

[Interactive Brokers Webcast](#)

Calendar and Diagonal Spreads with Volatility ETPs

November 19, 2014
Presented by Russell Rhoads, CFA



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Volatility ETPs

Outline

- **Introduction / Review of ETPs**
- **VIX[®] Futures Price Behavior**
- **ETP Option Pricing**
- **Resources / Contact**

Volatility ETPs

Introduction

Three VIX ETPs with Weekly Options –

iPath[®] S&P 500 VIX Short-Term Futures[™] ETN (VXX)

ProShares[®] Ultra VIX Short-Term Futures ETF (UVXY)

ProShares[®] Short VIX Short-Term Futures ETF (SVXY)

Volatility ETPs

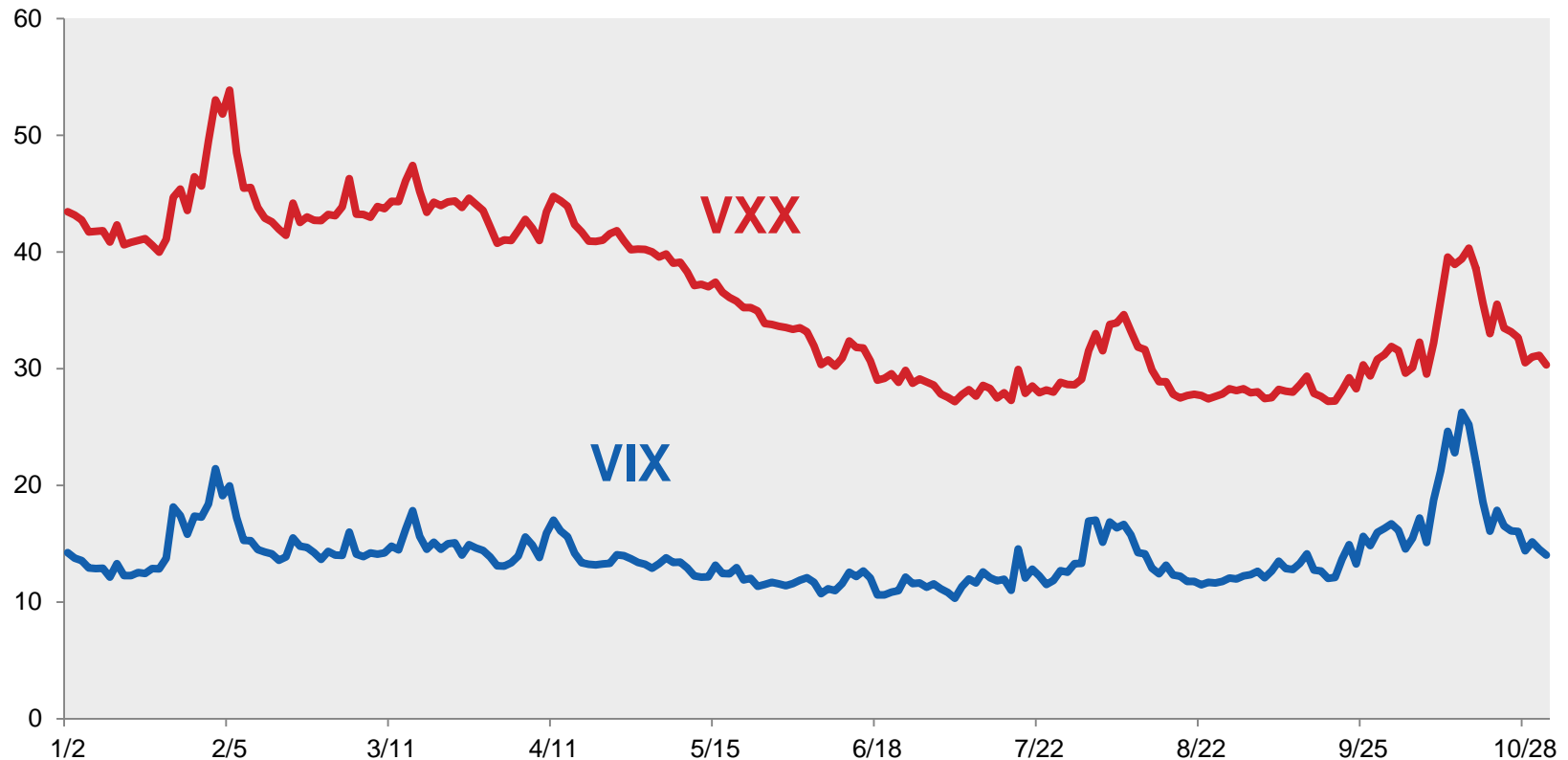
iPath S&P 500 VIX Short-Term Futures ETN (VXX)

- Introduced in late January 2009
- The fund is designed to match a consistent thirty day weighting in the front two month VIX futures contracts
- Each day the VXX portfolio is rolled which may result in a positive or negative roll yield effect on the value of the fund
- The dollar weighting of VIX futures in VXX may be found at the iPath website

Volatility ETPs

iPath S&P 500 VIX Short-Term Futures ETN (VXX)

2014 Price Action –

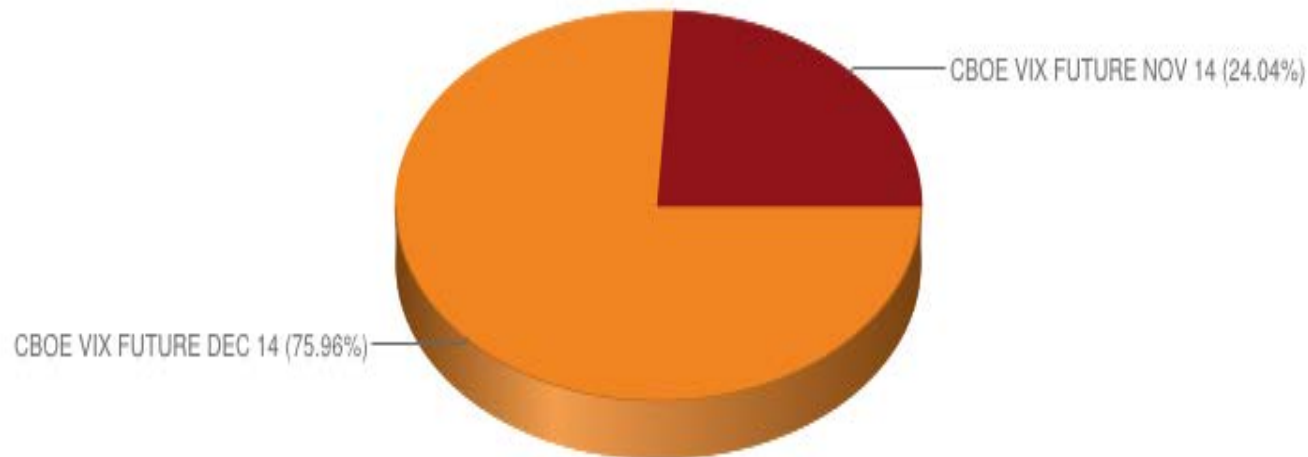


Source: Bloomberg

Volatility ETPs

iPath S&P 500 VIX Short-Term Futures ETN (VXX)

Daily Holdings 11/11/2014 –



75.96% December VIX Futures
24.04% November VIX Futures

Source: www.ipathetn.com

Volatility ETPs

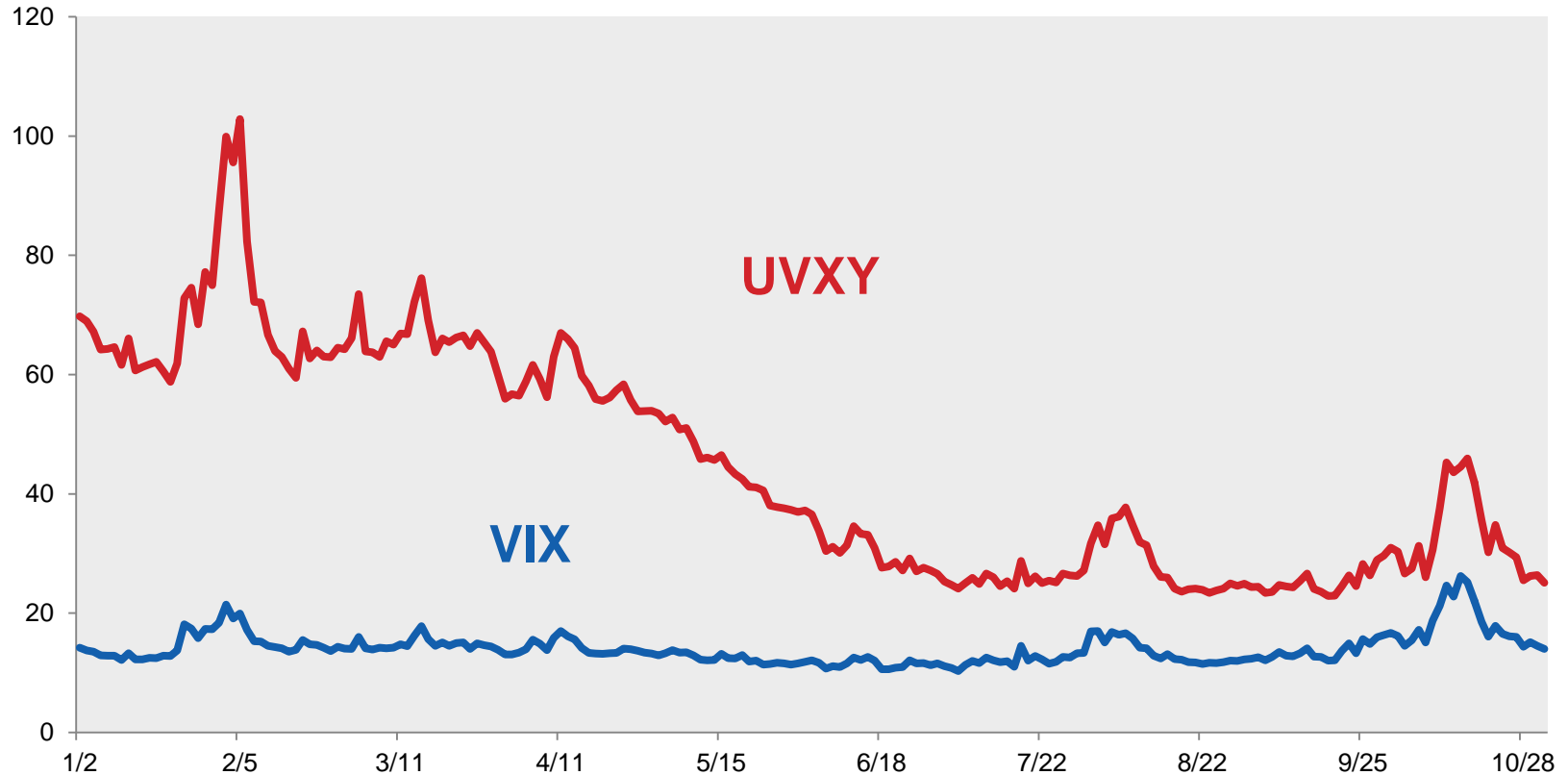
Ultra VIX Short-Term Futures ETF (UVXY)

- **UVXY is designed to return two times the daily performance of the S&P 500 VIX Short-Term Futures Index**
- **The roll yield that puts pressure on VXX can be more significant in the performance of this fund in low volatility environments**
- **When there is extra volatility in the market the ‘spikes’ in UVXY have been more accentuated than moves in VXX**

Volatility ETPs

Ultra VIX Short-Term Futures ETF (UVXY)

2014 Price Action –



Source: Bloomberg

Volatility ETPs

Ultra VIX Short-Term Futures ETF (UVXY)

Daily Holdings 11/11/2014 –

Description	Exposure Value (Notional + G/L)	Market Value (\$)	Shares/Contracts
CBOE VIX FUTURE 12/16/2014 (UXZ4)	562,176,450.00	-	37,857.00
CBOE VIX FUTURE 11/18/2014 (UXX4)	177,801,000.00	-	12,610.00
NET OTHER ASSETS / CASH	-	\$369,239,935.60	369,239,935.60

152% December VIX Futures
48% November VIX Futures

Source: www.proshares.com

Volatility ETPs

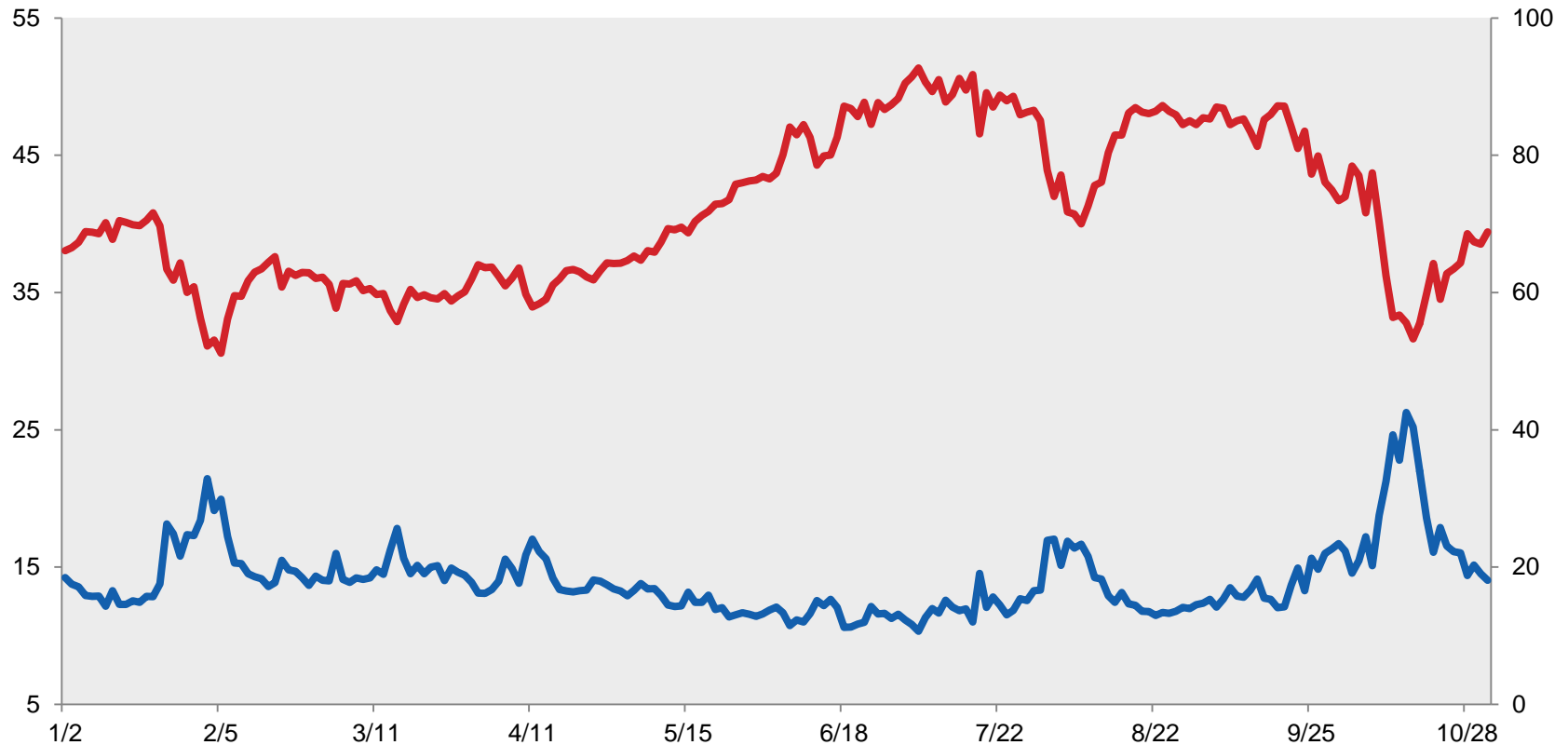
Short VIX Short-Term Futures ETF (SVXY)

- **SVXY is designed to return the inverse daily performance of the S&P 500 VIX Short-Term Futures Index**
- **Historically SVXY performance has benefitted from the negative roll yield associated with the index**
- **In times of higher volatility the fund has come under tremendous pressure as well**

Volatility ETPs

Short VIX Short-Term Futures ETF (SVXY)

2014 Price Action –



Source: Bloomberg

Volatility ETPs

Short VIX Short-Term Futures ETF (SVXY)

Daily Holdings – 11/11/2014 –

Description	Exposure Value (Notional + G/L)	Market Value (\$)	Shares/Contracts
CBOE VIX FUTURE 11/18/2014 (UXX4)	(128,521,500.00)	-	(9,115.00)
CBOE VIX FUTURE 12/16/2014 (UXZ4)	(405,523,800.00)	-	(27,308.00)
NET OTHER ASSETS / CASH	-	\$536,332,290.70	536,332,290.70

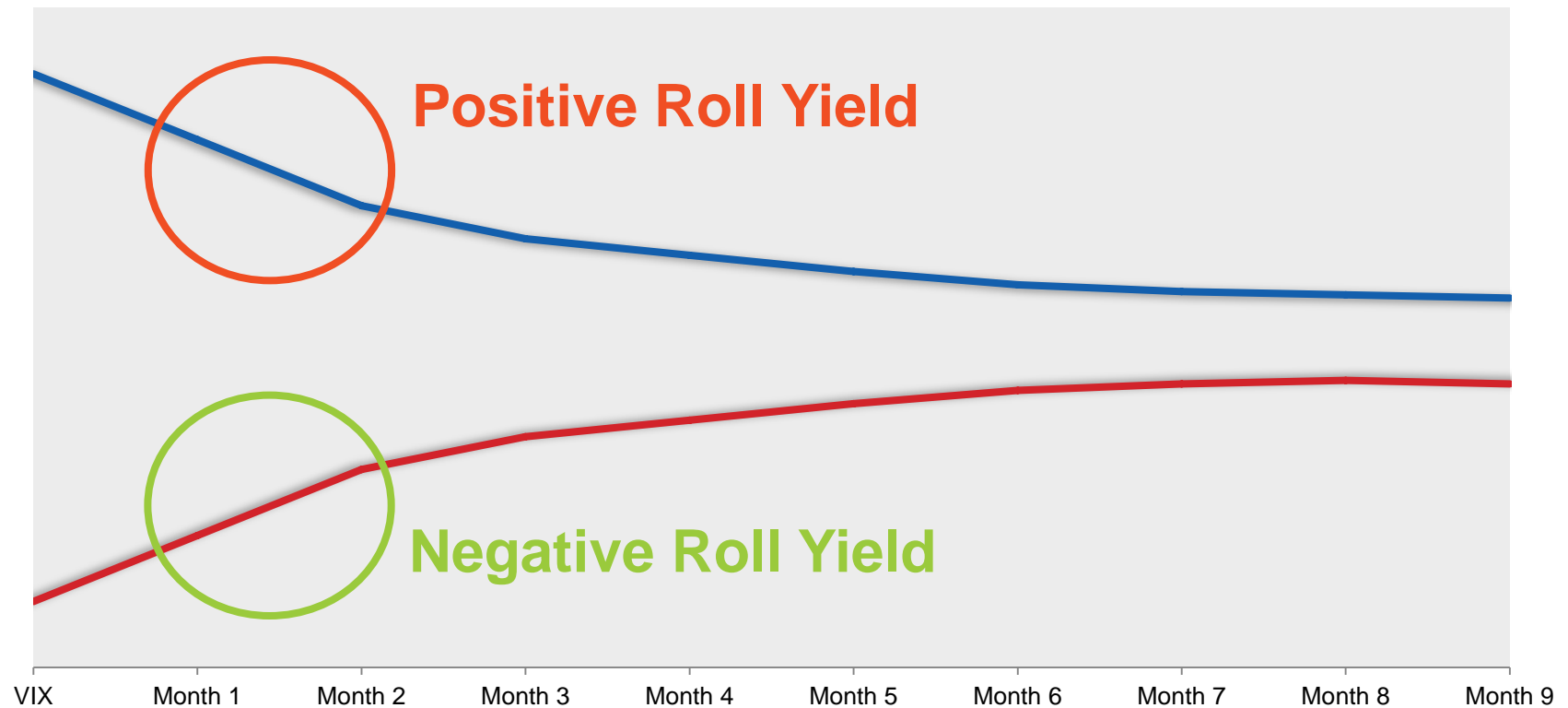
Short 76% December VIX Futures
Short 24% November VIX Futures

Source: www.proshares.com

VIX Futures Pricing

Contango / Backwardation

Generic Example –



VIX Futures Pricing

Roll Yield Impact

Annual Performance Analysis –

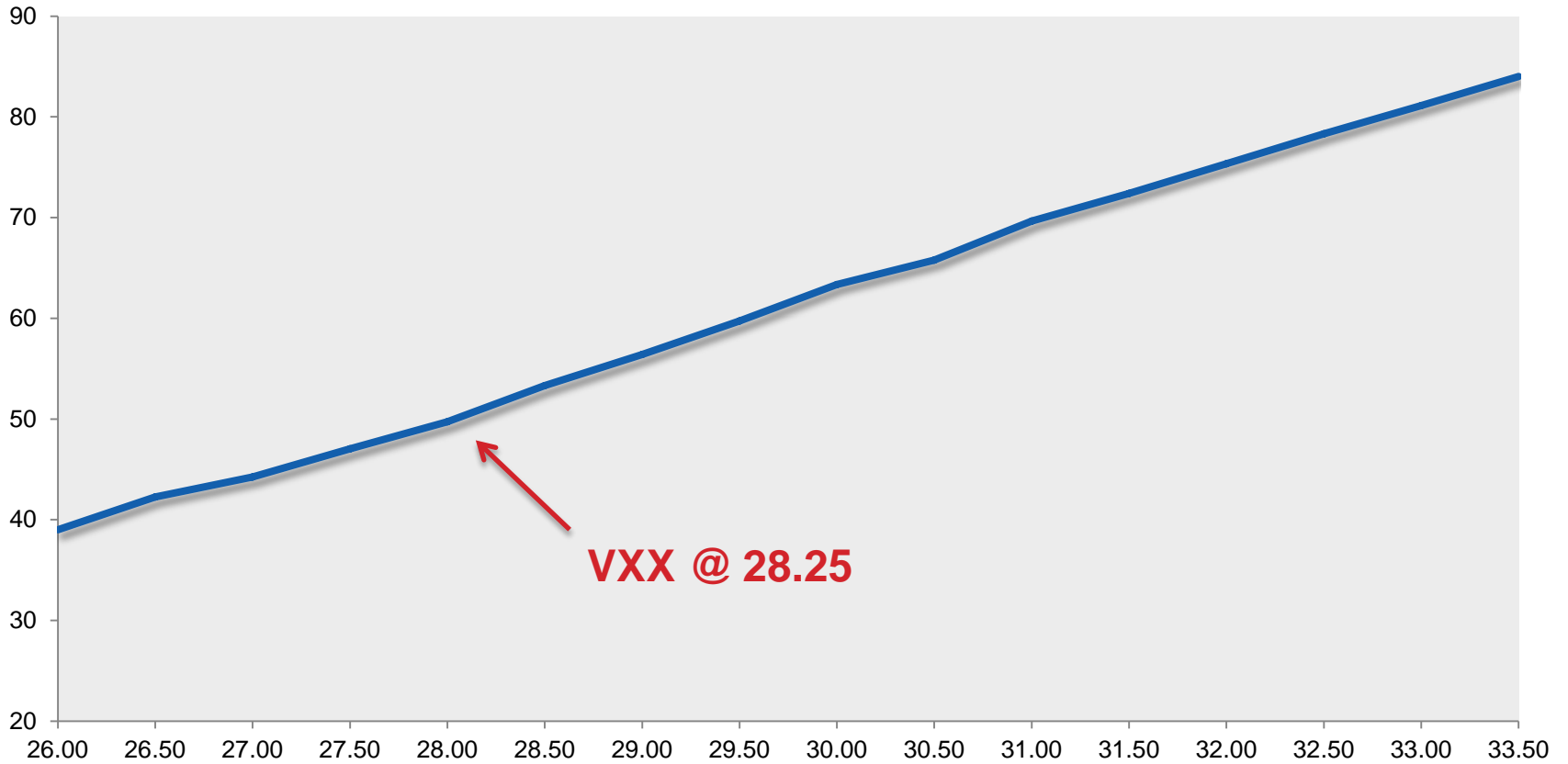
Year	VXX* Performance	UVXY* Performance	SVXY* Performance	VIX 1Mo – 2Mo Contango	VIX 1Mo – 2Mo Backwardation
2007	42.93%	28.50%	-51.07%	70.52%	29.48%
2008	109.71%	177.91%	-69.31%	51.38%	48.62%
2009	-64.90%	-90.69%	115.65%	72.22%	26.98%
2010	-71.99%	-94.59%	144.49%	93.25%	6.35%
2011	-3.72%	-48.87%	-45.47%	68.25%	30.95%
2012	-77.92%	-97.25%	162.35%	99.20%	0.80%
2013	-65.72%	-91.56%	107.98%	96.03%	3.57%
2014	-26.15%	-54.75%	11.95%	89.89%	6.91%

Source: Bloomberg

ETP Option Pricing

VXX Term Structure

9 Day Options

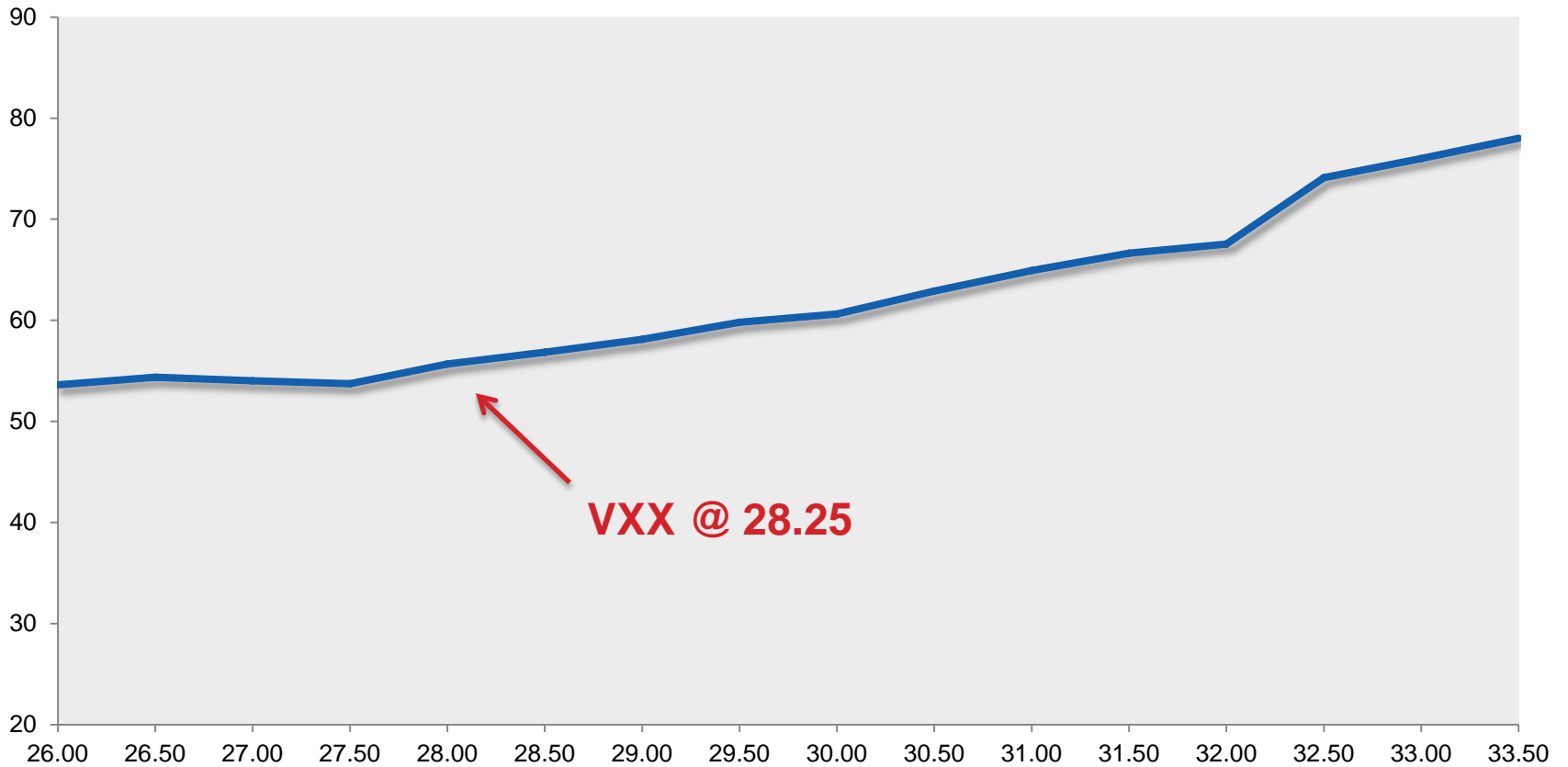


Source: Bloomberg

ETP Option Pricing

VXX Term Structure

30 Day Options



Source: Bloomberg

ETP Option Pricing

VXX Diagonal Trade

- VXX at 28.25
- Want to be prepared for a spike in volatility over the next nine days
- Hope to limit the losses if VIX stays low

Buy 1 30 Day 26 Call @ 2.90

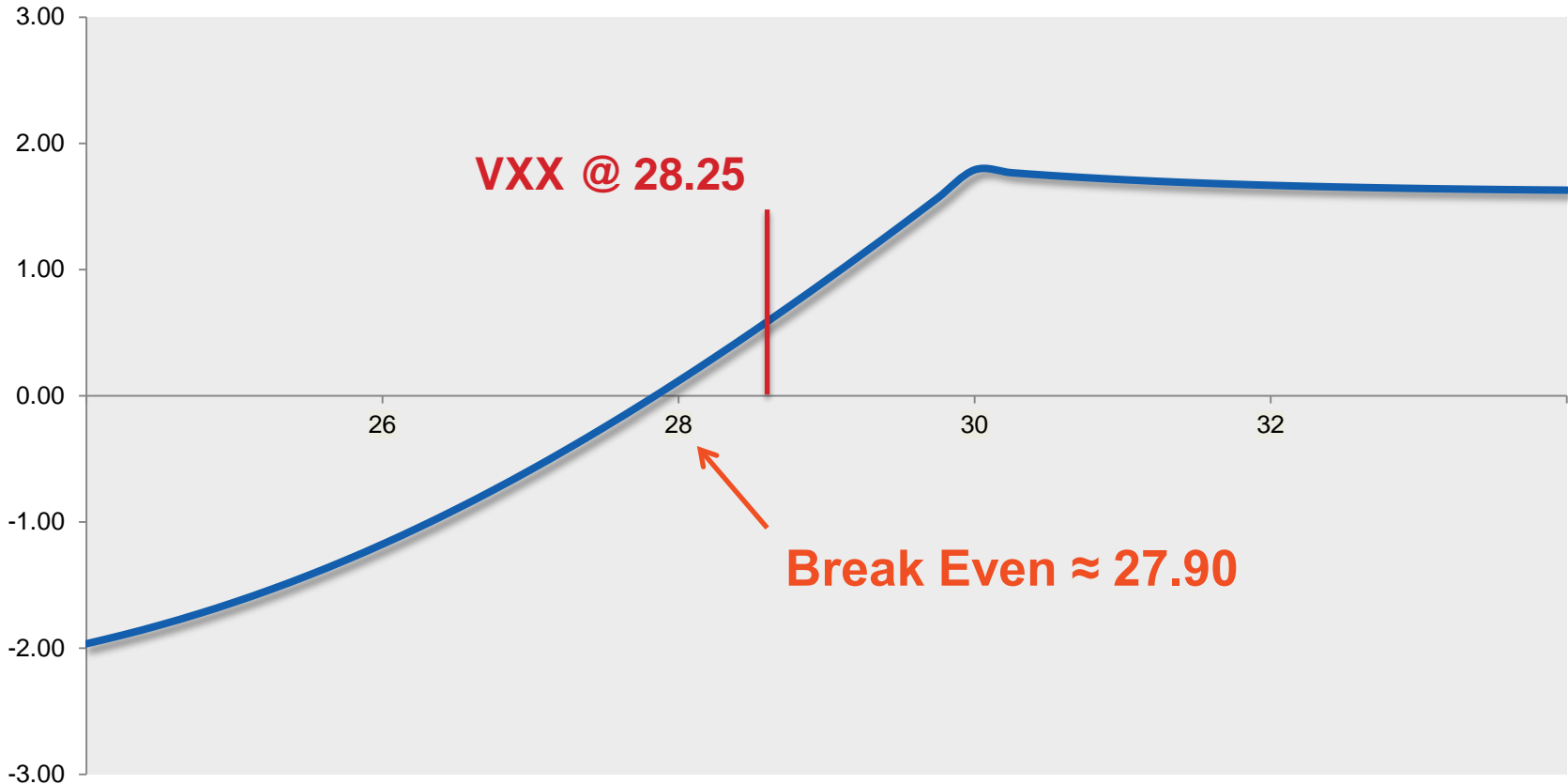
Sell 1 9 Day 30 Call @ 0.50

Net Cost = 2.40

ETP Option Pricing

VXX Diagonal Trade

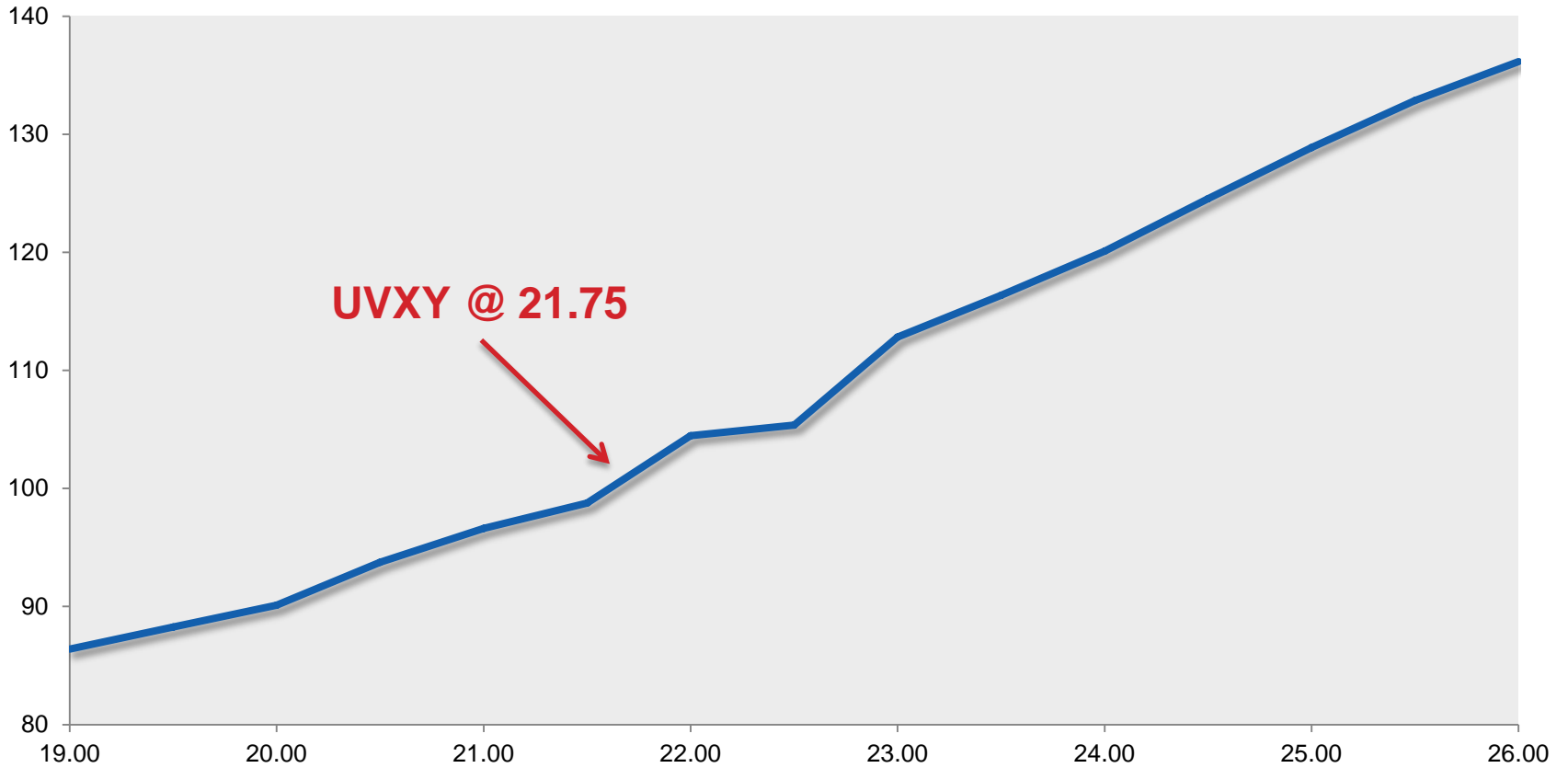
9 Day Expiration Payoff Diagram –



ETP Option Pricing

UVXY Term Structure

9 Day Options

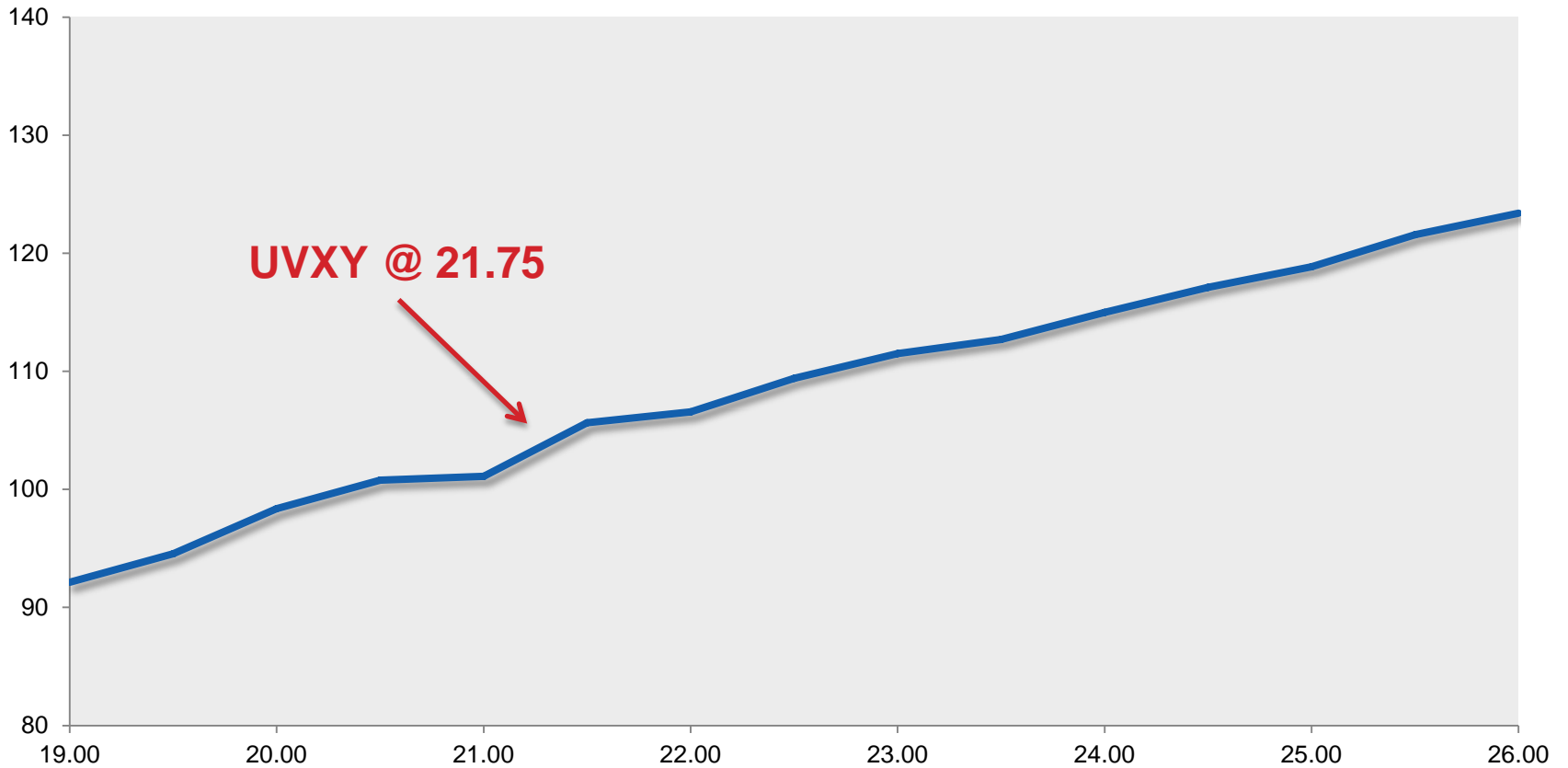


Source: Bloomberg

ETP Option Pricing

UVXY Term Structure

30 Day Options



Source: Bloomberg

ETP Option Pricing

UVXY Calendar Spread

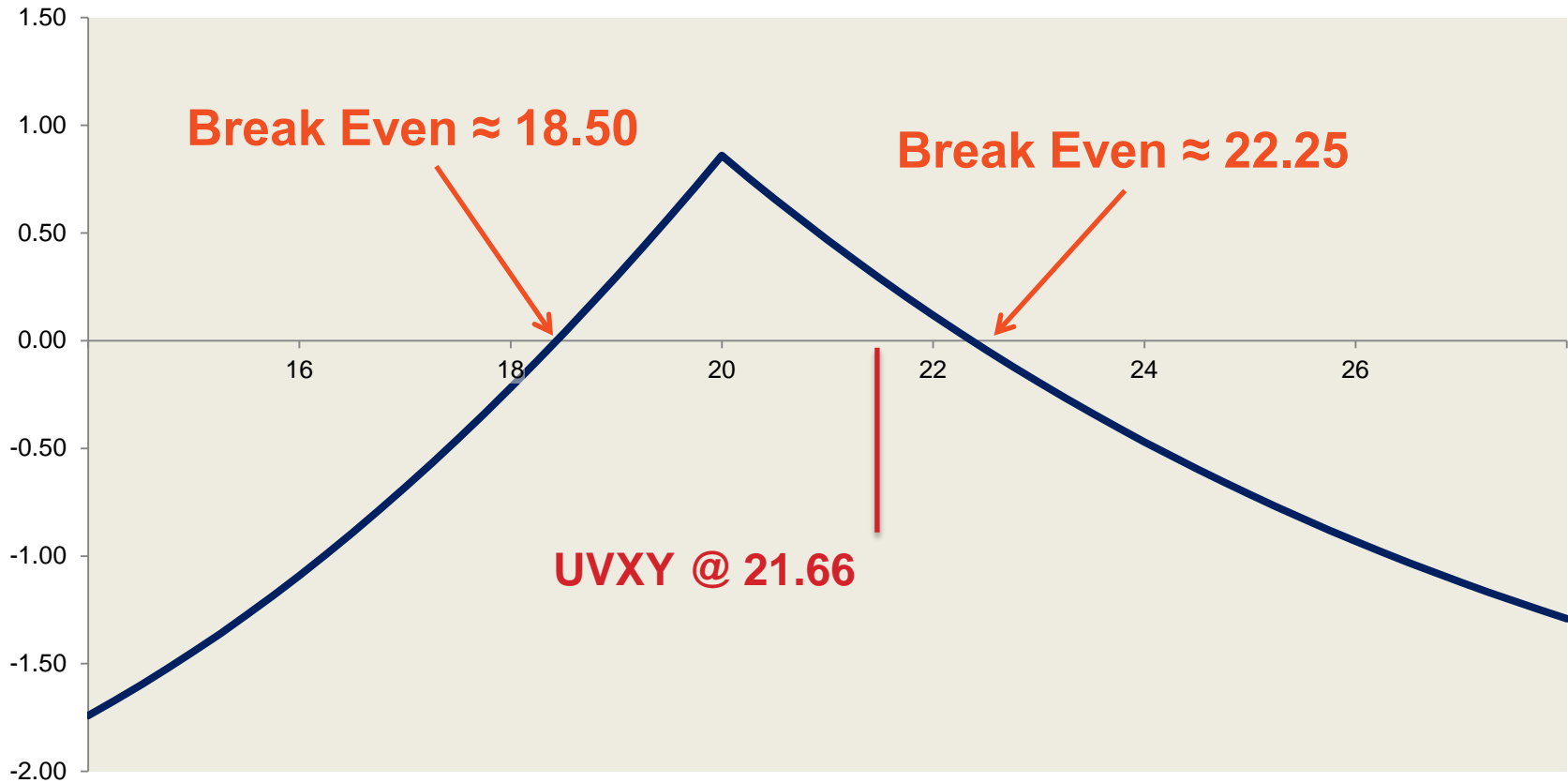
- **UVXY at 21.66 – expect VIX to be fairly quiet for the next week and a half**
- **Neutral VIX means UVXY would be expected to drift lower**

Sell 1 UVXY 9 Day 20 Call @ 2.15
Buy 1 UVXY 65 Day 20 Call @ 4.70
Net Cost = 2.55

ETP Option Pricing

UVXY Calendar Spread

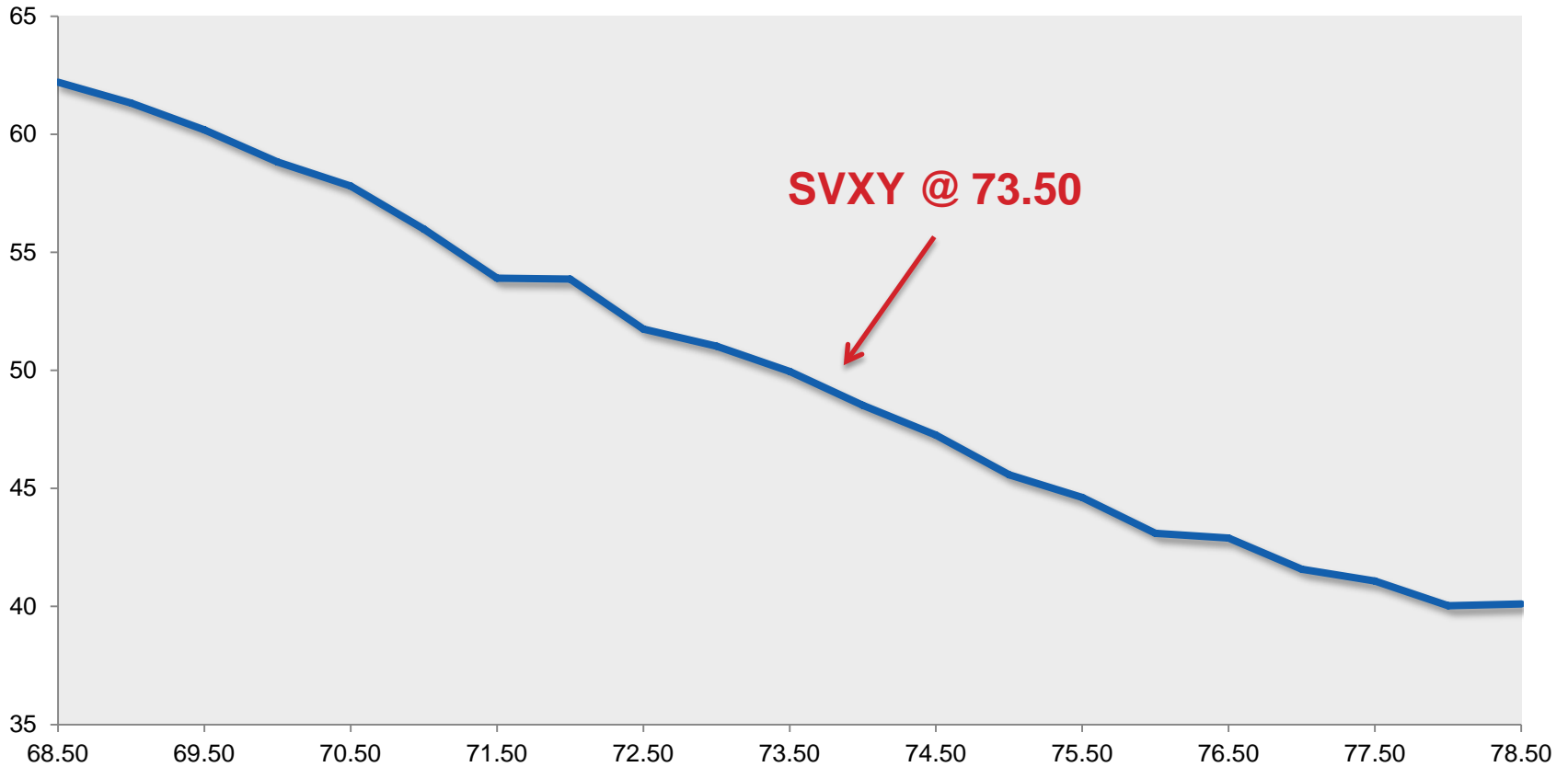
9 Day Expiration Payoff Diagram –



ETP Option Pricing

SVXY Term Structure

9 Day Options

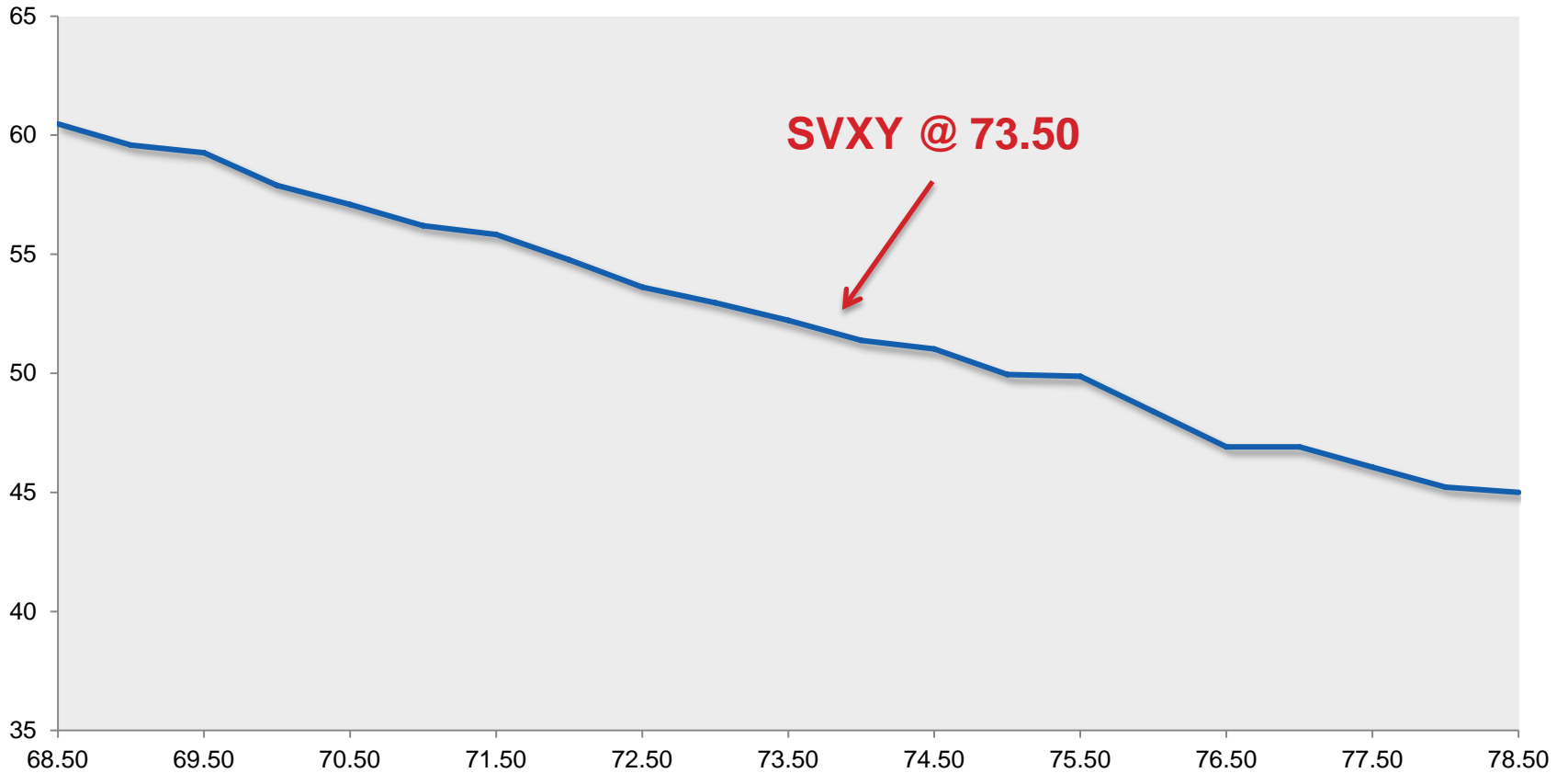


Source: Bloomberg

ETP Option Pricing

SVXY Term Structure

30 Day Options



Source: Bloomberg

ETP Option Pricing

SVXY Trading

Recent SVXY Price Action –



ETP Option Pricing

SVXY Trading

- **October 15 – SVXY down over 30% from recent highs trading around 55.00**
- **Consider buying a longer dated call option**
- **When volatility calms down opportunistically sell shorter dated calls against the long position**

October 15

Buy 1 SVXY Mar 50 Call at 13.00

Volatility ETPs

Summary

- **Each of the three volatility oriented ETPs with short dated options available for trading have their own unique price behavior and option price behavior**
- **Due to historical periods of extreme moves, the options may appear to be ‘expensive’**
- **Calendar and diagonal spreads are methods for trading a particular outlook for market volatility**

Volatility ETPs

Resources / Contact

Resources

www.cboe.com/weeklys

www.ipathetn.com

www.proshares.com

www.cboe.com/volatility

Contact

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