

JOINT CFTC-SEC
ADVISORY COMMITTEE
ON
EMERGING REGULATORY ISSUES



MAY 24, 2010

STATION PLACE AUDITORIUM

Agenda

1. May 6th General Market Context

2. Preliminary Findings

- a) Securities
- b) Futures

3. Initial Q&A

4. Next Steps and Analysis

- a) Securities
- b) Futures
- c) Joint

5. Closing Q&A

General Market Context

- **Economic News**
 - Uncertainties in Europe
 - Higher CDS spreads
 - Broad decline in U.S. equity market prior to 2 p.m.
 - Higher volatility index
- **Market News**
 - 10-year Treasury yield fell
 - Price of gold rose from the open to the 1:30 p.m. close
 - After 1:00 p.m., the Euro declined further against U.S. Dollar and the Japanese Yen

Figures 2 & 3: CBOE SPX Volatility Index Daily and Intraday Levels

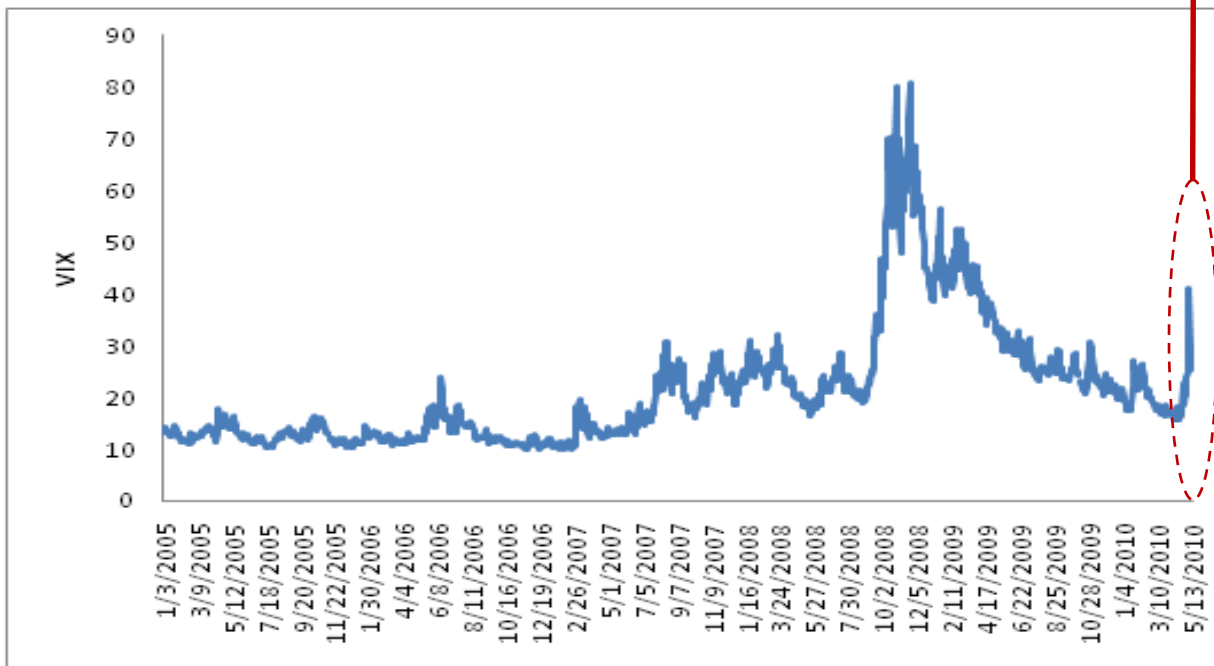
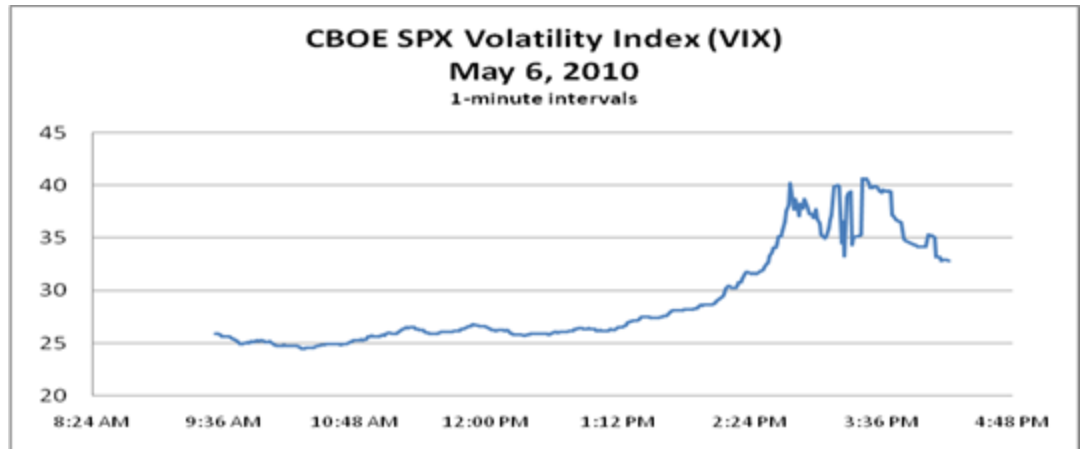


Figure 4: Ten-Year U.S. Treasury Note Yield

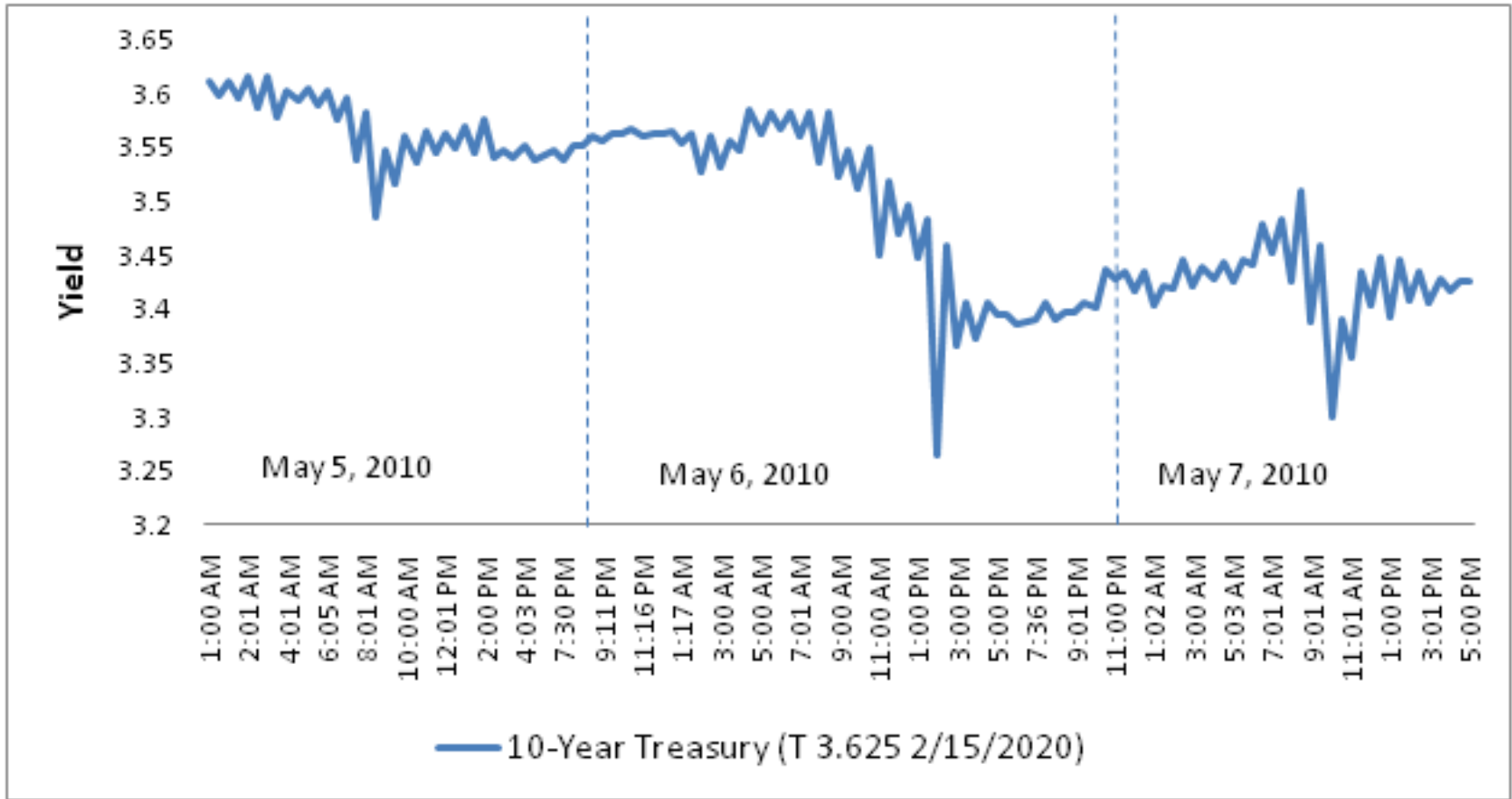
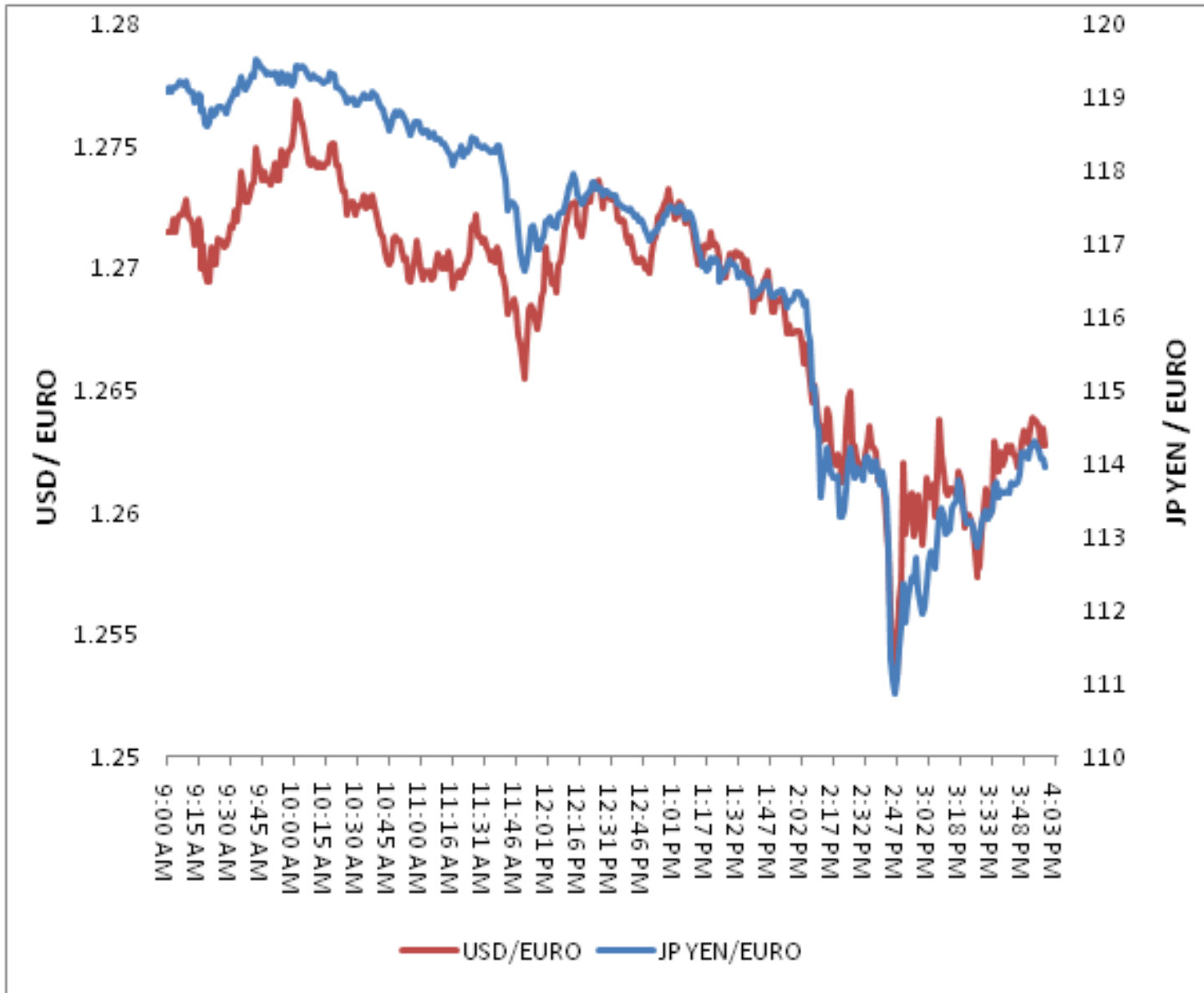


Figure 6: U.S. Dollar/Euro and Japanese Yen/Euro Exchange Rates on May 6, 2010



Afternoon of May 6

- 2:00 p.m. to 2:30 p.m. increase in liquidity replenishment points
- Existing market decline accelerated and implied volatility sharply increased
- Declarations of self help
- Dislocation of liquidity in E-mini S&P 500 futures contract
- Rebound begins with CME Stop Logic functionality

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Preliminary Findings* - Securities

A. Market Impact

B. Examples of Select Securities

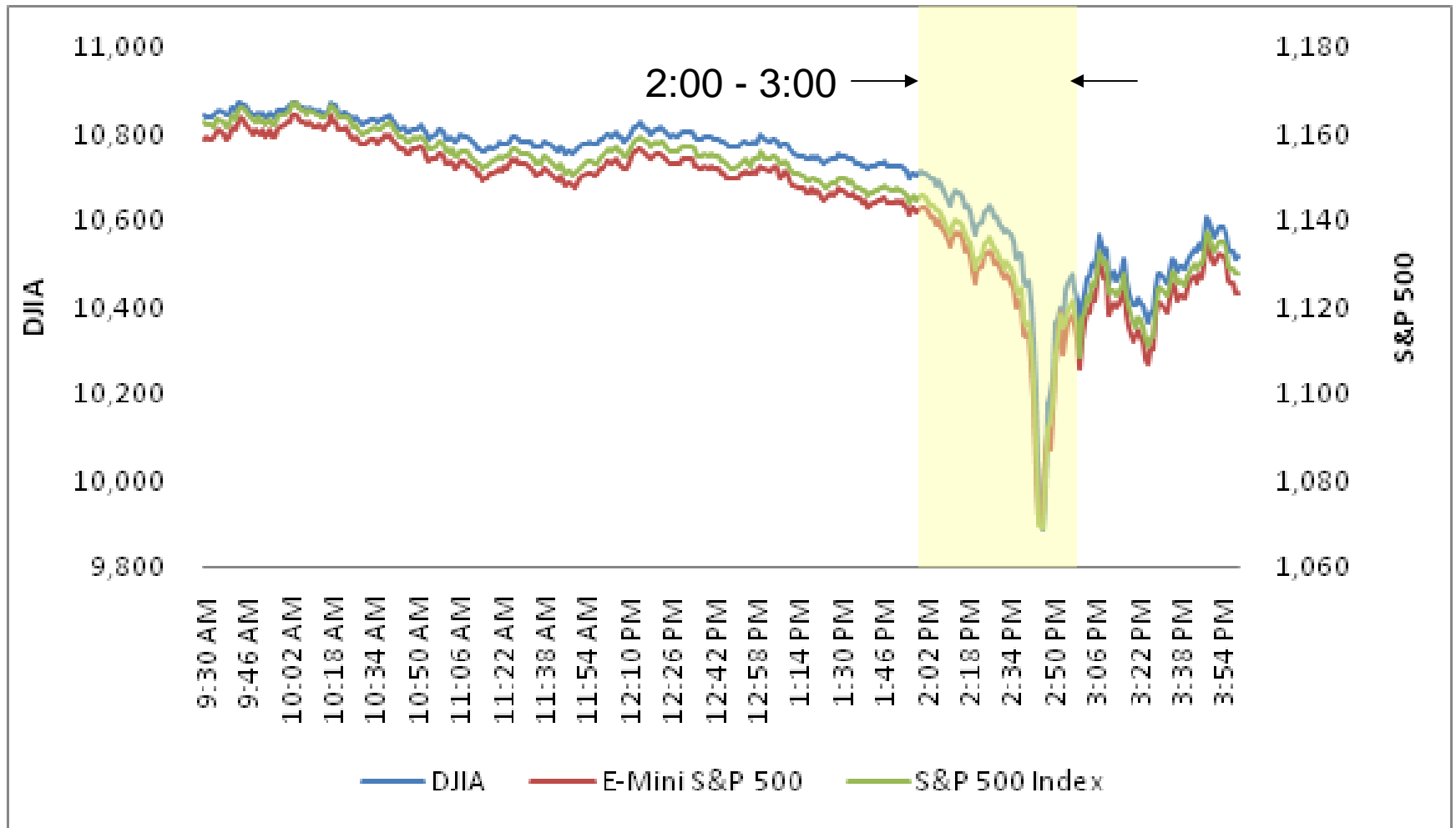
C. Broken Trades

D. Exchange-Traded Funds

E. Liquidity Issues

** Based on initial data and subject to change*

The Securities Markets on May 6th 2010

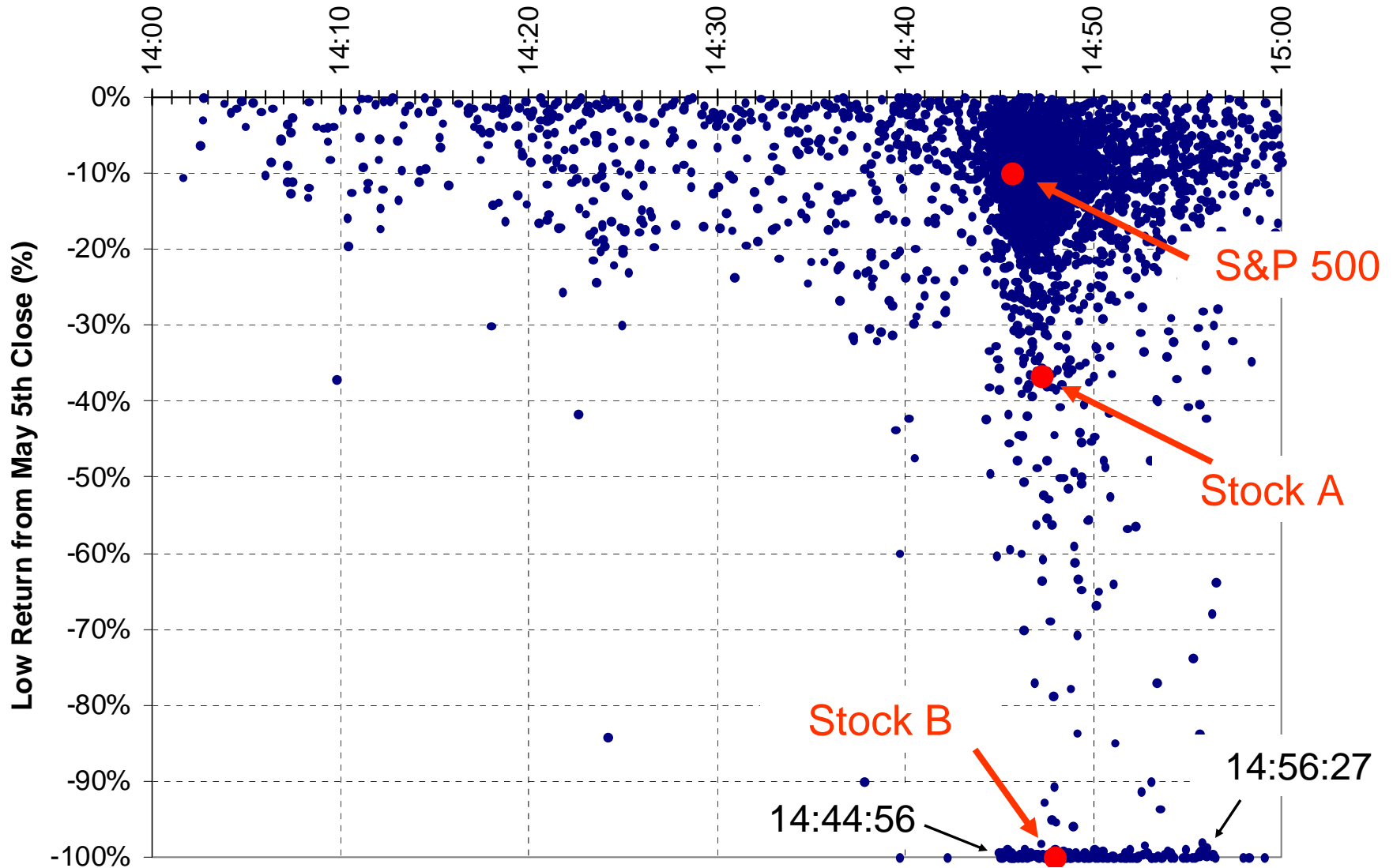


Summary of Major Index Moves

Lows from Previous May 5th Close (4:00pm)

	S&P 500 Index	S&P 500 ETF	DJIA Index	E-Mini Futures
2:00	-1.78%	-1.81%	-1.51%	-1.78%
2:40	-4.35%	-4.45%	-3.91%	-4.43%
2:45-2:47	-8.58%	-10.12%	-9.16%	-9.18%
3:00	-4.90%	-5.05%	-5.00%	-5.12%
4:00	-3.30%	-3.37%	-3.26%	-3.48%

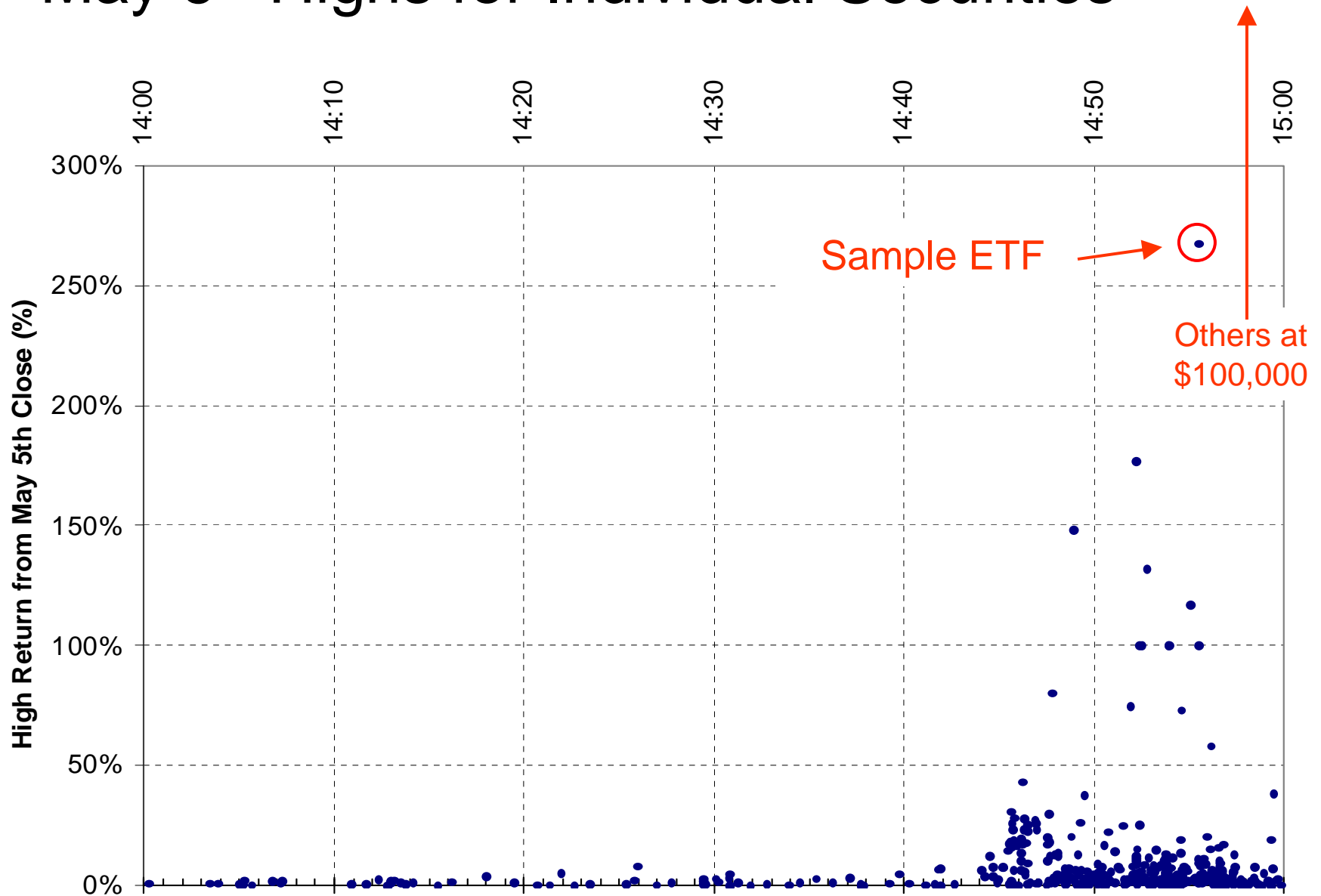
May 6th Lows for Individual Securities



Distribution of Losses from 2:40 – 3:00 pm

	Total # trades	Total volume	Total volume (\$)
All trades	7,135,104	1,995,000,637	56,651,582,692
Losses	5,013,724	1,358,709,226	38,047,617,508
0% to -10%	4,912,125	1,324,448,213	37,383,122,363
-10% to -20%	63,890	22,171,745	522,444,343
-20% to 30%	12,923	4,077,881	85,328,519
-30% to -40%	6,112	2,317,245	30,461,333
-40% to -50%	2,519	767,393	9,641,261
-50% to -60%	1,682	472,624	8,334,944
-60% to -70%	1,056	370,920	4,328,898
-70% to -80%	798	292,061	2,245,851
-80% to -90%	1,109	237,259	1,152,480
-90% to -100%	11,510	3,553,885	557,516

May 6th Highs for Individual Securities



Preliminary Findings* - Securities

A. Market Impact

B. Examples of Select Securities

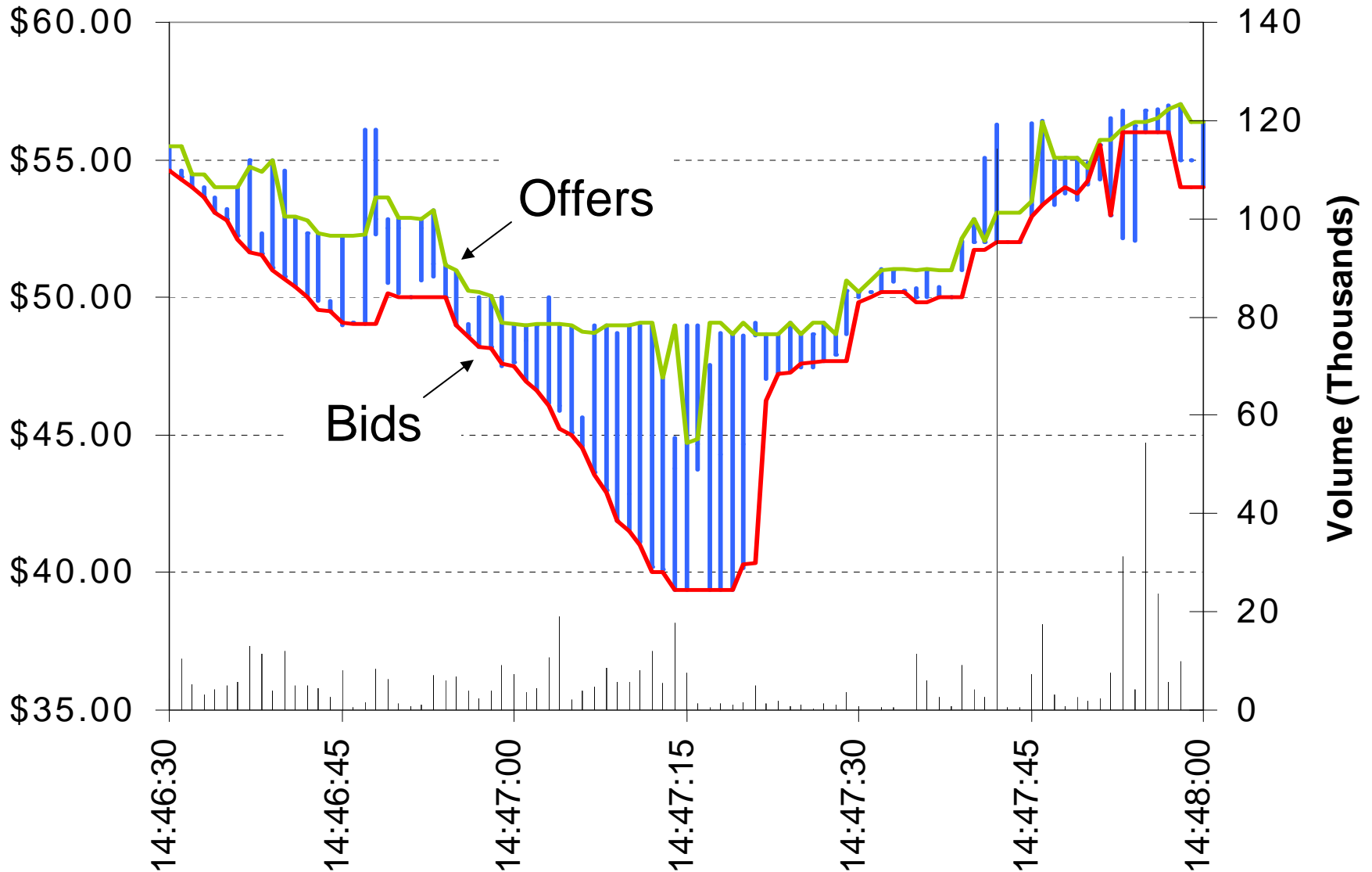
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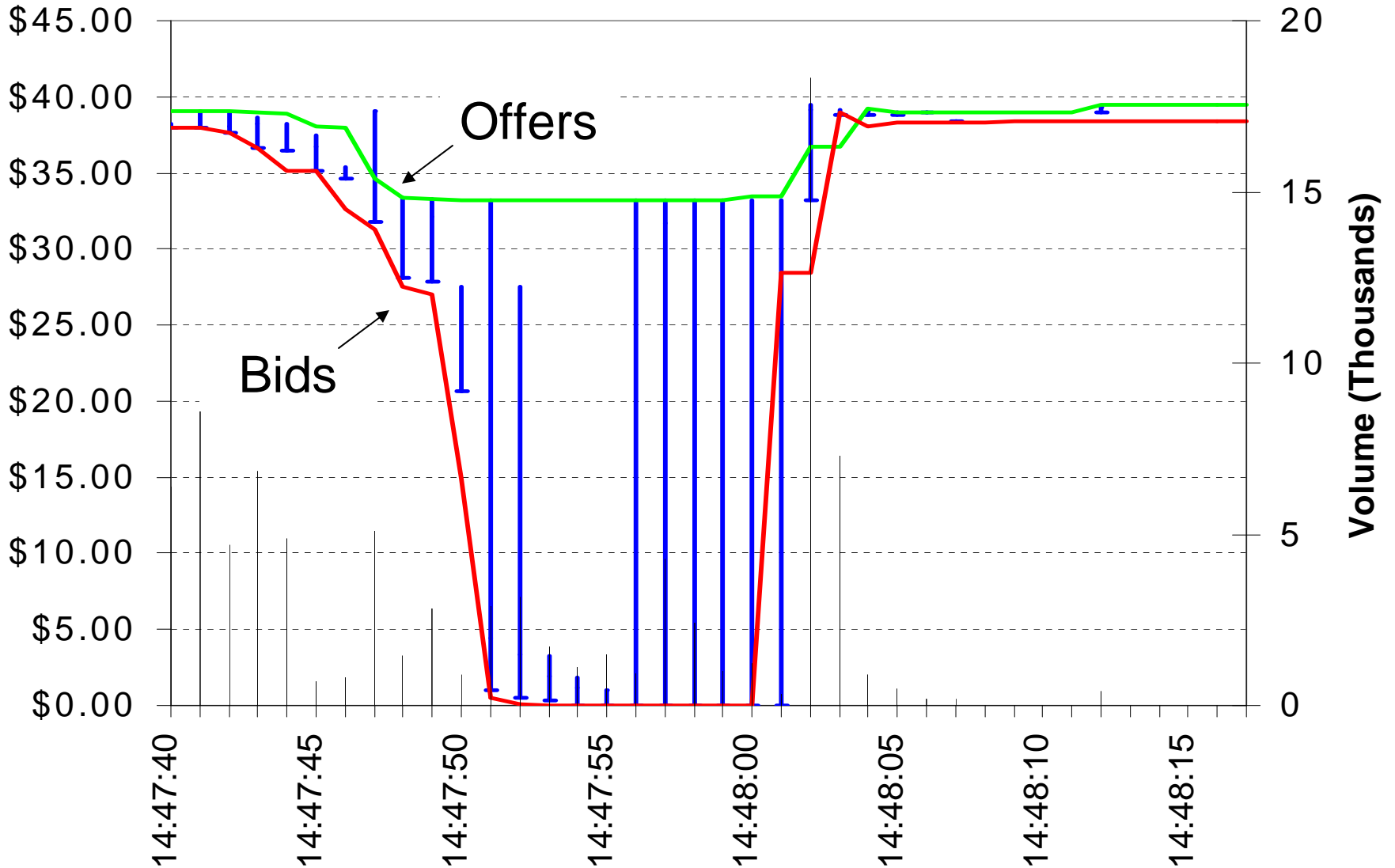
E. Liquidity Issues

** Based on initial data and subject to change*

Stock A: 90 Seconds of Trading



Stock B: A 10-Second Bounce



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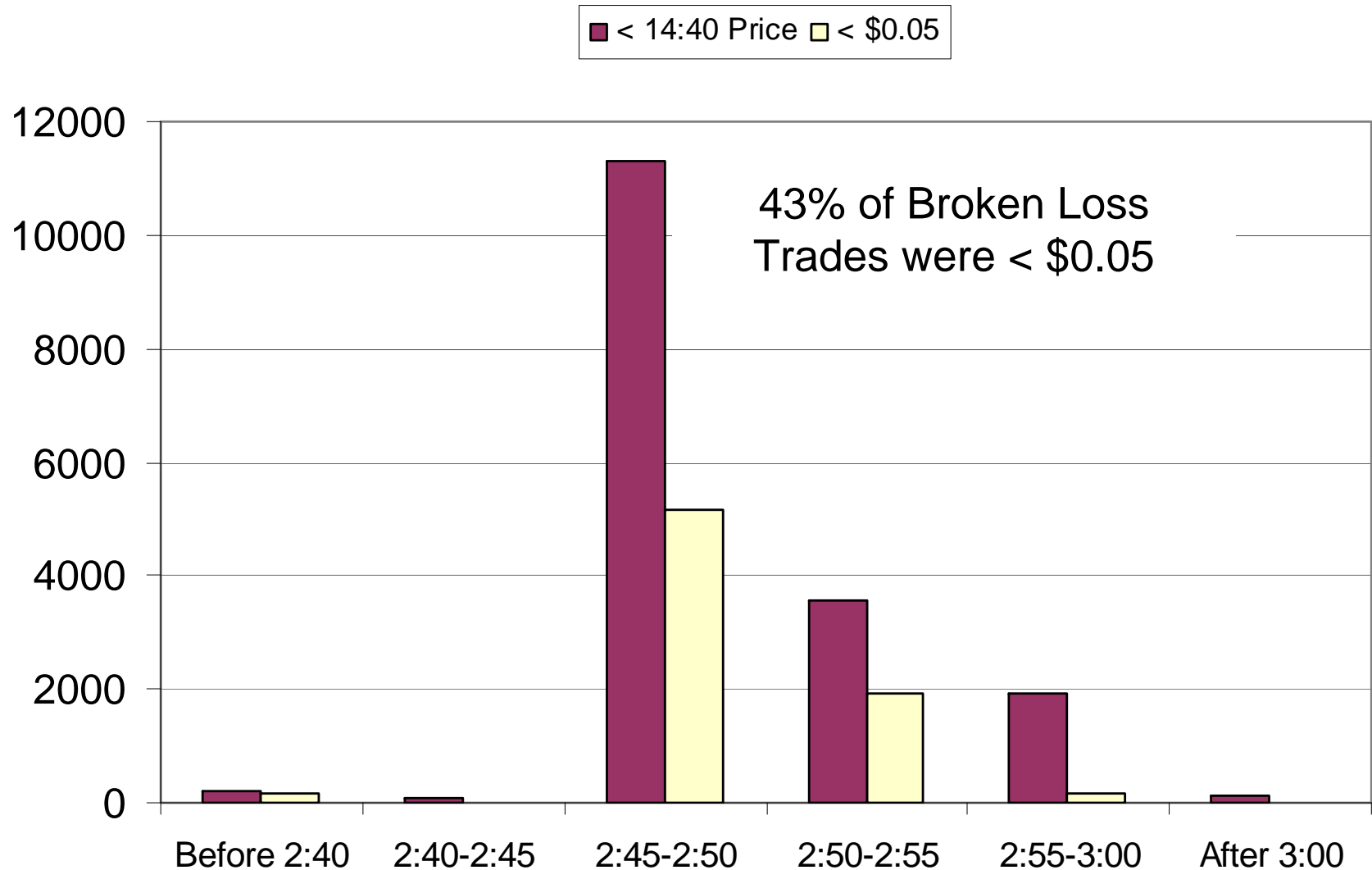
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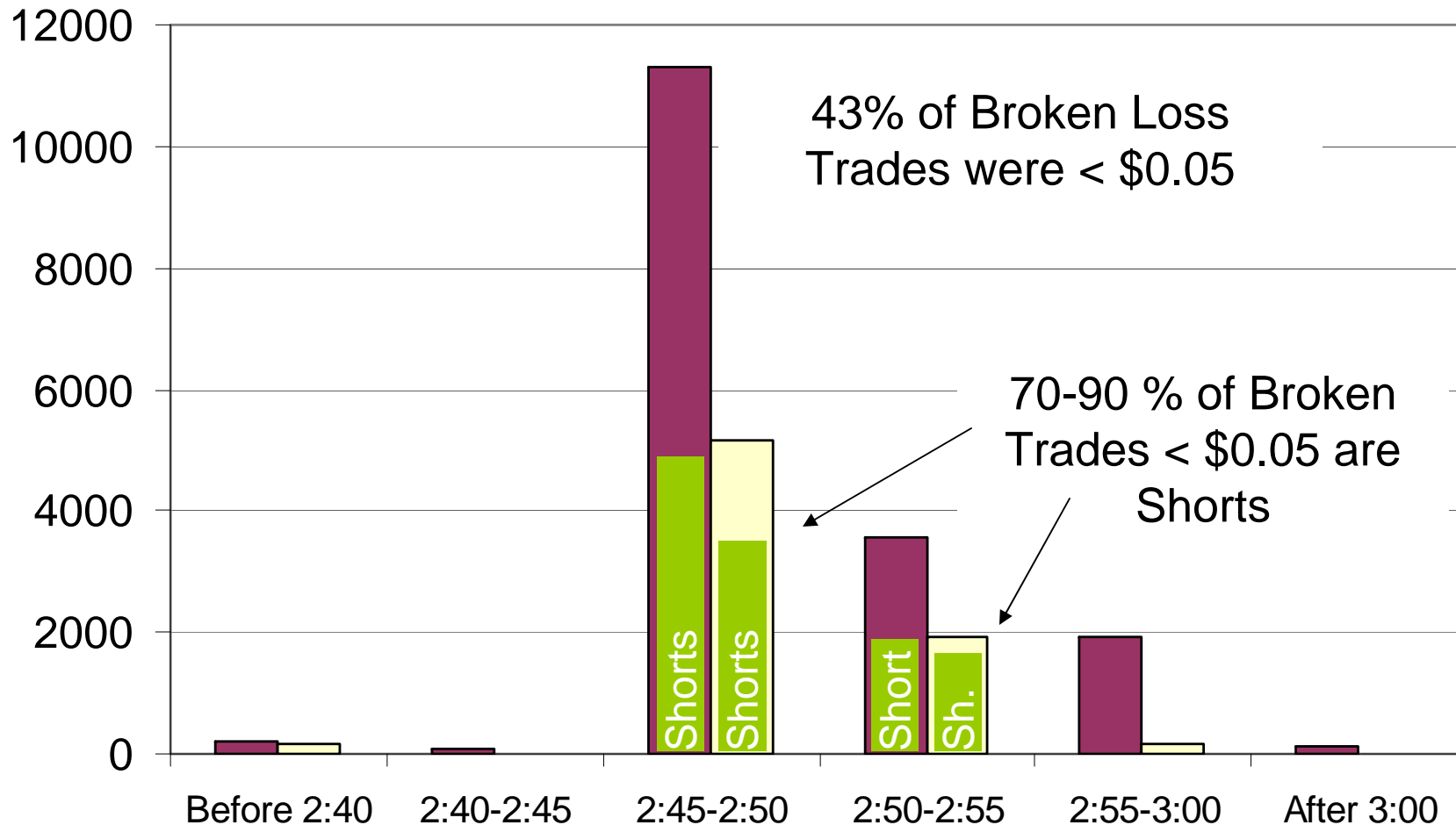
} Broken
Trades

Low-Priced Broken Trades over Time



Broken Trades and Short Sales

■ < 14:40 Price □ < \$0.05



Securities with Broken Trades

326 Securities
Affected

	Market		Broken	
	Total	%	Total	%
All Exchange-Traded Securities	7,878	100.0%	326	100.0%
• Primary Listing on NYSE	3,277	41.6%	56	17.2%
• Primary Listing on NASDAQ	2,946	37.4%	42	12.9%
• Primary Listing on ARCA	1,088	13.8%	225	69.0%
• Primary Listing on Amex	567	7.2%	3	0.9%
<hr/>				
• Component of DJIA	30	0.4%	0	0.0%
• Component of S&P 500	500	6.3%	12	3.7%
• Component of Russell 2000	2,000	25.4%	30	9.2%
<hr/>				
• Exchange-Traded Fund	838	10.6%	227	69.6%

Almost 70% of
Affected Securities
are ETFs

Preliminary Findings* - Securities

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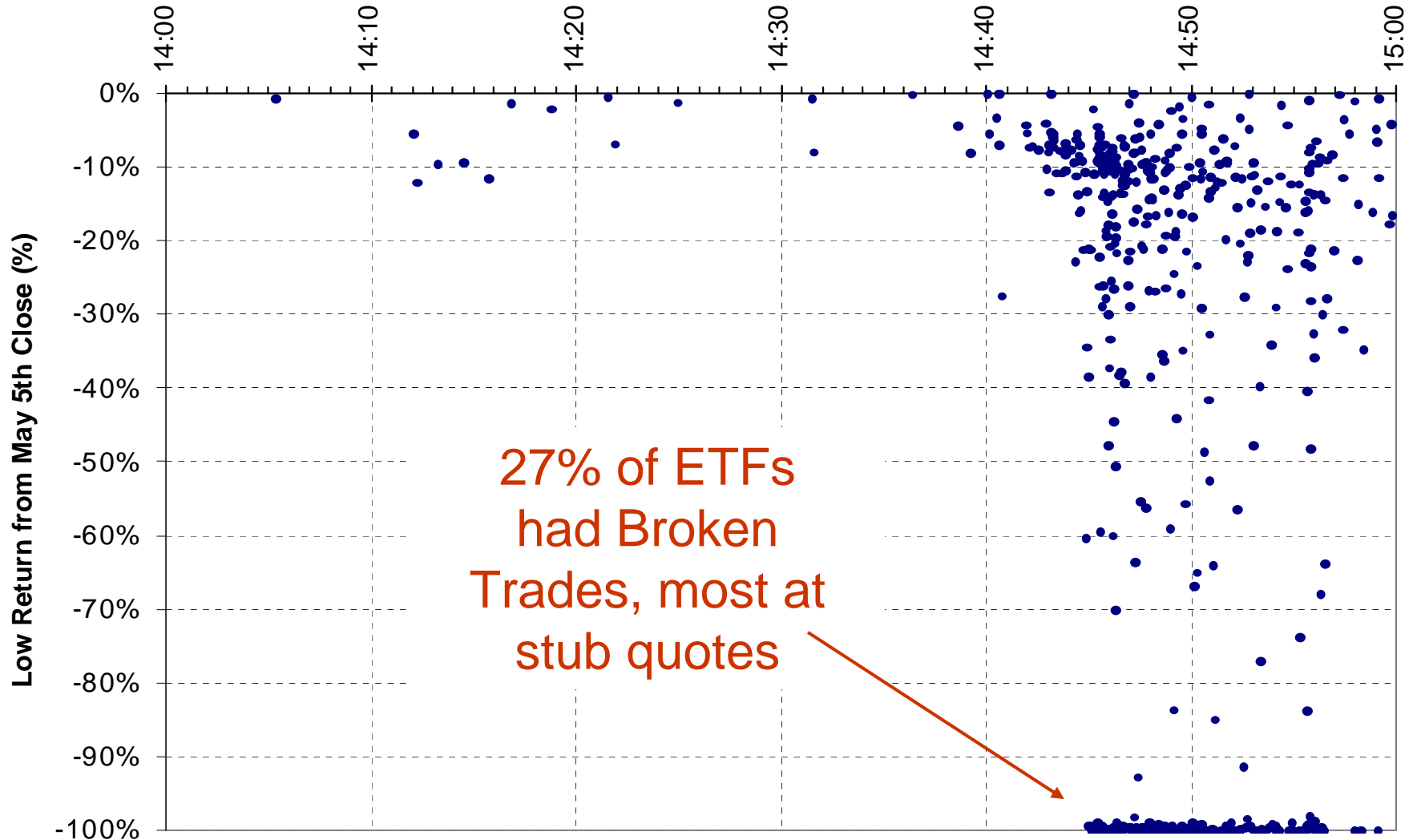
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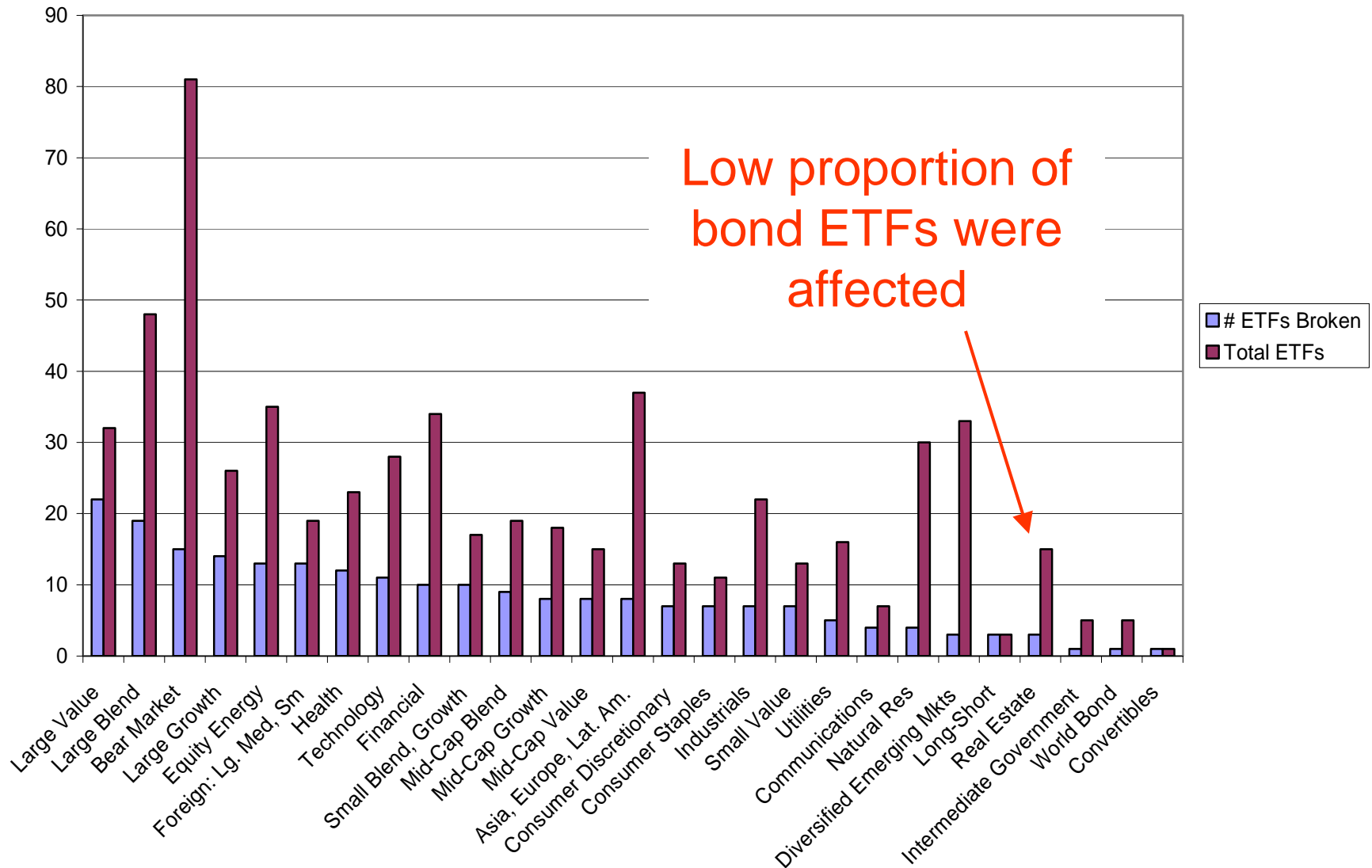
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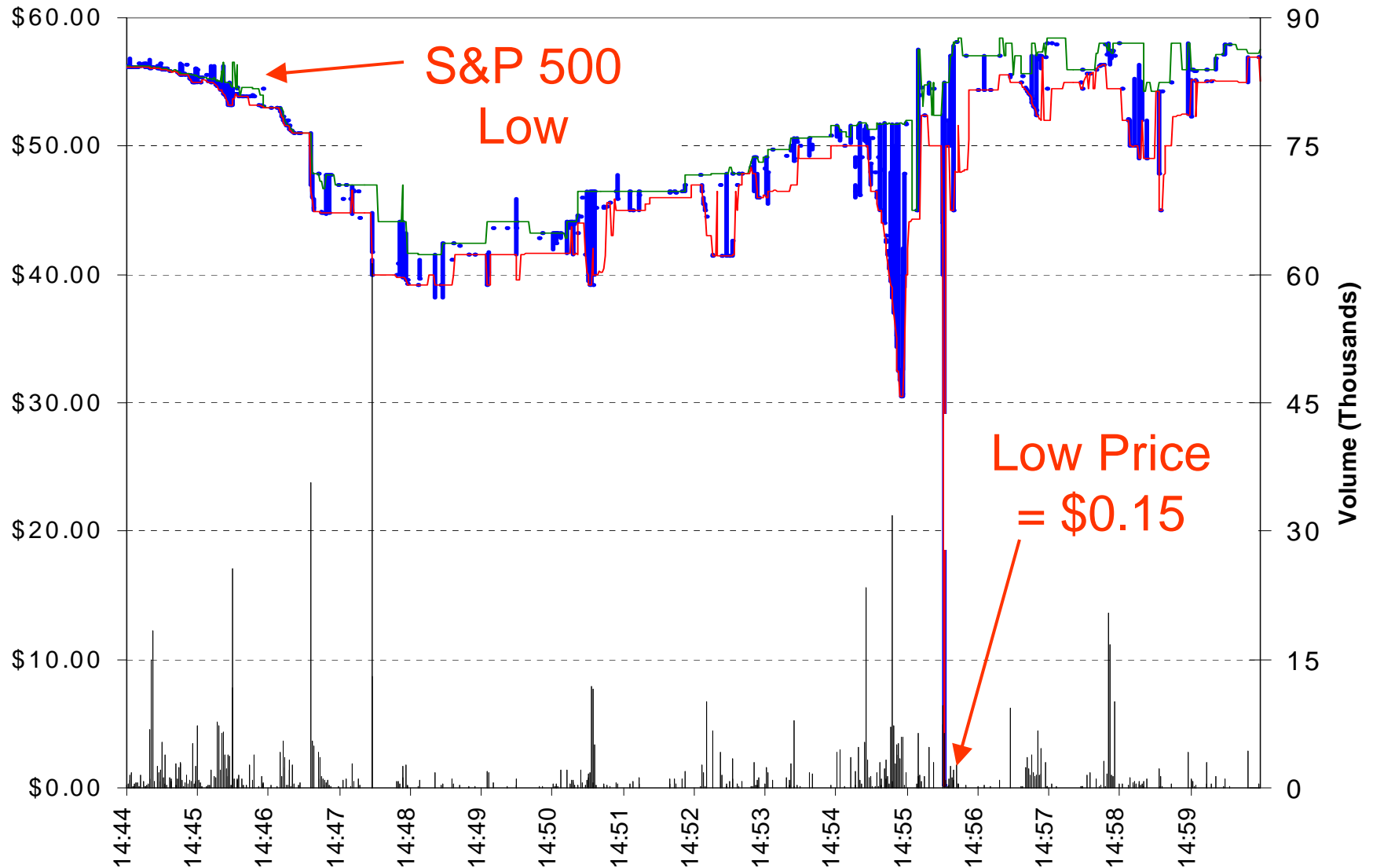
May 6th Lows for Exchange-Traded Funds



Asset Classes of ETFs with Broken Trades



Sample Exchange Traded Fund



Preliminary Findings* - Securities

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Liquidity and Order Routing

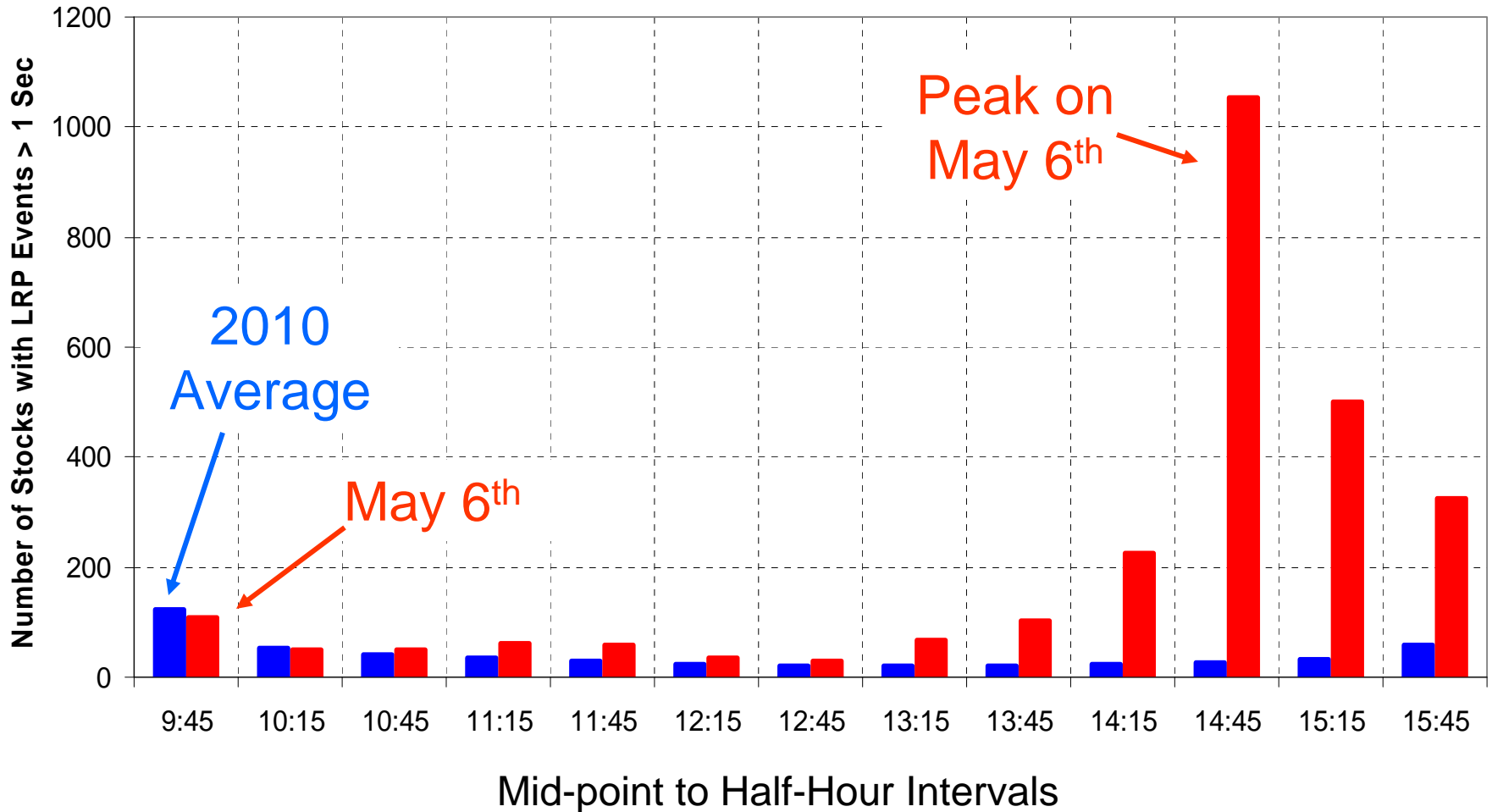
1. NYSE Liquidity Replenishment Points (LRPs)

2. Self-Help Declarations against Arca

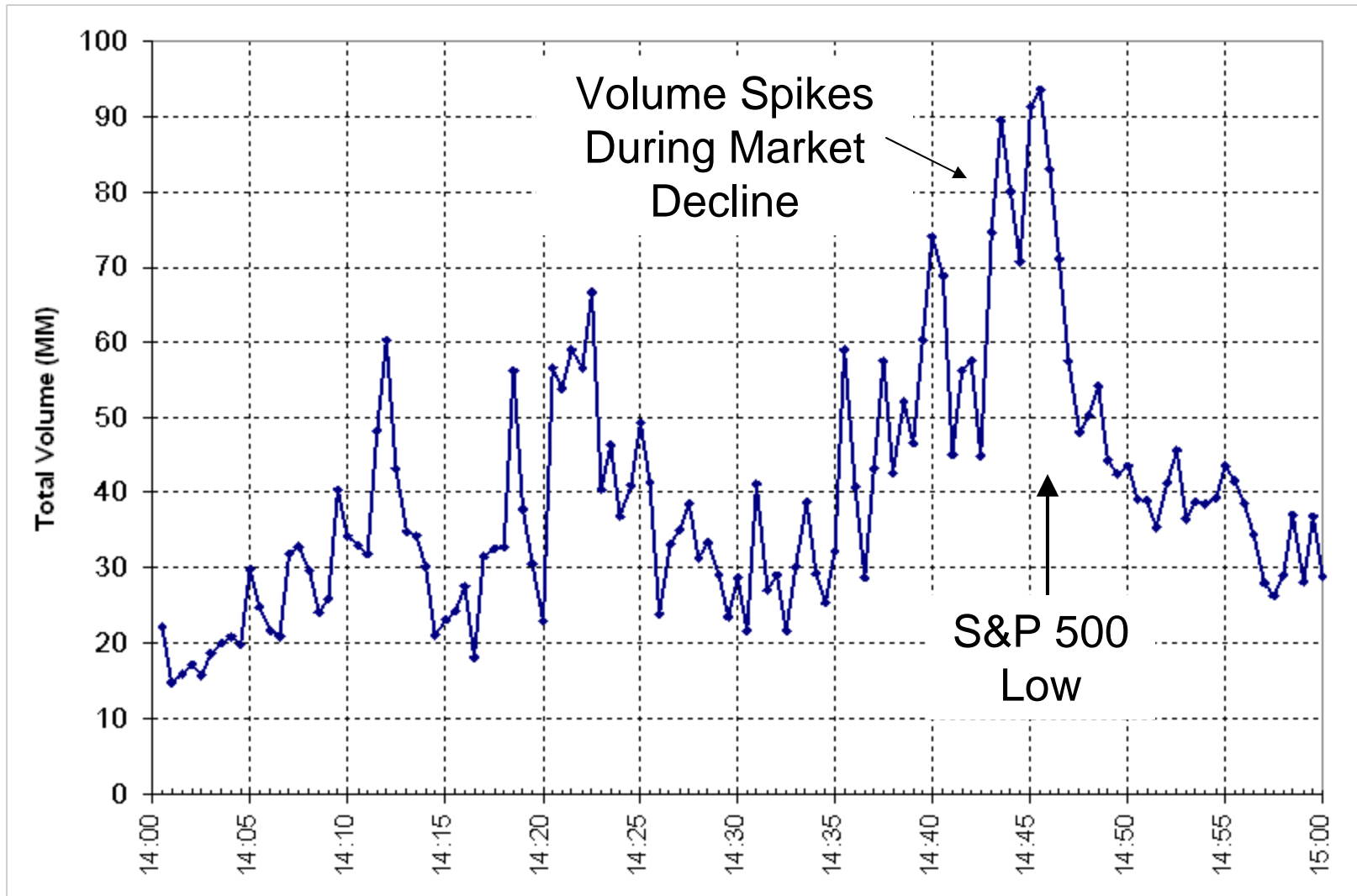
- Nasdaq: 2:37
- Nasdaq OMXBX: 2:39
- BATS: 2:49
- NSX: 2:51

NYSE Liquidity Replenishment Points (LRP)

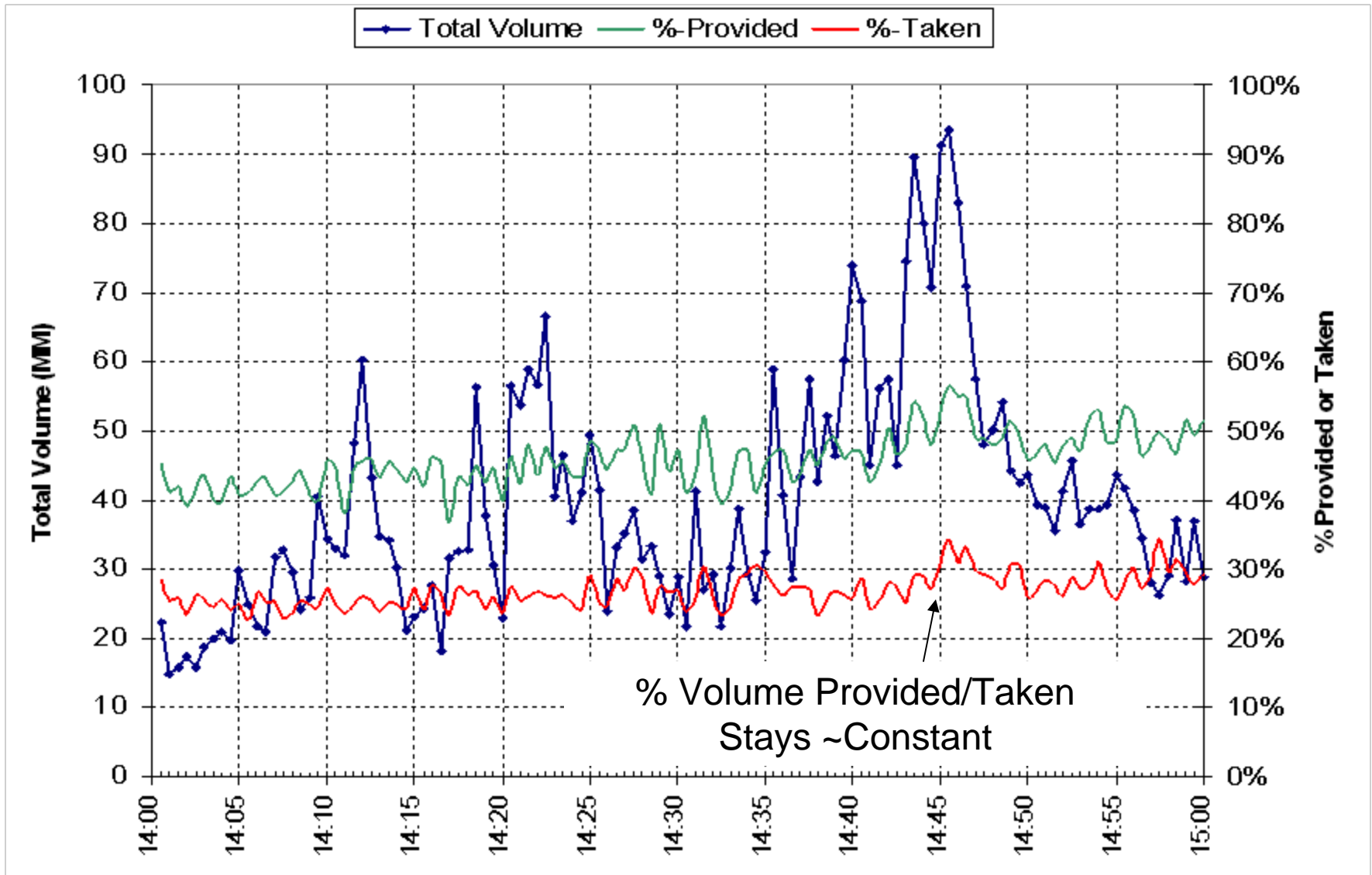
May 6th vs. 2010 Average



May 6th Volume from 2:00 – 3:00



Top 10 Liquidity Providers



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Analysis of E-mini S&P 500 Futures on May 6

- Liquidity Dislocation
- Market Volume and Price Movement
- Role of Liquidity
- Balance of Trading

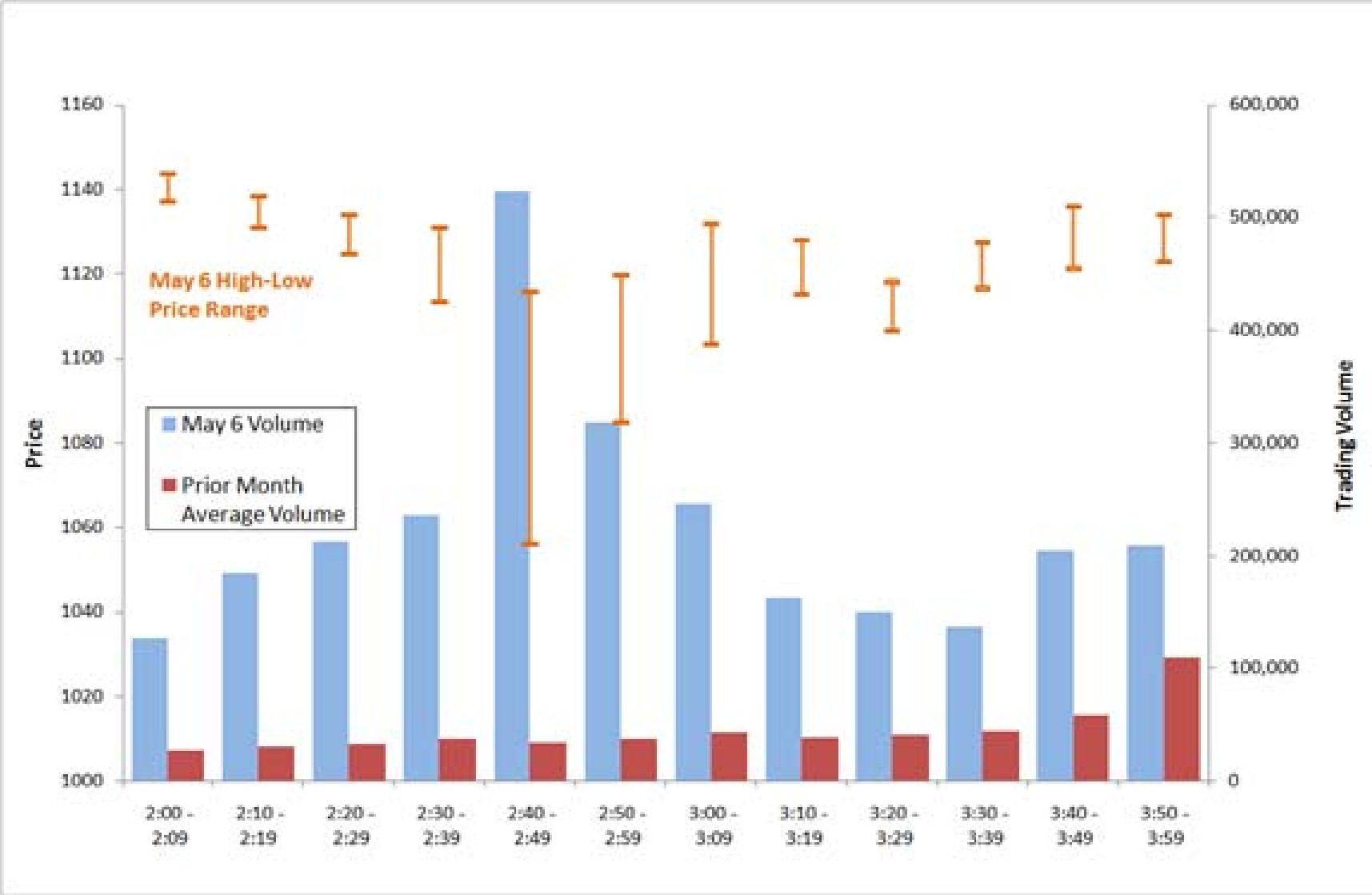
Liquidity Dislocation

- An imbalance of orders on the sell side resulted in prices falling.
- The depth of the order book declined, as prices fell.
- The price decline induced buyers to enter the market, coinciding with the CME Globex Stop Logic event.

E-mini S&P 500 Futures Volume and Price Movement

- Higher than Normal Volume
 - 2.6 times average volume
 - 5th highest daily volume in 5 years
 - Spike in volume between 2:40 and 2:49 p.m.
- High Price Volatility
 - Daily price range of 112.75 points
 - 2nd highest range in 5 years
 - 59.75 point range between 2:40 and 2:49 p.m.

Figure 29: CME E-mini S&P 500 Futures Trade Price and Volume



Role of Liquidity

- Liquidity reflects ease of buying/selling without exerting a significant price impact
- Liquidity cannot be directly observed
- Three indicators of liquidity
 - High volume may indicate more liquidity
 - Narrow bid-offer spreads may indicate more liquidity
 - Greater order book depth may indicate more liquidity

Role of Liquidity

- High and Erratic Volume
 - 10 times average volume between 2:30 and 3:00 p.m.
 - Possible execution deep into the order book
- Widening of Bid-Offer Spreads
 - Minimum bid-offer spreads prior to Stop Logic event
 - Widening and variable spreads just prior to and following Stop Logic event
- Imbalance and Decrease in Market Depth
 - Less market depth on buy side
 - Overall decrease in market depth after 2:45 p.m.
 - Return to relative balance in orders after 2:45 p.m.

**Figure 30: Price and Trading Volume
in the June 2010 E-mini S&P 500 Futures Contract**

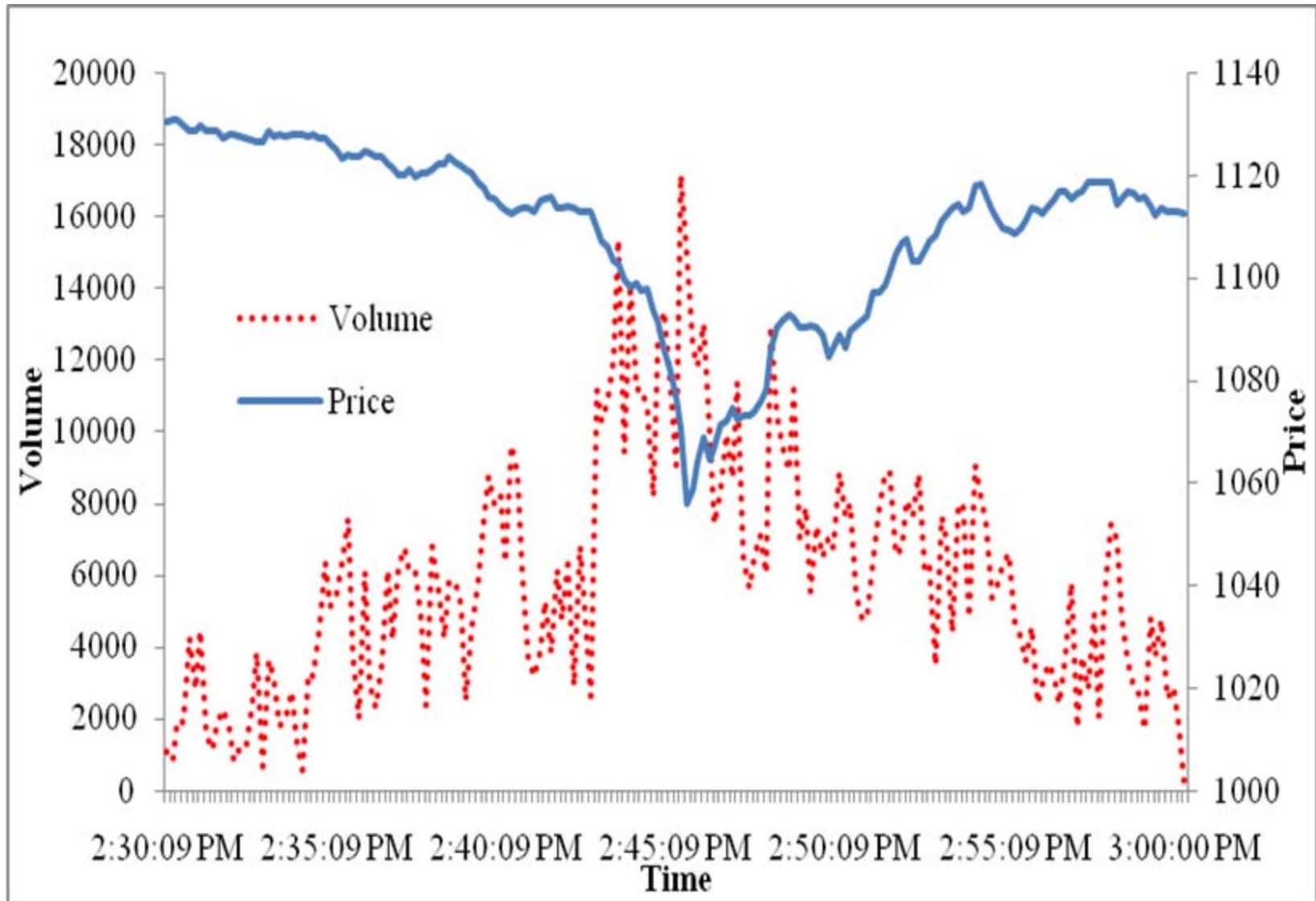
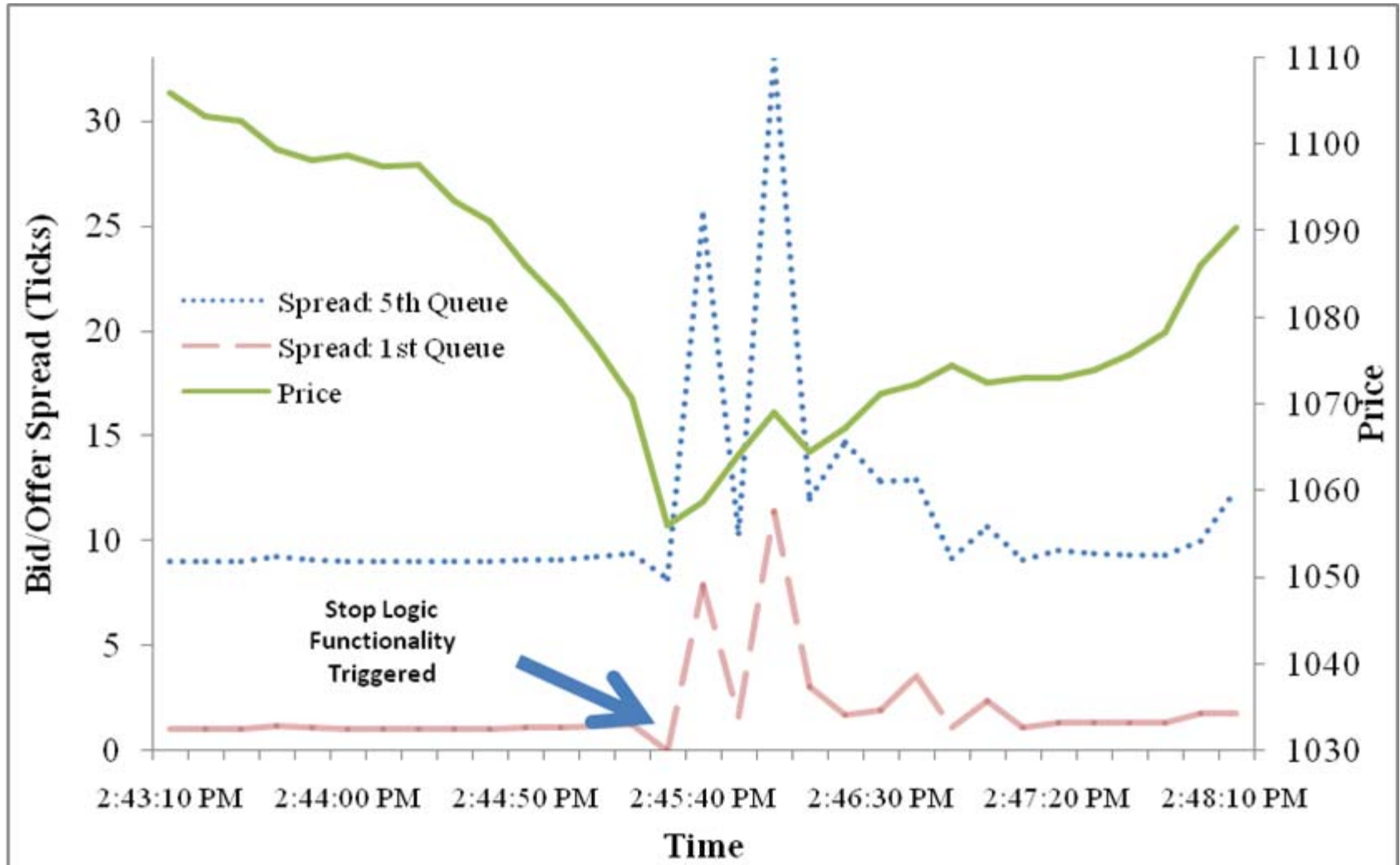
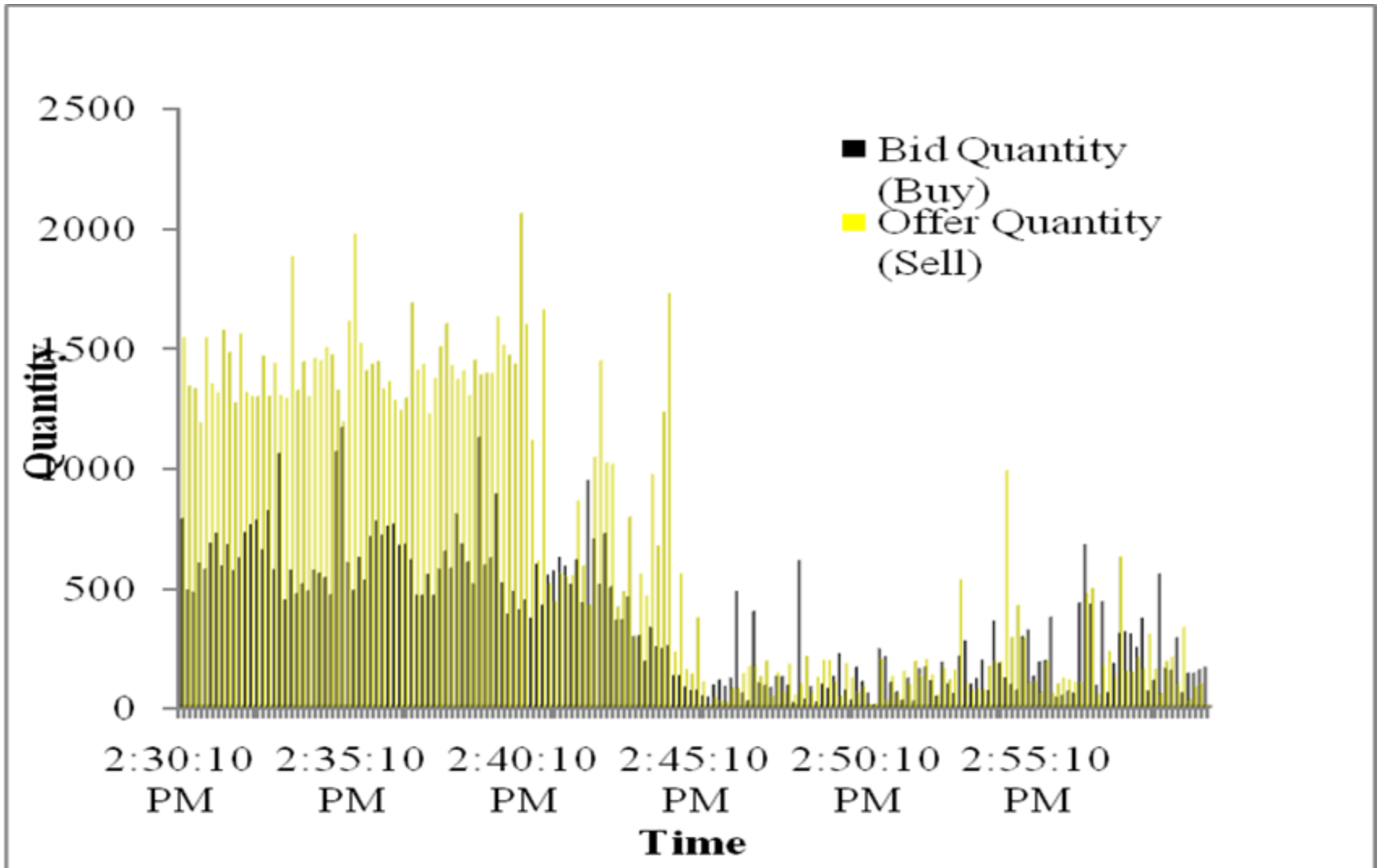


Figure 31: Bid/Offer Spread (in Ticks) and Price in the June 2010 E-mini S&P 500 Futures Contract



**Figure 32: Bid/Offer Quantities:
5th Best in the June 2010 E-mini S&P 500 Futures Contract**



CME Globex Stop Logic Functionality

- Designed to stop a cascade of stop loss orders.
 - A cascade is one stop loss order triggering another.
 - Market pauses to prevent a cascade greater than 6 points
 - Triggered at 2:45:28 p.m.
- Reserve State Pauses Execution
 - Five second hold
- Reserve State Exit
 - Release if execution within 6 points, otherwise hold for additional 5 seconds
 - Trading resumed at 2:45:33 p.m.

Large Trader Analysis

Buyer and Seller Transaction Volume

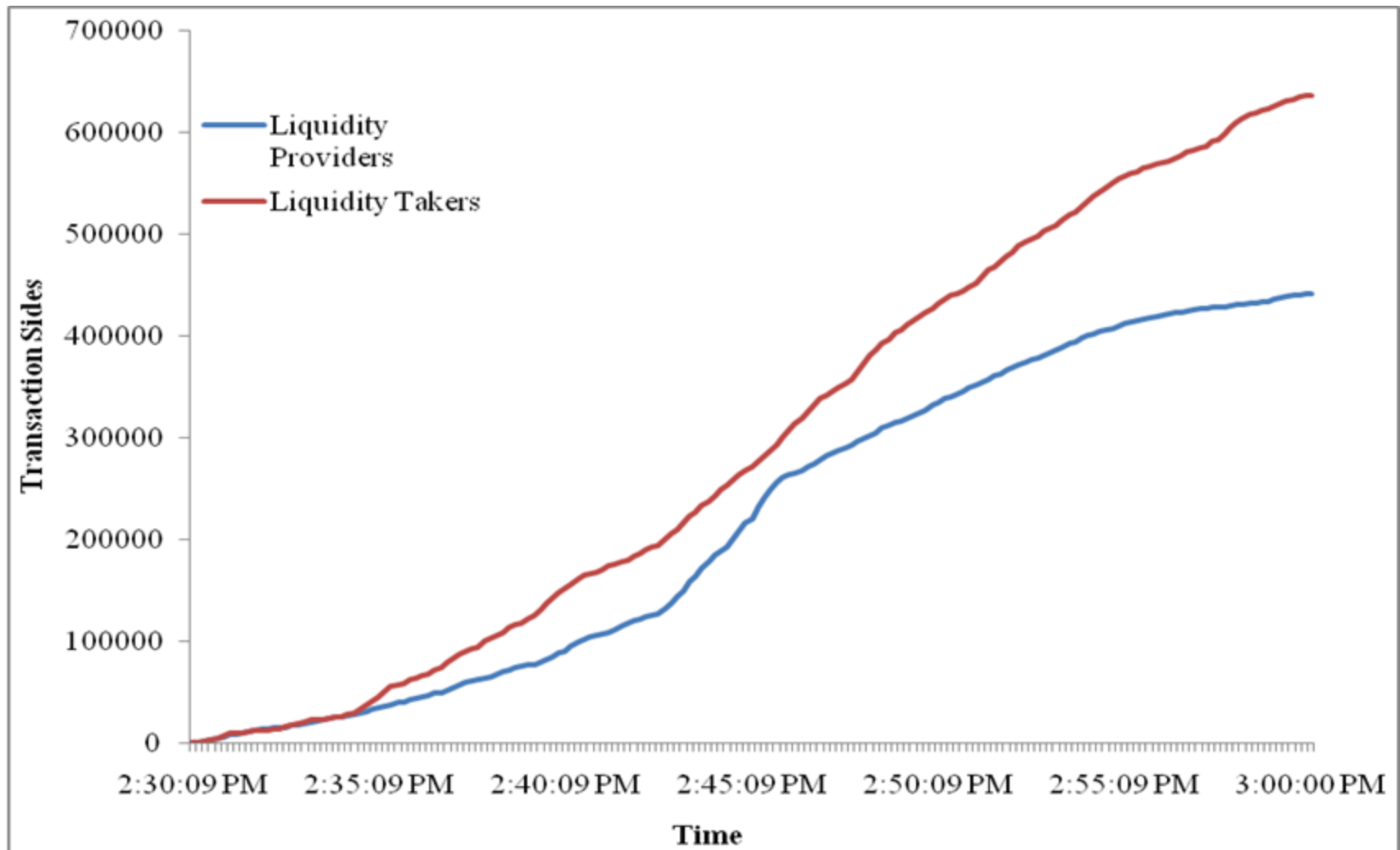
- Volume of 10 largest net sellers exceeds volume of 10 largest net buyers:
 - 51,526 net buys vs. 72,186 net sells during 2:30-2:45 p.m.
 - 49,180 net buys vs. 67,544 net sells during 2:46-3:00 p.m.
- Largest Net Seller
 - Only entered orders to sell
 - 9% of volume
 - Position executed between 2:32 p.m. and 2:51 p.m.

Large Trader Analysis

Liquidity Provision

- Liquidity Providers (Active but Flat Positions)
 - 2:30 to 3:00 p.m. review period
 - Methodology to select providers of liquidity
 - Six trading accounts
 - 50% of early trading activity
 - Decline of activity during volatile period
- Liquidity Takers (All Others: 4,573 accounts)

Figure 33: Cumulative Volume of Transaction Sides of Liquidity Providers and Liquidity Takers in the June 2010 E-mini S&P 500 Futures Contract



Summary of Findings—CFTC

- Broad-based desire for investors to reduce exposure to risky assets
- Liquidity Dislocation
 - Rise in volume during price decline
 - Imbalance of sell and buy orders
 - Reduction in depth of order book
- Triggering of Stop Logic functionality
- Return to balanced order book and tight bid-offer spread

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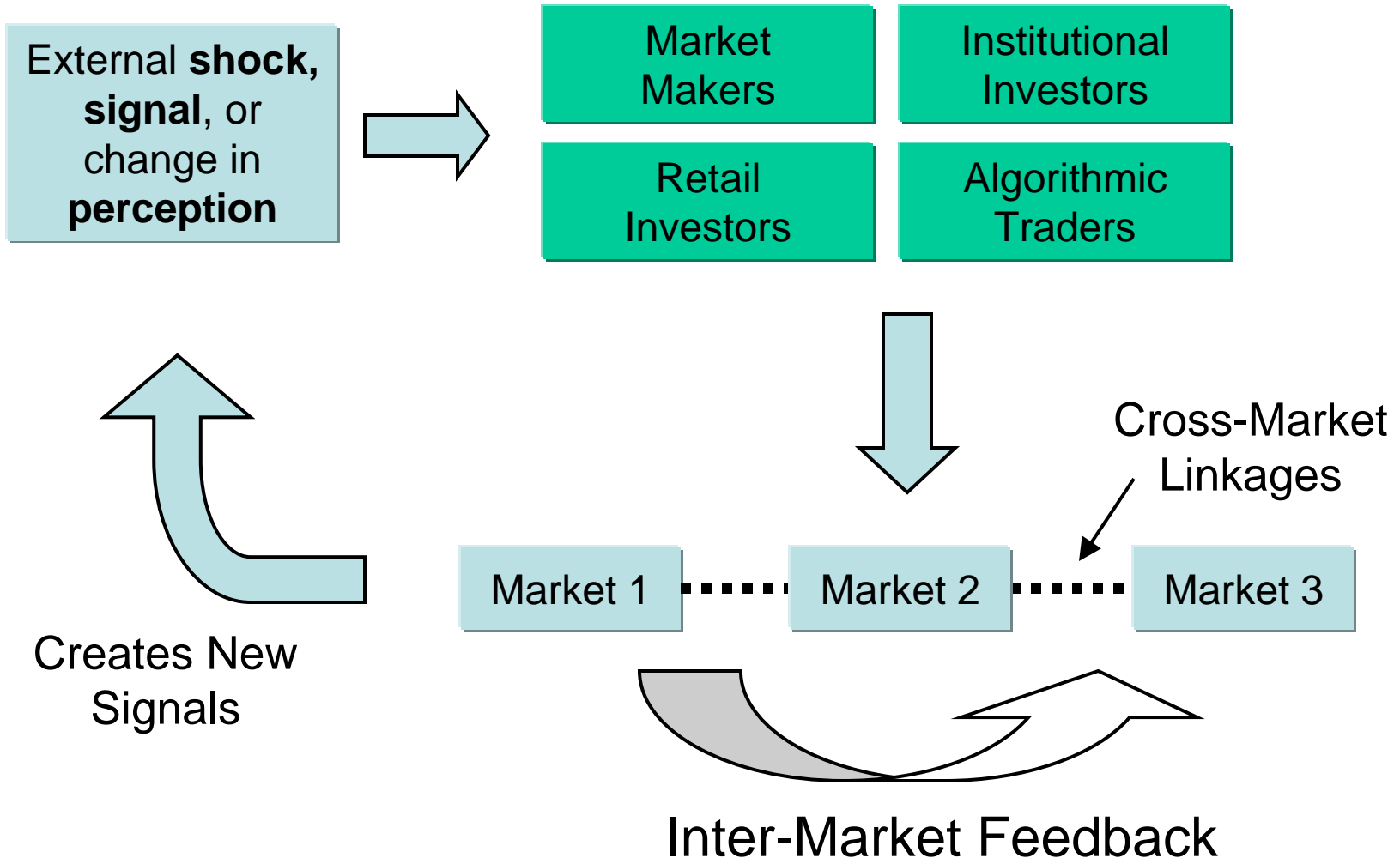
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A Framework for Next Steps and Analyses



Topics for Further Research

1. Where did the downward price pressure originate?

- a) Price discovery, arbitrage and linkages between markets
- b) Short sales and directional algorithms
- c) Hedging existing holdings
- d) Liquidating positions

2. What happened to liquidity?

- a) Withdrawal of market makers, internalizers, high-frequency algorithms
- b) “Trapped” liquidity: Declaration of Self-Help, LRPs

Topics for Further Research

3. What role did order types play?

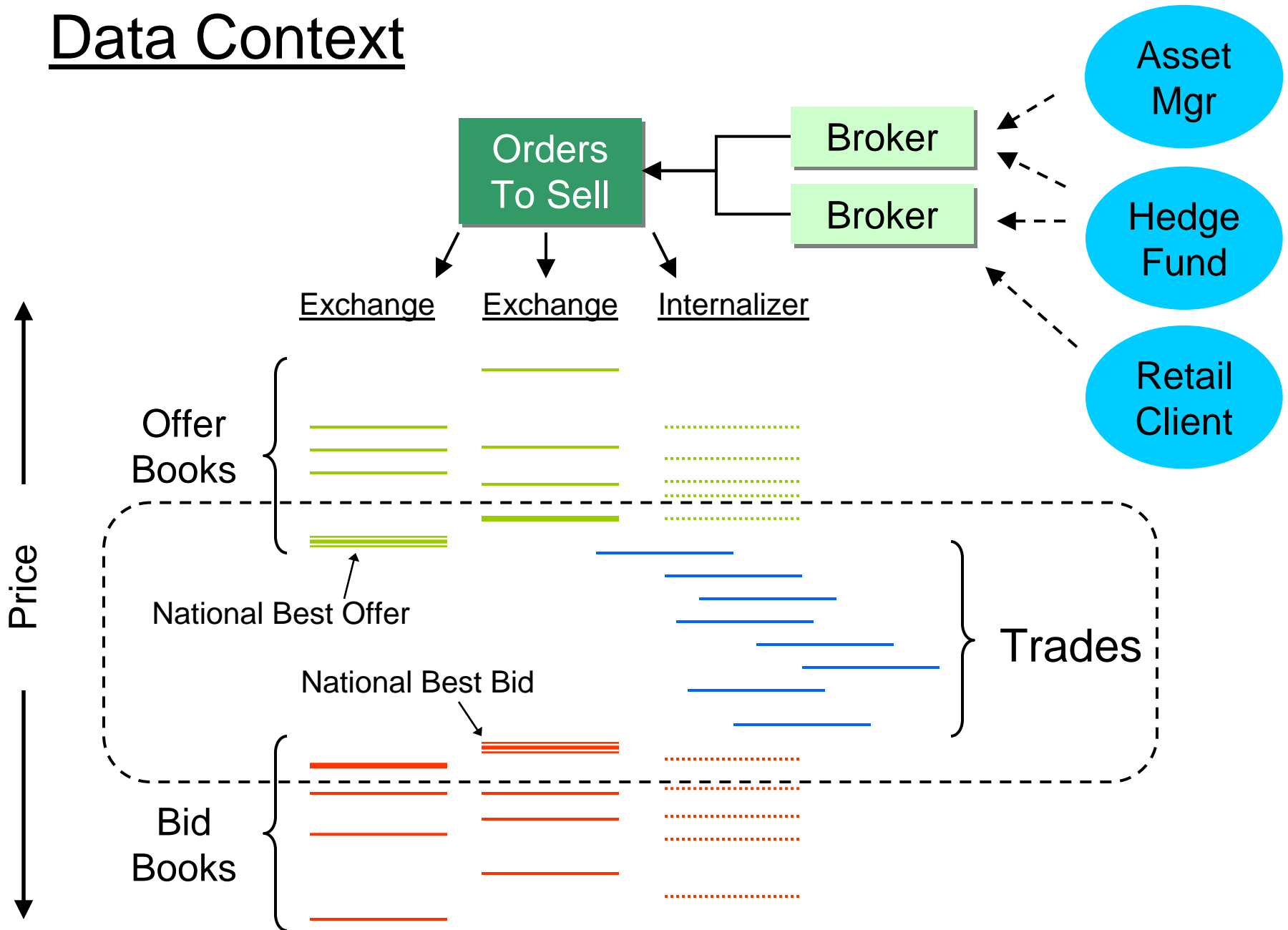
a) Market Orders, Stop Loss Orders, ISOs

b) Stub Quotes

4. What explains the experience of ETFs?

5. Were there other contributing factors?

Data Context



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Further Analysis—CFTC

- Review of special call on large traders and OTC swap dealers
- Review of trade-register data
- Review of electronic trading
 - High Frequency trading
 - Algorithmic trading
 - Pre-trade automated safety features

Further Analysis—Joint

- Study the linkages between correlated assets in equities (single stocks, mutual funds and ETFs), options and futures markets
- Focus on cross-market linkages in stock index products

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