Studies.
- Goyenko, Y. G., Holden, C., and C. Trzcinka, Do Liquidity Measures Measure Liquidity? Journal of Financial Economics, May 2009
- Hu, G.X, J. Pan and J. Wang, 2013, Noise as Information for Liquidity, Journal of Finance.

Brunnermeier, M. and L. Pedersen, 2009, Market Liquidity and Funding Liquidity, Review of Financial Studies.

5. Ambiguity in Markets

Easley, D. and M. O'Hara, 2010, Liquidity and Valuation in an Uncertain World, Journal of Financial Economics.

Easley, D. and M. O'Hara, 2010, Microstructure and Ambiguity, Journal of Finance.

Easley, D., M. O'Hara and L. Yang, 2014, Opaque Trading, Disclosure and Asset Prices: Implications for Hedge Fund Regulation, Review of Financial Studies.

Additional readings:

Easley, D. and M. O'Hara, 2009, Ambiguity and Non-participation: The Role of Regulation, Review of Financial Studies.

6. The High Frequency World

Easley, D., M. Lopez de Prado, and M. O'Hara, 2015, Discerning Information from Trade Data, Journal of Financial Economics, forthcoming.

Easley, D., M. Lopez de Prado, and M. O'Hara, 2015, Optimal Execution Horizon, Mathematical Finance, forthcoming.

Additional readings:

Baron, M., J. Brogaard, B. Hagstromer, and A. Kirilenko, 2014, Risk and Return in High Frequency Trading, Working Paper.

Brogaard, J., Hendershott, T., and R. Riordan, 2014, High-Frequency Trading and Price Discovery, Review of Financial Studies.

Chordia, T., A. Goyal, B. Lehmann, and G. Saar, 2013, High-Frequency Trading, Journal of Financial Markets.

Hasbrouck, J., and G. Saar, 2013, Low-Latency Trading, Journal of Financial Markets.

Menkveld, A. and B. Yueshen, 2015, The Flash Crash: A cautionary tale of highly fragmented markets, Working Paper, VU University Amsterdam.

Deusaker, P. and T. Johnson, 2011, Market Liquidity and Flow-driven Risk, Review of Financial Studies.

Hendershott, T., Jones, C., and A. Menkveld, 2011, Does Algorithmic Trading Improve Liquidity?, Journal of Finance.