Traders@MIT Spring Trading Competition 2012

Traders@MIT welcomes you to our **1st Annual Spring Trading Competition!** We are excited to be holding this competition for the first time this year, and are confident that it will provide a rich and challenging learning experience. The goal of this competition is to let MIT undergraduates get an idea of what trading is like and to practice basic trading concepts. This is a low pressure event geared towards students with little to no prior trading experience. If you have ever wondered what trading is about or you want try to go for the first place prize, we hope that you come *to the Spring Competition!*

This single-day event will consist of both open-outcry and electronic trading; the remainder of this packet offers introductory materials regarding the cases that will be presented, and other preparatory information. We recommend that you read it thoroughly and build the necessary Excel models before the day of the competition. We will also host a few **practice/set-up sessions** before the competition to help you with this, attendance at one of these sessions is highly recommended!

Please remember that each competitor must bring a Windows compatible laptop on the day of the competition. Please contact *traders@mit.edu* if you have any questions regarding the competition.

Schedule

Saturday, May 5th: 32-155

12:30PM – 1:30PM: *Lunch from Chipotle, computer set-up* (only for pre-registered participants)
1:30PM – 2:30PM: *Social Outcry* (30%)
2:30PM – 3:30PM: *Sales and Trader* (35%)
3:30PM – 4:30PM: *Price Discovery* (35%)
4:30PM – 5:00PM: *Announcement of winners!*

Overall prize winners:

Winners will be decided based on a weighted average of the 3 cases:
First Place Prize 2x $100 Amazon Gift Cards
Second Place 2x $50 Amazon Gift Cards
Third Place 3x $25 Amazon Gift Cards
Each individual event's top team will **may** also receive a prize/certificate

Practice Sessions

If you are new to trading and the Rotman software, don't stress! We will be hosting three introductory sessions to get the Rotman Interactive Trader software on your computer, walk through the basics of using it and give you some hints on strategies for the competition. The times are

Saturday, May 5th 11:00-12:30 PM Room 32-141
Thursday, May 3th 7:00-8:30PM Room 3-442
Monday, April 30th 7:00-8:30PM Room 3-442

Below are materials for the competition
Rotman Client, please install version 1.75
http://rit.rotman.utoronto.ca/software.asp
Rotman tutorial
http://rit.rotman.utoronto.ca/cases/Microstructure%202%20-%20Tutorial.pdf

Register!

Please fill out this Google form to register for the competition!
http://goo.gl/Q2IwX

Case Descriptions

Social Outcry: T@MIT Index Futures Trading

Overview

The Social Outcry case is a 40-minute case, representing a period of 1 year, in which each individual traders futures on the T@MIT Index. The case will be run in two 20-minute periods.

Background

The U.S. economy recently escaped by narrow margins a potential debt default, losing its AAA rating in the process. The uncertainty of the effect of the European bank crisis on US corporate earnings left investors bearish toward the end of Q2 into Q3, and left analysts wondering if the U.S. economy was entering a recession. At the same time, the economy is undergoing a steady recovery with projected 2.5% growth in Q3, higher than both Q1 and Q2 growth rates. Job growth momentum has increased as well, and plans devised by French and German leaders have led to a rise in stock futures. As a trader, you must navigate your way through this slow economic growth and search for signs of recovery. With a good strategy, you stand to make significant profits given current economic conditions.

T@MIT Index

Similar to the S&P 500 Index, The T@MIT Index is an equity index containing stocks of 500 large U.S. corporations. The Index will begin at a level of 1000 and will fluctuate based on economic and political news. News, as well as a chart showing the trend of the T@MIT Index, will be projected on the big screen during the outcry. The news affecting the index futures trading spans a wide variety of categories commonly known to affect the S&P 500 Index, including Federal Reserve decisions, macroeconomic analyst forecasts, natural disasters and events, corporate earnings releases, etc. Individuals will trade T@MIT **futures** with each other. While both teammates can trade simultaneously, their positions will be calculated as a team. The T@MIT Index itself is not tradable.

Futures

The T@MIT futures contract has the T@MIT Index as the underlying asset, and moves in ticks of 1 index point. The size of a T@MIT futures contract is $10 (contract multiplier) multiplied by the futures level. The futures level is the value at the end of the year at which the buyer/seller is agreeing to buy/sell the T@MIT Index.

For example, suppose a trader decides to buy one T@MIT futures contract with futures level of 500 from a seller, and the T@MIT Index ends the year at 1000. The trader who buys or “goes long” one contract receives a cash settlement of $10 x (1000 – 500) = $5000 at the end of the year, unless he closed his position before the end of the year by selling the correct size of futures contracts. The trader who sells or “goes short” one contract must pay a cash settlement of $5000.

The payoff at the end of the year for a future contract can be calculated as:

Payoff = \$10 x (S_T – F) for a long position and
Payoff = \$10 x (F – S_T) for a short position,

where S_T is the spot level of the T@MIT Index at the end of 1 year, and *F* is the futures level specified by the T@MIT futures contract – in the above case this is 500. The futures level will depend on supply and demand from traders.

Trading Profits

Participants can make profits through different strategies based on hedging or speculation. At the end of the period, all outstanding positions will be cash settled. Teams of two will be scored based on their total profit or loss (P&L) over the session.

The Social Outcry case will be worth **30%** of each team's final score.

Electronic Trading: Equities Sales & Trader

Overview

During the Equities Sales and Trader case, teams will trade on five different stocks. Unlike the other cases, traders in this case may act as both proprietary traders and agency traders for institutional clients.

The goal of an agency trader is to be a source of liquidity to clients. A successful agency trader must be cautious about which and how many orders to accept. Clients such as pension funds, mutual funds, and hedge funds may request to buy or sell a certain amount of a certain stock at a certain price at various times during the case. For example, you might get a request that says, "The Oregon Teachers Retirement fund wants to sell 10,000 shares of SBX to you at $54.10. Accept/Decline?" As an agency trader, you can earn money both from the spread between the price paid by the client and that at which you are able to execute, and a commission proportional to the dollar size of the order. At no point during the case do you have to accept an order from any client – you may always choose to prop trade. You will have 30 seconds to decide whether or not to accept an order.

Should you wish to hold on to your positions from clients, you will be subject to market risk. If you wish to minimize this risk and profit purely from market making, you can offload your positions onto the market. However, most client orders will be sufficiently large that immediate execution would result in adverse market impact. You can reduce risk while offloading the position by hedging your exposure according to market and industry correlations. Each stock has a historical beta coefficient against the T@MIT Index, and an extremely liquid market in T@MIT Index futures is available against which positions obtained through institutional orders may be hedged. Stocks also have correlations across industry groups which can be exploited depending upon liquidity.

There will be four ten-minute periods. Each period represents three months of trading. One team member will trade while the other performs analysis. Team members will switch roles after each period.

Case Information

During each period, your goal will be to maximize your P&L. Stocks may be positively or negatively correlated with each other, and the strength of these correlations varies. Additionally, in each of the four rounds, you will have an initial endowment of some number of shares. If those shares are tradable, you may sell them at any point during the 10 minute period. If your initial endowment is not tradable, you may either hedge your position with a long or short position in the T@MIT Index futures or a correlated stock, or accept the risk of holding on to the position without a hedge. There is a maximum order size of 10,000 shares when submitting a single order. See the tables below for more information.

During periods of high volatility, you may find it difficult to quickly hedge or offload positions you take on from institutional clients, so it may be more profitable to prop trade. During periods of lower volatility, it may be easier and more profitable to take on institutional orders. There will not be any market news in this case.

Available Equities:

Company name	**Industry**	**Ticker**	**Beta**
Sunbucks	Consumer/Retail	SBX	0.4
McDonuts	Consumer/Retail	MCD	1.0
MIT TV	Media & TV	MTV	1.4
Pear	Technology	PAR	1.2
Big Oil	Energy/Petroleum	BOIL	0.9

Period 1:

Ticker	Initial Endowment (shares)	Tradable
SBX	500	Yes
MCD	None	Yes
MTV	None	Yes
PAR	500	Yes
BOIL	None	No

Period 2:

Ticker	Endowment	Tradable
SBX	None	Yes
MCD	None	Yes
MTV	500	No
PAR	None	Yes
BOIL	500	Yes

Period 3:

Ticker	Initial Endowment (shares)	Tradable
SBX	2000	No
MCD	None	Yes
MTV	None	Yes
PAR	500	No
BOIL	None	Yes

Period 4:

Ticker	Endowment	Tradable
SBX	None	Yes
MCD	500	Yes
MTV	500	No
PAR	None	Yes
BOIL	1000	No

Starting Endowment	$1,000,000
Trading Periods	4
Period Time	10 minutes (equivalent to 3 months)
Risk-Free Rate	5% per year
Compounding Interval	30 seconds

Margin Requirements and Trading Costs

A trading fee of 2 cents per share is charged on every stock transaction. All stocks are marginable. A margin loan of 50% of an equity's value is given for long positions, and margin collateral of 150% of an equity's value is required for short positions.

The index value will start between $1000 and $1200, and the futures contract multiplier is 20. A trading fee of $2 per contract will be charged for every futures transaction. Initial margin of $5000 per contract is required to open a long or short position in the futures. The maximum order size is 50 contracts.

There is no maintenance margin, so margin calls will not be issued, but negative cash balances will be treated as loans and will accrue interest at the risk-free rate. As always, margin balances are deducted from your buying power, and you must have sufficient buying power to enter into any margined position.

Trading Profits

All outstanding positions at the end of each period will be closed out by RIT at a randomly chosen price which occurred in the last 60 seconds. We suggest that you close out all positions prior to the end of the round. You will be ranked according to overall P&L.

The Equities Sales & Trader case will be worth **35%** of each team's final score.

Electronic Trading: Price Discovery Case

Introduction

Jackson & Jackson (JNJ), Parkour & Grapple (PG) and Butterfly (BUT) have just issued earnings reports for the most recent quarter. According to various analysts, the target price of JNJ for the next quarter is between $30 and $50 per share, the target price for PG is between $20 and $40 per share and the target price for BUT is between $40 and $50 per share. The true price of each stock is randomly drawn from a uniform distribution but will not be revealed until the end of the period. The period will begin with the stock prices equal to their expected values.

There are four 10 minute periods. One team member will trade while the other performs analysis. Team members will switch roles after each period.

When a number of traders hold potentially different information or views on a particular security, the markets provide a mechanism for price discovery. In this case, traders can take price estimates they receive from research analysts and prices quoted by other traders in the open market to deduce the true value of each stock.

Tradable Securities, Endowments, and Interest Rates

There are 4 securities in this case: Jackson & Jackson (JNJ), Parkour & Grapple (PG), Butterfly (BUT) and the Daw Jacks Industrial Average Exchange Traded Fund (DIA). The true value of DIA should be the sum of the prices of JNJ, PG and BUT. Traders begin the case with an endowment of $1,000,000 dollars and can buy ("go long") and short-sell ("go short") all securities. There is a maximum order size of 10,000 shares when submitting a single order. Each period represents one quarter of the year. The risk free rate is 0%, so there is no interest paid on cash balances.

Information

During each period, each trader will receive 5 private news items for each stock (for total of 15 news items). These news items will provide him or her with an estimate of the final price of the stock. Each estimate $E(t)$ is a sample from a uniform distribution over $[P-c(t), P+c(t)]$, where:

- $E(t)$ is the estimate at time t,
- P is the final price of the stock,
- t is the number of seconds that have elapsed since the beginning of the trading period, and:
- $c(t) = 600-t/60$

Margin Requirements and Trading Costs

A trading fee of 2 cents per stock and ETF is charged on every buy and sell transaction. All securities are marginable. A margin loan of 50% of a security's value is given for long positions, and margin collateral of 150% of a security's value is required for short positions.

Position Close-Out

Any non-zero position in a security will be closed-out at the end of trading using the final value of the security.

The Price Discovery case will be worth **35%** of each team's final score.

Technical Requirements

Laptop

Each team should bring at least **one** laptop, and we kindly request that the minimum specifications be met:
1. Pentium 4 1.5 Ghz (or equivalent)
2. Windows XP (or Vista)
3. 512 Megabytes of RAM
4. 802.11a or 802.11b or 802.11g wireless network adapter
5. Microsoft Office (Version 2003 or higher)
6. Anti Virus Software with updated Virus Definitions
7. .NET 2.0 Framework and Rotman Interactive Trader Client (software included in this email, and also available for download at: http://rit.rotman.utoronto.ca/software.asp)
8. Macromedia Flash Plug-in

Software

Before the day of the competition, you must download the Rotman Interactive Trader Client software. You can find the software online at: http://rit.rotman.utoronto.ca/software.asp. We recommend contestants familiarize themselves with the trading platform using the practice case listed on RIT's web page.

Traders@MIT Contact Information:

Please contact us with any questions or concerns regarding the competition:

General inquiry e-mail address: traders@mit.edu