Econ 281: Selected Topics in Market Microstructure and Auctions, Spring 2021
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MW 11 am - 12:20 pm

Syllabus

This class introduces game-theoretic models of trading and bidding under various market institutions. The goal is to understand how trading mechanism affects information efficiency, liquidity, revenue, and other market performance.

Grading:

1. Two referee reports (60%). Each referee report should be around 4 pages: 2 pages of summary, 2 pages of comments and critiques. It should be about a paper (either theoretical, empirical, or experimental) related to the class material. A good place to find related theory papers is the unstarred papers on this syllabus.
   - A referee report can be substituted by (1) a writeup that gives an exposition of the results and derivations in the paper, (2) a note extending the model in the paper or giving new results, or (3) presentation slides for a 60 minutes presentation of the paper.
2. A take-home final exam (40%).

Reading List:

"*" indicates the main readings.

<u>Strategic Trading and Market Making</u>

* Glosten, L. & Milgrom, P. (1985). Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders. *Journal of Financial Economics*, 14(1), 71-100.

* Kyle, A. (1985). Continuous Auctions and Insider Trading. *Econometrica*, 53(6), 1315-1335.

Back, K. (1992). Insider Trading in Continuous Time. *The Review of Financial Studies*, 5(3), 387-409.

Back, K., Cao, C. & Willard, G. (2000). Imperfect Competition among Informed Traders. *The Journal of Finance,* 55(5), 2117-2155.

Back, K. & Baruch, S. (2004). Information in Securities Markets: Kyle Meets Glosten and Milgrom. *Econometrica*, 72(2), 433-465.

Huberman, G. & Stanzl, W. (2004). Price Manipulation and Quasi-Arbitrage. *Econometrica*, 72(4), 1247-1275.

Ostrovsky, M. (2012). Information Aggregation in Dynamic Markets with Strategic Traders. *Econometrica*, 80(6), 2595-2647.

Lambert, N.S., Ostrovsky, M. & Panov, M. (2018). Strategic Trading in Informationally Complex Environments. *Econometrica*, 86(4), 1119-1157.

Back, K., Collin-Dufresne, P., Fos, V., Li, T. & Ljungqvist, A. (2018). Activism, Strategic Trading, and Liquidity. *Econometrica*, 86(4), 1431-1463.

Hörner, J., Lovo, S. & Tomala, T. (2018). Belief-Free Price Formation. *Journal of Financial Economics*, 127(2), 342-365.

Sadzik, T. & Woolnough, C. (2021). Rational Destabilization in a Frictionless Market. *Journal of Economic Theory*, 192.

Williams, B. & Skrzypacz, A. (2021). Spoofing in Equilibrium.

Limit Order Markets

* Glosten, L. (1994). Is the Electronic Open Limit Order Book Inevitable? *The Journal of Finance, 49*(4), 1127-1161.

Biais, B., Martimort, D., & Rochet, J. (2000). Competing Mechanisms in a Common Value Environment. *Econometrica, 68*(4), 799-837.

Goettler, R., Parlour, C. & Rajan, U. (2005). Equilibrium in a Dynamic Limit Order Market. *The Journal of Finance*, 60(5), 2149-2192.

Goettler, R., Parlour, C. & Rajan, U. (2009). Informed Traders and Limit Order Markets. *Journal of Financial Economics*, 93(1), 67-87.

Roşu, I. (2009). A Dynamic Model of the Limit Order Book. *The Review of Financial Studies*, 22(11), 4601-4641.

* Back, K. & Baruch, S. (2013). Strategic Liquidity Provision in Limit Order Markets. *Econometrica*, 81(1), 363-392.

Back, K. & Baruch, S. (2007). Working Orders in Limit Order Markets and Floor Exchanges. *Journal of Finance*, 62(4), 1589-1621.

Baruch, S. & Glosten, L. (2019). Tail Expectation and Imperfect Competition in Limit Order Book Markets. *Journal of Economic Theory*, 183, 661-697.

Uniform-Price Double Auctions

Kyle, A. (1989). Informed Speculation with Imperfect Competition. *The Review of Economic Studies*, 56(3), 317-355.

Vayanos, D. (1999). Strategic Trading and Welfare in a Dynamic Market. *The Review of Economic Studies*, 66(2), 219-254.

Vives, X. (2011). Strategic Supply Function Competition with Private Information. *Econometrica*, 79(6), 1919-1966.

Rostek, M. & Weretka, M. (2012). Price Inference in Small Markets. *Econometrica*, 80(2), 687-711.

* Du, S. & Zhu, H. (2012). Ex Post Equilibria in Double Auctions of Divisible Assets.

Rostek, M. & Weretka, M. (2017). Dynamic Thin Markets. *The Review of Financial Studies*, 28(10), 2946-2992.

* Du, S. & Zhu, H. (2017). What is the Optimal Trading Frequency in Financial Markets? *The Review of Economic Studies*, 84(4), 1606-1651.

* Duffie, D. & Zhu, H. (2017). Size Discovery. *The Review of Financial Studies*, 30(4), 1095–1150.

Kyle, A., Obizhaeva, A. & Wang, Y. (2018). Smooth Trading with Overconfidence and Market Power. *The Review of Economic Studies*, 85(1), 611-662.

Babus, A. & Kondor, P. (2018). Trading and Information Diffusion in Over-the-Counter Markets. *Econometrica*, 86(5), 1727-1769.

Antill, S. & Duffie, D. (2019). Augmenting Markets with Mechanisms. *The Review of Economic Studies*, forthcoming.

Rostek, M. & Yoon, J. (2020). Equilibrium Theory of Financial Markets: Recent Developments.

Chen, D. & Duffie, D. (2021). Market Fragmentation. *American Economic Review*, forthcoming.

One-Sided Auctions

Krishna, V. (2010). Auction Theory. Academic Press; 2nd edition.

Myerson, R. (1981). Optimal Auction Design. *Mathematics of Operations Research*, 6(1), 58-73.

* Milgrom, P. & Weber, R. (1982). A Theory of Auctions and Competitive Bidding. *Econometrica, 50*(5), 1089-1122.

* DeMarzo, P., Kremer, I., & Skrzypacz, A. (2005). Bidding with Securities: Auctions and Security Design. *The American Economic Review, 95*(4), 936-959.

Che, Y., & Kim, J. (2010). Bidding with Securities: Comment. *The American Economic Review, 100*(4), 1929-1935.

Gorbenko, A. & Malenko, A. (2011). Competition among Sellers in Securities Auctions. *American Economic Review*, 101(5), 1806-41.

Du, S. (2018). Robust Mechanisms under Common Valuation. *Econometrica*, 86(5), 1569-1588.

Brooks, B. & Du, S. (2020). Optimal Auction Design with Common Values: an Informationally Robust Approach. *Econometrica*.