



**CBOE®**  
CHICAGO BOARD OPTIONS EXCHANGE

# VIX® Option Strategies

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## VIX Options

- Contract Specs
- Unique Characteristics

## VIX Pricing

## Vertical Spread

- Bullish
- Bearish

## Iron Condor

## Calendar Spread

## Summary / Q&A

- Introduced in 2006
- Caught on very quickly as a method of trading volatility
- Currently second most actively traded index option series at the CBOE
- Have growing institutional following as hedging vehicle

## Characteristics

- European Style
- Wednesday Settlement
- Unusual Pricing
  
- Opening Price Quotation

## European Style –

European options are only allowed to be exercised on expiration.

VIX options are cash settled at expiration.

## Wednesday Settlement –

VIX options expire on the Wednesday 30 days before standard equity option expiration.

## Opening Price Quotation –

VIX Options are settled using the Special Opening Quotation on the morning following the last trading day for those options.



## Unusual Pricing –

It is not uncommon for VIX options to appear to be cheap or expensive when using the VIX Index as the underlying.

When pricing VIX options, many traders look at the price of the VIX futures.

## Unusual Pricing –

VIX Index @ 32.00

VIX August 30.00 Call @ 1.25

VIX August Future @ 30.50

## Unusual Pricing –

VIX Index @ 27.50

VIX July 30.00 Put @ 1.50

VIX July Future @ 29.00

- VIX Option prices are based on the corresponding futures
- VIX Futures contracts can trade at a premium or discount to the index and each other

## VIX Futures at a Premium to Index

	<b>First Month &gt; Index</b>	<b>Second Month &gt; Index</b>	<b>Third Month &gt; Index</b>	<b>Fourth Month &gt; Index</b>
2007	65.74%	70.92%	70.92%	69.32%
2008	56.13%	55.34%	51.38%	48.22%
2009	79.37%	79.37%	72.62%	70.63%
2010*	77.25%	82.63%	86.23%	86.23%
<b>Total</b>	<b>68.91%</b>	<b>71.07%</b>	<b>68.80%</b>	<b>66.96%</b>

## Quick Review –

- Vertical Spread – bullish or bearish
- Defined risk when trade initiated
- Involves long and short position in options that are the same type and expiration
- Options have different strike prices

Long 1 Dec XYZ 50 Call

Short 1 Dec XYZ 55 Call

## Bear Spread w/ VIX Options

VIX Index = 23.19

October VIX Future = 29.15

VIX Oct 25 Call @ 5.20

VIX Oct 30 Call @ 2.90

Sell 1 VIX Oct 25 Call @ 5.20

Buy 1 VIX Oct 30 Call @ 2.90

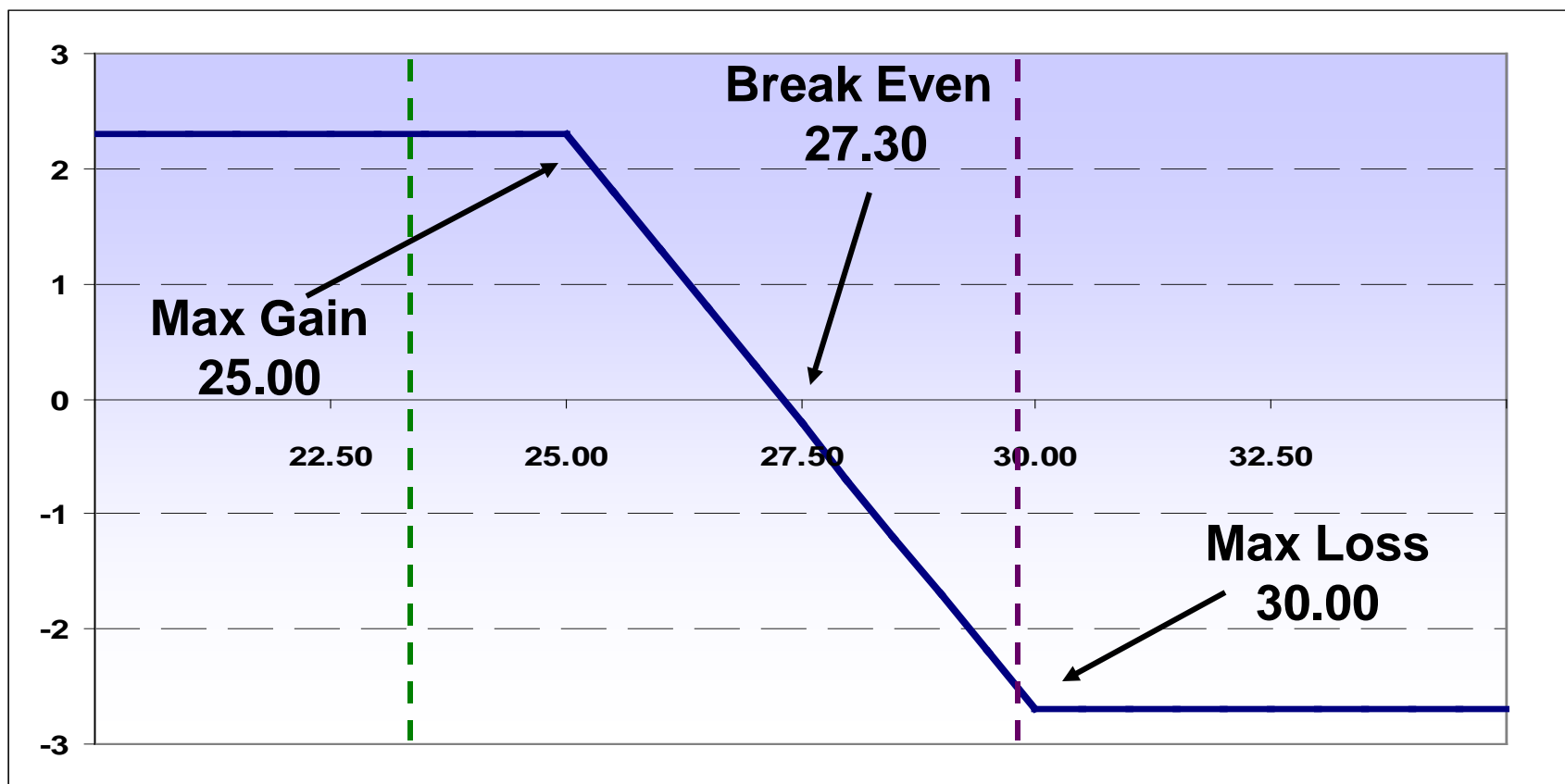
Net Credit = 2.30

## Payoff at October VIX Settlement -

VIX October Settlement	Oct 25 Call	Oct 30 Call	Credit	Profit / Loss
20.00	0.00	0.00	2.30	2.30
25.00	0.00	0.00	2.30	2.30
30.00	(5.00)	0.00	2.30	(2.70)
35.00	(10.00)	5.00	2.30	(2.70)



## Payoff at October VIX Settlement -



## Bull Spread w/ VIX Options

VIX Index = 21.31

September VIX Future = 23.60

VIX Sep 20.00 Put @ 0.10

VIX Sep 24.00 Put @ 1.40

Buy 1 VIX Sep 20.00 Put @ 0.10

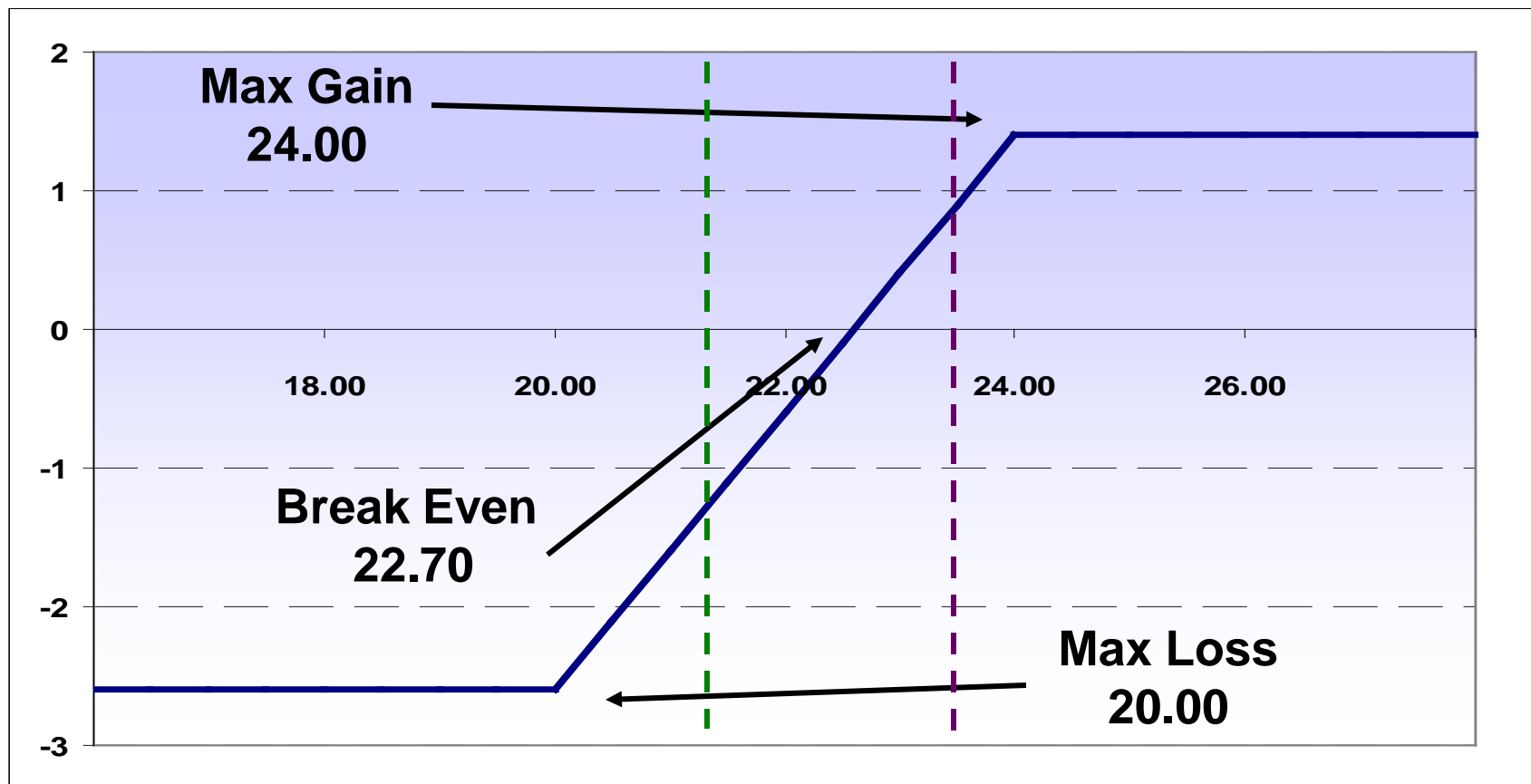
Sell 1 VIX Sep 24.00 Put @ 1.40

Net Credit = 1.30

## Payoff at September VIX Settlement -

VIX September Settlement	Sep 20.00 Put	Sep 24.00 Put	Credit	Profit / Loss
16.00	4.00	(8.00)	1.30	(2.70)
20.00	0.00	(4.00)	1.30	(2.70)
24.00	0.00	0.00	1.30	1.30
28.00	0.00	0.00	1.30	1.30

## Payoff at September VIX Settlement -



## Quick Review –

Neutral strategy with maximum payoff in range of prices at expiration

## Example –

Long 1 XYZ 20 Put  
Short 1 XYZ 25 Put  
Short 1 XYZ 30 Call  
Long 1 XYZ 35 Call

## Iron Condor w/ VIX Options

VIX Index = 23.19

October VIX Future = 29.15

VIX Oct 20.00 Put @ 0.15

VIX Oct 22.50 Put @ 0.40

VIX Oct 27.50 Call @ 3.80

VIX Oct 30.00 Call @ 2.90

## Iron Condor –

Buy 1 VIX Oct 20.00 Put @ 0.15

Sell 1 VIX Oct 22.50 Put @ 0.40

Sell 1 VIX Oct 27.50 Call @ 3.80

Buy 1 VIX Oct 30.00 Call @ 2.90

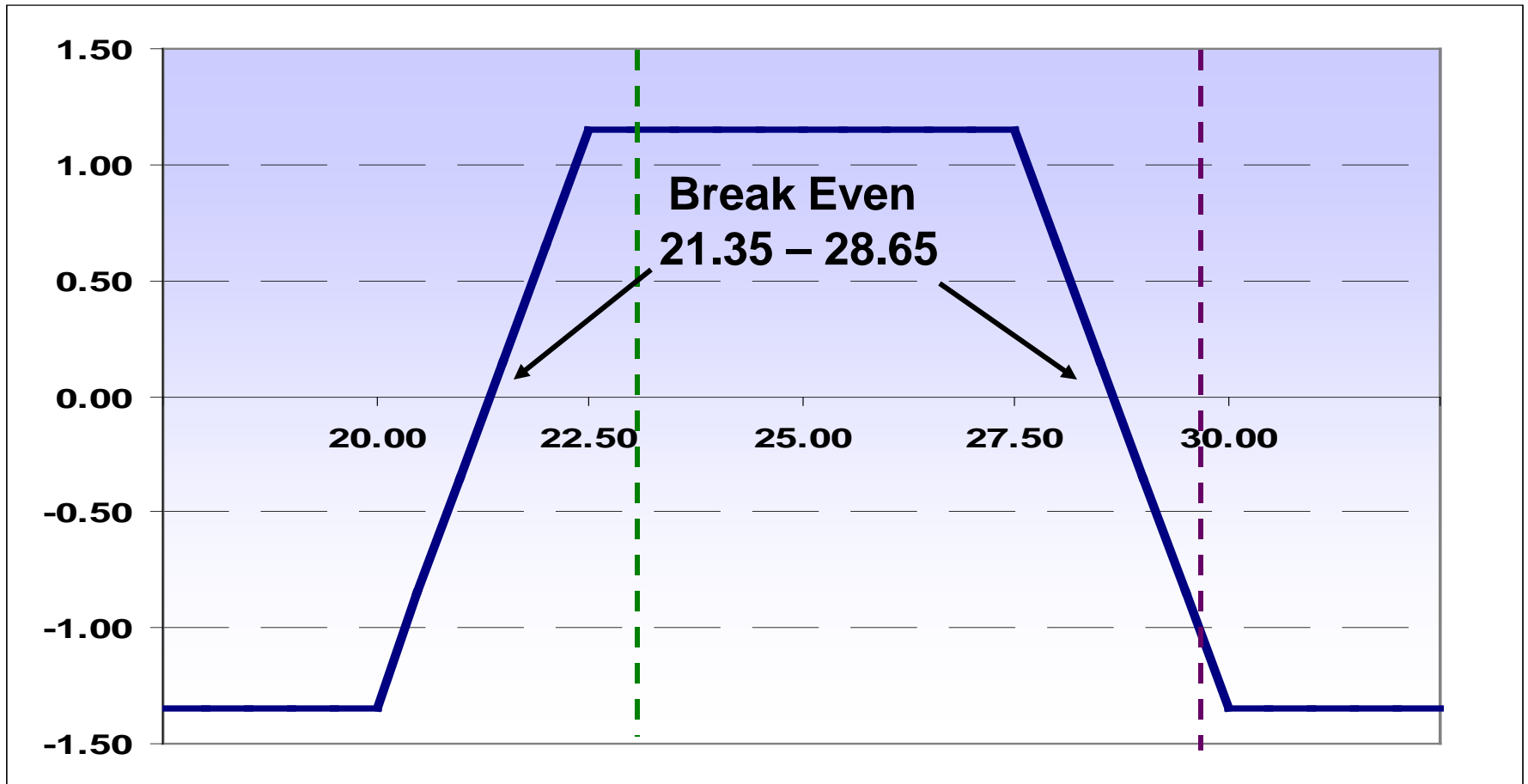
Net Credit = 1.15

## Payoff at October VIX Settlement -

VIX October Settlement	Oct 20.00 Put	Oct 22.50 Put	Oct 27.50 Call	Oct 30.00 Call	Credit	Profit / Loss
15.00	5.00	(7.50)	0.00	0.00	1.15	(1.35)
20.00	0.00	(2.50)	0.00	0.00	1.15	(1.35)
22.50	0.00	0.00	0.00	0.00	1.15	1.15
27.50	0.00	0.00	0.00	0.00	1.15	1.15
30.00	0.00	0.00	(2.50)	0.00	1.15	(1.35)
35.00	0.00	0.00	(7.50)	5.00	1.15	(1.35)



## Payoff at October VIX Settlement -



## Iron Condor w/ VIX Options

VIX Index = 23.19

December VIX Future = 30.25

VIX Dec 22.50 Put @ 0.55

VIX Dec 25.00 Put @ 1.15

VIX Dec 30.00 Call @ 3.80

VIX Dec 32.50 Call @ 3.00

## Iron Condor –

Buy 1 VIX Dec 22.50 Put @ 0.55

Sell 1 VIX Dec 25.00 Put @ 1.15

Sell 1 VIX Dec 30.00 Call @ 3.80

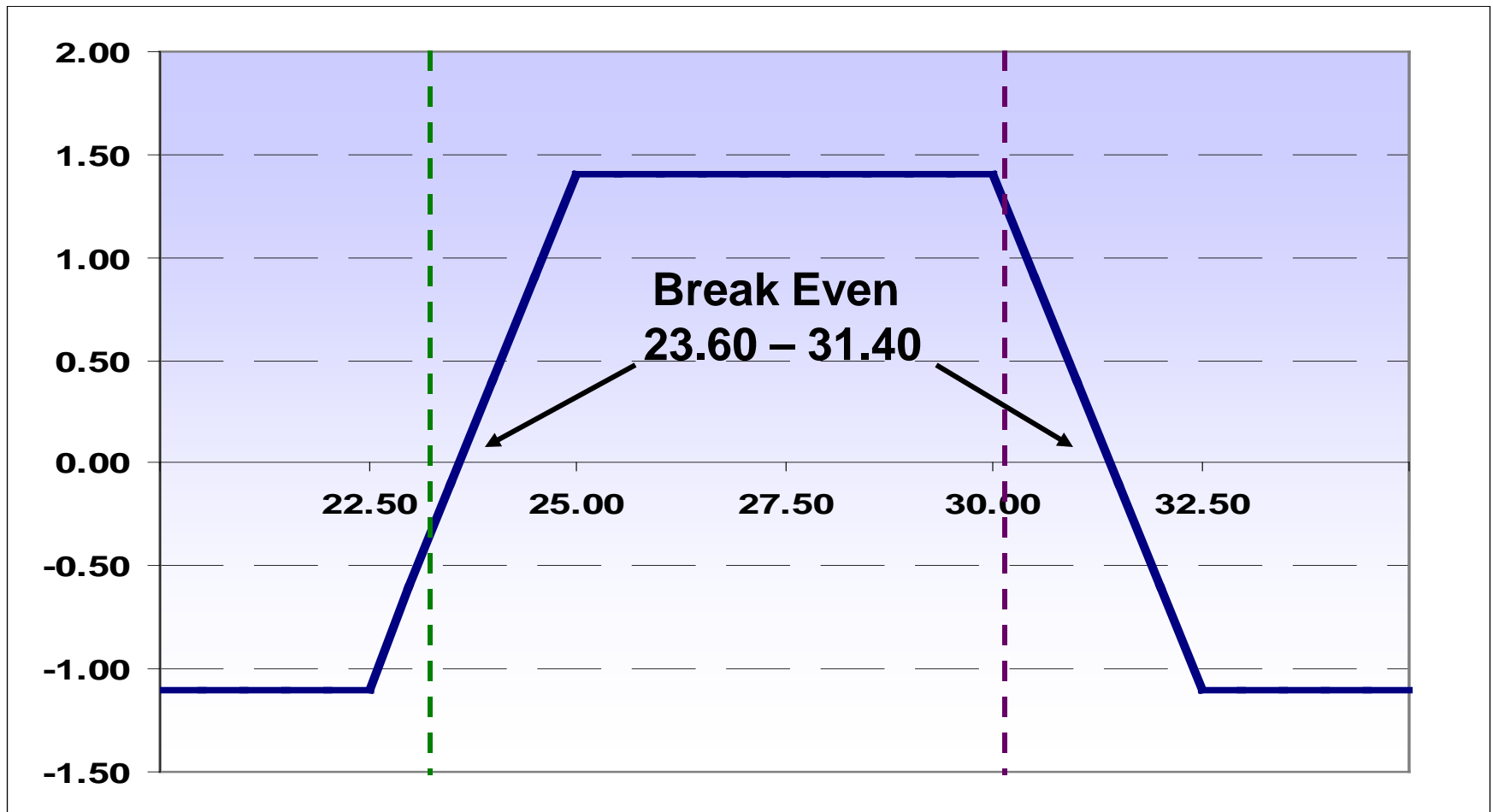
Buy 1 VIX Dec 32.50 Call @ 3.00

Net Credit = 1.40

## Payoff at December VIX Settlement -

VIX Dec Settlement	Dec 22.50 Put	Dec 25.00 Put	Dec 30.00 Call	Dec 32.50 Call	Credit	Profit / Loss
20.00	2.50	(5.00)	0.00	0.00	1.40	(1.10)
22.50	0.00	(2.50)	0.00	0.00	1.40	(1.10)
25.00	0.00	0.00	0.00	0.00	1.40	1.40
30.00	0.00	0.00	0.00	0.00	1.40	1.40
32.50	0.00	0.00	(2.50)	0.00	1.40	(1.10)
35.00	0.00	0.00	(5.00)	2.50	1.40	(1.10)

## Payoff at December VIX Settlement -



## VIX Calendar Spread –

- Involves options expiring on different dates
- These options have prices that generally correlate to different futures contracts
- Risks are different than a calendar spread on an equity or ETF

## VIX Index and Futures Closing Prices 9/2/2010 -

	Close
Index	23.19
Sep 10	25.00
Oct 10	29.15
Nov 10	30.05
Dec 10	30.25
Jan 10	32.30
Feb 10	32.40
Mar 10	32.70
Apr 10	32.50

- Believe November VIX will settle under 25.00
- Think there will be a 'normal' curve where December is at a premium to November
- Want short exposure to November and long exposure to December
- Do not want exposure that goes along with Future spread



## Calendar Spread w/ VIX Options

VIX Index = 23.19

November VIX Future = 30.05

December VIX Future = 30.25

VIX Nov 30 Put @ 3.60

VIX Dec 30 Put @ 3.80

## Calendar Spread –

Buy 1 VIX Nov 30 Put @ 3.60

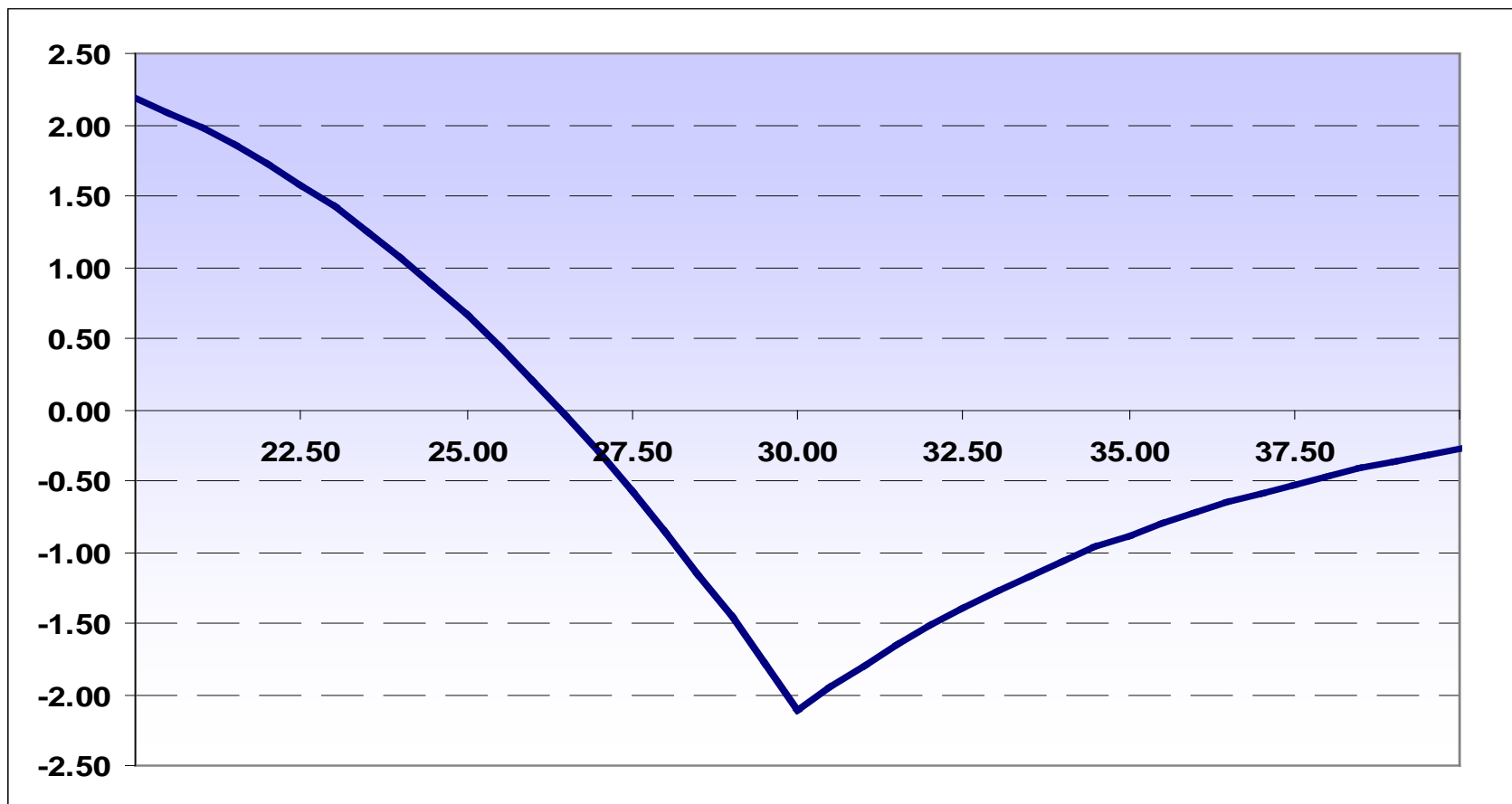
Sell 1 VIX Dec 30 Put @ 3.80

Net Credit = 0.20

## Payoff at November VIX Settlement -

VIX November Settlement / December Price	Nov 30 Put	Dec 30 Put	Credit	Profit / Loss
22.50 / 25.00	7.50	(5.70)	0.20	2.00
25.00 / 27.50	5.00	(4.00)	0.20	1.20
27.50 / 30.00	2.50	(2.70)	0.20	0.00
30.00 / 32.50	0.00	(1.70)	0.20	(1.50)
32.50 / 35.00	0.00	(1.10)	0.20	(0.90)

## Payoff at November VIX Settlement -



## Worst Case Scenario –

- Hold through November expiration
- Wednesday SOQ spikes due to overnight market activity
- Impact on SOQ greater than impact on December options
- May want to consider exiting both sides of trade just before expiration

The CBOE Website has more information on these and other products.

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

[www.cboe.com/learncenter](http://www.cboe.com/learncenter)

Questions / Comments?  
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