UNIVERSITY OF ALBERTA
ALBERTA SCHOOL OF BUSINESS

DEPARTMENT OF FINANCE

FIN 415 / FIN 615: TRADING AND MARKETS

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Course overview

This course discusses the functioning of financial markets and trading and price determination in these markets. Topics covered include order submission and trading strategies, market structure and quality, transaction costs and liquidity, bubbles and crashes, price formation and technical analysis.

The material is technical at some points but I will emphasize the intuition and practical applications. While there is a recommended textbook, we will rely primarily on academic and practitioner research as well as information from markets. This will make the discussion more seminar-like in style. Your presence and participation are encouraged. More importantly, you have to be comfortable with this less structured form of learning. I assume students are familiar with such concepts as option pricing basics, alpha, the Sharpe ratio and the four – factor model. A working knowledge of statistics, especially regression, is very useful.

This course incorporates the learning goals of the BCom Program, especially critical thinking, global awareness, teamwork, quantitative skills and written communication, and of the MBA program, especially business fundamentals, critical thinking and problem solving, and skills related to teamwork and leadership, quantitative methods and information processing, and communication.

Course page and contact information

Lectures: Tue/Thu, 3:30 pm-4:50 pm, BUS 3-10

Course page: Log into eClass (https://eclass.srv.ualberta.ca/portal/) and choose FIN 415 LEC A1 - FIN 615 LEC A1 - Fall 2021

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Office hours: Tue/Thu, 12:30-1:30 pm

Course materials

The recommended textbook for the course is **Trading and Exchanges: Market Microstructure for Practitioners** by Larry Harris. I will hand out power point slides, which will be the primary basis for the class discussion, assignments and exams. The discussion in the book, while adding depth to the lectures, is dated at several points and fails to provide adequate coverage in areas, and the lectures will fill these gaps.

In addition, I encourage you to read the finance sections of publications such as the *Globe and Mail*, the *National Post*, the *Wall Street Journal* and the *Economist*, where you will find articles dealing with relevant issues. We will often discuss such articles in class.

Class materials can be downloaded from the course page. The material for each topic should be available at least a week in advance. Slides and readings marked with an asterisk (*) are not examinable. Last year's slides are also available on the course page.

Library resources. You can find several databases at http://guides.library.ualberta.ca/stock-markets.

Grading

Your grade for the course will be based on **4** group assignments, worth **65%**, and a final exam (**December 14 at 9:00 am**), worth **35%**. I grade on a curve but also consider absolute performance; thus, for instance, an overall score of 80 has never received a course grade of B**–**. Exam questions will come from material covered in class. Sample exams are available online. *If the exam format departs from that in previous years, I will let you know well in advance.* Should you miss the final, I will assign a make-up project, due January 31 in the New Year. Deferred exam requests must be submitted to, and approved by, the undergraduate or MBA office.

I hope you will not hesitate to ask questions, respond to my questions, or provide comments during the lectures. While there is no formal class participation component to your grade, enthusiastic participation will be rewarded at the time of grade determination.

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards and to uphold the policies of the University in this respect. Students are urged to familiarize themselves with the provisions of the code of student behavior and avoid behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University. The code of student behavior is available here: https://www.ualberta.ca/governance/resources/policies-standards-and-codes-of-conduct/code-of-student-behaviour.html.

Materially similar assignments or exams will be severely dealt with. My hope is that you are in this course because you want to be here and to learn. The exam and assignments are an important part of the learning process.

Audio or video recording, digital or otherwise, by students of the lectures or other course-related sessions is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Be sure to put away your cell phone before the lecture starts. The use of computers for note-taking is understandable. But, please, no texting or web surfing once we start.

Assignments

The purpose of the assignments is to apply the concepts discussed in the lectures to actual data. With several questions, I will give you the data; with others, I might have you download the data. *The assignments should be available by the end of week 1, and will be due one week after we finish the relevant material.*

Stock market data for Canadian firms are available from *CFMRC* and for U.S. firms are available from *Global Financial Data* (GFD). Should you need these, balance sheet and income statement data are available from *Orbis*. See below how to access the databases. GFD also has data on commodity prices, exchange rates and interest rates, if you need these. Background information on firms is available from annual reports and financial statements, or from newspapers (the *Globe and Mail*, the *National Post*, and the *Wall Street Journal*), which are available from Dow Jones/Factiva.

A few things to note

- Working in groups is highly recommended. To minimize the free-rider problem, I am limiting the group size to **five**.

- Please submit each assignment (one per group) in hard copy form.
- The statistical analysis can be performed in the package of your choice. The default is Excel.
- It is a good idea to include a screen shot of your main calculations.
- I appreciate brevity and clarity, and must be able to understand your analysis easily.
- I provide partial credit but try to be tough in my grading. I am looking for sound analysis but also for interpretation and insights beyond the analysis.

Accessing data sources

A list of useful databases is available at https://guides.library.ualberta.ca/stock-markets. You can access the databases from this page. Otherwise, here are alternatives. For GFD, click on GFD. If this link doesn't work, you can go to the library website (https://www.library.ualberta.ca/), and search for *Global Financial Data* from the list of databases. In each case, you will need your U of A CCID and password. (The same steps will work for CFMRC and Orbis). Once you are in GFD, a separate login is required to access their server. If you do not already have an account, you must first register and create one. Click on *Client Login* in the top right corner, where you can also register to create an account. You won't need this additional step for *CFMRC* or *Orbis*.

CFMRC: http://clouddc.chass.utoronto.ca.login.ezproxy.library.ualberta.ca/ds/cfmrc/.

Orbis: https://ezpa.library.ualberta.ca/ezpAuthen.cgi?url=https://neworbis.bvdinfo.com/IP/Orbis.

If the stock you are interested is international, you can use Yahoo Finance, though these data are less reliable.

Topics

A list of topics follows. If necessary, I will add or remove material as we proceed.

TOPIC 0. OVERVIEW

TOPIC 1. ORDERS

- Orders and their characteristics
- Types of orders
- Advantages and disadvantages of each order type

Reading: T&M, Ch. 2, 4

TOPIC 2. MARKETS

- Market structure and its importance
- Types of market structures and their characteristics
- Market competition

Reading: T&M, Ch. 5, 6, 26, 27

TOPIC 3. TRANSACTION COSTS

- *Digression*: Trader types and some theory
- Importance of transaction costs
- Measuring transaction costs
- Determinants of transaction costs

Reading: T&M, Ch. 13, 14, 21

TOPIC 4. LIQUIDITY

- Liquidity and its importance
- Liquidity providers
- Measuring liquidity
- Episodes of illiquidity
- Liquidity comovement and liquidity risk

- Flight to safety and its effects

Reading: T&M, Ch. 19

TOPIC 5. MARKET QUALITY AND PRICE FORMATION

- Market efficiency
- Measuring market quality: The random walk and autocorrelations in returns
- Cross-autocorrelations in returns
- Market manipulation
- Volatility
- Market links, spillovers and arbitrage

Reading: T&M, Ch. 9, 10, 20

TOPIC 6. NON-EQUITY MARKETS

- The FX market
  - Dealer versus retail trades
- The bond market
  - Government bonds
  - Corporate bonds
- Price effects

Reading:

*D. Rime (2003), New electronic trading systems in foreign exchange markets, in the *New Economy Handbook*, Elsevier, 469-504.

*M. Fleming (1997), The round-the-clock market for U.S. treasury securities, Federal Reserve Bank of New York Economic Policy Review, 9-32.

TOPIC 7. INSTITUTIONAL TRADES

- Institutional trading patterns
- Features of institutional trading
- Hedge fund trading and the tech bubble

- High frequency trading

Reading:

*M. Brunnermeier and S. Nagel (2004), Hedge funds and the technology bubble, Journal of Finance 59, 2013-2040.

TOPIC 8. BEHAVIORAL FINANCE AND TRADING

- The plausibility of behavioral finance: A trader's perspective
- What aspects of behavioral finance are relevant to trading?

Reading:

T&M: Ch. 17

*N. Barberis and R. Thaler (2003), A survey of behavioral finance, in *Handbook of the Economics of Finance*, Eds. G. Constantinides, M. Harris and R. Stulz, Elsevier.

TOPIC 9. CRASHES AND BUBBLES

- Bubbles
- Crashes
- Market breakdowns
- Regulatory tools

Reading: T&M, Ch. 28

TOPIC 10. TECHNICAL ANALYSIS AND PREDICTION

- What is technical analysis?
- Simple methods
- Macro prediction

Reading:

*C. Neely (1997), Technical analysis in the foreign exchange market: A layman's guide, Federal Reserve Bank of St. Louis Review.

Readings*

The papers on this list are not required reading for the course. I will summarize the relevant details in class. I am providing this list in case you want to read further.

Y. Amihud (2002), Illiquidity and stock returns: Cross-section and time-series effects, Journal of Financial Markets 5, 31-56.

Y. Amihud and H. Mendelson (1986), Asset pricing and the bid-ask spread, Journal of Financial Economics 17, 223-249.

Y. Amihud and H. Mendelson (1987), Trading mechanisms and stock returns: An empirical investigation, Journal of Finance 62, 533-553.

Y. Amihud, H. Mendelson and M. Murgia (1990), Stock market microstructure and return volatility: Evidence from Italy, Journal of Banking and Finance 14, 423-440.

A. Ang and J. Chen (2002), Asymmetric correlations of equity portfolios, Journal of Financial Economics 63, 443-494.

S. Badrinath, J. Kale and T. Noe (1995), Of shepherds, sheep, and the cross- autocorrelations in equity returns, Review of Financial Studies 8, 401-430.

W. Bagehot (1971), The only game in town, Financial Analysts Journal 27, 12-14, 22.

M. Barclay, T. Hendershott and C. Jones (2006), Order consolidation, price efficiency and extreme liquidity shocks, Working paper, University of Rochester.

G. Benston and R. Hagerman (1974), Determinants of bid-asked spreads in the over-the- counter market, Journal of Financial Economics 1, 353-364.

M. Blume, C. MacKinlay and B. Terker (1989), Order imbalances and stock price movements on October 19 and 20, 1987, Journal of Finance 44, 827-848.

M. Brandt and K. Kavajecz (2004), Price Discovery in the U.S. Treasury Market: The Impact of Orderflow and Liquidity on the Yield Curve, Journal of Finance 59, 2623-2654.

M. Brennan and A. Subrahmanyam (1996), Market microstructure and asset pricing: On the compensation for illiquidity in stock returns, Journal of Financial Economics 41, 441-464.

M. Brennan, N Jegadeesh and B Swaminathan (1993), Investment analysis and the adjustment of stock prices to common information, Review of Financial Studies 6, 799-824.

M. Brunnermeier and S. Nagel (2004), Hedge funds and the technology bubble, Journal of Finance 59, 2013-2040.

K. Chan, K. C. Chan and A. Karolyi (1991), Intraday volatility in the stock index and stock index futures markets, Review of Financial Studies 4, 657-684.

T. Chordia, R. Roll and A. Subrahmanyam (2002), Order imbalance, liquidity, and market returns, Journal of Financial Economics 65, 111-130.

T. Chordia and B. Swaminathan (2000), Trading volume and cross-autocorrelations in stock returns, Journal of Finance 55, 913-935.

M. Cooper, O. Dimitrov and R. Rau (2001), A rose.com by any other name, Journal of Finance 56, 2371-2388.

R. Edelen and J. Warner (2001), Aggregate price effects of institutional trading: a study of mutual fund flow and market returns, Journal of Financial Economics 59, 195-220.

M. Fan and R. Lyons (2003), Customer trades and extreme events in foreign exchange, in Monetary History, Exchange Rates and Financial Markets: Essays in Honor of Charles Goodhart, Paul Mizen (ed.), Edward Elgar, 160-179.

M. Fleming (1997), The round-the-clock market for U.S. treasury securities, Federal Reserve Bank of New York Economic Policy Review, 9-32.

D. Foster and S. Vishwanathan (1993), Variations in trading volume, return volatility, and trading costs: Evidence on recent price formation models, Journal of Finance 48, 187-211.

K. French and R. Roll (1986), Stock return variances: The arrival of information and the reaction of traders, Journal of Financial Economics 17, 5-26.

L. Frieder and J. Zittrain (2007), Spam works: Evidence from stock touts and corresponding market activity, Working paper, Purdue and Oxford.

M. Gerety and H. Mulherin (1994), Price formation on stock exchanges: The evolution of trading within the day, Review of Financial Studies 7, 609-629.

L. Glosten and L. Harris (1988), Estimating the components of the bid-ask spread, Journal of Financial Economics 21, 123-142.

A. Hameed, W. Kang and S. Vishwanathan (2006), Stock market declines and liquidity, Working paper, Duke University.

Y. Hamao, R. Masulis and V. Ng (1990), Correlations in price changes and volatility across international stock markets, Review of Financial Studies 3, 281-307.

J. Harford and A. Kaul (2005), Correlated order flow: Pervasiveness, sources, and pricing effects, Journal of Financial and Quantitative Analysis 40, 29-55.

L. Harris (2003) Trading and exchanges: Market microstructure for practitioners, OUP.

J. Hasbrouck (2005), Trading costs and returns for U.S. equities: The evidence from daily data, WP 2005.

J. Hasbrouck (2007), Empirical market microstructure: The institutions, economics, and econometrics of securities trading, OUP.

T. Hendershott, C. Jones and A. Menkveld (2011), Does algorithmic trading improve liquidity?, Journal of Finance 66, 1-33.

S. Kandel, A. Ofer and O. Sarig (1993), Learning from trading, Review of Financial Studies 6, 507-526.

D. Keim and A. Madhavan (1995), Anatomy of the trading process: Empirical evidence on the behavior of institutional traders, Journal of Financial Economics 37, 371-398.

C. Lee and M. Ready (1991), Inferring trade direction from intraday data, Journal of Finance 46, 733-746.

C. Lee, M. Ready and P. Seguin (1994), Volume, volatility, and NYSE trading halts, Journal of Finance 49, 183-214.

A. Lo and C. MacKinlay (1990), When are contrarian profits due to stock market overreaction?, Review of Financial Studies 3, 175-208.

A. Lynch and R. Mendenhall (1997), New evidence on stock price effects associated with changes in the S&P 500, Journal of Business 70, 351-384.

R. Lyons (1995), Tests of microstructural hypotheses in the foreign exchange market, Journal of Financial Economics 39, 321-351.

S. Nagel (2012), Evaporating Liquidity, Review of Financial Studies 25, 2005-2039.

M. O'Hara (1995), Market microstructure theory, Blackwell.

P. Pasquariello and C. Vega (2007), Informed and strategic order flow in the bond markets, Review of Financial Studies 20, 1975-2019.

L. Pástor and R. Stambaugh (2003), Liquidity risk and expected stock returns; Journal of Political Economy 111, 642-85.

D. Rime (2003), New electronic trading systems in foreign exchange markets in the New Economy Handbook, 469-504.

R. Roll (1988), R2, Journal of Finance 43, 541-566.

Paul Schultz (2001), Corporate bond trading costs: A peek behind the curtain, Journal of Finance 56, 677-698.

H. Stoll and R. Whaley (1990), Stock market structure and volatility, Review of Financial Studies 3, 37-71.

R. Wermers (1999), Mutual fund herding and the impact on stock prices, Journal of Finance 54, 581-622.