

# Short Volatility Trading with Volatility Derivatives



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# Short Volatility Trading

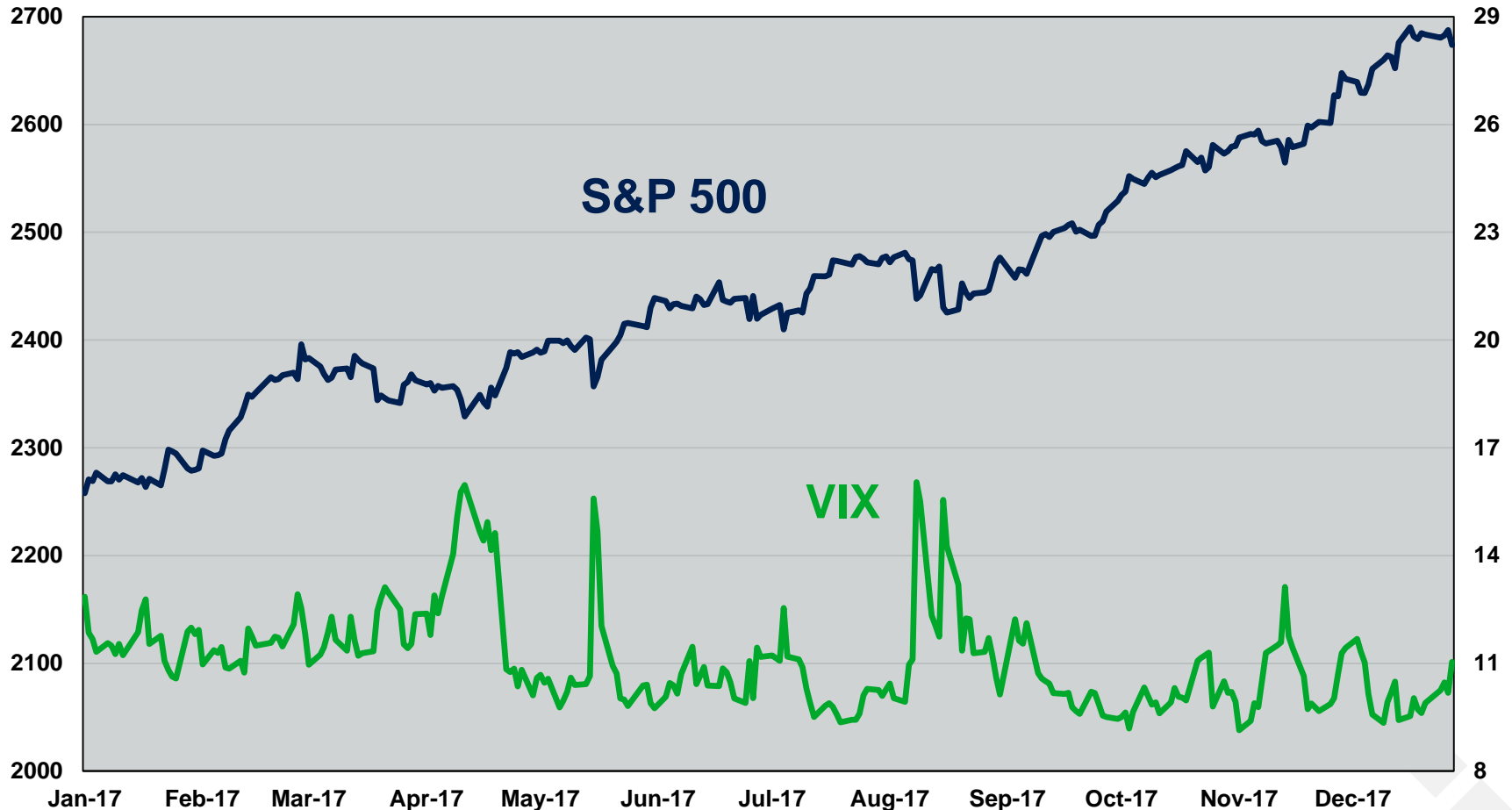
- ❖ Cboe Volatility Index Primer
- ❖ VIX Futures
- ❖ VIX Options
- ❖ Summary / Contact



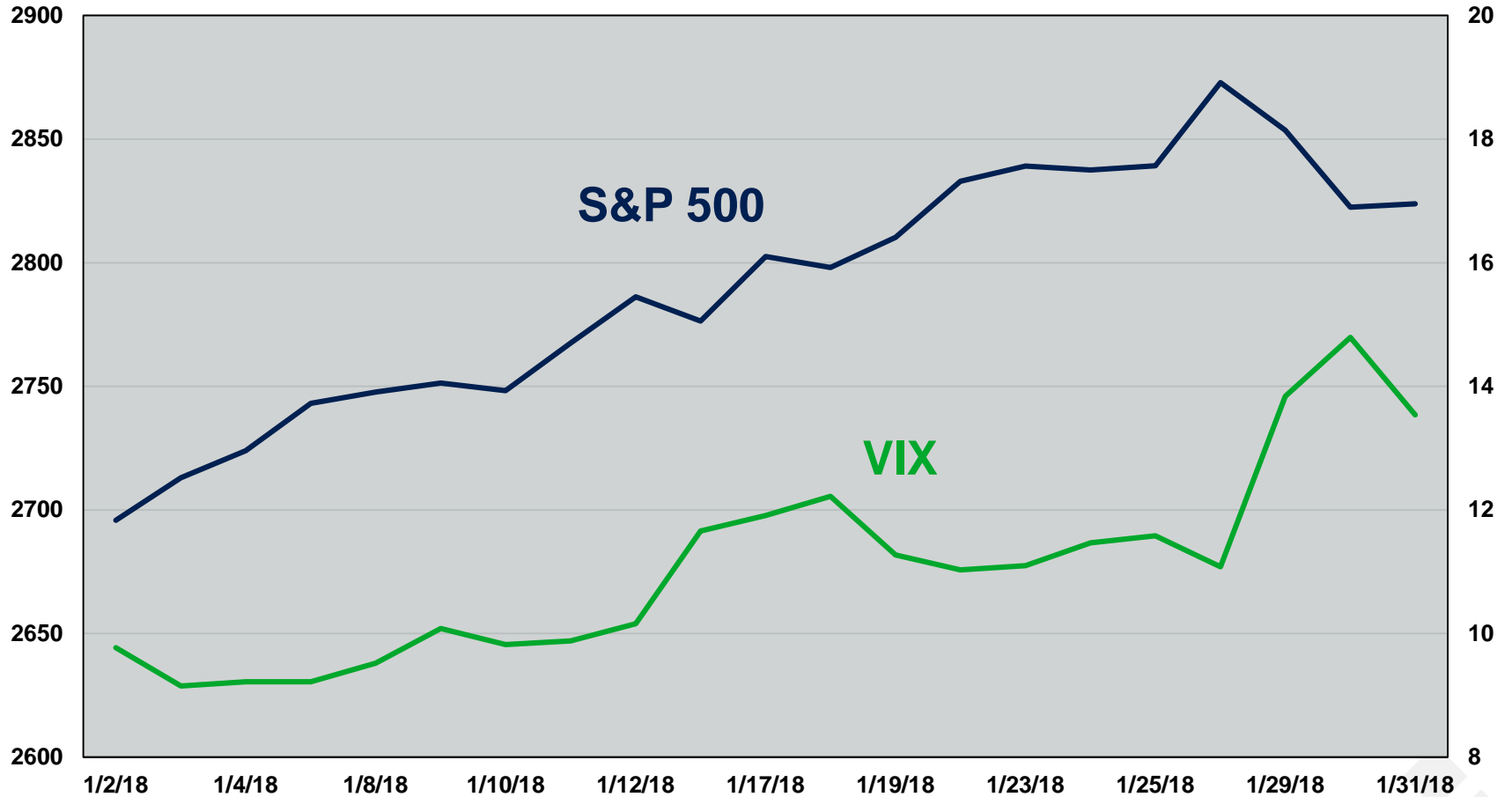
- ❖ The Cboe Volatility Index® or the VIX® Index is a consistent 30 day measure of implied volatility as indicated by S&P 500® Index option prices
- ❖ The VIX Methodology is considered the industry standard for a consistent measure of implied volatility
- ❖ Historically the VIX Index has displayed an inverse relationship with the S&P 500 which resulted in it being referred to as “the fear index”



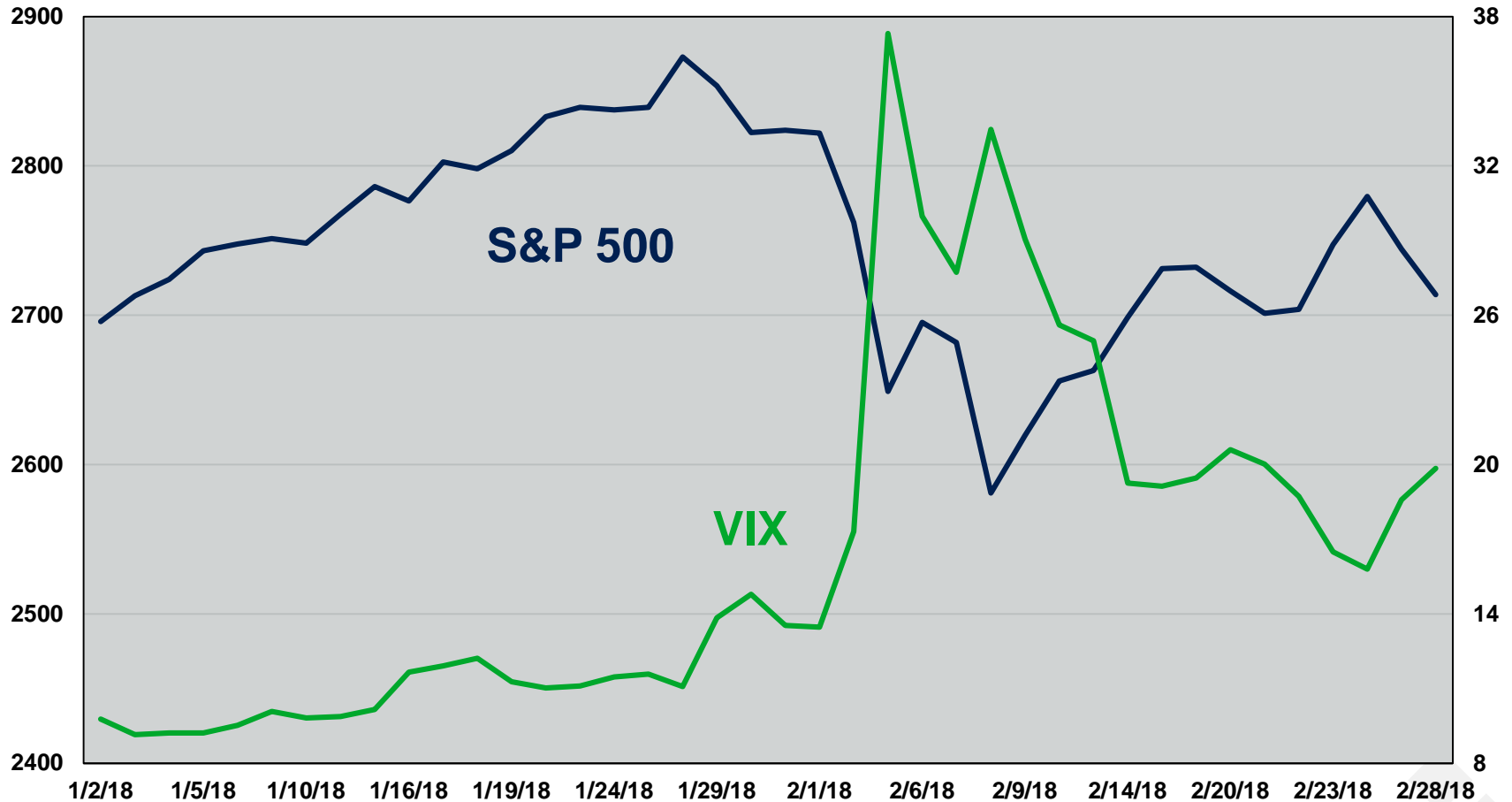
## VIX vs. S&P 500 Daily 2017



## VIX vs. SPX January 2018



## VIX vs. SPX 2018 January and February 2018



## Contract Specifications

- ❖ The value of a VIX futures contracts is \$1000 times the quoted value
- ❖ Minimum ticks are 0.05 (\$50) for single contract trades and 0.01 (\$10) for calendar spreads
- ❖ There are both standard and weekly contracts available for trading – currently the majority of volume is concentrated in the standard expirations
- ❖ Trading is available almost 24 / 5 with small breaks after the end of regular US trading hours
- ❖ Expirations typically occur on Wednesdays and the futures are AM settled



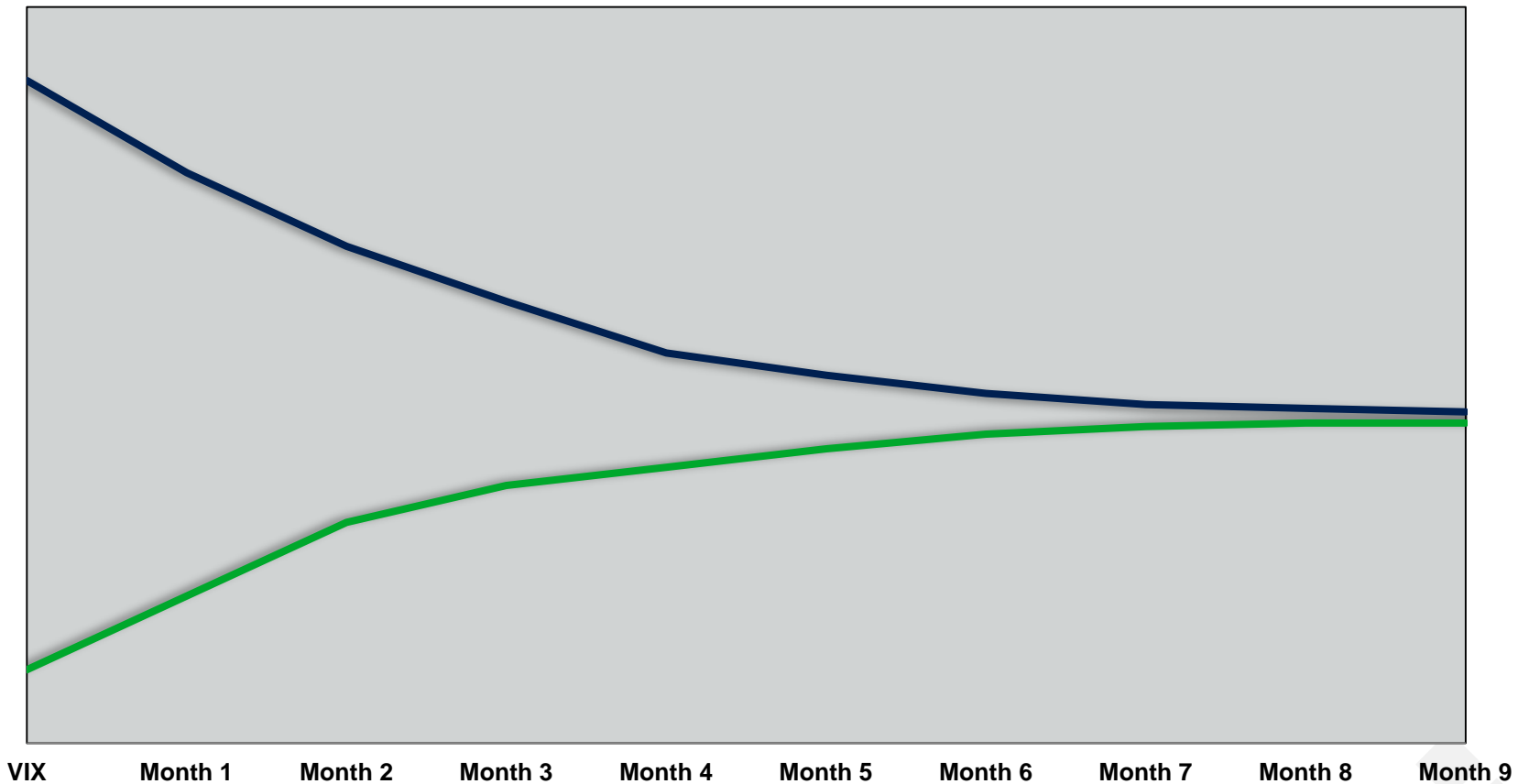


## Pricing

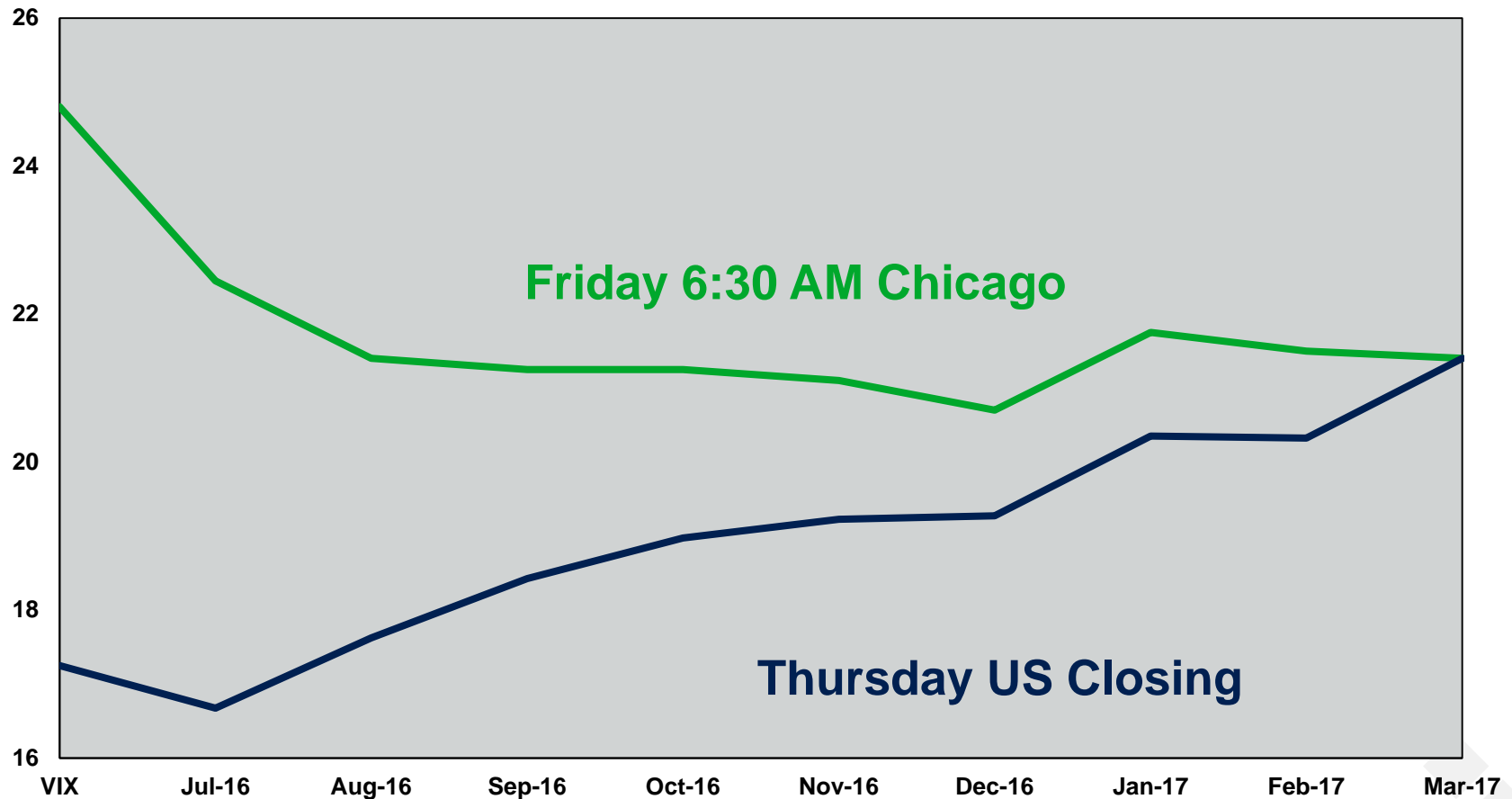
- ❖ Unlike many financial futures markets there is not a 'fair value' relationship between VIX and the associated futures contracts
- ❖ At times VIX futures are priced at a premium to spot VIX and at times VIX futures will be priced at a discount
- ❖ The pricing relationship is often referred to as being in contango or backwardation



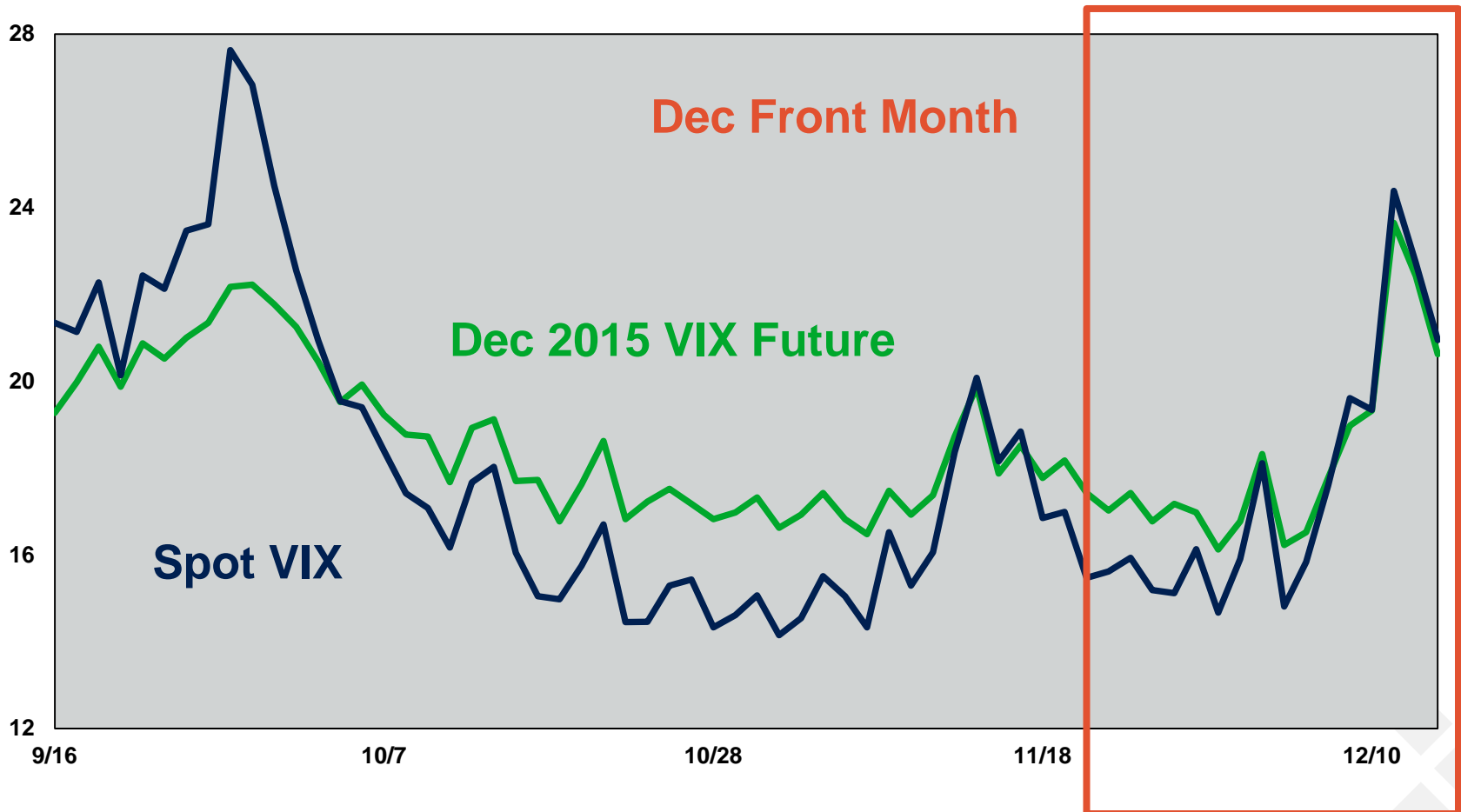
## Contango / Backwardation



## Backwardation – Impact of Brexit Referendum



## Standard Futures Daily Pricing



## Trading Example –

**August 14, 2014**

**VIX @ 12.42**

**Sell 1 August VIX @ 12.95**

**August 19, 2014**

**VIX @ 12.21**

**Buy 1 August VIX @ 12.20**

**Profit = 0.75**



## Trading Example –

**August 14, 2014**

**VIX @ 12.42**

**Sell 1 August VIX @ 12.95**

**Buy 1 September VIX @ 13.90**

**August 19, 2014**

**Buy 1 August VIX @ 12.20 (+0.75)**

**Sell 1 September VIX @ 13.50 (-0.40)**

**Profit = +0.35**



## Trading Example –

**January 10, 2018**

**VIX @ 9.82**

**Sell 1 January VIX @ 10.55**

**January 16, 2018**

**VIX @ 11.66**

**Buy 1 January VIX @ 11.75**

**Loss = -1.20**



## Trading Example –

**January 10, 2018**

**VIX @ 9.82**

**Sell 1 January VIX @ 10.55**

**Buy 1 February VIX @ 11.55**

**January 16, 2018**

**VIX @ 11.66**

**Buy 1 January VIX @ 11.75**

**Sell 1 February VIX @ 12.10**

**Loss = -0.65**





- ❖ VIX Index options are cash settled contracts that share an expiration date with a VIX Future
- ❖ Traders are better served using VIX Futures as the best underlying pricing vehicle for valuing VIX Options
- ❖ This means that VIX Option positions are best priced off futures but settle in the spot index
- ❖ The multiplier for VIX Options is \$100 and trading is available during both European and US market hours



Friday August 12, 2016 – **VIX at 11.50** / **Sep VIX Futures at 15.00**

Call Bid	Call Ask	Strike	Put Bid	Put Ask
4.80	5.10	10	0.00	0.05
3.90	4.10	11	0.00	0.05
3.10	3.30	12	0.15	0.20
2.40	2.55	13	0.45	0.55
1.90	2.05	14	1.00	1.05
1.55	1.65	15	1.60	1.70
1.35	1.45	16	2.35	2.45
1.10	1.25	17	3.10	3.30



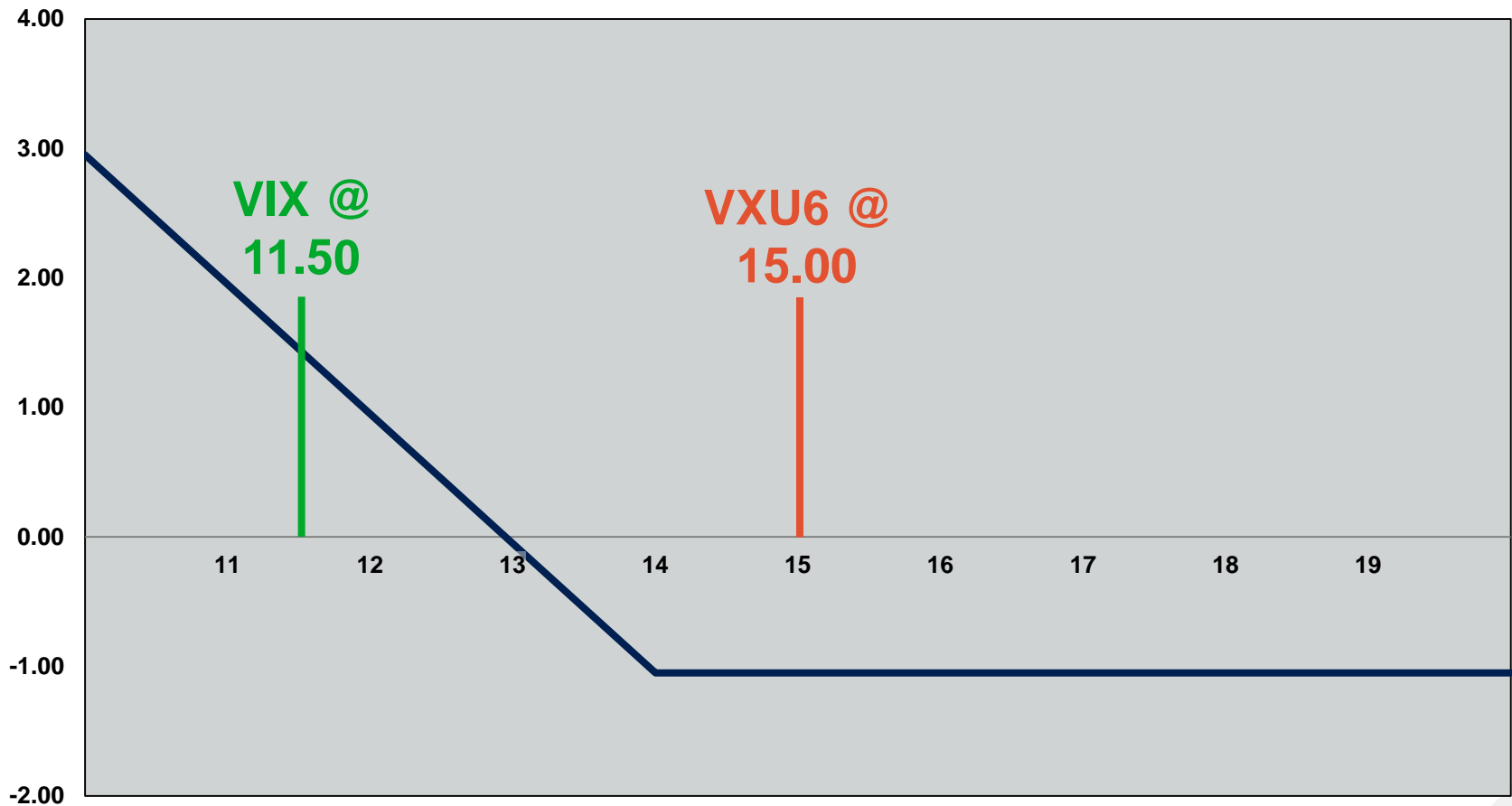
**VIX at 11.50 / September VIX at 15.00**

**Believe VIX Will Remain Low  
Considering Buying a VIX Put**

<b>Put Strike</b>	<b>Ask Price</b>	<b>Break Even</b>	<b>P/L VIX @ 11.50</b>
<b>12</b>	<b>0.20</b>	<b>11.80</b>	<b>0.30</b>
<b>13</b>	<b>0.55</b>	<b>12.45</b>	<b>0.95</b>
<b>14</b>	<b>1.05</b>	<b>12.95</b>	<b>1.45</b>
<b>15</b>	<b>1.70</b>	<b>13.30</b>	<b>1.80</b>
<b>16</b>	<b>2.45</b>	<b>13.55</b>	<b>2.05</b>
<b>17</b>	<b>3.30</b>	<b>13.70</b>	<b>2.20</b>



## Buy 1 VIX Sep 14 Put at 1.05



## Bear Call Spread #1

**March 23, 2016**

**VIX @ 14.75**

**May VIX @ 19.05**

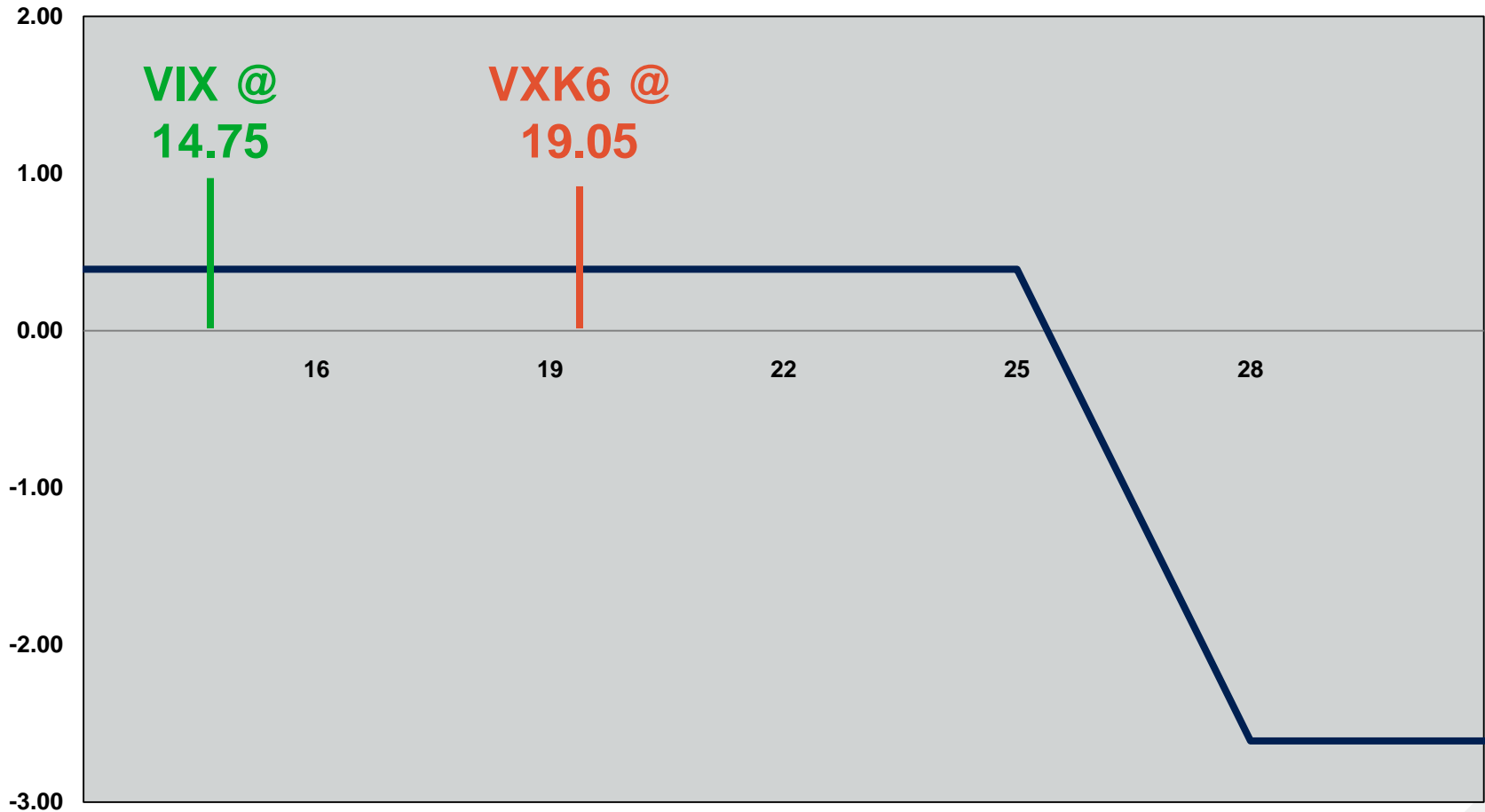
**Sell 1 May VIX 25 Call at 1.25**

**Buy 1 VIX May 28 Call at 0.85**

**Net Credit = 0.40**



## Bear Call Spread #1



## Bear Call Spread #2

**March 23, 2016**

**VIX @ 14.75**

**May VIX @ 19.05**

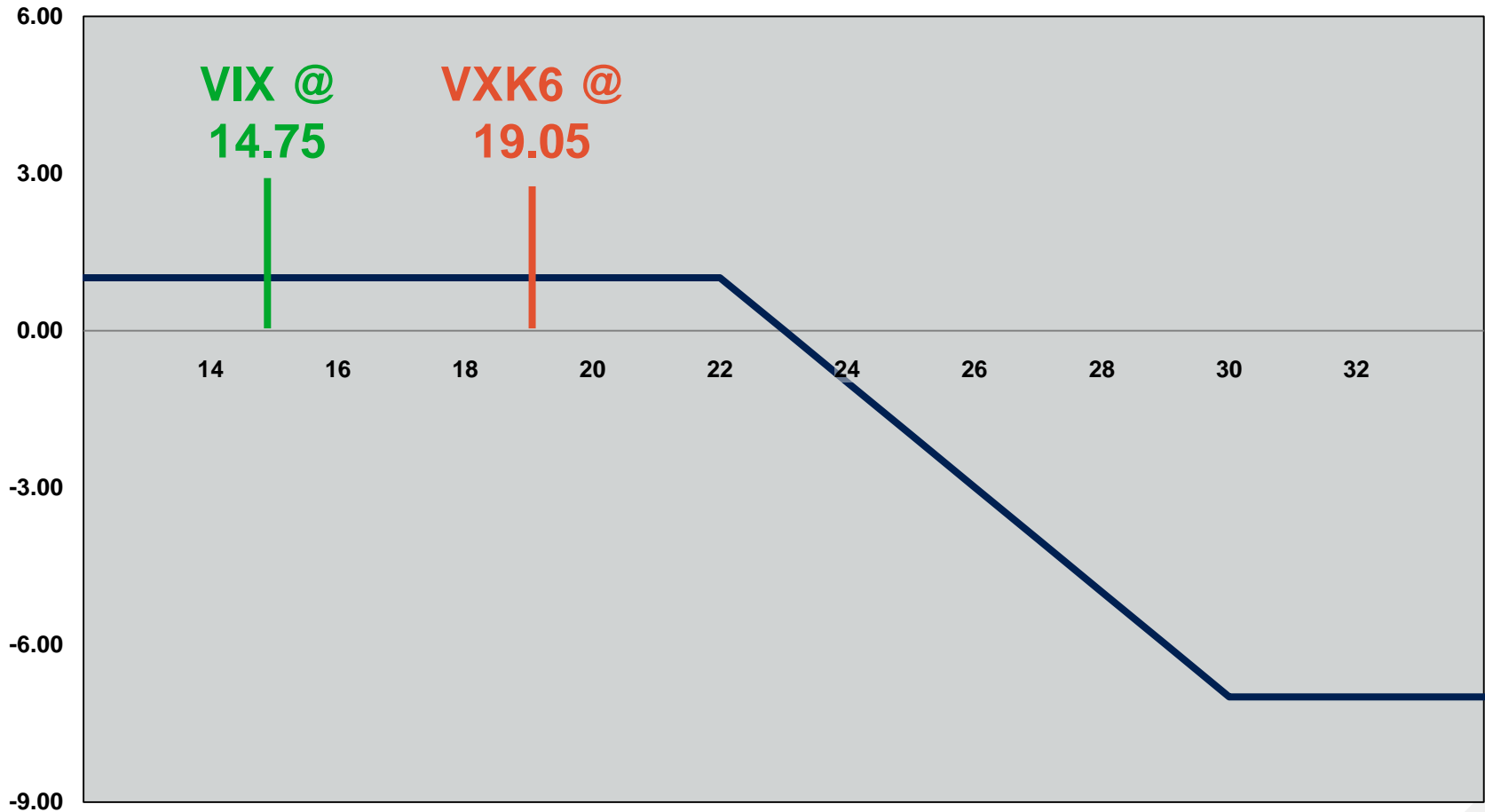
**Sell 1 May VIX 22 Call at 1.70**

**Buy 1 VIX May 30 Call at 0.70**

**Net Credit = 1.00**



## Bear Call Spread #2





- ❖ Both VIX futures and options offer opportunities to short market volatility
- ❖ Recent market action reminds us to have risk controls in place when taking a short volatility position



## Links

[www.Cboe.com/vix](http://www.Cboe.com/vix)

[www.cfe.Cboe.com](http://www.cfe.Cboe.com)

[www.Cboe.com/blogs](http://www.Cboe.com/blogs)

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