

THE OHIO STATE UNIVERSITY
Fisher College of Business

Business Finance 730/830
Trading and Markets

Professor Ingrid M. Werner
Spring 2008

1. Outline

In this course, we describe how today's financial markets work; how governments and exchanges regulate them; and how traders create liquidity, volatility, informative prices, trading profits, and transaction costs. The course provides an overview of today's fragmented market for financial securities: securities exchanges (e.g., NYSE, AMEX, Regionals, ArcaEX, CME, Philadelphia Stock Exchange, ISE, TSX, TSE), boards of trade (e.g., CBOT, CBOE), dealer markets (e.g., Nasdaq, FOREX, government and corporate bonds), electronic communication networks (e.g., Archipelago, The Island ECN/Instinet/REDIBook), Inter Dealer Brokers (e.g., Tullet & Tokyo, and Cantor Fitzgerald), crossing networks (e.g., ITG's POSIT, Arizona Stock Exchange), the OTC Bulletin Board, and the Pink Sheets.

Specifically, we study different market structures: single price auctions, open outcry auctions, screen-based markets, and brokered markets. We study the role of different market participants: investors, brokers, dealers, arbitrageurs, retail traders, buy-side traders (institutions), day traders, rogue traders, and gamblers. We also study different order types: limit orders, market orders, and stop orders; and trading strategies: program trading, basket trading, block trading, and short sales. Finally, we look at the dark side of securities trading: insider trading, front running, market manipulation, and bluffing.

2. Target Students

This course is primarily targeted towards students thinking of a career in investment management, securities trading, or the brokerage industry. It is also an excellent course to take for students targeting a career as a financial advisor. However, the course will also be useful for students interested in finance more generally. In the course, we will show that market structure and regulation affect asset pricing, and hence the cost of capital for firms around the world. Students taking this course will most certainly get a "leg-up" on the competition for summer jobs and hopefully also permanent jobs in the securities industry.

3. Course Goals

There are three main goals for students in this course:

1. To develop a thorough understanding of how securities are traded around the world, how traders (retail and institutional) can minimize their costs of trading, and how market makers can optimally set prices and execute orders.
2. To understand the role of regulation, and how it impacts players in the securities industry.
3. To gain first-hand experience in trading simulated securities and making a market for simulated securities.

4. Requirements

There are no formal prerequisites for Business Finance 730/830 and the course can be taken junior or senior year in the undergraduate business program and at any time in the MBA program. However, some exposure to finance is useful because we will be dealing primarily with securities markets. Microeconomics is useful because the notions of supply, demand and economic equilibrium underlie just about every trading situation. Statistics comes in when we need to design strategies in situations involving risk or evaluate performance of existing markets.

5. Logistics

830 Meets: Mondays and Wednesdays, 10:30-12:18 pm in GE 265
730 Meets: Mondays and Wednesdays, 1:30-3:18 pm in SB 319
Instructor: Professor Ingrid M. Werner
Office Hours: By Appointment
Office: Fisher Hall 818
Phone: (614) 292-6460
Fax: (614) 292-2418
e-mail: werner@cob.osu.edu
Instructor web-page: <http://fisher.osu.edu/fin/faculty/werner/>
Course web-page: http://fisher.osu.edu/fin/faculty/werner/830/830_730iwp08.htm

6. Instructor

Ingrid Werner is the Martin and Andrew Murrer Professor of Finance at Ohio State University. She joined the university in 1998. She has also taught at Stanford Business School, at the Wharton School, and at the Stockholm School of Economics. She has an MBA and an Economics Licentiate degree from the Stockholm School of Economics, and a MA and a PhD in Economics from the University of Rochester. Professor Werner does research in international finance and market microstructure. She was the visiting research economist at the New York Stock Exchange in 1997, and the visiting academic fellow at the Nasdaq Stock Market in 2001-2002.

7. Course Material

The required textbook is *Equity Markets in Action*, 2004, Wiley, New York, which is written by Professor Robert A. Schwartz and Reto Francioni. There will also be a packet of cases available from Uniprint (Tuttle location and online). Class-notes and other materials will be distributed via the course web-page.

8. Course Evaluation

The final course grade will be allocated according to the following formula:

Individual Classroom Contribution	20%
Trading Simulation	20%
Midterm Exam	30%
Term-paper	30%
Improvement option	$\max(0.30*\text{Midterm}+0.30*\text{Term-paper}, 0.60*\text{Term-paper})$

9. Term Paper

The term paper can cover any topic in the general area of trading and markets. Suggestions on topics will be provided at a later date. The paper itself should be no more than 15 pages long, including exhibits. Needless to say, it should include proper sourcing of materials, referencing of cited work, etc. The paper should be handed in by the last scheduled class for the quarter, **May 28, 2008**. Additional information regarding the term paper and suggestions for topics will be provided in mid April.

10. Trading Simulations

We will use several trading simulations in the course, and your simulation performance accounts for 20% of your grade. The trading simulations are not simply graded on profits generated by each trader, but also on learning and on position risk management. The first trading simulation -- Rotman Interactive Trader (RIT) -- is based on a software package designed by the staff in the trading laboratory at the Rotman School, University of Toronto. The second one -- Dynamic Markets -- is based on software designed by Joshua Coval and Eric Stafford at Harvard Business School. Students are encouraged to practice using the RIT software throughout the course, and we will be trading using the RIT platform on 4/9, 5/7, 5/21, and 5/28. In addition, the HBS-based trading simulation will take place on **April 23, 2007**. We will devote the class-sessions on **May 21** and **May 28, 2007** to the final trading competition. More information about the simulations will be provided on the class web-page.

11. Class Participation

A substantial portion of your grade (20%) will be based on class participation. Class participation will mainly be graded based on your contributions to case discussions, but general participation in the form of questions and comments during lectures is also

welcome and will be rewarded. A combination of cold-calling and soft-calling will be used to maximize participation. Each student will be given ample opportunity to contribute to the classroom discussion. I will monitor contributions daily, and will cold-call students who need encouragement to speak up in class.

12. Other policies

Accommodation

Students who request help will be given reasonable accommodation through the advice and assistance of the University Office of Disability Services (292-3307).

Academic misconduct

It causes failing the course and triggers quite unpleasant university-mandated procedures that result in further sanctions. Faculty Rule 333-5-487 requires alleged academic misconduct to be reported to the department and the Committee on Academic Misconduct. Academic misconduct includes, but is not limited to, giving or receiving information during an exam and submitting plagiarized work for academic requirements.

Appeals

Grading errors should be corrected. Appeals must be in writing, within 1 week after the graded work is returned—not the date you first look at it. The appeal should include a description of the question(s) that need to be reexamined as well as an explanation of why the original grade was incorrect. In general, the entire document will be checked for grading errors, and correcting these could either raise or lower the overall score.

Attendance

Absence from the midterm or the final exam will not be excused, except for the most serious circumstances. Such circumstances must be validated in writing by an appropriately accredited professional (e.g., medical doctor). If you are unable to attend a particular class, please notify the instructor of your absence *prior* to that class. Failure to notify the instructor of absences, or missing more than five (5) sessions during the course, might result in a failing grade.

Seating arrangement

To help me keep track of class participation each day and to make it easier for you to interact with each other during discussions, I ask that you sit in the same seat each day and bring your name card.

Business Finance 730/830 Tentative Schedule

I. Trading Primitives

3/24 Introduction to Trading and Markets

Course Outline and Requirements
Chapter 1: The Role of an Equity Market

3/26 Information and Prices

Chapter 2: From Information to Prices

3/31 Liquidity and Dark Pools

Chapter 3: Liquidity
Abrokwah, K., and G. Sofianos, 2006, Accessing Displayed and Non-Displayed Liquidity, *The Journal of Trading*, Fall, 47-57.
Sofianos, G., 2007, Dark pools and algorithmic trading, Chapter 6 in *Algorithmic Trading Handbook*, 2nd edition, Goldman Sachs.

4/2 Market Quality

Chapter 4: What We Want from Our Markets

II. Market Design

4/7 Order-Driven Markets

Chapter 6: Order-Driven Markets
Hand-in Assignment 1: Market Quality Measures

4/9 Trading Simulation: Price Discovery

Case:
RIT Price Discovery I – Market Equilibrium
Mason Hall 345

4/14 Institutional Order Flow

Guest speaker: John Schwarck, State Teachers Retirement System
Chapter 5: Institutional Order Flow

4/16 Intermediated Markets

Chapter 7: Intermediated Markets
Hand-in Assignment 2: Call Auctions and Continuous Trading

III. Trading Costs and Trader Performance

4/21 Trading Cost Analysis

Rakhlin, D., and G. Sofianos, 2006, The Choice of Execution Algorithm: VWAP or Shortfall, *The Journal of Trading*, Winter, 26-32.

Rakhlin, D., and G. Sofianos, 2006, The Impact of an Increase in Volatility on Trading Costs, *The Journal of Trading*, Spring, 43-50.

Cai., T., and G. Sofianos, 2006, Multi-day Executions, *The Journal of Trading*, Summer, 25-33.

4/23 Trading Simulation: HBS Dynamic Markets:

Case:

Price Formation Simulation Overview

Mason Hall 345

Hand-in Assignment 3: SIM Trader Performance Evaluation.

4/28 The Transactions Process: Evaluation and Enhancement

Guest speaker: Steve Glass, Managing Director, ITG

Plexus Plan Sponsor Group, Inc.

4/30 Midterm Exam (in class)

V. Regulation

Chapter 10: Clearing and Settlement

Chapter 11: Regulation

5/5 Insider Trading

Case (in syllabus packet):

Martha Stewart (A), HBS Case 9-305-034

5/7 RIT Trading Platform Practice Session

Cases:

Market Microstructure I

Market Microstructure II

Mason Hall 345

Brokers and Best Execution (last 45 minutes)

Case (in syllabus packet):

The Jeffrey Verde Account, Ivey School of Business Case No. 9A98N002

5/12 **Market Manipulation and Rogue Traders**

Case (distributed separately):

Risk Management at Société Générale

Madhavan, A., D.J. Leinweber, 2001, Three Hundred Years of Stock Market Manipulations, *The Journal of Investing*, Summer.

IV. Competition Between Markets

Chapter 8: The Evolving Scene in the United States

Chapter 9: The Evolving Scene in Europe

5/14 **NYSE-Euronext**

Guest speaker: Dr. Frank Hatheway, Chief Economist, The Nasdaq Stockmarket Inc.

5/19 **Nasdaq-OMX Group**

Guest speaker: Dr. Paul Bennett, Chief Economist, NYSE, The NYSE Group, Inc.

VI. Trading Competition: Sales and Trading

Chapter 12: Simulated Trading

5/21 RIT Trading Simulation
Competition- Part I
Mason Hall 345

5/26 *Memorial Day – No Class!*

5/28 RIT Trading Simulation
Competition – Part II
Mason Hall 345
Term-paper due