NEW YORK UNIVERSITY STERN SCHOOL OF BUSINESS

Trading in Cash and Derivative Securities (GB.2349.30)

Instructors:

Stephen Figlewski, KMC 9-160, sfiglews@stern.nyu.edu

Office hours: Mondays 4:30-6:30 or by appointment

Bruce Tuckman, KMC 9-92, btuckman@stern.nyu.edu

Office hours: MW, 3:30-5pm or by appointment

Teaching Fellow, [redacted]

Class Meetings: W, 6-9pm, KMEC 3-80

Course Description

This course discusses how trade ideas are evaluated and executed. Facets of markets that are dramatically simplified in most introductory classes are the focus of attention here.

The first half of the course (Figlewski) surveys a wide variety of well-known trading ideas. Some are beloved by traders and dismissed by academics (e.g., technical trading); some make sense to academics but are hard to impossible in practice (e.g., profiting from delta hedging a "mispriced" option). And a lot of ideas that were dismissed by academics in the 1960s and 70s turned out to work a lot better than expected when they were examined more closely by the next generation of academics in the 1990s. The course considers how to judge if a trade makes sense in theory <u>and</u> <u>also</u> in practice. How should one think about trading in a market that is pretty efficient but not entirely so?

The second half of the course (Tuckman) addresses several fundamental challenges when implementing trading strategies: choosing position size for relative value and arbitrage trades; delta hedging with real-world frictions; recognizing skew and expressing preferences over skewed returns; incorporating financing costs and risks; and being careful about large and crowded trades.

Prerequisites

Foundations of Finance (GB.2311) is required. Debt Instruments and Markets (GB.3333) and Futures and Options (GB.3335) are not required, but are useful for background.

Requirements, Exams, and Grading

- Homework assignments:
    1. Predicting the stock market
    2. Analyzing trade ideas
    3. Trading ED futures in a tightening cycle
    4. Delta hedging exercise
- Guest speaker day: Wednesday 29 March
    - Speakers
        - Chiente Hsu, QCAM Currency Asset Management AG, and author of <u>Rule Based Investing</u>
        - David Heatley, Jump Trading (tentative).
    - Attendance is mandatory.
    - Only students enrolled in the course may attend. Exceptions may be made with prior instructor permission.
- There will be one midterm and one (non-cumulative) final exam. Students are expected to arrange their schedules to be present for both exams.
    - Midterm: 22 March, 6-7:30pm, in class
    - Final: 3 May, 6-7:30pm, in class
- The course grade will be determined through the following weighted average:
    - Homeworks: 30% (7.5% for each of the four assignments)
    - Guest lecture attendance: 10%
    - Midterm: 30%
    - Final: 30%

Readings

For Figlewski's part of the course, there is a required textbook and a variety of articles, some of which are "required" and the others are for your own background interest.

<u>Required textbook</u>: Pedersen (2015). <u>Efficiently Inefficient</u>. Princeton University Press.

<u>Articles</u>: Articles are available to be downloaded through the Internet. Some are resident on the course website. Others need to be accessed through the Bobst Library online access system. The links should take you to the right place; you may need to log in with your NYU credentials.

Assessing Trading Ideas (Figlewski): Lesson Plan for Spring 2017

Session 1: [2/8]

Intro: Course Overview,
Efficient Markets: Fama and Malkiel vs. Keynes and Shiller
Pedersen's "Efficiently Inefficient" Markets

========REQUIRED READING==========

Pedersen: Introduction, Ch. 1

Silber and Smith. "What Traders Do." Working paper.
https://newclasses.nyu.edu/access/content/group/f0cd6f4a-967d-4e12-b312-2fd53954e920/Silber-Smith_What%20Traders%20Do.pdf

Malkiel. "The Efficient Market Hypothesis and Its Critics." Journal of Economic Perspectives, Winter 2003. http://www.jstor.org/stable/3216840?origin=JSTOR-pdf

Shiller. From Efficient Markets Theory to Behavioral Finance. Journal of Economic Perspectives. Winter, 2003. http://www.jstor.org/stable/3216841?origin=JSTOR-pdf

=======BACKGROUND READING========

Keynes. The General Theory of Employment, Interest, and Money, ch. 12.
https://newclasses.nyu.edu/access/content/group/f0cd6f4a-967d-4e12-b312-2fd53954e920/Keynes_General%20Theory%20ch%2012.pdf

Fama. "Efficient Capital Markets: A Review of Theory and Empirical Work." Journal of Finance, May 1970.
http://ezproxy.library.nyu.edu:2116/stable/pdfplus/2325486.pdf

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Session 2: [2/15]

Measuring and Forecasting Risk and Return
Testing theories and performance attribution
Arbitrage

========REQUIRED READING==========

Pedersen: Ch. 2-4, 9, skim Ch. 5

Figlewski. "Explaining the Early Discounts on Stock Index Futures: The Case for Disequilibrium." Financial Analysts Journal, Jul-Aug. 1984.
http://ezproxy.library.nyu.edu:2116/stable/pdfplus/4478759.pdf

Sofianos. "Index Arbitrage Profitability." Journal of Derivatives, Fall 1993.
http://www.iijournals.com/doi/pdfplus/10.3905/jod.1993.407871

=======BACKGROUND READING========
Fama and French. Common Risk Factors in the Returns on Stocks and Bonds. JFE, 1993.

https://newclasses.nyu.edu/access/content/group/f0cd6f4a-967d-4e12-b312-2fd53954e920/Fama-French_Common%20Risk%20Factors%20in%20the%20Returns%20on%20Stocks%20and%20Bonds.pdf

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Session 3: [2/22]
Technical Trading
"Value and Momentum Everywhere"
Carry

========REQUIRED READING==========

Pedersen: Ch. 6-12

Silber. Technical Trading: When It Works and When It Doesn't. JOD, Spring 1994.
http://ezproxy.library.nyu.edu:4706/doi/pdfplus/10.3905/jod.1994.407887

Cornell. "What moves stock prices: Another look." Journal of Portfolio Management, 2013.
http://www.iijournals.com/doi/abs/10.3905/jpm.2013.39.3.032

Baker, Bradley, and Wurgler. "Benchmarks as Limits to Arbitrage: Understanding the Low-Volatility Anomaly." Financial Analysts Journal Jan-Feb 2011.
http://ezproxy.library.nyu.edu:2255/ehost/viewarticle?data=dGJyMPPp44rp2%2fdV0%2bnjisfk5Ie46bZQtqqxT7Sk63nn5Kx95uXxjL6nrUmxpbBIr6qeTbinsFKurZ5oy5zyit%2fk8Xnh6ueH7N%2fiVauosUiuq7dIrq%2bkhN%2fk5VXj5KR84LPgjOac8nnls79mpNfsVbOtt0%2b1pq5OpNztiuvX8lXu2uRe8%2bLqbOPu8gAA&hid=4206

=======BACKGROUND READING========

Koijen, Moskowitz, Pedersen, and Vrugt. "Carry." WP Nov. 2013.

http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2351570_code374406.pdf?abstractid=2298565&mirid=1

Asness, Moskowitz and Pedersen. "Value and Momentum Everywhere." Journal of Finance June 2013. http://ezproxy.library.nyu.edu:2134/doi/10.1111/jofi.12021/pdf

Asness, Frazzini, and Pedersen. "Quality Minus Junk." WP Oct. 2013.
http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2316719_code384604.pdf?abstractid=2312432&mirid=1
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Session 4: [3/1]

Investment Strategies continued
Short sales
Behavioral Finance: How "Rational" are Investors?

========REQUIRED READING==========

Pedersen ch. 13-16

Barber and Odean. "The Behavior of Individual Investors."
http://faculty.haas.berkeley.edu/odean/Papers%20current%20versions/behavior%20of%20individual%20investors.pdf

Gladwell. "Blowing Up." The New Yorker, Apr. 22, 2002.
https://newclasses.nyu.edu/access/content/group/f0cd6f4a-967d-4e12-b312-2fd53954e920/Malcom%20Gladwell%20on%20Nassim%20Taleb_The%20New%20Yorker%2C%20Apr%2022%2C%202002.pdf

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Session 5: [3/8]

Volatility, in Theory and Practice
Derivatives based on the VIX
Summing Up the Themes of the First Half

========REQUIRED READING==========

TBA

=======BACKGROUND READING========

Green and Figlewski. "Market Risk and Model Risk for a Financial Institution Writing Options." Journal of Finance, Aug. 1999. https://ezproxy.library.nyu.edu:2100/stable/pdfplus/798011.pdf

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Session 6: [3/22]

Midterm exam

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Session 7: [3/29]

Guest Speakers

Execution of Trading Strategies (Tuckman)

a. Sizing of Mean Reverting and Arbitrage Trades
    1. Why sizing matters
    2. Possible objectives and utility theory
    3. Sizing rules from academic papers
        i. Merton (1969, 1971)
        ii. Liu and Longstaff (2004)
        iii. Tuckman and Vila (1992)
        iv. Jurek and Yang (2007) and/or Timmerman and Liu (2012)
    4. Application: Siamese Twin Shares
    5. Mini-Case Study: MF Global Repo-to-Maturity Trades
    6. Homework #3: Trading ED futures in a tightening Cycle
b. Delta Hedging in the Real World
    1. Review of Black-Scholes and binomial option pricing models, with emphasis on gamma vs. theta
    2. Hedging at fixed times
    3. Trading costs
    4. Utility-based approaches
    5. Some practical recommendations
        i. Discrete greeks
        ii. Soft deltas
    6. Homework #4: Delta hedging exercise
c. Trades with Negative Skew
    1. Review of skew and kurtosis
    2. Skew and kurtosis of hedge fund strategies and of stops
    3. Approaches to managing the left tail
        i. Just in Time (Hsu (2014))
        ii. Always On (Bhansali (2014))
    4. Application: Positive Carry FX Trades
d. Financing Costs and Risks
    1. Applications:
        i. Treasury triplets
        ii. Negative swap spreads
        iii. Negative CDS-Bond Basis
        iv. Tech stock carve-outs
    2. Embedded Financing: the Unsung Virtue of Derivatives
e. Large and Crowded Trades
    1. Applications:
        i. Amaranth
        ii. Quant funds in August 2007
        iii. The London Whale
    2. What to do about crowds?