ARTICLES TO PRESENT AND REFERENCES

Articles to be presented in class by you are identified two ways: (1) they are numbered at the left before the article; and (2) they are set to the left margin. Articles with “letters” next to them I will present (you need to read ahead of time). Reference articles (for your information and possible research endeavors) are indented and not numbered. See the syllabi for information on how to present an article.
(Note: the @ signs are for my reference.)

Trading Activity, Customer Order Flow, and Trading Models

Momentum plus term structure signals create annualized alphas of 10.14% and 12.66%. With both 21.02%.

Similar to Hartzmark in that it looks at winners and losers, but in one commodity that a few players seem to dominate; uses COT data; profitability.

Monthly data 48 years, 28 markets. Moving average and channel strategies. Large profits, including subperiods.

Profitability of technical trading rules. Only 2 of 17 markets profitable.

Examines 7000 trading rules over 20 years. Do not find any rules that beat market.

Tests short-term continuation and long-term reversal trading models and finds they earn a 9.38% average return a year.

Finds momentum profits that are significant for as long as 9 months.


Hartzmark, “Returns to Individual Traders of Futures: Aggregate Results,” Journal of Political Economy, 1987, vol 95 no. 6, 1292-1306. Could these results be opposite his other article?


2. Wang, “Futures Trading Activity and Predictable Foreign Exchange Market Movements,” Journal of Banking and Finance, May 2004, volume 28 number 5, 1023-1041. Uses Commitment of Traders data to examine speculator and hedger returns. Results are interesting (somewhat different than much of the literature) in that backwardation works! That is, speculators earn profits from futures positions. Speculators sentiment is positively related to futures returns while hedgers sentiment covaries negatively with future returns.


Volume and its Effects

prices do not. Theoretical; important observations on volume and volume/absolute return patterns. Seriously considered taking this for class.


Wiley and Daigler, “Volume Relationships Among Types of Traders in the Financial Futures,” Journal of Futures Markets, Feb 1998, 91-113. This article does not add a lot of important info to the JF paper.


Behavioral Finance and Trading


Examines Korean SIF. Finds strong evidence for disposition effect. Examines the reasons.

Locke and Sarajoti, “Interdealer Trading in Futures Markets,” Journal of Futures Markets, October 2004, volume 24 number 10, 923-944. @
Dealer trading and profits. CFTC data. Inventory vs. price.

An example of behavioral finance. Local traders keep losers. The “disposition effect.”

Examines loss aversion and mental accounting.

Issues with Intraday Data; Information; Limit Orders and Trades

This is a review article that both covers topics in microstructure and discusses data issues.

The timing of daily highs and lows.

Examines the cost of slippage and market vs limit orders.

Open; closing prices.


Examines the behavior of intraday volatility on electronic markets; examines heat waves and meteor showers. Volume and open interest also examined.

Examines the question of whether prices reflect private or public information (French and Roll famous for this). Then looks at private information vs mispricing. A good discussion at the beginning of information and prices.

Returns at the close for Russell 1000, and has all market on close order imbalances. Institutional trading; variance; liquidity.


Frino, Bjursell, Wang, and Lepone,” “Large Trades and Intraday Futures Price Behavior,” Journal of Futures Markets,” Dec. 2008, Vol. 28 No. 12, 1147-1181. The effect of large trades by outside customers on prices on CME. Large buyer initiated trades have a larger permanent price impact (information effect) than large seller initiated trades; opposite is true for temporary price impact (liquidity effects). Bull vs bear markets have different effects.


@ Hasbrouck and Sosebee, “Orders, Trades, Reports and Quotes at the NYSE,” working paper, 1992. Provides information on how the reporting system works for trades and quotes.

Lead-Lag Relationships; Index Effects


Pizzi, Economopoulos, and O'Neill, “An Examination of the Relationship between Stock Index Cash and Futures Markets: A Cointegration Approach,” Journal of Futures Markets,
May 1998, 297-305.
A short article! Lead-lag; cointegration; short and long-run components; minute data.

Lead-lag for volume and volatility; commitment of traders; causality.

Lead-lag; futures to cash.

Lead-lag; nonlinear, U.K.

7. He and Wu, “Further Evidence on Mean Reversion Index Basis Changes,” Financial Review, Feb 2001, 95-124. @3 @5 @9
Examination of the cash-futures basis and effects of index composition. Note the “old” nature of the cash index due to non-trading.

Mean reversion basis; linear and nonlinear; daily.

Issues in Microstructure; Macroeconomic Announcement Effects

B. (Professor will do; will provide material) Chapters from An Introduction to High-Frequency Finance by Dacorogna, Gencay, Muller, Olsen, and Pictet.


This is a review article, but not futures. Detailed discussion.

This is a review article. Concentrates on theory and models.

Examines how regression is used in empirical studies and the resultant errors.


How electronic futures absorb news when regular markets are closed. Uses S&P 500 and Nasdaq markets. Also examines volume and volatility and macro news.
Macroeconomic news effect on prices. Daily data; GARCH.

Unanticipated macro announcement’s effects on price changes for T-bond futures. Uses five-minute data.

Lead-lag around macroeconomic announcements.

Effects on volatilities, covariances, and correlations between ED and Treasury futures.

**Very interesting article.** Examines the tradeoff between sampling frequency and noise effects. Finds that noise means you sample less, but then they model noise and find that more frequent sampling is beneficial with the modeling of noise. **May become an important article in microstructure research.**

Separates time-varying variance from microstructure noise (stocks).

**Liquidity and Depth; Pit/Floor Trading**

Engle and Lange, “Predicting VNET: A Model of the Dynamics of Market Depth,” Journal of Financial Markets, April 2001, 113-142. @3 @5 @9
Engle is well know for GARCH. Gives a new intraday measure of market liquidity, which measures the depth of the market, using volume.

Estimates liquidity for futures transaction data from the pits; to deal with a lack of bids and asks the paper develops new Markov chain Monte Carlo estimations. Model decomposes long-run volatility into trade and non-trade components.
This paper may be useful for anyone using the futures volume and trade database. It has a short discussion, and then some results on price impact. (But it only uses one month of data on four commodities.)

Effects of direction of trade initiation and trade size on quote prices, spreads, and depths.

Order imbalances and need for liquidity. Creates excessive selling and crashes; creates effects on returns, correlation and volume.

Examines the effect of limit order book disclosure on trading behavior. Examines when depth information for bid and ask changes from best to three deep. Depth is reduced but the size of bid-ask spreads did not change.

Finds that there is information on from limit orders beyond the best bid and offer (22% to price discovery). Order imbalances are significant to short-term returns. This is based on stock information; an interesting sequel would be to use futures or option information.

Liquidity and Depth Measure.

Dealers and order flow. Use S&P 500 futures shows active floor traders correctly time the market. Price dispersion is also informative.

Noise trades; model where learn about liquidity from past prices and volume

“Different”; interesting. Would you have thought to do this? @3 @5 @9

Manaster and Mann, “Sources of Market Making Profits: Man Does Not Live by Spread Alone,” working paper 1999. (Go to subfaculty.tcu.edu/mann)
Important paper for anyone looking at pit traders or profitability of pit traders. Finds that the scalpers make money from position taking as well as the bid-ask spread (providing liquidity). Uses CFTC audit trail data (broken into the CTI traders); some info on CTI4 the general public.

Has all trades of all participants (CFTC audit data); examines inventory control by scalpers.

Scalper profits on floor traded futures; decomposed into liquidity and position taking components. Make significant position taking profits. Related to order flow information.
Activity and inventory issues of floor traders. CFTC audit trail data.

Floor brokers trades and how it depends on liquidity, block volume, competition, volatility, and order flow. Good info on FAQ and floor trading, but has specialized data.

Electronic Exchanges

Electronic vs pit trading.

How electronic trading affects price discovery and liquidity in yen, pound and euro.

Examines profits and quoting of liquidity providers at LIFFE and how it differs from open outcry.

Hybrid markets of floor and electronic. Can trading floor compete for order floor.

Electronic vs pit trading; liquidity.

Compares volume on electronic vs pit for Matif.

Examines the change in currency futures from pit traded to electronically traded.

Stock Index Futures: Price Discovery; Arbitrage and Pricing

Examines whether the SPY can be used as the underlying for the S&P500 futures and if arbitrage is possible with the SPY.
Tse, “Price Discovery and Volatility Spillovers in the DJIA Index and Futures Markets,” Journal of Futures Markets, Dec 1999, 911-930. @3 Minute by minute for price discovery and volatility spillover; EGARCH

Chu and Hsieh, “Pricing Efficiency of The S&P500 Index Market: Evidence from the Standard and Poor’s Depositary Receipts,” Journal of Futures Markets, 2002, vol 22 no. 9, 877-900. @3 @5 Arbitrage; S&P cash and futures; SPDRs


Hasbrouck, “Intraday Price Formation in the US Equity Index Markets,” Journal of Finance, December 2003, Volume 58 Number 6, 2375-2400. @5 Examines which market provides Price leadership: four traded futures, electronic traded futures, exchange traded funds.


Dwyer, Locke and Yu, “Index Arbitrage and Nonlinear Dynamics between the S&P500 Futures and Cash,” Review of Financial Studies, Spring 1996, 301-332. Note @3 @5 Looks at arbitrage on a non-linear basis. Is this what others may be missing?

Examines the many interrelated factors affecting the delivery options; more like a review (no empirical evidence).

Compares the current systems of conversion factors to a proposed system to see which is better. Useful if doing research on T-bond conversion factors.


Much of the mode/math he presents is not needed (he has a PhD in math as well as one in Finance).


One of the better examinations of the value of T-bond delivery options.

Eurodollar pricing and arbitrage.

Does not find convexity being priced into these instruments.

Risk Premia for Futures

Similar to JBF 2003 article; Commitment of traders; behavior of speculators and hedgers trading. R squared often below 10%.

Risk premia; commitments of traders; daily data; backwardation

13. Christie-David and Chaudhry, “Coskewness and Cokurtosis in Futures Markets,” Journal of Empirical Finance, March 2001, volume 8 number 1, 55-81. @5 @9
Examines whether skewness in kurtosis are priced in futures markets.

Systematic risk; returns vs hedgers.

@ Siddique, “Common Asset Pricing Factors in Volatilities and Returns in Futures Markets,”
Uses means and volatilities to explain common factor; S&P500 volatility correlated with implied volatility. Prediction of volatility.

Trading Intensity and Duration between Trades


Furfine, “When is Inter-Transaction Time Informative?” working paper, Federal Reserve Bank of Chicago. Inter-transaction time varies across stocks and across time. Transaction time is informative when there is liquidity. Volume and price moves.


Volatility, Volatility Measurement; Persistence (Long Memory)


The Volume-Volatility Relation, including the Effect of Types of Traders


17. Chen and Daigler, “An Examination of the Complementary Volume-Volatility Information
There are four different theories about the volume-volatility relation. This article examines the importance of each of these theories. They are not competitors but rather complementary.


**Cho and Daigler**, “The Price Advantage of being on the Futures Floor or ‘How the General Public Makes Poor Decisions.’” Different types of traders and when they buy and sell in relation to the range of price during the day.


Discusses VAR applied to intraday relationships; distinguishes between structural relationships and “causal” priority.

The Effect of Volume on Prices; Smiles in Implied Volatilities


Han, “Investor Sentiment and Option Prices,” Review of Financial Studies, Jan 2008, Vol. 21 No. 1, 387-414. Does investor sentiments affect option prices for S&P500 options. The smile is steeper (flatter) and risk neutral skewness is more (less) negative when sentiment becomes more bearish (bullish).


Alexander, “Normal Mixture Diffusion with Uncertain Volatility: Modeling Short and Long-

Ederington and Guan, "The Information Frown in Option Prices," Journal of Banking and Finance, 2005, 1429-1457. Implied volatilities from glow and at the money strikes are biased and less efficient. This is consistent with hedging pressure of Bollen and Whaley.

Camara, "Two Counters of Jumps," Journal of Banking and Finance, March 2009, Vol. 33 No. 3, 456-463. Examines how jumps can create smiles and skews (one jump) and term structures of IV with two jumps.


Options: Pricing, Bid-Ask Spreads; Option Models; Option Returns; Trader Performance


Berchtold and Norden, "Information Flows and Option Bid/Ask Spreads," The Journal of Futures Markets, 2005, Dec, Vol 25 No. 12, 1147-1172. Examines two types of information flows (return information and volatility information). Bid-ask spreads are related to return shocks and conditional variance; thus, market makers alter option spreads in response to return and volatility information flows.


New market in Israel. Liquidity increased and bid-ask decreased.

Wrigeing out of money puts.

Examines extraordinary returns in options, due to volatility and jump risk premia. These affect returns but are insufficient, esp ST out money puts.

Ranks difference between historical realized and implied volatility across stocks. Examines trading strategy which authors claims makes money (R-squares are small).

Shows that options markets before Black-Scholes prices options in much the same way as current markets.

Option prices change stock prices on day of expiration. Due to hedge rebalancing by market makers and manipulation by proprietary traders.

Examines volume in stock and underlying option.

Volatility and Forecasting Volatility; Volatility Risk Premium


Find Parkinson's performs well. Removes upward bias created by microstructure noise. Says most efficient of all range based methods.

Compares daily range methods for volatility. Includes jumps.

Forecasts of volatility are efficient but are more biased. Daily range based estimators appear to be more desirable.
Different measures of volatility, 5 minute best.

Compares five different stochastic volatility models; uses option and VIX data. Finds best volatility specification is a linear rather than square root diffusion for variance.

Models to forecast volatility. Compares many models, including new model, with various tests.

RV has superior performance in regressions and out of sample pricing tests, no significant economic gains.

Camines various forecasting models; R-squares are near zero. Uses trading strategies on CBOE VIX futures. Predictable patterns but not economically significant.

Examines forecasting volatility for short-term interest-rate contracts.

A new specification of volatility linking volatility to information flow (order flow) and price sensitivity to that information.

Tests for existence and sign of volatility risk premium. Examines using expected option hedging errors. But claims such a test yields unreliable results. Jump risk premia is a problem. Delta-gamma hedges are no better.

Examines the negative market price of volatility risk between implied and realized volatility. Estimate the volatility risk premium; are distinct seasonality patterns.

Good article. Has math. Examines stochastic volatility and jumps in relation to variance risk premium.
Examines sources of bias of option IV to forecast realized volatility. Bias can be eliminated when IV regressions adjusted for risk premium effects.

Good article. Negative volatility risk premium examined as a result of hedging demand against market declines. But most traders in KOSPI are speculators. Finds volatility risk does NOT require a premium in KOSPI index options market. Rather jump fears influence these options.

Calls (negative) volatility risk premium a “volatility spread”. Caused by bias in implied volatility. Develops new volatility estimator by incorporating both risk preference investors and nonnormality of returns. Claims new volatility forecast outperforms other forecasts including IV and historical volatility.

Volatility shocks impact on pricing LT vs ST options (under and over reaction); shows rely on BS IV and thus have model errors. Finds when remove misspecification errors that over and underreaction disappears.

Direct method to quantify variance risk premium. Difference between realized variance and synthetic variance swap rate to quantify variance risk premium.

Variance risk premium explains fraction of time series variation in stock returns. Uses model free implied volatilities and high frequency intraday realized volatility.

**Implied Volatility (Options) and the VIX; Volatility's Derivatives**

Examines the negative relation between VIX and S&P500 returns on a daily and intraday basis. Examines the importance of large changes on the relation.

Uses “old” VIX to see if VIX predicts returns (VIX may be a risk factor). Look at portfolios of stocks; control for Fama and French factors. Finds VIX has strong predictive ability.

Low, “The Fear and Exuberance from Implied Volatility of S&P 100 Index Options,” Journal of Business, 2004, volume 77 number 3, 527-546. @5
Risk perception relative to upside and downside volatility. Relation is asymmetric and nonlinear.


Zhang and Zhu, “VIX Futures,” Journal of Futures Markets, June 2006, Vol 26, No. 6, 521-531. Develops a way to price VIX over time and an expression for VIX futures. When the entire time period (15 years) is used to develop the estimated parameters then the model overprices the futures by 16-44%. When the last year is used then the errors is reduced to 2-12%.


Becker, Clements, and White, “Does Implied Volatility Provide any Information Beyond that Captured in Model-Based Volatility Forecasts?”, Journal of Banking and Finance, August 2007, Vol. 31 No. 8, 2535-2549. Good article. Determines that there in no information in the new VIX that is not in model based forecasts such as GARCH. (A question if intraday VIX data is used comparable to the realized volatility used.)


Interesting article on IV surfaces for OTC FX options. Daily. VAR.

Shape of volatility smirk has cross sectional predictive power for future equity returns. Individual stocks. Informed traders with negative news trade out of the money put options; stock market is slow in incorporating information from smirks.

Forecasting using the VIX.

U-shaped impled risk aversion (IV). Examines reasons for smile. Stochastic volatility and jumps are unlikely to be the reason. Heterogeneous beliefs cause sizable distortions but unlikely the reason.

Marketwide correlation shocks and expected option returns. Priced correlation risk.

Options. Finding implied correlations.

Options on volatility.

NOTE: #24 is below; #25 is a bonus article to be bid on later.


Values and hedging volatility derivatives using three models. An option on a straddle will estimate the volatility risk premium.

Use mean reverting stochastic volatility model for S&P index, find linear relation variance and VIX squared.

Variance term structure using VIX futures. Third factor is significant.
Asymmetry of Volatility: The Tail; Jumps in Volatility

Asymmetric shocks to volatility and their effects. New method. A lot of math.

Jumps in implied volatility. Mean reversion is second order importance.

Does IV subsume information on how historical jump activity contributed to price volatility? Whether VIX reflects any incremental information pertaining to future jump activity relative to model based forecasts. VIX does both.

Different measures of volatility.

Tails and tail index. Distribution of returns. Uses five-minute, one hour, and daily data.

About the Tail Index.

Volatility of volatility; static hedging; options.

Weather, Emissions, and Credit Derivatives

Examines pricing of weather futures. Weather forecasts influence prices up to 11 days ahead. Examines trading strategies.

Weather derivatives and modeling, temperature. “Market Price of weather risk”.

Examines the behavior of temperature.

Daskalakis, Psychoyios, and Markellos, “Modeling CO2 Emission Allowance Prices and Derivatives: Evidence from the European Trading Scheme,” Journal of Banking and
Futures pricing of emissions trading.

Finds insider information in credit swaps.

**Hedging and Hedge Ratios**

Harris and Shen, “Robust Estimation of the Optimal Hedge Ratio,” Journal of Futures Markets, August 2003, Vol. 23 No. 8, 799-816. **Note: @3? @5**
Hedging and models and methods that reduce the optimal hedge ratio for nonnormal distributions by reducing the effect of extremes. Reduces variance.

MVHRs misspecified when long memory volatility exists. Finds degree of misspecification.

MV hedge ratios are inefficient.

Compares out of sample hedging with MVH for ETFs. Aversions to negative skewness and excess kurtosis.

BGARCH used on commodities. Shows basis effect is asymmetric, with positive basis having a greater effect and provides more risk reduction.

Uses VaR and CvaR as hedging criteria. They find using the minimum variance hedging ratio reduces these criteria by 80% of the reduction of standard deviation.

Examines seven methods of hedging for comparison, including value at risk.

Uses Spider ETF as hedge to see performance.

Time varying hedge ratios using régime switching versus other models.

Miffre, “Conditional OLS Minimum Variance Hedge Ratios, Journal of Futures Markets,
Conditional OLS vs OLS and GARCH for hedge ratios.


Theory and Dispersion of Beliefs

Dispersion of beliefs are an important concept related to volume and volatility. Look carefully at the conclusions from this model.

Massa and Simonov, “Is Learning a Dimension of a Risk?” Journal of Banking and Finance, 2005, Volume 29, 2605-2632. @5
Two components of uncertainty: learning uncertainty and dispersion of beliefs. Includes open interest and implied volatility from derivatives. Learning uncertainty and dispersion of beliefs are conditionally priced.

Model based on asymmetric info and heterogenous beliefs: volume consistent with U-shape; predicts positive autocorrelation in volume and correlation between volume and volatility.

Dispersion of beliefs, mostly model.

Hedge Funds

Propose the squared Sharpe ration to examine 221 funds. Timing ability at both the aggregate and fund levels. Timing better in bear and volatile markets.

Finds that hedge fund performance is not explained by luck. Alpha of 5.5% between top and bottom hedge fund deciles.

Portfolios, Futures, and CTA Performance

Uses weekly futures data on international stock markets and the effect of diversification, including skewness in kurtosis; focuses on tail risk and its characteristics.


Examines international stock index futures diversification compared to using the S&P500, emphasizing other ways than correlation to determine the extent of diversification, including tail risk and conditional correlation.

Determines the factors affecting international stock index futures diversification. Related to “Is International Diversification Really Beneficial?”


**Market Structure**