

Welcome to

Trading VIX[®] Futures

January 23, 2007



- This Presentation will begin at 3:30 Central Time.
- The speaker today is Dan Passarelli, Instructor at The Options Institute of Chicago Board Options Exchange (CBOE).

Disclosures & Disclaimers

For the sake of simplicity, the examples that follow do not take into consideration commissions and other transaction fees, tax considerations, or margin requirements, which are factors that may significantly affect the economic consequences of a given strategy. An investor should review transaction costs, margin requirements and tax considerations with a broker and tax advisor before entering into any strategy.

Futures trading involves substantial risk and is not suitable for everyone.

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Presentation Outline

- What Is VIX?
- Why Futures on VIX?
- Contract Specifications
- The Futures-Cash Relationship
- Unique Pricing Concepts
- Two Trading Case Studies

The VIX

- VIX - the CBOE's Volatility Index
- Created in 1993 by Professor Robert Whaley of Duke University
- Goal: to measure the level of 30-day implied volatility
- Originally based on OEX options
- 2003 – Formula changed and underlying options changed to SPX

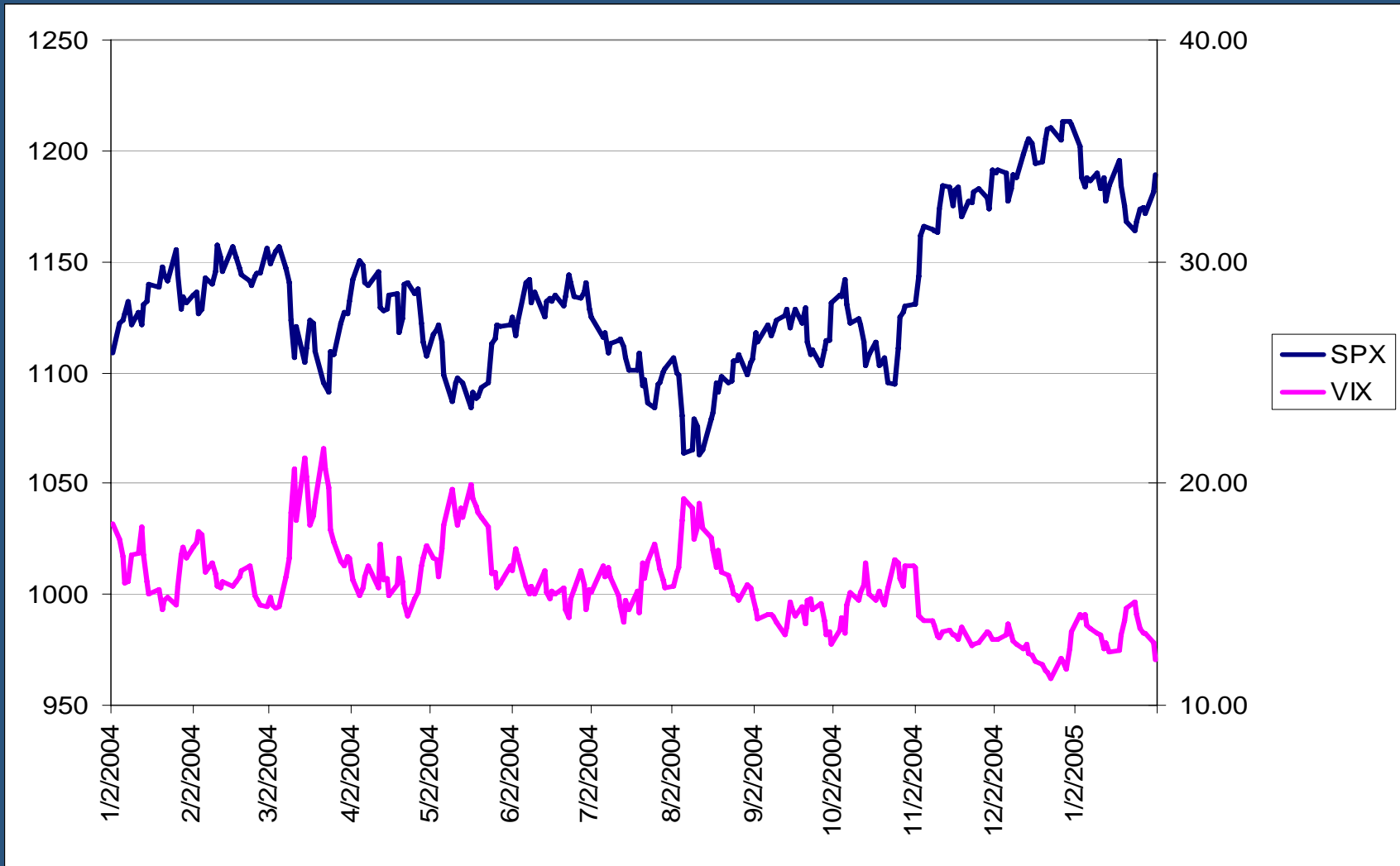
What Is VIX?

- CBOE's Volatility Index is a proprietary measure of the implied volatility of options on the S&P 500 Stock Index.

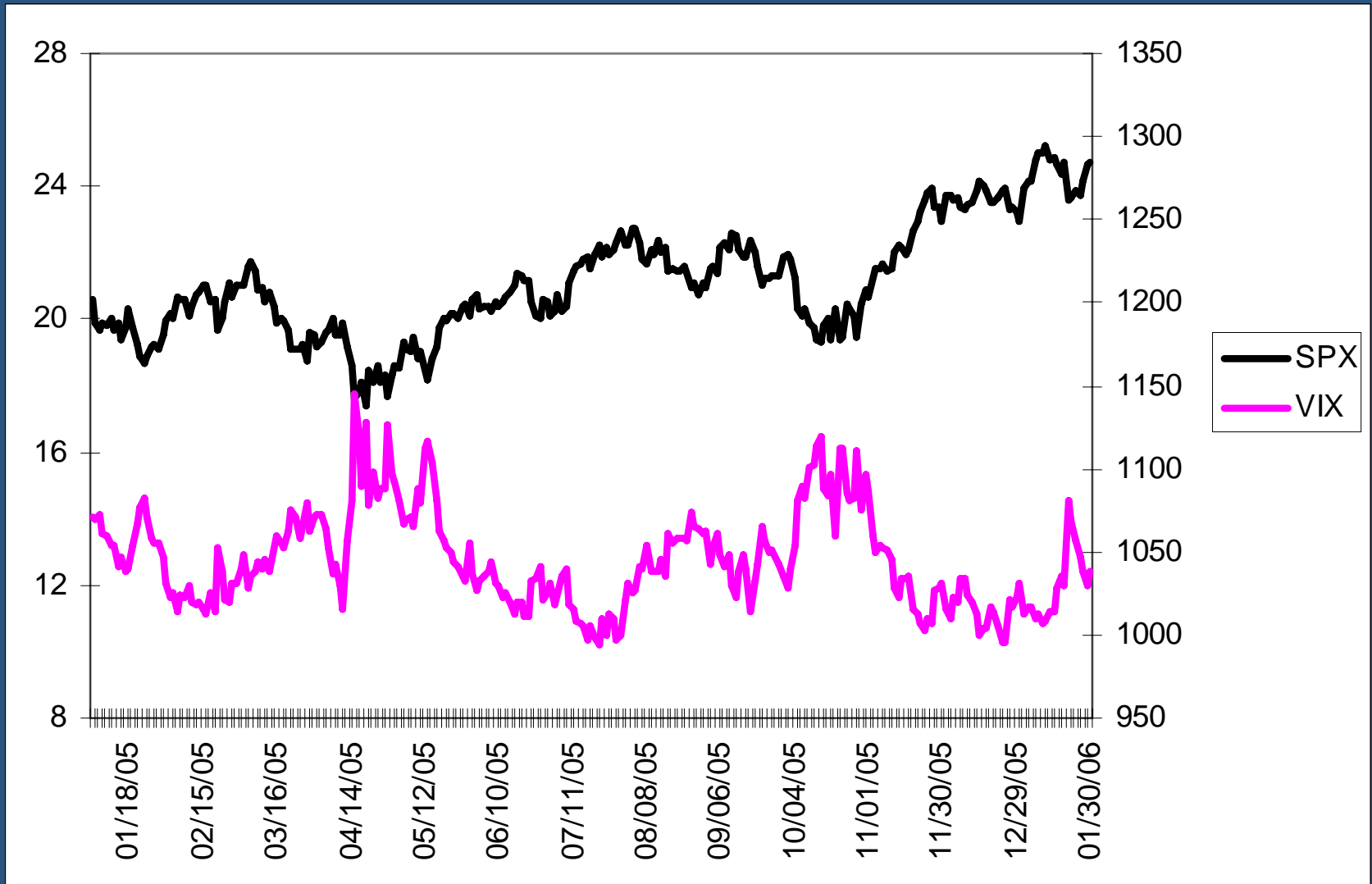
VIX and the S&P 500

- Also known as the “Fear Index,” VIX gives an indication of how anxious options buyers are.
- A “low” VIX indicates complacency.
- A “high” VIX indicates anxiety.
- VIX tends to rise as the SPX falls.

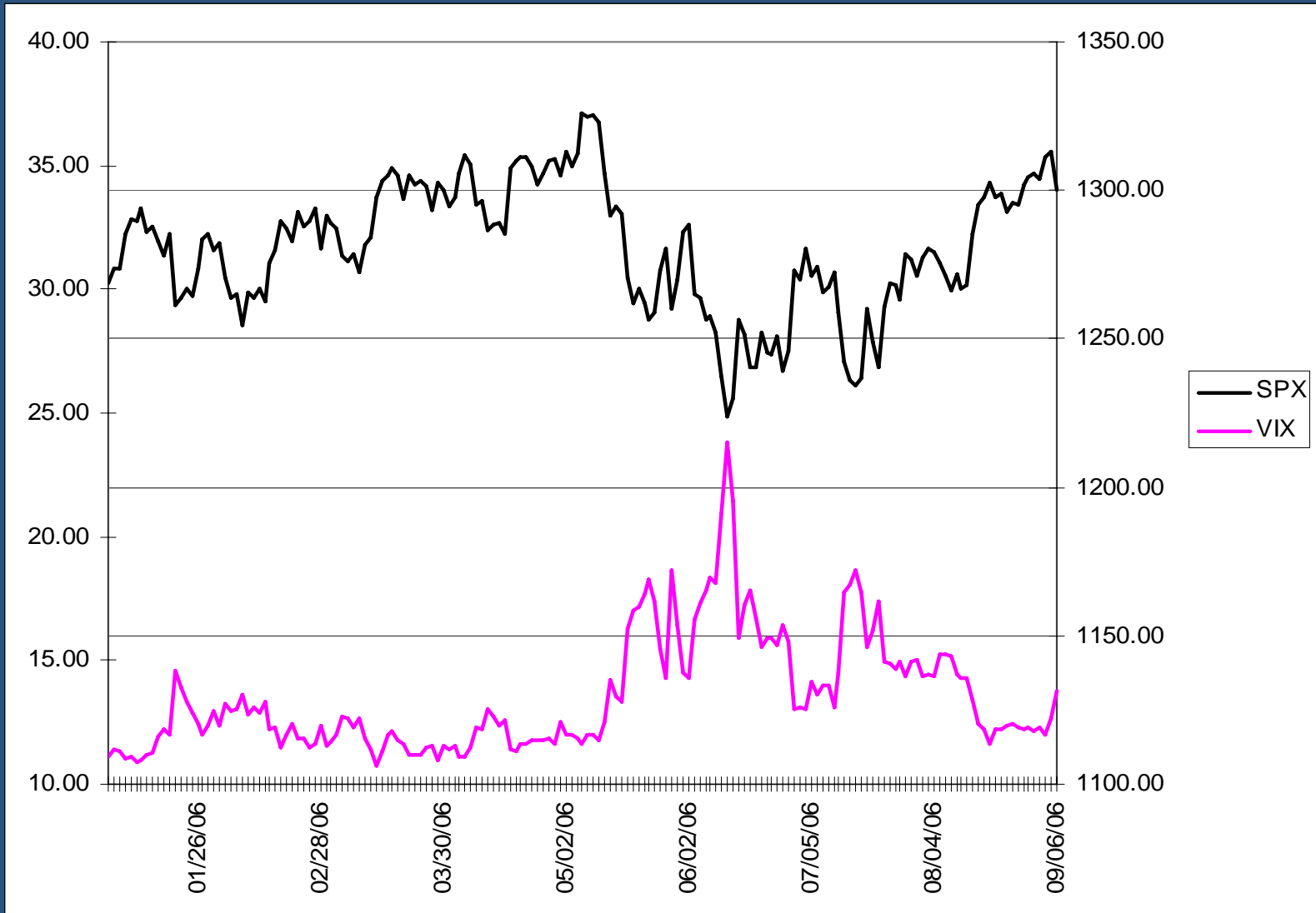
SPX & VIX 1/2/04 – 1/30/05



SPX & VIX 1/3/05 – 1/30/06



SPX & VIX 1/2/06 – 9/6/06



VIX Futures – What Strategy?

Historical observation:

Market down → VIX up (& vice versa)

Implication:

Bullish on the market, sell VIX futures

Bearish on the market, buy VIX futures

VIX Contract Specs

- Ticker symbol
- Contract value and Tick Size
- Contract months available
- Trading Hours / Trades Online
- Expiration Procedures
- Marked-to-Market
- Margin Requirements

Ticker Symbols

Root Symbol:	VX
February 07:	VXG7
March 07:	VXH7
April 07:	VXJ7
May 07:	VXK7
June 07:	VXM7
August 07:	VXQ7
November 07:	VXX7
May 08:	VXK8

Futures Contract Value

VIX Index

VBI Index = $10 \times \text{VIX Index}$

Futures Contract Value = $\$100 \times \text{VBI}$

VIX = 15

VBI = 150

VX Futures: Price = 150

Value = $\$15,000 (150 * \$100)$

Tick Size

1 tick = .10 (150.0 – 150.1)
= \$10

1 point = 10 ticks (150.0 – 151.0)
= \$100

Available Contracts

Up to six near-term serial months and five months on the February quarterly cycle.

If today is January 23, 2007:

Serial Months: March 2007, April 2007, June 2007, July 2007

Quarterly Months: February 2007, May 2007, August 2007,
November 2007, May 2008

Trading Hours

- Trading Hours: 8:30 am – 3:15 pm CST
- Trades Online

Expiration Procedures

- **Last Trading Day:** Tuesday (30 days before SPX options expire)
- **Final Settlement:** Wednesday open
- Special Opening Quotation of VIX (SOQ)
 - VIX Cash Index based on mid-point of SPX Index Options bids and asks
 - *****VIX SOQ based on 1st traded prices at open of SPX Index options**

Margin Requirements

Long or Short per contract

Initial Margin \$2,250

Minimum Margin \$1,800

Spread per contract

Initial Margin \$ 50

Minimum Margin \$ 40

Margin & Leverage

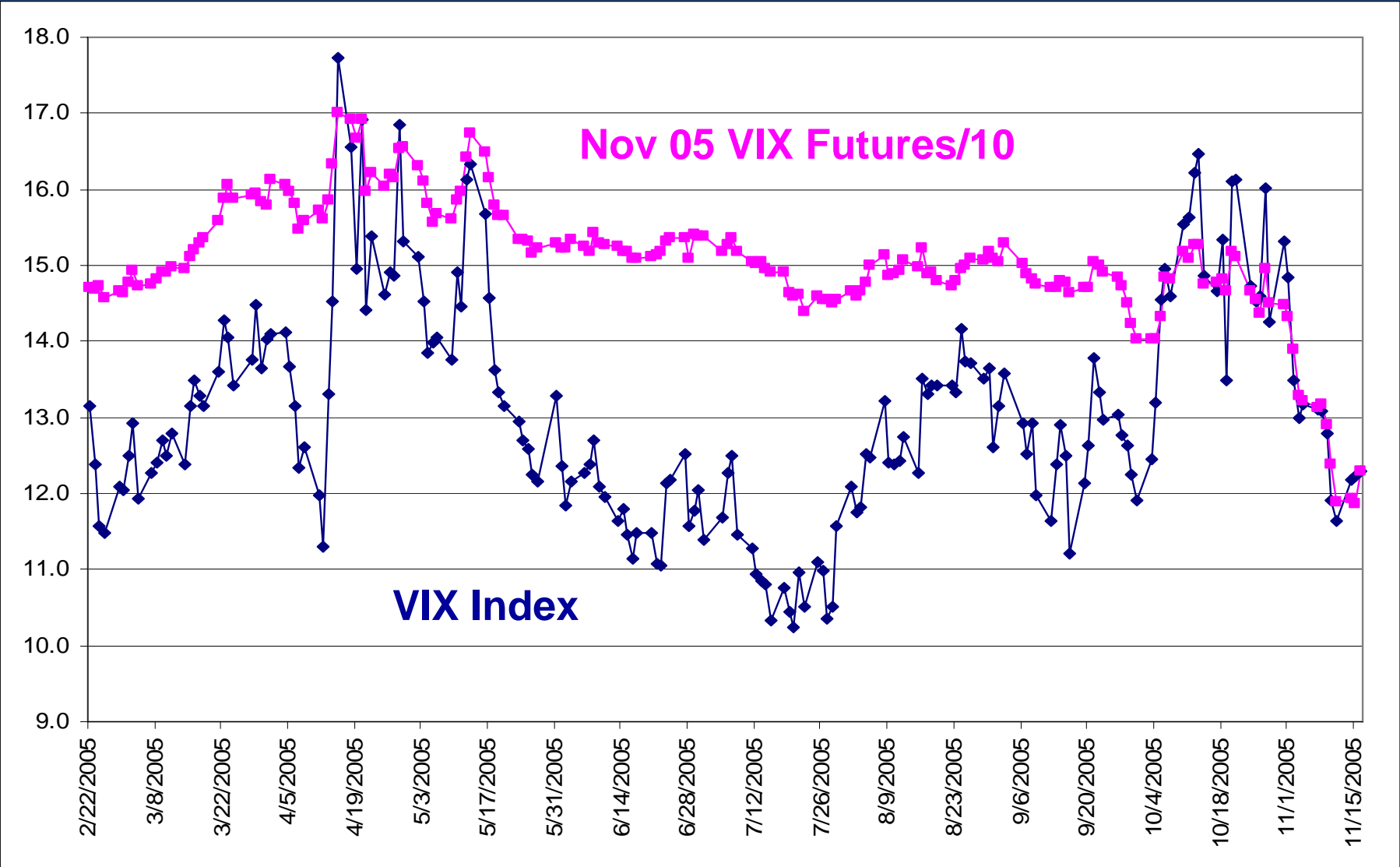
Initial Margin = \$ 2,250

Minimum Margin = \$ 1,800

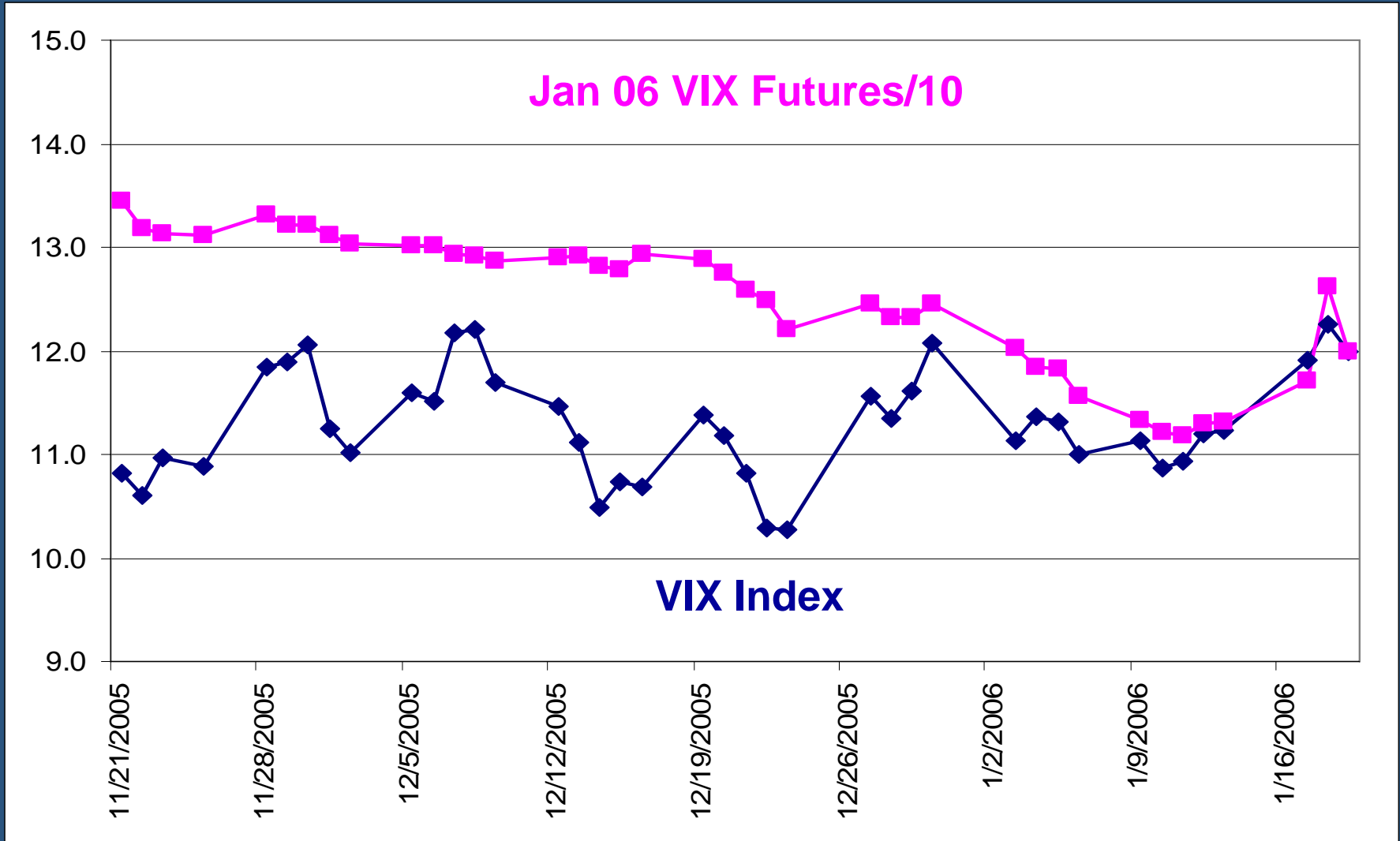
Buy 1 contract = \$ 2,250 initial
= \$ 1,800 maintenance

If your account falls *below* \$1,800, you must immediately close your position or deposit more money.

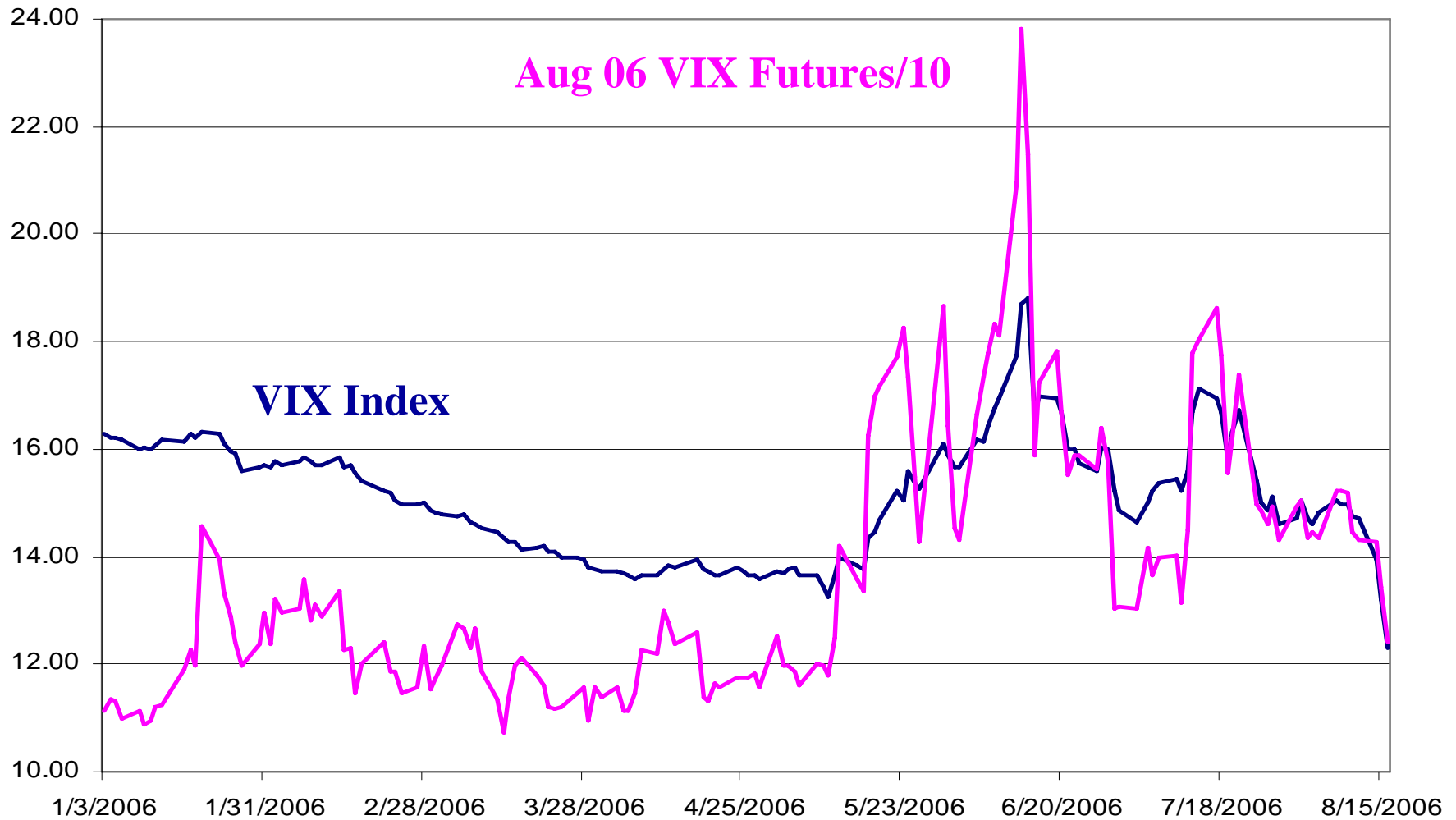
VIX compared to Nov VIX Futures



VIX compared to Jan VIX Futures



VIX compared to Aug VIX Futures



VIX compared to VIX Futures

<u>Date</u>	<u>VIX Index</u>	<u>VIX Futures/10</u>
4/12	11.3	15.6
4/14	14.5	16.3
4/15	17.7	17.0
4/21	14.4	16.0

VIX Futures – VIX Index

- What is the relationship?

VIX Futures – VIX Index

- VIX futures prices are based purely on expectations.
- The current futures price is the market's estimate of what the VIX Index will be at settlement.
- There is no cost-of-carry relationship.

Case Study #1

Date 5/10/05 (98 days to Aug expiration)

VIX Index	12.8
VIX AUG Futures/10	15.6

#1 – Your Forecast - 1

- Date 5/10 → 5/24
- VIX Index 12.8 → 20.0
- AUG Futures/10 15.6 → ???

#1 – Your Forecast - 1

- Date 5/10 → 5/24
- VIX Index 12.8 → 20.0
- AUG Futures/10 15.6 → **19.0**

Case Study #1 - Conclusions

▪ VIX Index	12.8	→	20.0
▪ Futures/10	15.6	→	19.0
	premium	→	discount

Case Study #2

Date **7/4/05** (43 days to Aug expiration)

VIX Index	11.6
VIX AUG Futures/10	14.1

#2 – Your Forecast

- Date 7/4 (43) → 8/4 (12)
- VIX Index 11.6 → 12.2
- AUG Futures/10 14.1 → ???

#2 – Your Forecast

- Date 7/4 (43) → 8/4 (12)
- VIX Index 11.6 → 12.2
- AUG Futures/10 14.1 → **13.6**

Case Study #2 - Conclusions

- Date 7/4 (43) 8/4 (12)
- VIX Index 11.6 → 12.2
- Futures/10 14.1 → 13.6
- Futures & Index converge at expiration

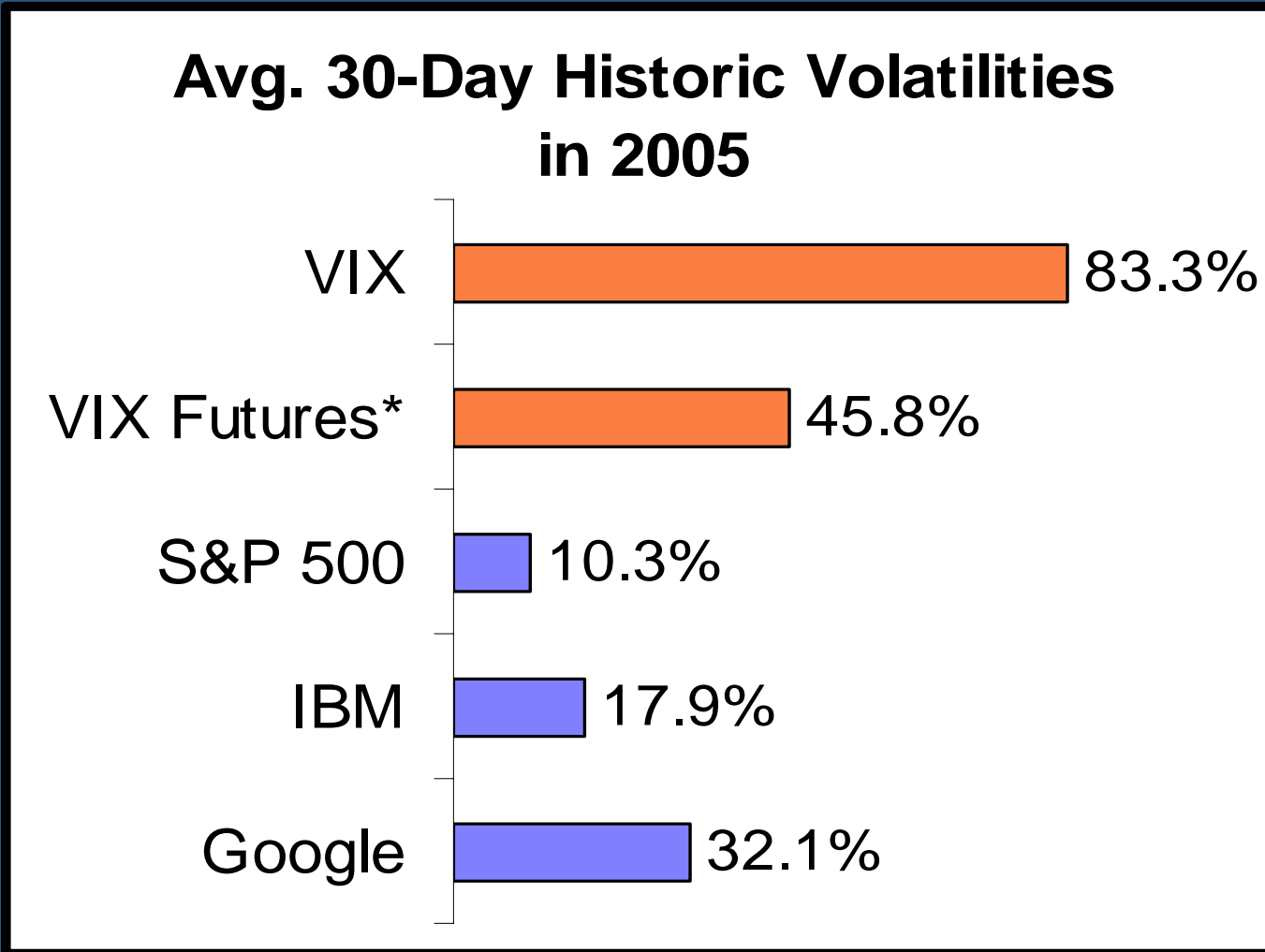
Summary - 1

- VIX Futures (ticker VX) is based on the popular CBOE Volatility Index
- Tick size = \$10 (150.0 – 150.1)
- Contract value with VIX at 15 = \$15,000
- Margin for 1 contract = \$2,250

Summary - 2

- VIX Futures prices are based on expectations, not cost of carry.
- VIX Futures prices can swing from a premium to a discount relative to VIX index.

High Volatility of Volatility



* Based on the near-term VIX futures prices **CFE**
CBOE FUTURES EXCHANGE

Thank You For Attending

- Questions
- Thank you for attending

For more information, please contact:

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