# Market microstructure

## Prof. Giovanni Petrella

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

This course covers two main topics related to secondary markets from an empirical standpoint: price efficiency and market liquidity. The following indicators are covered: market efficiency coefficient and autocorrelation, r-squared, delay in the price discovery process, bid-ask spread, market impact.

Students attending the class may work all alone or in small groups, on a voluntary basis, to perform an empirical project dealing with a market microstructure topic.

As for the expected learning outcomes, at the end of this course students will know the main practical implications of market microstructure; will be able to evaluate secondary market quality (level of price efficiency, degree of information asymmetry, market liquidity); will be able to set up and perform empirical analyses based on historical market data (prices, trading volumes, bid-ask spreads).

***COURSE CONTENT***

Course Outline And Detailed Learning Goals

1. *The microstructure of financial markets.*

At the end of this section of the course, the student will be able to:

– Know how and why do people trade.

– Identify suppliers and demanders of liquidity.

– Estimate indicators of market quality: efficiency, liquidity and price discovery.

2. *Weak form efficiency*

At the end of this section of the course, the student will be able to:

– Estimate informational efficiency.

– Recognize sources and consequences of return autocorrelation.

– Apply price efficiency tests to microstructure issues.

– Collect market data for empirical analyses.

\* Use the Thomson Reuters Datastream database.

\* Use the Bloomberg database.

3. *Semi-strong form efficiency.*

At the end of this section of the course, the student will be able to:

– Perform an event study.

– Apply the event study methodology to news releases and other events.

4. *Market liquidity.*

At the end of this section of the course, the student will be able to:

– Estimate bid-ask spread and price impact.

– Identify the determinants of bid-ask spread and price impact.

– Know how market makers set the bid-ask spread.

– Know how to assess the best execution of trades

5. *Trading with asymmetric information.*

At the end of this section of the course, the student will be able to:

– Isolate the information content of order flow.

– Estimate the adverse selection component of the spread.

6. *Liquidity and stock returns.*

At the end of this section of the course, the student will be able to:

– Identify liquidity costs and risks.

– Estimate wealth effects associated with microstructure events.

***READING LIST***

Selected chapters from the following texts:

* J. Hasbrouck, *Securities Trading: Principles and Procedures,* manuscript, 2020 (chapters 4, 6-9, 12-15, 17, 18, 20)
* T. Foucault, M. Pagano, A. Röell, *Market Liquidity*, Oxford University Press, 2013, ISBN 9780199936243 (chapters 1-10)
* J.Y. Campbell-Andrew W Lo-A. Craig Mackinlay, *The Econometrics of Financial Markets,* Princeton University Press, 1997, ISBN 9781400830213 (chapters 2 and 4)

Other relevant materials (slides, data, papers, etc.) will be posted on the class website, available through the Blackboard learning platform.

***TEACHING METHOD***

Lectures.

***ASSESSMENT METHOD AND CRITERIA***

As for the assessment of the learning outcomes, students are expected to take a written test. The test usually consists of 3 questions, each one including three to four sub-questions.

As for the grading criteria, course grades are set based on the evaluation of the individual questions. The final grade of the exam aggregates the grades assigned to the individual questions. The exam is written only. The test lasts between 60 and 90 minutes. The questions refer to concepts, examples, models, methodologies, empirical analyses dealt in the course and may also require the solution to numerical problems.

***NOTES AND PREREQUISITES***

In case the health situation related to the Covid-19 pandemic does not allow face-to-face teaching, remote teaching will be performed in ways that will be communicated in due time.

*Prerequisites*

Before entering the course, the student should be familiar with:

– fundamentals of economics and accounting;

– fundamentals of statistics and econometrics.

*Office Hours*

Office hours are held once a week every Tuesday at 6 pm in Necchi 5 building (room 202-bis).

Further information, updates notices of change are published on the instructor’s webpage at http://docenti.unicatt.it/eng/giovanni\_petrella.