
Bocconi University - PhD

Financial Market Microstructure

Academic Year 2023-2024, 1st Semester

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1. Course Objectives

This course deals with the microstructure of financial markets and has three main objectives:

- a) understanding how the most advanced financial markets work, also in light of the striking recent developments brought by high frequency trading and dark markets
- b) presenting the core microeconomic models which have been used by researchers in the field of microstructure to discuss issues related to financial market design and market participants' trading strategies
- c) providing real world examples of how microeconomic analysis can be used to evaluate regulatory actions in market design, to estimate transaction costs, and to test the empirical predictions of the theoretical models

2. Course Assessment

Work will be graded based on:

- a presentation of 1 or 2 of the journal articles offered as optional readings
- a research project

3. Course Outline and Material

Part I - How Financial Markets Work

A prerequisite condition for dealing with applied models of market microstructure is a thorough knowledge of financial markets, hence the first part of this course will be dedicated to an overview of the structure of financial markets. Special attention will be paid to the most striking features that have characterized financial markets over the last decade, such as high frequency trading, dark markets and crypto currency markets.

Students will be presented with the most advanced electronic trading platforms which work as Open Limit Order Books: trading sessions (continuous vs batch auction), trading phases, execution systems, order types, trading strategies and rules (e.g. Order Precedence Rules and Trade Pricing Rules).

Textbooks

Johnson, B. 2010. Algorithmic Trading & DMA. 4Myeloma Press. Chapters 4, 5 and 6.

Harris, L. (2003), " Trading and Exchanges", Oxford University Press.

[MIT201 – Guide to the trading system Issue 15.4 Effective from 20 February 2023](#)

Part II - From Theory to Empirical Evidence

This part of the course concentrates on the mostly used microstructure models that proxy the most relevant market structures that characterize financial markets around the World. The aim is to show how the different models can be used to discuss issues related to financial market design and regulation.

- *Dealership Markets*: Information Based and Sequential Trading Models
- *Batch Auction Markets*: Noisy Rational Expectations, Learning, Price Discovery and Market Transparency
- *Batch Markets with Specialist*: Strategic Traders and Insider Trading
- *Limit Order Books*: execution costs, price opportunity costs, exposure costs and the choice of the optimal order submission strategy. Model of a single market, extended to allow for competition from an Alternative Trading System (ATS). Use of this model to generate empirical predictions about the most relevant (recent) issues on the agenda of the Security and Exchange Commission (SEC) and of Financial Regulators around the World: Dark trading, Tick size, Trading fees, Closing auction volume.
- *Empirics*: overview of trading costs, of the most used indicators of market quality, and of currently available datasets. Tests of the theory's predictions using high frequency datasets within an event study framework.
- *Experimental Economics*: Students might be able to participate a trading game at BELSS LAB. The trading platform students will join simulates two competing limit order books.

Textbooks and additional background material

de Jong F. and Rindi, B. (2009) The Microstructure of Financial Markets. Cambridge University Press. Journal articles.

The lecture notes made available at the beginning of each class will indicate precisely which journal articles or additional background material will be relevant for the final assessment.