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10 am until 8 pm

## 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

1. Fuertes, Miffre, and Rallis, "Tactical Allocation in Commodity Futures Markets: Combining Momentum and Term Structure Signals," Journal of Banking and Finance, October 2010, Vol. 34 No. 10, 2530-2546.

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

Leuthold, Garcia, and Lu, "The Returns and Forecasting Ability of Large Traders in the Frozen Pork Bellies Futures Market," Journal of Business, 1994, vol 67 no. 3, 459-473. @9 Similar to Hartzmark in that it look at winners and losers, but in one commodity that a few players seem to dominate; uses COT data; profitability.

Szakmary, Shen, and Sharma, "Trend-Following Trading Strategies in Commodity Futures: A Re-Examination," Journal of Banking and Finance, Feb 2010, vol. 34 no. 2, 409-426. Monthly data 48 years, 28 markets. Moving average and channel strategies. Large profits, including subperiods.

Park and Irwin, "Technical Trading Rule Profits in the U.S. Futures Markets," Journal of Futures Markets, July 2010, vol. 30 no. 7, 633-659. Profitability of technical trading rules. Only 2 of 17 markets profitable.

Marshall, Cahan, and Cahan, "Can Commodity Futures be Profitably Traded with Quantitative Market Timing Strategies?," Journal of Banking and Finance, Sept 2008, Vol. 32 No. 9, 1810-119. Examines 7000 trading rules over 20 years. Do not find any rules that beat market.

Miffre and Rallis, "Momentum Strategies in Commodity Futures Markets," The Journal of Banking and Finance, 2007, June, Vol 31 No. 6, 1863-1886. Tests short-term continuation and long-term reversal trading models and finds they earn a 9.38% average return a year.

Shen, Szakmary, and Sharma, "An Examination of Momentum Strategies in Commodity Futures Markets," The Journal of Futures Markets, March 2007, Vol. 27 No. 3, 227-256. Finds momentum profits that are significant for as long as 9 months.

Miffre and Rallis, "Momentum Strategies in Commodity Futures Markets," Journal of Banking and Finance, June 2007, 1863-1886.

Shows that momentum strategies earn 9.38% per year. Buy backwardated contracts and sell contangoed contracts.

Hartzmark, "Luck Versus Forecast Ability: Determinants of Trader Performance in Futures Markets," Journal of Business, 1991, vol. 64 no. 1, 49-74. @3 @5

Who wins and who loses; CFTC audit data.

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?

Roberts, "Technical Analysis in Genetic Programming: Constructing and Testing a Commodity Portfolio," Journal of Futures Markets, July 2003, Vol 25 No 7, 643-660.

Technical analysis; forecasting and profits.

Massa and Simonov, "Reputation and Interdealer Trading: A Microstructure Analysis of the Treasury Bond Market," Journal of Financial Markets, April 2003, Vol. 6 no. 2, 99-141. @3 @5@9

Information about the traders: reputation; how do traders react; causes different volume and volatility patterns.

Kurov, "Execution Quality in Open-Outcry Futures Markets," Journal of Futures Markets, Nov. 2005, 1067-1092.

Examines the composition of customer order flow and execution quality for different types of customers. Off-exchange customers provide liquidity to other traders by limit orders. Shows factors when limit orders are put in.

2. Wang, "Futures Trading Activity and Predictable Foreign Exchange Market Movements," Journal of Banking and Finance, May 2004, volume 28 number 5, 1023-1041. @3 @5 @9

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.

Locke and Onavev, "Order Flow, Dealer Profitability, and Price Formation," Journal of Financial Economics, Sept 2007, Vol. 85 No. 3, 857-887.

Examines CFTC data on short and long run effects of order flow on price. Price moves strongly with the order flow in the short run, long run impact is slightly negative.

Naik and Yakav, "Risk Management with Derivatives by Dealers and Market Quality in Government Bond Markets," Journal of Finance, October 2003, Volume 58 Number 5, 1873-1904.

Trading by Bond dealers. Dealers take directional bets in hedge changes in spot exposure.

### Volume and its Effects

Blume, Easley and O'Hara, "Market Statistics and Technical Analysis: The Role of Volume," Journal of Finance, 1994, vol 49 no. 1, 153-181.

A classic article on the importance of volume. Shows that volume provides information that

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

Schneider, "A Rational Expectations Equilibrium with Informative Trading Volume," *Journal of Finance*, 2010, vo. 64 No. 6, 2783-2805.

References many studies on imp volume to predict future distributions of returns.

Hutson, Kearney, and Lynch, "Volume and Skewness in International Equity Markets," *Journal of Banking and Finance*, Sept 2008, Vol. 32 No. 9, 1255-1268.

May be useful if looking at the distribution of futures volume. Relates volume to skewness with daily and monthly data.

Kawaller, Koch, and Peterson, "Volume and Volatility Surrounding Quarterly Redesignation of the Lead S&P500 Futures Contract," *Journal of Futures Markets*, Dec 2001, 1119-1149. Volume around expiration; volatility; expected and unexpected volume.

**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.

Alexander and Peterson, "An Analysis of Trade-Size Clustering and its Relation to Stealth Trading," *Journal of Financial Economics*, May 2007, Vol. 84 No. 2, 435-471.

NYSE and Nasdaq trades cluster on multiples of 500, 1000, and 5000 shares. Medium sized rounded trades have greater relative price impact than large rounded trades. Such trading is consistent with stealth traders.

Lee and Radhakrishna, "Inferring Investor Behavior: Evidence from TORQ Data," *Journal of Financial Markets*, May 2000, 83-111.

Method from data to infer buy/sell of transactions.

Chng, "A Model of Price Discovery and Market Design: Theory and Empirical Evidence," *Journal of Futures Markets*, December 2004, Vol 24 No. 12, 1107-1146.

Shows that the size of trades improves Price discovery.

Wang and Yu, "Trading Activity and Price Reversals in Futures Markets," *Journal of Banking and Finance*, 2004, volume 28 number 6, 1137-1361.

Short run return predictability. Looks at past returns and lags in trading activity.

### Behavioral Finance and Trading

3. Coval and Shumway, "Do Behavioral Biases Affect Prices?" *Journal of Finance*, 2005, Volume 60 Number 1, 1-34. @5 @9

Provides evidence for behavioral biases among futures traders. Traders loss aversion in trading is affected by time of day. CFTC data.

4. Locke and Mann, "Professional Trader Discipline and Trade Disposition," *Journal of Financial Economics*, 2005, vol 76 no. 2, 401-444. @9

Looks at whether professional traders exhibit the typical behavioral bias of holding on to losers too long and selling winners too quickly.

Choe and Eom, "The Disposition Effect and Investment Performance in the Futures Markets," *The Journal of Futures Markets*, June 2009, Vol. 29 No. 6, 496-522.

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. @5  
Dealer trading and profits. CFTC data. Inventory vs. price.

Frino, Johnstone, and Zheng, "The Propensity for Local Traders in Futures Markets to Ride Losers: Evidence of Irrational or Rational Behavior?" Journal of Banking and Finance, 2004, Volume 28, 353-372.  
An example of behavioral finance. Local traders keep losers. The "disposition effect."

Haigh and List, "Do Professional Traders Exhibit Myopic Loss Aversion? An Experimental Analysis," Journal of Finance, 2005, Volume 60 Number 1, 523-534.  
Examines loss aversion and mental accounting.

### Issues with Intraday Data; Information; Limit Orders and Trades

A. (**Professor will do.**) Goodhart and O'Hara, "High Frequency Data in Financial Markets: Issues and Applications," Journal of Empirical Finance, June 1997, 73-114. @  
This is a review article that both covers topics in microstructure and discusses data issues.

Copeland, Lam, and Jones, "The Index Futures Markets: Is Screen Trading More Efficient?" The Journal of Futures Markets, April 2004, Volume 24 Number 4, 337-358.  
The timing of daily highs and lows.

5. Brown, Koch, and Powers, "Slippage and the Choice of Market or Limit Orders in Futures Trading," Journal of Financial Research, Fall 2009, vol. 32 No. 3, 309-335.  
Examines the cost of slippage and market vs limit orders.

Webb and Smith, "The Effect of Market Opening and Closing on the Volatility of Eurodollar Futures Prices," Journal of Futures Markets, 1994, Vol 14 no. 1, 51-78.  
Open; closing prices.

Chng, "Measuring the Summary Informativeness of Orders and Trades," Review of Futures Markets, Fall 2005, Vol. 14 No. 2, 247-284.

Martinez and Tse, "Intraday Volatility in the Bond, FX, and Stock Index Futures Markets," Journal of Futures Markets, April 2008, Vol. 28 No. 4, 313-334.  
Examines the behavior of intraday volatility on electronic markets; examines heat waves and meteor showers. Volume and open interest also examined.

@ Ito, Lyons, and Melvin, "Is there Private Information in the FX Market? The Tokyo Experiment," Journal of Finance June 1998, 1111-1130.  
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.

@ Cushing and Madhavan, "Stock Returns at the Close," Journal of Financial Markets, Feb 2000, 45-67.  
Returns at the close for Russell 1000, and has all market on close order imbalances. Institutional trading; variance; liquidity.

Docking and Kawaller, "Mid-Day Spikes in U.S. Futures Markets," *Journal of Futures Markets*, April 1999, vol 19 no. 2, 195-216.

Examines the volatility spike due to the London close.

Elyasiani and Kocagil "Interdependence and Dynamics in Currency Futures Markets: A Multivariate Analysis of Intraday Data," *J. of Banking and Finance*, June 2001, 1161-1186.

**Daigler**, "Intraday Futures Volatility and Theories of Market Behavior," *Journal of Futures Markets*, Feb 1997, 45-74.

Examines the U-shaped for Stock Index futures.

Harris, Sofianos, and Shapiro, "Program Trading and Intraday Volatility," *Review of Financial Studies*, 1994, vol 7 no. 4, 654-656.

Looks at the effect of program trades on prices; lead-lags.

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.

Gwilym, Ap, Clare, and Thomas, "Extreme Price Clustering in the London Equity Index Futures and Options Markets," *Journal of Banking and Finance*, Sept 1998, 1193-1206.

Clustering; tenths, etc.

Schwartz, Van Ness, and Van Ness, "Clustering in the Futures Market: Evidence from S&P Futures Contracts," *The Journal of Futures Markets*, May 2004, Volume 24 Number 5, 413-428.

Price Clustering by decimal.

Mitchell, "Clustering and Psychological Barriers: The Importance of Numbers," *Journal of Futures Markets*, May 2001, 395-428.

Clustering of prices; psychological aspects only.

@ 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

6. Chatrath, Christie-David, Dhanda, and Koch, "Index Futures Leadership, Basis Behavior, and Trader Selectivity," *Journal of Futures Markets*, 2002, vol 22 no. 7, 649-677. @3 @5 @9  
Lead-lag; VAR; commitment of traders.

Cabrera, Wang, and Yang, "Do Futures Lead Price Discovery in Electronic Foreign Exchange Markets?" *Journal of Futures Markets*, Feb. 2009, Vo. 29 No. 2, 137-156.

Spot FX leads futures markets.

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.

Chatrath, Ramahander, and Song, "The Role of Futures Trading Activity in Exchange Rate Volatility," *Journal of Futures Markets*, August 1996.

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

Chan, "A Further Analysis of the Lead-Lag Relationship between the Cash Market and Stock Index Futures Market," *Review of Financial Studies*, 1992, vol. 5 no. 1, 123-151.

Lead-lag; futures to cash.

Abhyankar, "Linear and Nonlinear Granger Causality: Evidence from the U.K. Stock Index Futures Market," *Journal of Futures Markets*, August 1998, 519-540.

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.

Monoyious and Sarno, "Mean Revision in Stock Index Futures Markets: A Nonlinear Analysis," *Journal of Futures Markets*, 2002, vol 22 no. 4, 285-314.

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.

**Cho and Daigler**, "Development of an Autoregressive Conditional Filtering Process to Remove Intraday Seasonal Volatility," under review.

Coughenour and Shastri, "Symposium on Market Microstructure: A Review of Empirical Research," *Financial Review*, November 1999, 1-28.

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

Madhavan, "Market Microstructure: A Survey," *Journal of Financial Markets*, 2000, 205-258.

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

8A. (Do both 8A and 8B as one presentation) Jarrow, "On Model Testing in Financial Economics," *Financial Review*, May 2010, vol. 45 no. 2, 277-285.

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

Ederington and Lee, "How Markets Process Information: News Releases and Volatility," *Journal of Finance*, 1993, vol 48, no. 4, 1161-1192.

8B. Dungey, Fakhrutdinova, and Goodhart, "After-Hours Trading in Equity Futures Markets," *Journal of Futures Markets*, Feb 2009, Vol. 29 No. 2, 114-136. @9

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.

Simpson and Ramchander, "An Examination of the Impact of Macroeconomic News on the Spot and Futures Treasury Markets," *Journal of Futures Markets*, May 2004, Volume 24 Number 5, 453-478.

Macroeconomic news effect on prices. Daily data; GARCH.

Hess, "Determinants of the Relative Price Impact of Unanticipated Information on US Macroeconomic Releases," *Journal of Futures Markets*, July 2004, Volume 24 Number 7, 609-630.

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

Frino, Walter, and West "The Lead-Lag Relationship between Equities and Stock Index Futures Markets Around Information Releases," *Journal of Futures Markets*, May 2000, 467-487.

Lead-lag around macroeconomic announcements.

Thomakos, Wang, Wu, and Chuderewicz, "Macroeconomic Announcements, Intraday Covariance Structure and Asymmetry in the Interest Rate Futures Returns," *Journal of Futures Markets*, Sept. 2008, Vol. 28 No. 9, 815-844.

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

Ait-Sahalia, Mykland, and Zhang, "How Often to Sample a Continuous-time Process in the Presence of Market Microstructure Noise," *Review of Financial Studies*, 2005, Volume 18 Number 2.

**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.**

Bandi and Russell, "Separating Microstructure Noise from Volatility," *Journal of Financial Economics*, March 2006, Vol. 79 No. 3, 655-692.

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 known for GARCH. Gives a new intraday measure of market liquidity, which measures the depth of the market, using volume.

Hasbrouck, "Liquidity in the Futures Pits: Inferring Market Dynamics from Incomplete Data," *Journal of Financial and Quantitative Analysis*, June 2004, 305-326.

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.)

Aspris, Cummings, and Frino, "Price Formation and Liquidity Surrounding Large Trades in Interest Rate and Equity Index Futures," *Review of Futures Markets*, Spring 2009, Vol. 17 No. 4, 383-407.

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

Huang and Wang, "Liquidity and Market Crashes," *Review of Financial Studies*, July 2009, Vol. 22 No. 7, 2607-2643.

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

9. Bortili, Frino, Jarnecic, Johnstone, "Limit Order Book Transparency, Execution Risk, and Market Liquidity: Evidence from the Sydney Futures Exchange," *Journal of Futures Markets*, Dec. 2006, Vol. 26 No. 12, 1147-1167. @9

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

Cao, Hansch, and Wang, "The Information Content of an Open Limit-Order Book," *Journal of Futures Markets*, Jan 2009, Vol. 29 No. 1, 16-41.

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.

Polymenis, "A Realistic Model of Market Liquidity and Depth," *Journal of Futures Markets*, May 2005, Vol. 25 No. 5, 443-464.

Liquidity and Depth Measure.

Huang, "Dealer Interaction in Futures Markets," *Review of Futures Markets*, Fall 2007, Vol. 16 No. 2, 241-258.

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

@ Hong and Rady, "Strategic Trading and Learning about Liquidity," *Journal of Financial Markets*, Oct 2002, 419-450.

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

10. Coval and Shumway, "Is Sound Just Noise?" *Journal of Finance*, Oct 2001, 1887-1910. "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](http://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.

Manaster and Mann, "Life in the Pits: Competitive Market Making and Inventory Control," *Review of Financial Studies*, Fall 1996, 953-975.

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

Frino, Jarnecic, and Feletto, "Local Trader Profitability in Futures Markets: Liquidity and Position Taking Profits," *Journal of Futures Markets*, Jan 2010, vol 30 no. 1, 1-24.

Scalper profits on floor traded futures; decomposed into liquidity and position taking components. Make significant position taking profits. Related to order flow information.



Chakravarty and Li, "An Examination of Own Account Trading by Dual Traders in Futures Markets," Journal of Financial Economics, August 2003, 375-397.  
Activity and inventory issues of floor traders. CFTC audit trail data.

@ Sofianos and Werner, "The Trades of NYSE Floor Brokers," Journal of Financial Markets, 2000, 139-176.  
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

Tse and Zobotina, "Transaction Costs and Market Quality: Open Outcry versus Electronic Trading," Journal of Futures Markets, August 2001, 713-735. @3  
Electronic vs pit trading.

Ates and Wang, "Liquidity and Price Discovery on Floor Versus Screen-Based Trading Systems: An Analysis of Foreign Exchange Futures Markets," Review of Futures Markets, Winter 2005-2006, Vol. 14 No. 3, 391-419.  
How electronic trading affects price discovery and liquidity in yen, pound and euro.

Zobotina, Spahr, and Scannell, "Intraday Liquidity Provision in Electronic Futures Markets: "LIFFE" without the Pits," Review of Futures Markets, Winter 2005-2006, Vol. 14 No. 3, 369-390.  
Examines profits and quoting of liquidity providers at LFFFE and how it differs from open outcry.

Polimenis, "Trading on the Floor after Sweeping the Book," Review of Futures Markets, Spring 2006, Vol. 14 No. 4, 451-470.  
Hybrid markets of floor and electronic. Can trading floor compete for order floor.

Pirrong, "Market Liquidity and Depth on Computerized and Open Outcry Trading Systems: A Comparison of DTB and LIFFE Bond Contracts," Journal of Futures Markets, Aug 1996, 519-543.  
Electronic vs pit trading; liquidity.

Chow, Lee, and Shyy, "Trading Mechanisms and Trading Preferences on a 24-Hour Futures Market: A Cases Study of the Floor/Globex Switch on Matif," Journal of Banking and Finance, Dec 1996, 1695-1713.  
Compares volume on electronic vs pit for Matif.

**Daigler**, "Changes in the Structure of the Currency Futures Market: Who Trades and Where They Trade," working paper, 2005.  
Examines the change in currency futures from pit traded to electronically traded.

### Stock Index Futures: Price Discovery; Arbitrage and Pricing

11. **Richie, Daigler, and Gleason**, "The Limits to Stock Index Arbitrage: Examining S&P 500 Futures and SPDRs," The Journal of Futures Markets, December 2008, Vol. 28 No. 12, 1182-1205.  
@9  
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 Depository Receipts," Journal of Futures Markets, 2002, vol 22 no. 9, 877-900. @3 @5  
Arbitrage; S&P cash and futures; SPDRs

McMillan and Ulku, "Persistent Mispricing in a Recently Opened Emerging Index Futures Market: Arbitrageurs Invited," Journal of Futures Markets, March 2009, vo. 29 No. 3, 218-243.  
Mispricing of 5-8%. Causes: problems shorting spot market, behavioral effects, and insufficient arbitrage.

Switzer, Varson, and Zghidi, "Standard and Poor's Depository Receipts and the Performance of the S&P500 Index Futures Market," Journal of Futures Markets, Sept 2000, 705-716.  
Pricing when SPDR started.

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.

Ates and Wang, "Information Transmission in Electronic Versus Opened – Outcry Trading Systems: and Analysis of US Equity Index Futures Markets," Journal of Futures Markets, July 2003, Volume 25 Number 7, 679-715.  
Which market leads for price discovery purposes.

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?

12. Kurov and Lasser, "Price Dynamics in the Regular and the E-mini Futures Markets," Journal of Financial and Quantitative Analysis, June 2004, volume 39 number 2, 365-384. @5 @9  
Examines the Price dynamics in the S&P 500 and NASDAQ futures markets. Uses transactions data with type of trader to determine where price discovery is initiated.

Frino, Harris, McInish, Tomas, "Price Discovery in the Pits: the Role of Market Makers on the CBOT and the Sydney Futures Exchange," Journal of Futures Markets, August 2004, Volume 24 Number 8, 785-804.  
Price discovery for bond futures, uses trade prices. VAR.

Bae, Chan, and Cheung, "The Profitability of Index Futures Arbitrage: Evidence from Bid-Ask Quotes," Journal of Futures Markets, October 1998, 743-763.  
Bid-ask; Hong Kong; options an futures.

#### T-bond and Eurodollar Futures Pricing and Arbitrage

**Daigler**, "The Integrated Nature of T-bond Delivery Options," Review of Futures Markets, 2005, Vol. 11 No. 1, 67-91.

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

Ben-Abdallah, Ben-Ameur, and Breton, "An Analysis of the True Notional Bond System Applied to the CBOT T-bond Futures," *Journal of Banking and Finance*, March 2009, Vol. 33 No. 3, 543-545.

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**.

Chance and Hemler, "The Impact of Delivery Options on Futures Prices: A Review," *The Journal of Futures Markets*, 1993, Vol. 13 No. 2, 127-156..

Hemler, "The Quality Delivery Option in Treasury Bond Futures Contracts," *Journal of Finance*, Dec 1990, 1565-1586.

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

Hegde, "An Empirical Analysis of Implicit Delivery Options in the Treasury Bond Futures Contract," *Journal of Banking and Finance*, 1988, vol 12, 469-492.

Hegde, "An Ex-post Valuation of the Quality Option Implicit in the Treasury Bond Futures Contract," *Journal of Banking and Finance*, 1990, vol. 14, 741-760.

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

Grinblatt and Jegadeesh, "The Relative Price of Eurodollar Futures and Forward Contracts," *Journal of Finance*, Sept 1996, 1499-1522. **Note @3 @5**  
Eurodollar pricing and arbitrage.

Poskitt, "In Search of the Convexity Adjustment: Evidence from the Sterling Futures and IMM FRA Markets," *Journal of Futures Markets*, July 2008, Vol. 28 No. 7, 617-633.

Does not find convexity being priced into these instruments.

### Risk Premia for Futures

Wang, "The Behavior and Performance of Major Types of Futures Traders," *Journal of Futures Markets*, January 2003, 1-32.

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

Chatrath, Liang, and Song, "Commitment of Traders, Basis Behavior, and the Issue of Risk Premia in Futures Markets," *Journal of Futures Markets*, Sept 1997, 707-731.

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.

Bessembinder "Systematic Risk, Hedging Pressure, and Risk Premiums in Futures Markets," *Review of Financial Studies*, 1992, vol 5 no 4, 637-668.

Systematic risk; returns vs hedgers.

@ Siddique, "Common Asset Pricing Factors in Volatilities and Returns in Futures Markets,"

Journal of Banking and Finance, 2003, 2347-2368.

Uses means and volatilities to explain common factor; S&P500 volatility correlated with implied volatility. Prediction of volatility.

### Trading Intensity and Duration between Trades

Taylor, "Trading Intensity, Volatility, and Arbitrage Activity," Journal of Banking and Finance, 2004, volume 28 number 5, 1137-1162. @3 @5 @9

Good idea! Confusing in places. They determine trading intensity. A new approach: looking at the time between transactions, volume, arbitrage opportunities, bid-ask spread as a measure of the inverse of conditional volatility. A Garch type formation.

Holder, Qi, Sinha, "The Impact of Time Duration between Trades on the Price of Treasury Note Futures Contracts," Journal of Futures Markets, October 2004, Volume 24 Number 10, 965-980.

Time duration between trades, T-notes.

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.

Chung, Li, and McInish, "Information Based Trading, Price Impact of Trades, and Trade Autocorrelation," Journal of Banking and Finance, 2005, Volume 29, 1645-1669.

The Price impact of volume, effect of time interval.

### Volatility, Volatility Measurement; Persistence (Long Memory)

Anderson, Bollerslev, Diebold, and Ebens, "The Distribution of Realized Stock Return Volatility," Journal of Financial Economics, 2001, Vol. 61, 43-76. @03

"Discovers" that using 5 minute data is a better estimate of daily volatility than daily close to close. Not a shock but they provide all kinds of analysis and are getting credit for their discovery. IMPORTANT paper on the measurement of volatility. Many aspects to study.

Fleming, Kirby and Ostadiak, "The Economic Value of Volatility Timing Using "Realized" Volatility," Journal of Financial Economics, March 2003, 473-511.

Uses the 5 min data for daily volatility and then shows how portfolio timing strategies using the 5 min vs daily data perform substantially better. A good part of the paper relates to the intraday data.

Crato and Ray, "Memory in Returns and Volatilities of Futures Contracts," Journal of Futures Markets, July 2000, Vol 20 No. 6, 525-543. @03

Returns, volatility, persistence, techniques. Long-memory basic tests.

**Chen, Daigler, and Parhizgari**, "Persistence of Volatility in Futures Markets," Journal of Futures Markets, 2006, June, Vol. 26 No. 6, 571-594.

Examines how different measures of volatility have different degrees of persistence. Examines persistence in some detail.

Booth and Tse, "Long Memory in Interest Rate Futures Markets: A Fractional Cointegration Analysis," Journal of Futures Markets, August 1995, 573-584.

Provides background in fractional cointegration.

Fung, Lo, and Peterson, "Examining the Dependency of Intraday Stock Index Futures," Journal of Futures Markets, 1994, vol 14 no. 4, 405-419.  
Long memory, fractionally integrated, 3 methods, transactions data.

Areal and Taylor, "The Realized Volatility of FTSE-100 Futures Prices," Journal of Futures Markets, 2002, vol. 22 no. 7, 627-648.  
5 minute volatility; persistence, FTSE 100.

14. Speight, McMillan, and Gwilym, "Intra-Day Volatility Components in FTSE-100 Stock Index Futures," Journal of Futures Markets, May 2000, 425-444. @3 @5 @9  
Within day volatility broken in short and long run; persistence

Taylor, "Modeling Discontinuous Periodic Conditional Volatility: Evidence from the Commodity Futures Market," Journal of Futures Markets, September 2004, Volume 24 Number 9, 805-834.  
Variation in conditional volatility. PGarch.

15. Wu, Li, and Zhang, "Intradaily Periodicity and Volatility Spillovers between International Stock Index Futures Markets," Journal of Futures Markets, June 2005, Volume 25 Number 6, 553-585.  
@9  
Volatility spillovers; U-shaped.

Duong and Kalev, "The Samuelson Hypothesis in Futures Markets: An Analysis Using Intraday Data," Journal of Banking and Finance, April 2008, Vol. 32 No. 4, 489-500.  
Finds for ag contracts that volatility in futures increases as approach expiration. Not hold for other futures. Negative covariation is key factor for hyp.

Chan, Chan, and Karolyi "Intraday Volatility in the Stock Index and Stock Index Futures Markets," Review of Financial Studies, 1991, vol. 4 no. 4, 657-684.  
Volatility of futures and cash; Autocorrelation; bivariate GARCH; impulse response.

Locke and Sarkar, "Liquidity Supply and Volatility: Futures Market Evidence," Journal of Futures Markets, Jan 2001, 1-17.  
Volatility and CTI traders.

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

C. **(Presented by professor.) Daigler and Wiley**, "The Impact of Trader Type on the Futures Volatility-Volume Relation," Journal of Finance, Dec 1999, 2297-2316.  
Look at how this could be different from a typical study on volatility-volume.

16. Luu and Martens, "Testing the Mixture-of-Distributions Hypothesis Using "Realized" Volatility," Journal of Futures Markets, July 2003, 661-680. @3 @5 @9  
Volume-volatility; uses intraday data to calculate volatility, all results reversed vs squared return; bivariate VAR; long memory.

Holmes and Tomsett, "Information and Noise in UK Futures Markets," Journal of Futures Markets, August 2004, Volume 24 Number 8, 711-732.  
Volume-volatility and the mixture of distributions hypothesis studying the effect of noise vs. informed trading.

17. **Chen and Daigler**, "An Examination of the Complementary Volume-Volatility Information

Theories,” *The Journal of Futures Markets*, Oct 2008, Vol. 28 No. 10, 963-992.

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.

**Nguyen and Daigler**, “A Return-Volume-Volatility Analysis of Futures Contracts,” *The Review of Futures Markets*, 2006-2007, Winter, Vol. 15 No. 3, 265-293.

Uses VAR to examine the interrelationships between return, volume, and volatility. Presented at the Asia-Pacific Research Seminar in Bangkok by Nguyen (article should have been sent to JFM but Doung wanted to get it published quickly).

Darrat, Zhong, and Cheng, “Intraday Volume and Volatility Relations with and without Public News,” *Journal of Banking and Finance*, Sept 2007, Vol. 31 No. 9, 2711-2729.

Examines intraday volume-volatility relation using NYSE stocks. Examines the effect of public news. Argues for SIAH. Relates to behavioral reasons.

**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.

Chan and Fong, “Realized Volatility and Transactions,” *Journal of Banking and Finance*, July 2006, Vol. 30 No. 7, 2063-2085.

Examines volume-volatility relation by using realized volatility, number of trades, and trade size and order imbalance for stocks. Finds no. of trades is dominant factor.

Xu, Chen, and Wu, “Time and Dynamic Volume-Volatility Relation,” *Journal of Banking and Finance*, May 2006, Vol. 30 No. 5, 1535-1558.

Accounts for the varying time duration between transactions. Informed and uninformed components.

Xu, Chen, and Wu, “Time and Dynamic Volume Volatility Relation,” *Journal of Banking and Finance*, 2005.

Includes time duration when looking at volume and volatility.

Girma, Berhanu, and Mougoue, “An Empirical Examination of the Relation between Futures Volatility, Volume, and Open Interest,” *Journal of Futures Markets*, 2002, Vol 22 no. 11, 1083-1102.

Daily data; calendar spreads with volatility and volume, open interest; persistence of volatility.

Fujihara and Mougoue, “An Examination of Linear and Nonlinear Causal Relationships between Price Variability and Volume in Petroleum,” *Journal of Futures Markets*, June 1997, 385-416.

Returns, volume, causality, nonlinear, VAR, Garch.

Kocagil and Shachmurove, “Return-Volume Dynamics in Futures Markets,” *Journal of Futures Markets*, June 1998, 399-426.

Volume and volatility; returns; VAR, causality.

Koch, “Reexamining Intraday Simultaneity in Stock Index Futures Markets,” *Journal of Banking and Finance*, Dec 1993, 1191-1205.

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

### The Effect of Volume on Prices; Smiles in Implied Volatilities

18. Bollen and Whaley, “Does the Net Buying Pressure Affect the Shape of Implied Volatility Functions?” *Journal of Finance*, 2004, Volume 59 Number 2, 711-753. @5 @9

A well written paper that examines the effect of buying pressure on the shape of the implied volatility function. Relates to our interest in that it covers volume and volatility.

Garleanu, Pedersen, and Poteshman, “Demand Based Option Pricing,” *Review of Financial Studies*, Oct 2009, Vol 22 No 10, 259-4299.

Model demand pressure effects on options. Relates option price change by variance of unhedgeable part of the option. Helps explain expensiveness and skew patterns of index options (and individual options).

**Daigler, Wiley, Sullivan, and Parhizgari**, “The Fear Factor: Behavioral Effects of Options Traders on the Implied Volatility Skew,” working paper, 2005.

Examines how certain types of traders causes the volatility skew.

**Daigler and Wiley**, “Options Traders and the Implied Volatility Skew: a Market Dynamics Explanation,” working paper, 2005.

Looks at the pricing and mispricing of options to two different types of traders.

Kang and Park, “The Information Content of Net Buying Pressure: Evidence from the KOSPI 200 Index Option Market,” *Journal of Financial Markets*, Feb 2008, Vol. 11 No. 1, 36-56.

Intraday KOSP index options data to see net buying pressure and IV. Direction learning hypothesis.

Brown and Pinder, “The Impact of Net Buying Pressure on Implied Volatilities Observed from SPI Futures Options,” *Review of Futures Markets*, Fall 2005, Vol. 14, No. 2, 199-216. Buying pressure is related to changes in IV for at money options.

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).

Ni, Pan, and Poteshman, “Volatility Information Trading in the Option Market,” *Journal of Finance*, June 2008, Vol. 63 No. 3, 1059-1091.

Informed trading. Finds that net demand for volatility based on volume is informative about future realized volatility. Price impact increases by 40% as asymmetry about stock volatility intensifies.

Chan, Cheng, and Lung, “And Net Buying Pressure, Volatility Smile, and Abnormal Profit of Hang Seng Index Options,” *Journal of Futures Markets*, December 2004, Volume 24 Number 12, 1165-1194.

Net buying pressure and the smile.

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

term Smile Effects,” Journal of Banking and Finance, 2004, Volume 28, 2957-2980.  
Short-term and long-term smile effects.

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.

Griffin, Harris, Topaloglu, “The Dynamics of Institutional and Individual Trading,” Journal of Finance, December 2003, Volume 58 Number 6, 2285-2320.

Examines returns and trading and their relationship in the NASDAQ 100.

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

Anand and Chakravarty, “Stealth Trading in Options Markets,” Journal of Financial and Quantitative Analysis, March 2007, Vol. 42 No. 1, 167-188.

Options trade size and informed traders; they fragment orders into smaller trades. 60% of price discovery occurs in largest market.

Berchold 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.

Bauer, Cosemans, and Eichholtz, “Option Trading and Individual Investor Performance,” Journal of Banking and Finance, April 2009, Vol. 33 No. 4, 731-746. @9

Topic and results interesting. Determines how well option traders perform and what factors affect performance. Most lose money.

Constantinides, Jackwerth, and Perrakis, “Mispricing of S&P 500 Index Options,” Review of Financial Studies, March 2009, Vol. 22 No. 3, 1247-1277.

Substantial violations of postcrash OTM calls. Option market is not becoming more rationale over time.

Broadie, Chernov, and Johannes, “Understanding Index Option Returns,” Review of Financial Studies, November 2009 Vol 22 No 11, 4493-4529.

Index option mispricing, especially puts. Jump risk premiums. Uses S&P500 futures options, matching prices within one minute. Appendix A gives empirical literature. Appendix D issues of microstructure data. Appendix E delta hedging.

**Dupoyet**, “Information Content of Cross-Sectional Option Prices: A Comparison of Alternative Currency Option Pricing Models on the Japanese Yen,” Journal of Futures Markets, 2006, Jan, Vol. 26 No. 1, 33-60.

Examines different option models, including stochastic volatility and jumps, to determine the best model.



Eldor, Hauser, Pilo, Shurki, "The Contribution of Market Makers to Liquidity and Efficiency of Options Trading in Electronic Markets," *Journal of Banking and Finance*, July 2006, Vol. 30 No. 7, 2025-2040.

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

Santa-Clara and Saretto, "Option Strategies: Good Deals and Margin Calls," *Journal of Financial Markets*, Aug 2009, Vol. 12 No. 3, 391-417.

Writing out of money puts.

Jones, "A Nonlinear Factor Analysis of S&P500 Option Returns," *Journal of Finance*, Oct 2006, Vol. LXI No. 5, 2325-2363.

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

Goyal and Saretto, "Cross-section of Option Returns and Volatility," *Journal of Financial Economics*, 2009, vol 94, 310-326.

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

Mixon, "Option Markets and Implied Volatility: Past versus Present," *Journal of Financial Economics*, 2009 vo. 94, 171-191.

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

Ni, Pearson, and Poteshman, "Stock Price Clustering on Option Expiration Dates," *Journal of Financial Economics*, October 2005, Vol. 78 No. 1, 49-87.

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

Roll, Schwartz, and Subrahmanyam, "The Relative Trading Activity in Options and Stock," *Journal of Financial Economics*, 2010, vol. 96, 1-17.

Examines volume in stock and underlying option.

### Volatility and Forecasting Volatility; Volatility Risk Premium

D. **(Professor will give)** Poon and Granger, "Forecasting Volatility in Financial Markets: A Review," *Journal of Economic Literature*, June 2003, vol. 41 no. 2, 478-539.

Akay, Griffiths, and Winters, "On the Robustness of Range-Based Volatility Estimators," *Journal of Financial Research*, Summer 2010, vol. 33 No. 2, 179-199.

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

Shu and Zhang, "Testing Range Estimators of Historical Volatility," *Journal of Futures Markets*, 2006, Vol. 26 No. 3, 297-313.

Compares daily range methods for volatility. Includes jumps.

Jacob and Vipul, "Estimation and Forecasting on Stock Volatility with Range-Based Estimators," *Journal of Futures Markets*, June 2008, Vol. 28 No. 6, 561-581.

Forecasts of volatility are efficient but are more biased. Daily range based estimators appear to be more desirable.

Martens, "Measuring and Forecasting S&P500 Index-Futures Volatility Using High-Frequency Data," *Journal of Futures Markets*, 2002, vol. 22 No. 6, 497-518. @03  
Different measures of volatility, 5 minute best.

Christoffersen, Jacobs, and Mimouni, "Volatility Dynamics for the S&P500: Evidence from Realized Volatility, Daily Returns, and Option Prices," *Review of Financial Markets*, August 2010, 3141-3189.

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.

Ederington and Guan, "Forecasting Volatility," *Journal of Futures Markets*, May 2005, Vol. 25 No. 5, 465-490. @5

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

Chan, Jha, and Kalilipalli, "The Economic Value of Using Realized Volatility in Forecasting Future Implied Volatility," *Journal of Financial Research*, Fall 2009, Vol 32 No. 3, 231-259.  
RV has superior performance in regressions and out of sample pricing tests, no signif economic gains.

Konstantinidi, Skiadopoulos, and Tzagkaraki, "Can the Evolution of Implied Volatility be Forecasted? Evidence from European and US Implied Volatility Indices," *Journal of Banking and Finance*, Nov 2008, Vol. 32 No. 11, 2401-2411.

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

Ferland and Lalancette, "Dynamics of Realized Volatilities and Correlations: an Empirical Study," *Journal of Banking and Finance*, 2005.

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

19. Berger, Chaboud, and Hjalmarsson, "What Drives Volatility Persistence in the Foreign Exchange Market?" *Journal of Financial Economics*, 2009, Vol. 94, 192-213.

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

Branger and Schlag, "Can Tests Based on Option Hedging Errors Correctly Identify Volatility Risk Premia?" *Journal of Financial and Quantitative Analysis*, Dec. 2008, Vol. 43 No. 4, 1055-1090.

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.

20. Doran and Ronn, "Computing the Market Price of Volatility Risk in the Energy Commodity Markets," *Journal of Banking and Finance*, Dec 2008, Vol. 32 No. 12, 2541-2552. @9

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

Todorov, "Variance Risk-Premium Dynamics: The Role of Jumps," *Review of Financial Studies*, Jan 2010, 345-383.

Good article. Has math. Examines stochastic volatility and jumps in relation to variance risk premium.

21. Rompolis and Tzavalis, "Risk Premium Effects of Implied Volatility Regressions," *Journal of Financial Research*, Summer 2010, Vol. 33 No. 2, 125-151.

Examines sources of bias of option IV to forecast realized volatility. Bias can be eliminated when IV regressions adjusted for risk premium effects.

Yoon and Byun, "Is Volatility Risk Priced in the KOSPI 200 Index Options Market?" *Journal of Futures Markets*, Sept 2009, Vol. 29 No. 9, 797-825.

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.

22. Kang, Kim, and Yoon, "Information Content of Volatility Spreads," *Journal of Futures Markets*, June 2010, Vol 30 no. 6, 533-558.

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.

Jiang and Tian, "Mis-reaction or Mis-specification? A Re-Examination of volatility Anomalies," *Journal of Banking and Finance*, October 2010, Vol. 34 No. 10, 2358-2369. Volatility shocks impact 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.

Carr and Wu, "Variance Risk Premiums," *Review of Financial Studies*, March 2009, Vol. 22 No. 3, 1311-1341.

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

Bollerslev, Tauchen, and Zhou, "Expected Stock Returns and Variance Risk Premia," *Review of Financial Studies*, Nov 2009, vol 22 no. 11, 4463-4492.

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

**Hibbert, Daigler, and Dupoyet**, "A Behavioral Explanation for the Negative Asymmetric Return-Volatility Relation," *Journal of Banking and Finance*, 2008, Oct., Vol. 32 No. 10, 2254-2266. @9

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.

Banerjee, Doran, and Peterson, "Implied Volatility and Future Portfolio Returns," *Journal of Banking and Finance*, Oct 2007, Vol. 31 No. 10, 3183-3199.

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.

**Pavlova and Daigler**, "The Non-Convergence of the VIX Futures at Expiration," 2008, Review of Futures Markets, Vol. 17 No. 2, Fall, 201-223.

Shows how VIX futures does not converge to the cash VIX.

Zhang, Shu, and Brenner, "The New Market for Volatility Trading," Journal of Futures Markets, Sept 2010, vol. 30 no. 9, 809-833.

Relation VIX futures and VIX index. Term structure VIX futures is upward sloping, whereas term structure of VIX futures volatility is downward sloping. Model relation futures and VIX.

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 are reduced to 2-12%.

Lin, "Pricing VIX Futures: Evidence from Integrated Physical and Risk-Neutral Probability Measures," Journal of Futures Markets, Dec 2007, Vol. 27 No. 12, 1175-1217.

A very involved model on pricing VIX Futures. Little empirical work.

Lin and Chang, "VIX Option Pricing," The Journal of Futures Markets, June 2009, Vol. 29 No. 6, 523-543.

A very involved model for pricing VIX options.

Martens and Zein, "Predicting Financial Volatility: High-frequency Time-Series Forecasts Vis-à-vis Implied Volatility," Journal of Futures Markets, November 2004, Volume 24 Number 11, 1005-1028.

Historical versus implied volatility as forecast. Uses Long memory. **Note @5?**

Dawson and Staikouras, "The Impact of Volatility Derivatives on S&P500 Volatility," Journal of Futures Markets, Dec 2009, vol. 29 no. 12, 1190-1213.

Volatility derivatives has reduced volatility of S&P500 and reduced impact of shocks. However, big sudden shocks vol of vol elevates due global correlations. LR vol persistence is present.

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 is 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.)

Diaz, Meneu, and Navarro, "International Evidence on Alternative Models of the Term Structure of Volatilities," Journal of Futures Markets, July 2009, Vol. 29 No. 7, 653-683.

Examines currencies with daily data from cap markets. Substantial changes over time in both level and shape. Propose two new forms of instantaneous volatility of forward rates.

Szakmary, Ors, Kim, and Davidson, "The Predictive Power of Implied Volatility: Evidence from 35 Futures Markets," Journal of Banking and Finance, 2003, 2151-2175.

How well does implied volatility predict realized volatility.

Chalamandaris and Tsekrekos, "Predictable Dynamics in Implied Volatility Surfaces from OTC Currency Options," Journal of Banking and Finance, June 2010, Vol. 34 No.6 , 1175-1188.

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

23. Xing, Zhang, and Zhao, "What does the Individual Option Volatility Smirk Tell Us About Future Equity Returns?" Journal of Financial and Quantitative Analysis, June 2010, vol 45 No. 3, 641-662. 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.

Corrado and Miller, "The Forecast Quality of CBOE Implied Volatility Indexes," Journal of Futures Markets, April 2005, Volume 25 Number 4, 339-373.  
Forecasting using the VIX.

Ziegler, "Why Does Implied Risk Aversion Smile?" Review of Financial Studies, May 2007, Vol. 20 No. 3, 859-904.  
U-shaped implied 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.

Driessen, Maenhout, and Vilkov, "The Price of Correlation Risk: Evidence from Equity Options," Journal of Finance, June 2009, Vol 64 No. 3, 1377-1406.  
Marketwide correlation shocks and expected option returns. Priced correlation risk.

Skintzi and Refenes, "Implied Correlation Index: a New Measure of Diversification," Journal of Futures Markets, February 2005, volume 25 number 2, 171-198.  
Options. Finding implied correlations.

Daouk and Guo, "Switching Asymmetric GARCH And Options on a Volatility Index," Journal of Futures Markets, March 2004, volume 24 number 3, 251-282.  
Options on volatility.

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

25. **Wang and Daigler**, "The Performance of VIX Option Pricing Models: Empirical Evidence beyond Simulation," forthcoming, The Journal of Futures Markets. @9

Windcliff, Forsyth, and Vetzal, "Pricing Methods and Hedging Strategies for Volatility Derivatives," Journal of Banking and Finance, 2006, February, Vol. 30 No. 2, 409-431. @5?  
Values and hedging volatility derivatives using three models. An option on a straddle will estimate the volatility risk premium.

Zhang and Huang, "The CBOE S&P500 Three-Month Variance Futures," Journal of Futures Markets, Jan 2010, Vol. 30 no. 1, 48-70.  
Use mean reverting stochastic volatility model for S&P index, find linear relation variance and VIX squared.

Lu and Zhu, "Volatility components: The Term Structure Dynamics of VIX Futures," Journal of Futures Markets, March 2010, Vol 30 No. 3, 230-256.  
Variance term structure using VIX futures. Third factor is significant.

## Asymmetry of Volatility; The Tail; Jumps in Volatility

Meneu and Torro, "Asymmetric Covariance in Spot – Futures Markets," Journal of Futures Markets, Nov. 2003, Vol. 23 No. 11, 1019-1046. Note: @5  
Asymmetric shocks to volatility and their effects. New method. A lot of math.

Dotsis, Psychoyious, and Skiadopoulos, "An Empirical Comparison of Continuous-Time Models of Implied Volatility Indices," Journal of Banking and Finance, Vo. 31 No. 12, 3584-3603.

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

24A. (Present 24A and 24B together) Becker, Clements, and McClelland, "The Jump Component of S&P500 Volatility and the VIX Index," Journal of Banking and Finance, June 2009, Vol. 33 No. 6, 1033-1038. @9

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.

Bali and Weinbaum, "A Comparative Study of Alternative Extreme Value Volatility Estimators," Journal of Futures Markets, September 2005, Vol 25 No 9, 873-892.

Different measures of volatility.

Werner and Upper, "Time Variation in the Tail Behavior of Bund Future Returns," Journal of Futures Markets, April 2004, Vol 24 No 4, 387-398.

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

Glatzer and Scheicher, "What Moves the Tail? The Determinants of the Option Implied Probability Density Function of the DAX Index," Journal of Futures Markets, June 2005, Vol 25 No Six, 515-536.

About the Tail Index.

Fink, "Hedging in the Presence of Stochastic Volatility," Journal of Futures Markets, September 2003, vol 23 no 9, 859-890.

Volatility of volatility; static hedging; options.

## Weather, Emissions, and Credit Derivatives

24B. Dorfleitner and Wimmer, "The Pricing of Temperature Futures at the CME," The Journal of Banking and Finance, June 2010, vo. 34, no. 6, 1360-1370.

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

Cao and Wei, "Weather Derivatives Valuation and Market Price of Weather Risk," Journal of Futures Markets, November 2004, Volume 24 Number 11, 1065-1090.

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

Huang, Shiu, and Lin, "HDD and CDD Option Pricing with Market Price of Weather Risk for Taiwan," Journal of Futures Markets, August 2008, Vol. 28 No. 8, 790-814.

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

Finance, July 2009, Vol. 33 No. 7, 1230-1241.  
Futures pricing of emissions trading.

Acharya and Johnson, "Insider Trading in Credit Derivatives," Journal of Financial Economics, April 2007, Vol. 84 No. 1, 110-141.  
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**  
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Dark, "Basis Convergence and Long Memory in Volatility when Dynamic Hedging with Futures," Journal of Financial and Quantitative Analysis, Dec. 2007, Vol. 42 No. 4, 1021-1040.  
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Ederington and Salas, "Minimum Variance Hedging when Spot Price Changes are Partially Predictability," Journal of Banking and Finance, May 2009, Vol. 32 No. 5, 654-663.  
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Alexander and Barbosa, "Hedging Index Exchange Traded Funds," Journal of Banking and Finance, Feb 2008, Vol. 32 No. 2, 326-337.  
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Lien and Yang, "Asymmetric Effect of Basis on Dynamic Futures Hedging: Empirical Evidence from Commodity Markets," Journal of Banking and Finance, Feb 2008, Vol. 32 No. 2, 187-198.  
BGARCH used on commodities. Shows basis effect is asymmetric, with positive basis having a greater effect and provides more risk reduction.

Harris and Shen, "Hedging and Value at Risk," Journal of Futures Markets, April 2006, Vol. 26 No. 4, 369-390.  
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Cotter and Hanly, "Reevaluating Hedging Performance," Journal of Futures Markets, July 2006, Vol. 26 No. 7, 677-702.  
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Alexander and Barbosa, "The Spider in the Hedge," Review of Futures Markets, Summer 2005, Vol. 14 No. 1, 93-116.  
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Terry, "Minimum Variance Futures Hedging under Alternative Returns Specifications," *The Journal of Futures Markets*, June 2005, Volume 25 Number 6, 537-552.  
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Ferguson and Leistikow, "Are Regression Approach Futures Hedge Ratios Stationary?," *Journal of Futures Markets*, Oct 1998, 851-866.  
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**Daigler and Copper**, "A Futures Duration-Convexity Hedging Method," *Financial Review*, Nov 1998, 61-80.

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Lee, "Contemporary and Long-run Correlations: A Covariance Component Model and Studies on the S&P500 Cash and Futures Markets," *Journal of Futures Markets*, Dec 1999, 877-894.  
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### Theory and Dispersion of Beliefs

Shalen, "Volume, Volatility, and the Dispersion of Beliefs," *Review of Financial Studies*, 1993, vol. 6 no. 2, 405-434. @3



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.

(@) Wang, "Strategic Trading, Asymmetric Information and Heterogenous Prior Beliefs," Journal of Financial Markets, 1998 Vol. 1, 321-352.

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

Frechette and Weaver, "Heterogeneous Expectations of Traders in Speculative Futures Markets," Journal of Futures Markets, May 2001, 429-446.

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Chen and Liang, "Do Market Timing Hedge Funds Time the Market?" Journal of Financial and Quantitative Analysis, Dec. 2007, Vol. 42 No. 4, 827-856.

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Kosowski, Naik, and Teo, "Do Hedge Funds Deliver Alpha? A Bayesian and Bootstrap Analysis," Journal of Financial Economics, April 2007, Vol. 84 No. 1, 229-264.

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### Portfolios, Futures, and CTA Performance

26. **You and Daigler**, "Using Four-Moment Tail Risk to Examine Financial and Commodity Futures Diversification," forthcoming, Financial Review. @9

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

27. **You and Daigler**, "A Markowitz Optimization of Commodity Futures Portfolios," working paper. Examines ex-ante and ex-post Markowitz portfolios relative to the traditional stock plus bond portfolio and the naively-weighted portfolio. Finds that the ex-post portfolio has a better risk-return performance.

**You and Daigler**, "Is International Diversification Really Beneficial?" The Journal of Banking and Finance, Jan 2010, vo. 34 no. 1, 163-173.

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Jensen, Johnson, and Mercer, "Efficient Use of Commodity Futures in Diversified Portfolios," Journal of Futures Markets, May 2000, 489-506.  
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McCarthy, Schneeweis and Spurgin, "Informational Content Historical CTA Performance," Journal of Futures Markets, May 1997, 317-339.  
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### Market Structure

**Daigler**, "Spread Volume for Currency Futures," Journal of Economics and Finance, 2007, March (accepted July 2004), vol. 31 no. 1, 12-19.  
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