Housekeeping

1. Graded assignments have been returned. Assignment 2 average 4.74 out of 5. Assignment 1 average 4.70 out of 5.

2. Assignment 3 posted. Tried to cut down on programming burden. Please reach out to TAs if need assistance.

3. Practice exam problems posted. Another batch coming soon. I will post videos of me discussing these problems.

4. Midterm October 15th during class time, can start any time in window 15 minutes before or after class start for your section. Computer will give you 90 minutes to complete. Details on number of problems and mix will be provided in advance.

5. Plan today quick course recap, new material on trading costs

Course Recap

1. Thinking about statistical properties of returns cross-sectionally and over time (normality, log normality, joint distributions, time horizons)

2. Statistical models of expected returns. Estimating coefficients, model inputs, and standard errors. Adjusting for heteroskedasticity and serial correlation.

3. Testing the CAPM using portfolio sorts and Fama-MacBeth approach. Adjusting tests/standard errors for serial correlation. CAPM is imperfect.

4. Using characteristics that predict returns to come up with a better model of expected returns. Fama-French models. The art and science of cross-sectional return model interpretation. Rational versus behavioral interpretations. Searching for alpha.

5. Factor models versus characteristics. Momentum. Estimating risk premia on factors.

6. More predictors of returns: reversals, liquidity, volatility, RMW, CMA. Synthesis.

7. Predicting the whole market (time variation in returns). Tough, many stats. challenges.

8. Predicting volatility. SMA, EWMA, ARCH/GARCH. Stats work better.

Going Forward

1. Once we have model of expected returns and risk we can talk about direction to tilt a portfolio given an inherent risk-return tradeoff

2. Need to worry about the nitty gritty costs of doing this – transactions costs and the process of buying and selling ➔ topic for today's class

3. Consider strategies of hedge funds that trade on proprietary information/models

4. More generally consider the portfolio optimization problem of other investors (mutual funds, endowments, individuals)

5. More into derivatives markets and fixed income markets

Cboe Proposes Plan to Curb Advantages of Fast Traders

29 July 2020 - The Wall Street Journal

Cboe Global Markets Inc. is seeking to introduce a new mechanism on one of its U.S. stock exchanges that could limit the advantages of high-frequency traders over other market participants.

The exchange operator is proposing to launch periodic auctions lasting one-tenth of a second, during which buyers and sellers could come together to trade stocks.

Such auctions work by aggregating orders to buy and sell stocks into batches and executing them at discrete intervals, rather than allowing orders to be executed continuously throughout the trading day, the standard practice at U.S. exchanges.

Potentially, Cboe could conduct thousands of such auctions a day, as often as 10 times a second in individual stocks.

Although high-speed traders would be able to participate, the intervals between auctions mean that they wouldn't benefit from their ability to execute trades slightly faster than others. High-frequency traders typically operate in time frames of millionths of a second, far faster than the proposed auctions.

The plan would make BYX the first U.S. stock exchange to offer periodic auctions, said Adam Inzirillo, head of U.S. equities at Cboe. He said the proposal was partly modeled off periodic auctions that Cboe runs in Europe, where the mechanism has gained some traction over the past several years.

High-frequency traders can use their speed advantage to "pick off" slightly out-of-date orders posted on exchanges by slower market participants. In such strategies, the speedy trader might buy a share just before its price ticks up a penny, or sell just before its price drops.

In part to avoid such strategies, big investors and their brokers often steer clear of exchanges, instead turning to dark pools -- off-exchange trading venues where the investors' orders don't have to be publicly displayed.

Placid Markets Punish High-Speed Trader Virtu; Stock down 36% since beginning of year for company, the only publicly traded U.S. high-speed trading firm

30 September 2019 - The Wall Street Journal

Virtu Financial Inc. is among the fastest trading firms in today's high-tech markets. These days, its stock is falling fast, too.

Shares of the New York-based high-speed trading firm fell 2% to $16.36 Monday, their lowest close since December 2017. The company's stock is down 36% since the beginning of this year.

The main culprit: a slide in trading volumes and volatility. High-speed traders tend to make more money when markets are swinging around wildly and investors are actively buying and selling shares. The average number of shares traded each day in the U.S. stock market fell to 6.9 billion in the current quarter from 8.5 billion in the fourth quarter of 2018, according to a Sept. 24 research note from Sandler O'Neill + Partners. The Cboe Volatility Index—a widely watched gauge of expected U.S. stock-market volatility—fell about 25% over that period, while volumes and volatility also dropped in overseas markets, Sandler said.

Virtu handles about 20% of the shares traded in U.S. equities each day. Its core business is market-making, a strategy in which a firm buys and sells the same assets throughout the day, earning profits by collecting a small "spread" between the buy and sell price. At times of lower volatility, such spreads tend to narrow, reducing the profits available to market makers.

As the only publicly traded U.S. high-speed trading firm, Virtu offers a glimpse into the financial performance of a largely secretive industry. Flow Traders NV, an Amsterdam-based market-making firm, is down 14% since the beginning of the year.


Virtu Financial, Inc. (VIRT)
NasdaqGS - NasdaqGS Real Time Price. Currency in USD
23.36 +0.48 (+2.10%)
At close: September 28 4:00PM EDT
23.99 +0.63 (2.70%)
Before hours: 8:00AM EDT
Premium
Technical Events
All 21 Events
Short Term
Bearish
Mid Term
Bearish
Long Term
Neutral
Support - Resistance
16.7
23.75
Stop loss
17.75
Indicators
Comparison
Events
Date Range
1D
5D
1M
3M
6M
YTD
1Y
2Y
5Y
Max
1D
VIRT 16.09
yahoo!finance
27.50
25.00
23.36
22.50
20.00
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