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Eurex

Advanced Volatility Strategies with Futures on VSTOXX® Options

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GFM
ASSET MANAGEMENT
Exchange
Partner
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Advanced Volatility Strategies
Actionable Strategies VSTOXX® Options
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About Tariq Dennison TEP CFP^{CM}

- Independent Advisor Managing Accounts on the IBKR platform
  - US Advisor: GFM Asset Management LLC
  - HK Advisor: GFM Group Limited
- In the market since 1998
  - Commerzbank (NY, London, Frankfurt)
  - Bear Stearns (NY)
  - J.P. Morgan (NY)
  - Canadian Imperial Bank of Commerce
  - Societe Generale (HK)
- Masters in Financial Engineering
  - University of California at Berkeley
- Lecturer at ESSEC Singapore
  - Fixed Income
  - Alternative Assets
- Focus on US-Asia corridor
- Author "Invest Outside the Box"

VSTOXX® Options Workings

- What are the VSTOXX vs VIX Options?
- Contract specs
- Margin requirements of calls vs puts
- Sample option chains

Sample Strategies

- Outright call/put buy
- Outright call/put sell
- Vertical spread and 1x2
- Calendar spread
- VSTOXX vs VIX spread

This is an ”advanced” webinar, where I assume:

- You already understand what the VSTOXX® and VIX® are, how they are calculated, and what makes them go up and down.
- You understand VSTOXX® and VIX® futures, their term structures, and how/why differences between futures prices and index levels can be significant.
- You understand and have some experience with options, option trading, and option risks

- This will let us focus on some unique features of these options on an index of options you may or may not have thought of, and on a few specific strategies.

About VSTOXX® Options

Typing in “V2TX” vs “VIX”

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Source: Interactive Brokers

V2TX Futures on IBKR Mosaic on Oct 22nd

	LAST	CHANGE		VLM
V2TX INDEX	16.17	-0.58	-3.46%	1.23K
V2TX Nov17'21 @DTB	19.55	-0.45	-2.25%	4.28K
V2TX Dec22'21 @DTB	20.40	-0.35	-1.69%	1.22K
V2TX Jan19'22 @DTB	21.70	-0.35	-1.59%	211
V2TX Feb16'22 @DTB	22.25	-0.15	-0.67%	185
V2TX Mar15'22 @DTB	c24.10			
V2TX Apr20'22 @DTB	c24.35			
V2TX May18'22 @DTB	c24.10			
V2TX Jun15'22 @DTB	c0.00			

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Source: Interactive Brokers

V2TX Nov Option Chain Oct 22nd

PUT/CALLs (Side by Side) | 19.55 | -0.45 (-2.25%)

NOV / NOV 26 DAYS | DEC / DEC 61 DAYS | JAN'22 / JAN'22 89 DAYS | FEB'22 / FEB'22 117 DAYS | MORE

TABBED VIEW | PUT/CALL | All STRIKES | DTB | OVS2 | 100

IV: 89.2%

CALLS								PUTS						
OPTN ...	VOLUME	BID SI...	BID x ASK	DELTA	IMPLD ...	ASK SI...	STRIKE	OPTN ...	VOLUME	BID SI...	BID x ASK	DELTA	IMPLD ...	ASK SI...
			x	0.967			15				x 0.075	-0.033		1
			x	0.946	60.1%		15.5			1,300	0.025 x 0.125	-0.053	54.6%	1,300
		750	3.425 x 3.925	0.911	63.8%	750	16			2,050	0.075 x 0.200	-0.089	58.7%	751
		750	3.100 x 3.550	0.868	65.3%	750	16.5			1,250	0.175 x 0.325	-0.132	62.8%	1,250
		750	2.750 x 3.150	0.814	69.8%	750	17		1	1,150	0.325 x 0.475	-0.186	65.6%	1,150
		750	2.500 x 2.850	0.758	74%	750	17.5		10	1,100	0.525 x 0.675	-0.241	69.9%	1,100
		1,050	2.325 x 2.425	0.699	76.3%	1	18			1,050	0.775 x 0.925	-0.301	74.5%	1,050
		1,050	2.125 x 2.325	0.643	80.8%	1,050	18.5			1,050	1.075 x 1.225	-0.356	79.8%	1,050
		1,000	1.925 x 2.125	0.594	83.3%	1,000	19			1,000	1.375 x 1.575	-0.405	83.5%	1,000
		1,000	1.775 x 1.975	0.551	88.3%	1,000	19.5			1,000	1.725 x 1.925	-0.449	88.2%	1,000
		1,000	1.675 x 1.875	0.511	93.8%	1,000	20			1,000	2.125 x 2.275	-0.489	92.2%	1,000
		1,000	1.575 x 1.725	0.477	97.3%	1,000	20.5			1,000	2.475 x 2.675	-0.523	96%	1,000
		1,000	1.475 x 1.625	0.445	100.9%	1,000	21			1,000	2.875 x 3.075	-0.555	99.7%	1,000
		950	1.375 x 1.525	0.417	104.1%	950	21.5			950	3.275 x 3.475	-0.583	103.5%	950
	10	950	1.275 x 1.425	0.390	106.7%	950	22			950	3.675 x 3.875	-0.610	105.3%	950
		1,500	1.100 x 1.375	0.363	108%	1,750	22.5			950	4.075 x 4.325	-0.637	108.1%	950
		2,500	1.025 x 1.275	0.341	109.5%	950	23			950	4.525 x 4.725	-0.658	111.1%	950
		750	0.975 x 1.225	0.322	113.4%	2,500	23.5			950	4.925 x 5.175	-0.677	113.4%	950
		750	0.900 x 1.125	0.302	114.6%	950	24			950	5.375 x 5.625	-0.697	116.5%	950
		1,750	0.825 x 1.075	0.286	117.1%	950	24.5			950	5.825 x 6.025	-0.714	117.4%	950
		1,750	0.775 x 1.025	0.269	119.7%	950	25			950	6.275 x 6.475	-0.731	119.9%	950
		2,500	0.725 x 0.975	0.255	120.6%	950	25.5			950	6.725 x 6.975	-0.745	124.1%	950
		1,700	0.675 x 0.925	0.242	121.9%	950	26			950	7.175 x 7.425	-0.757	125.2%	950
		750	0.650 x 0.875	0.229	125%	900	26.5			750	7.175 x 8.250	-0.770	124.6%	750

OFF Strategy Builder

GFM ASSET MANAGEMENT

Source: Interactive Brokers

V2TX Jan '22 Option Chain Oct 22nd

PUT/CALLs (Side by Side) | 19.55 | -0.45 (-2.25%)

NOV / NOV 26 DAYS | DEC / DEC 61 DAYS | JAN'22 / JAN'22 89 DAYS | FEB'22 / FEB'22 117 DAYS | MORE

TABBED VIEW | PUT/CALL | All STRIKES | DTB | OVS2 | 100

IV: 79.1%

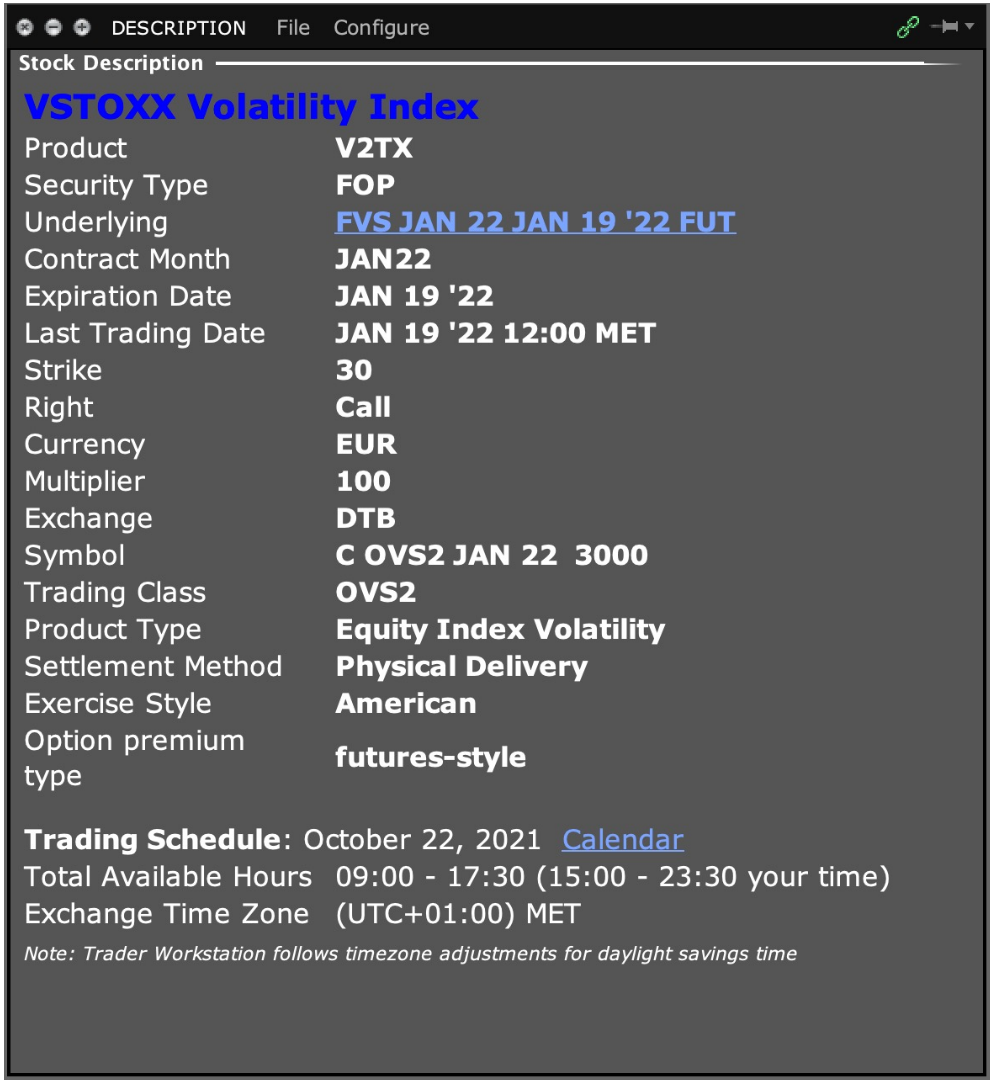
CALLS								PUTS						
OPTN ...	VOLUME	BID SI...	BID x ASK	DELTA	IMPLD ...	ASK S...	STRIKE	OPTN ...	VOLUME	BID SI...	BID x ASK	DELTA	IMPLD ...	ASK S...
			x	0.985			12.5				x 0.125	-0.013		2,000
			x	0.984			13				x 0.150	-0.014		1,850
			x	0.982			13.5				x 0.075	-0.016		2
			x	0.972			14				x 0.100	-0.026		1
			x	0.957			14.5				x 0.175	-0.041		1
			x	0.938			15			1,850	0.050 x 0.200	-0.061	49.4%	1
		750	5.650 x 6.475	0.891	55.3%	750	16			2,400	0.250 x 0.450	-0.108	55.6%	1
		750	4.975 x 5.700	0.833	59.4%	750	17			1,400	0.550 x 0.800	-0.165	60.4%	2,950
		750	4.475 x 5.125	0.772	64.5%	750	18			2,000	0.950 x 1.225	-0.226	64.6%	2,801
		1,050	4.025 x 4.550	0.713	68.3%	1,800	19			1,900	1.425 x 1.725	-0.285	68.4%	750
		3,401	3.650 x 4.150	0.657	72.3%	1,100	20			2,301	2.025 x 2.325	-0.341	72.3%	2,301
		750	3.475 x 3.775	0.608	77.6%	2,600	21			3,351	2.650 x 3.025	-0.391	75.7%	2,301
		750	3.150 x 3.500	0.563	80.9%	2,600	22			750	3.450 x 3.800	-0.435	80.9%	2,600
		750	2.875 x 3.200	0.525	83.1%	750	23			1,750	4.100 x 4.575	-0.473	82.8%	1,000
		750	2.625 x 2.950	0.488	85.8%	750	24			1,000	4.875 x 5.400	-0.510	86.3%	1,800
		750	2.425 x 2.750	0.456	88.4%	2,301	25			1,000	5.675 x 6.200	-0.542	89%	1,000
		3,051	2.275 x 2.600	0.428	91.5%	3,051	26			1,000	6.500 x 7.050	-0.570	91.8%	1,000
		2,301	2.150 x 2.425	0.403	93.4%	750	27			1,000	7.350 x 7.900	-0.595	93.8%	1,000
		750	2.025 x 2.275	0.380	95%	750	28			1,000	8.200 x 8.750	-0.618	95.6%	1,000
		750	1.900 x 2.150	0.360	98.6%	750	29			1,000	9.050 x 9.625	-0.639	98.1%	1,000
		2,300	1.775 x 2.075	0.340	100.1%	2,300	30			1,000	9.950 x 10.500	-0.658	99%	1,000
		2,300	1.575 x 1.875	0.307	103.2%	2,300	32			1,000	11.725 x 12.300	-0.691	102.9%	1,000
		2,300	1.400 x 1.700	0.279	106.8%	2,300	34			750	12.950 x 14.800	-0.719	106.7%	2,300
		1,500	1.250 x 1.550	0.251	109.4%	1,500	36			750	14.675 x 16.750	-0.747	109.7%	750

OFF **Strategy Builder**

GFM ASSET MANAGEMENT

Source: Interactive Brokers

V2TX Jan '22 Option Chain Oct 22nd


DESCRIPTION File Configure

Stock Description

VSTOXX Volatility Index

Product	**V2TX**
Security Type	**FOP**
Underlying	**FVS JAN 22 JAN 19 '22 FUT**
Contract Month	**JAN22**
Expiration Date	**JAN 19 '22**
Last Trading Date	**JAN 19 '22 12:00 MET**
Strike	**30**
Right	**Call**
Currency	**EUR**
Multiplier	**100**
Exchange	**DTB**
Symbol	**C OVS2 JAN 22 3000**
Trading Class	**OVS2**
Product Type	**Equity Index Volatility**
Settlement Method	**Physical Delivery**
Exercise Style	**American**
Option premium type	**futures-style**

Trading Schedule: October 22, 2021 Calendar

Total Available Hours	09:00 - 17:30 (15:00 - 23:30 your time)
Exchange Time Zone	(UTC+01:00) MET

Note: Trader Workstation follows timezone adjustments for daylight savings time

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Sample VSTOXX Call Buy

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Source: Interactive Brokers

Sample VSTOXX Call Buy (30 call @1.5)

Final Level	P&L	
14.0	€	(150)
16.0	€	(150)
18.0	€	(150)
20.0	€	(150)
22.0	€	(150)
24.0	€	(150)
26.0	€	(150)
28.0	€	(150)
30.0	€	(150)
32.0	€	50
34.0	€	250
36.0	€	450
38.0	€	650
40.0	€	850
42.0	€	1,050
44.0	€	1,250
46.0	€	1,450
48.0	€	1,650

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Source: Interactive Brokers

Sample VSTOXX Call Sell

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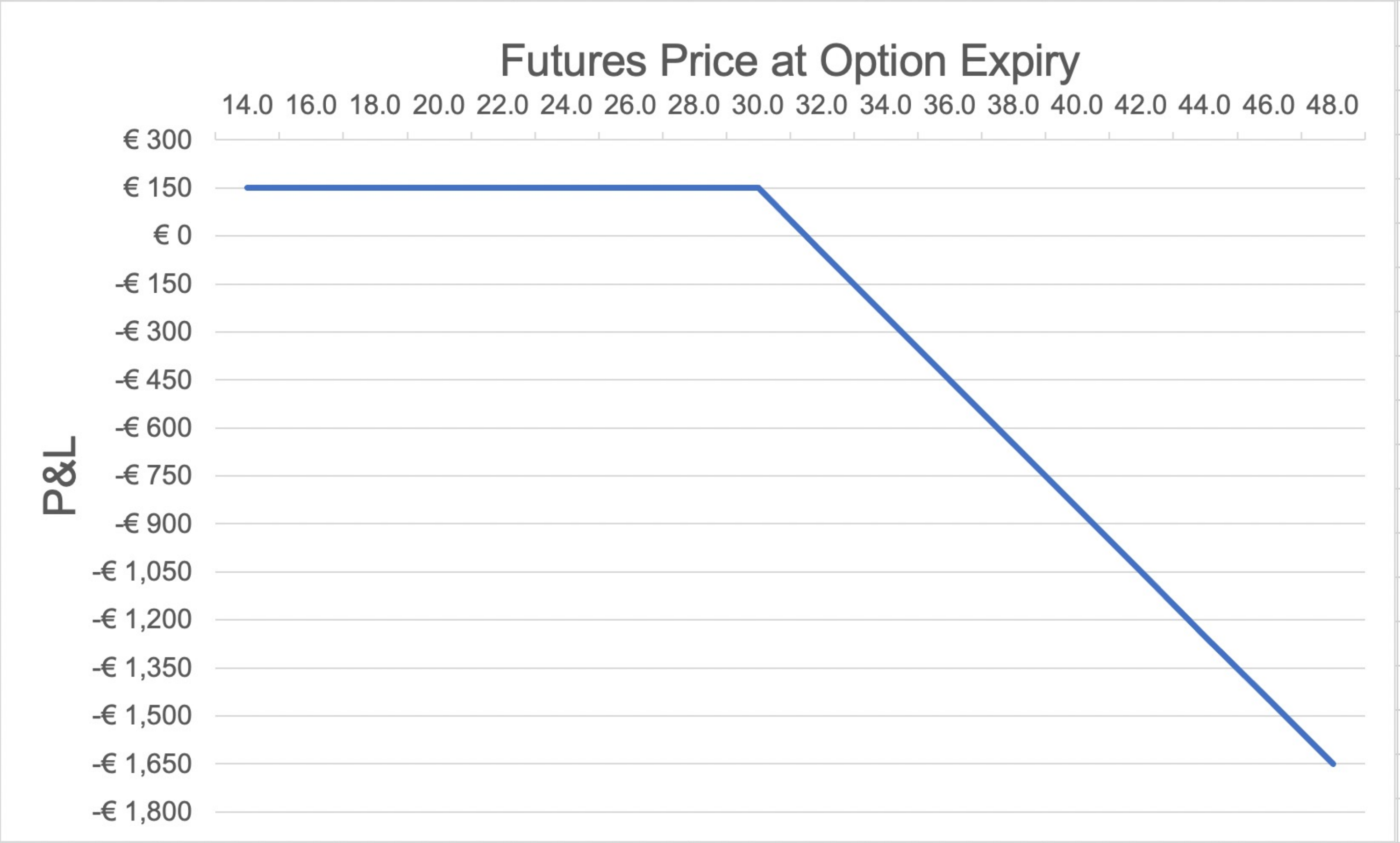
Sample VSTOXX Call Sell (30 call @1.5)

Final Level	P&L	
14.0	€	150
16.0	€	150
18.0	€	150
20.0	€	150
22.0	€	150
24.0	€	150
26.0	€	150
28.0	€	150
30.0	€	150
32.0	€	(50)
34.0	€	(250)
36.0	€	(450)
38.0	€	(650)
40.0	€	(850)
42.0	€	(1,050)
44.0	€	(1,250)
46.0	€	(1,450)
48.0	€	(1,650)



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Sample VSTOXX Put Sell

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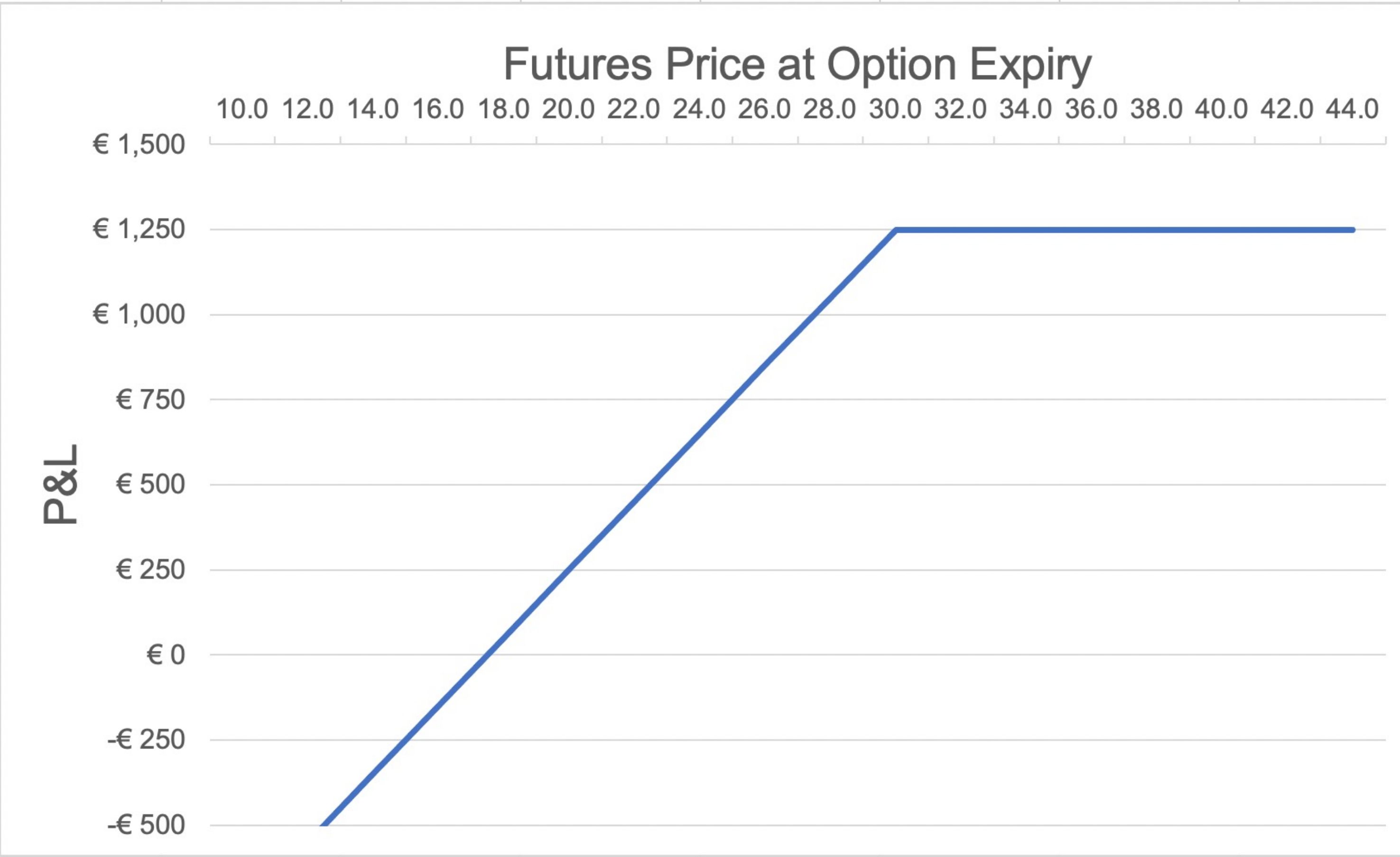
Sample VSTOXX Put Sell (30 put @12.5)
(Note this looks like a covered call, but simpler)

Final Level	P&L	
10.0	€	(750)
12.0	€	(550)
14.0	€	(350)
16.0	€	(150)
18.0	€	50
20.0	€	250
22.0	€	450
24.0	€	650
26.0	€	850
28.0	€	1,050
30.0	€	1,250
32.0	€	1,250
34.0	€	1,250
36.0	€	1,250
38.0	€	1,250
40.0	€	1,250
42.0	€	1,250
44.0	€	1,250



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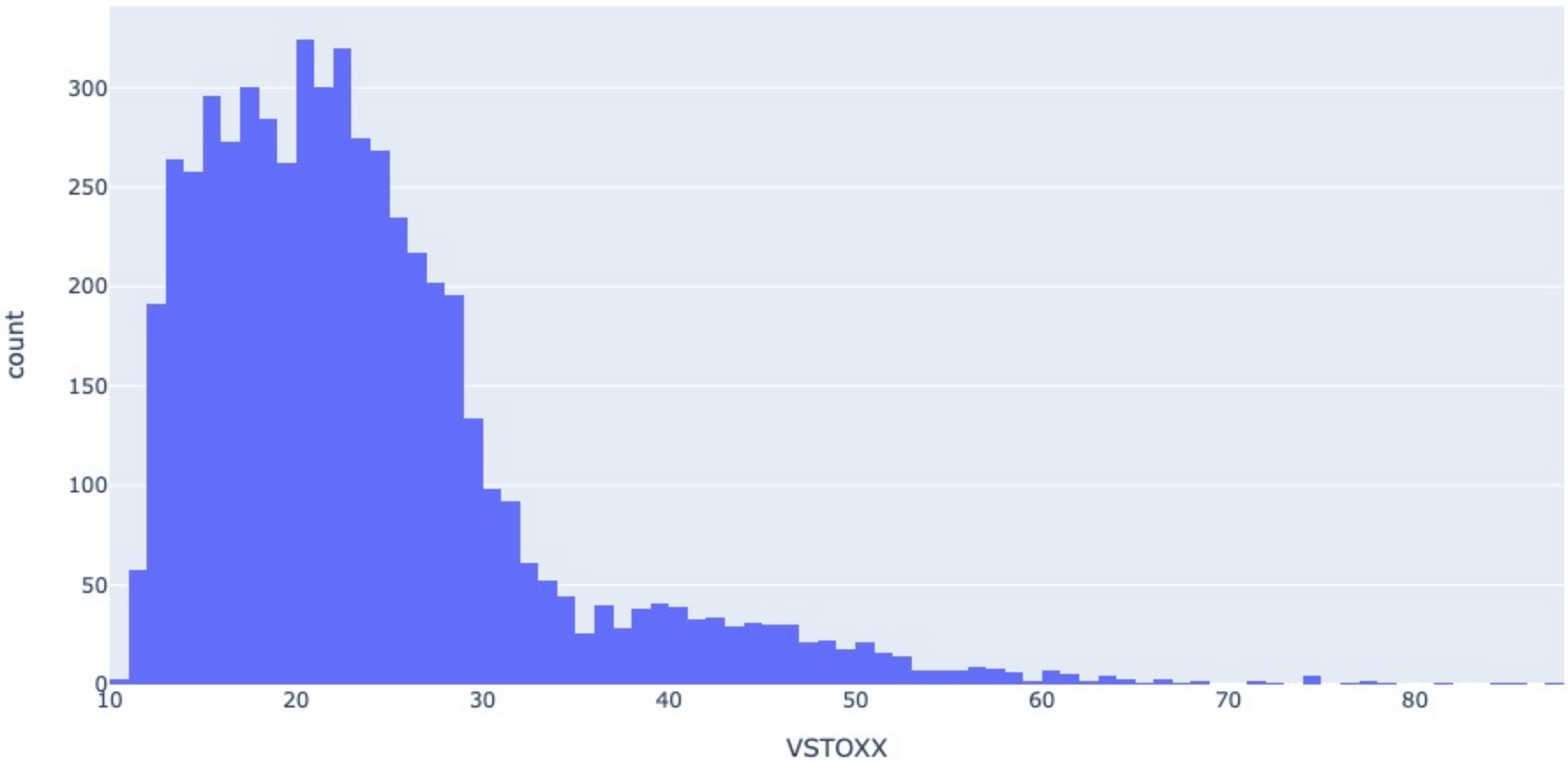
Historic Frequency of VSTOXX Values, 1999-2021

(5,607 daily observations, whole number buckets)



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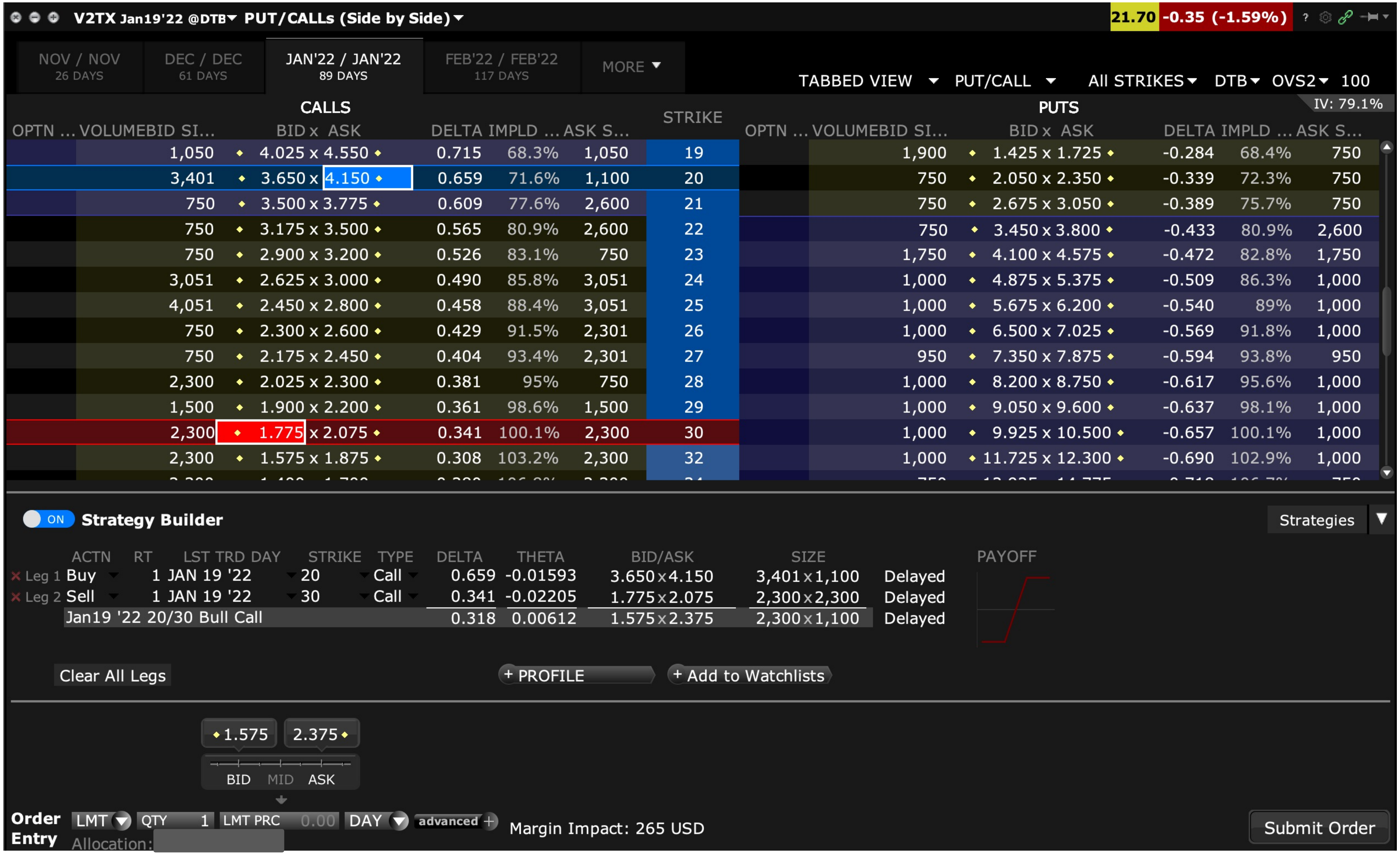
Source: Interactive Brokers

Sample VSTOXX Call Spread



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Source: Interactive Brokers

Sample VSTOXX Call Spread (20-30 @2.0)

Final Level	P&L	
10.0	€	(200)
12.0	€	(200)
14.0	€	(200)
16.0	€	(200)
18.0	€	(200)
20.0	€	(200)
22.0	€	-
24.0	€	200
26.0	€	400
28.0	€	600
30.0	€	800
32.0	€	800
34.0	€	800
36.0	€	800
38.0	€	800
40.0	€	800
42.0	€	800
44.0	€	800

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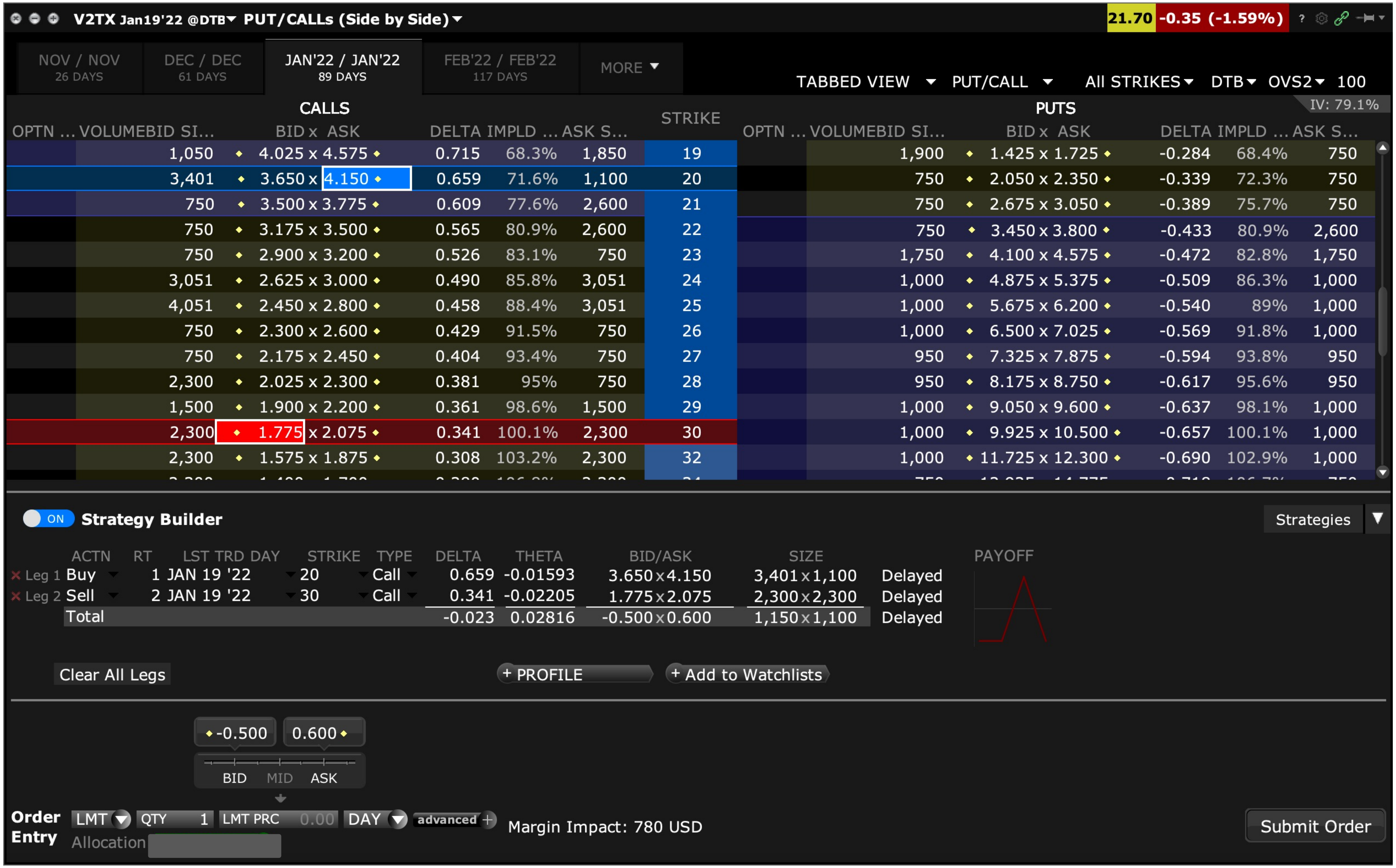
Sample VSTOXX 1x2 Call Spread



CALLS VOLUME	CALLS BID SI...	CALLS BID x ASK	CALLS DELTA	CALLS IMPLD ...	CALLS ASK S...	STRIKE	PUTS BID SI...	PUTS BID x ASK	PUTS DELTA	PUTS IMPLD ...	PUTS ASK S...
	1,050	4.025 x 4.575	0.715	68.3%	1,850	19	1,900	1.425 x 1.725	-0.284	68.4%	750
	3,401	3.650 x 4.150	0.659	71.6%	1,100	20	750	2.050 x 2.350	-0.339	72.3%	750
	750	3.500 x 3.775	0.609	77.6%	2,600	21	750	2.675 x 3.050	-0.389	75.7%	750
	750	3.175 x 3.500	0.565	80.9%	2,600	22	750	3.450 x 3.800	-0.433	80.9%	2,600
	750	2.900 x 3.200	0.526	83.1%	750	23	1,750	4.100 x 4.575	-0.472	82.8%	1,750
	3,051	2.625 x 3.000	0.490	85.8%	3,051	24	1,000	4.875 x 5.375	-0.509	86.3%	1,000
	4,051	2.450 x 2.800	0.458	88.4%	3,051	25	1,000	5.675 x 6.200	-0.540	89%	1,000
	750	2.300 x 2.600	0.429	91.5%	750	26	1,000	6.500 x 7.025	-0.569	91.8%	1,000
	750	2.175 x 2.450	0.404	93.4%	750	27	950	7.325 x 7.875	-0.594	93.8%	950
	2,300	2.025 x 2.300	0.381	95%	750	28	950	8.175 x 8.750	-0.617	95.6%	950
	1,500	1.900 x 2.200	0.361	98.6%	1,500	29	1,000	9.050 x 9.600	-0.637	98.1%	1,000
	2,300	1.775 x 2.075	0.341	100.1%	2,300	30	1,000	9.925 x 10.500	-0.657	100.1%	1,000
	2,300	1.575 x 1.875	0.308	103.2%	2,300	32	1,000	11.725 x 12.300	-0.690	102.9%	1,000

ON Strategy Builder

	ACTN	RT	LST TRD DAY	STRIKE	TYPE	DELTA	THETA	BID/ASK	SIZE	
Leg 1	Buy	1	JAN 19 '22	20	Call	0.659	-0.01593	3.650 x 4.150	3,401 x 1,100	Delayed
Leg 2	Sell	2	JAN 19 '22	30	Call	0.341	-0.02205	1.775 x 2.075	2,300 x 2,300	Delayed
	Total					-0.023	0.02816	-0.500 x 0.600	1,150 x 1,100	Delayed

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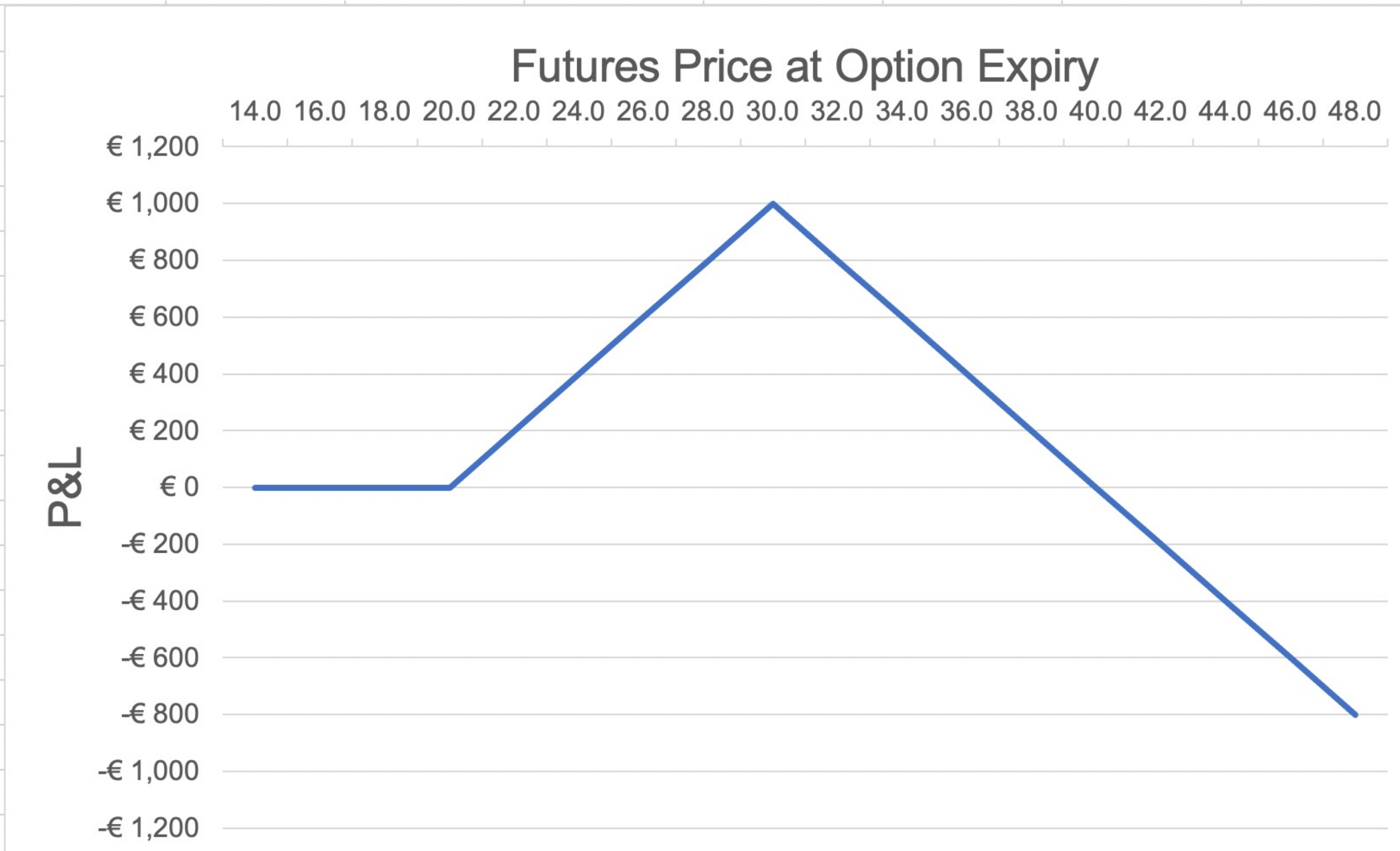
Sample VSTOXX 1x2 Call Spread (20-30 @nil)

Final Level	P&L	
14.0	€	-
16.0	€	-
18.0	€	-
20.0	€	-
22.0	€	200
24.0	€	400
26.0	€	600
28.0	€	800
30.0	€	1,000
32.0	€	800
34.0	€	600
36.0	€	400
38.0	€	200
40.0	€	-
42.0	€	(200)
44.0	€	(400)
46.0	€	(600)
48.0	€	(800)



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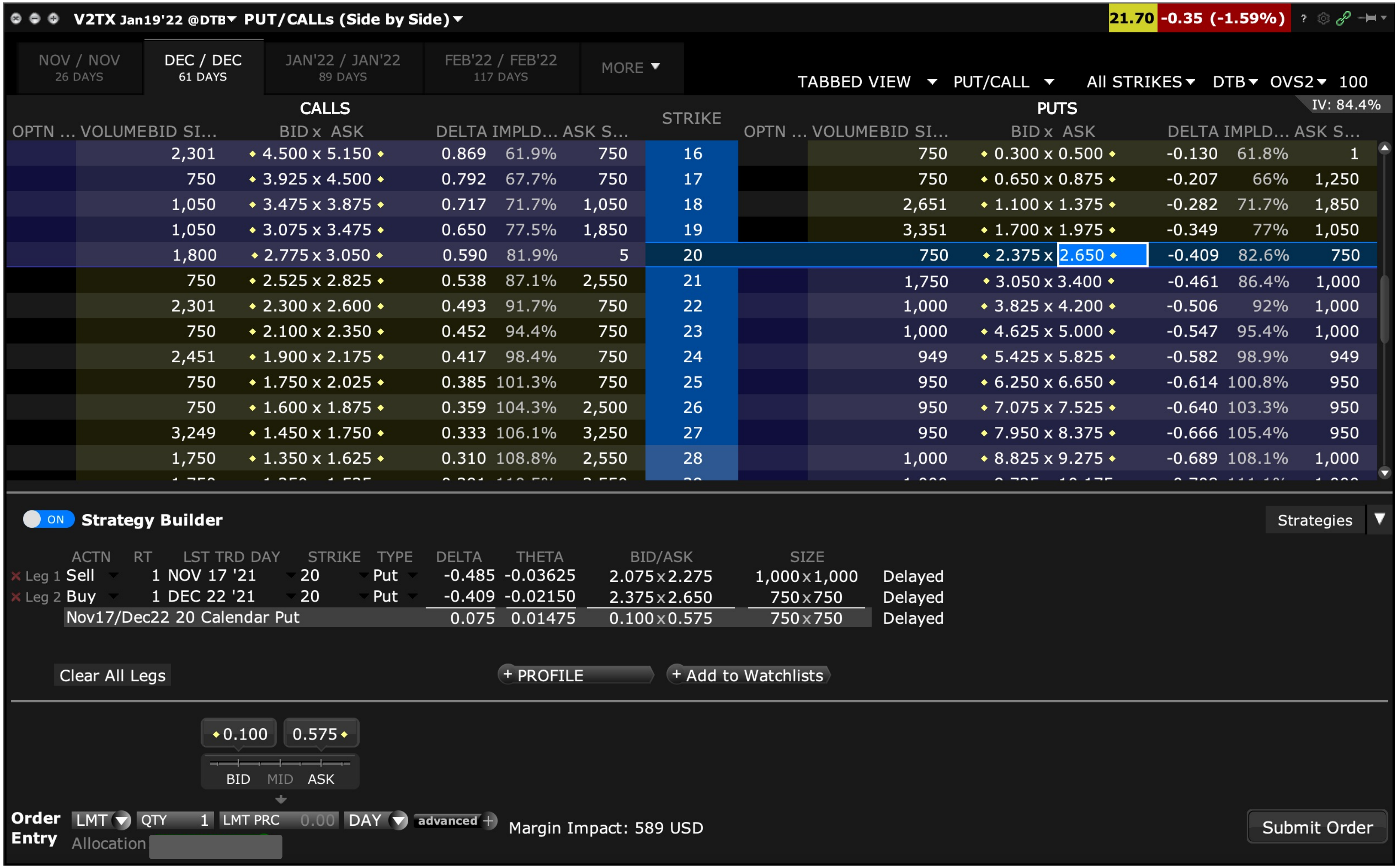
GFM ASSET MANAGEMENT

Source: Interactive Brokers

Sample VSTOXX Calendar Put Spread



Sample VSTOXX Calendar Spread (2m-1m @0.35)

Final Level		P&L
10.0	€	(35)
12.0	€	(35)
14.0	€	(33)
16.0	€	(18)
18.0	€	25
20.0	€	57
22.0	€	48
24.0	€	24
26.0	€	4
28.0	€	(9)
30.0	€	(17)
32.0	€	(22)
34.0	€	(25)
36.0	€	(27)
38.0	€	(28)
40.0	€	(29)
42.0	€	(30)
44.0	€	(31)

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Source: Interactive Brokers

VSTOXX® vs VIX®, with Historical Data

V2TX vs VIX option differences

DESCRIPTION File Configure

Stock Description

VSTOXX Volatility Index

Product	**V2TX**
Security Type	**FOP**
Underlying	[FVS JAN 22 JAN 19 '22 FUT]
Contract Month	**JAN22**
Expiration Date	**JAN 19 '22**
Last Trading Date	**JAN 19 '22 12:00 MET**
Strike	**30**
Right	**Call**
Currency	**EUR**
Multiplier	**100**
Exchange	**DTB**
Symbol	**C OVS2 JAN 22 3000**
Trading Class	**OVS2**
Product Type	**Equity Index Volatility**
Settlement Method	**Physical Delivery**
Exercise Style	**American**
Option premium type	**futures-style**

Trading Schedule: October 22, 2021 Calendar

Total Available Hours	09:00 - 17:30 (15:00 - 23:30 your time)
Exchange Time Zone	(UTC+01:00) MET

Note: Trader Workstation follows timezone adjustments for daylight savings time

DESCRIPTION File Configure

Stock Description

CBOE Volatility Index

Security Type	**OPT**
Underlying	[VIX IND]
Contract Month	**JAN22**
Expiration Date	**JAN 19 '22**
Last Trading Date	**JAN 18 '22 15:15 CST**
Strike	**30**
Right	**Call**
Currency	**USD**
Multiplier	**100**
Exchange	**SMART**
Trading Class	**VIX**
Symbol	**VIX 220119C00030000**
Sector	**Indices**
Industry	**Volatility Index**
Category	*****
Product Type	**Equity Index Volatility**
Settlement Method	**Cash**
Exercise Style	**European**

Trading Schedule: October 28, 2021 Calendar

Regular Trading Session	08:30 - 15:15 (21:30 - 04:15 your time)
Total Available Hours	02:00 - 08:15 (15:00 - 21:15 your time) 08:30 - 15:15 (21:30 - 04:15 your time)
Exchange Time Zone	(UTC-06:00) US/Central

Note: Trader Workstation follows timezone adjustments for daylight savings time

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Source: Interactive Brokers

The Futures on IBKR Mosaic (29 Oct 2021)

	LAST	CHANGE	
VIX INDEX	16.52	-0.46	-2.71%
VXM Nov17'21 @CFE	19.05	+0.40	2.14%
VXM Dec22'21 @CFE	21.15	+0.30	1.44%
VXM Jan19'22 @CFE	c22.35		
VXM Feb16'22 @CFE	c23.20		
VXM Mar15'22 @CFE	24.25	+0.20	0.83%
VXM Apr20'22 @CFE	c24.50		

		LAST	CHANGE	
V2TX INDEX	♦	c17.61		
V2TX Nov17'21 @DTB	♦	19.65	+0.25	1.29%
V2TX Dec22'21 @DTB	♦	20.70	+0.10	0.49%
V2TX Jan19'22 @DTB	♦	21.45	-0.10	-0.46%
V2TX Feb16'22 @DTB	♦	22.10	-0.05	-0.23%
V2TX Mar15'22 @DTB	♦	23.90	0.00	0.00%
V2TX Apr20'22 @DTB	♦	24.20	0.00	0.00%

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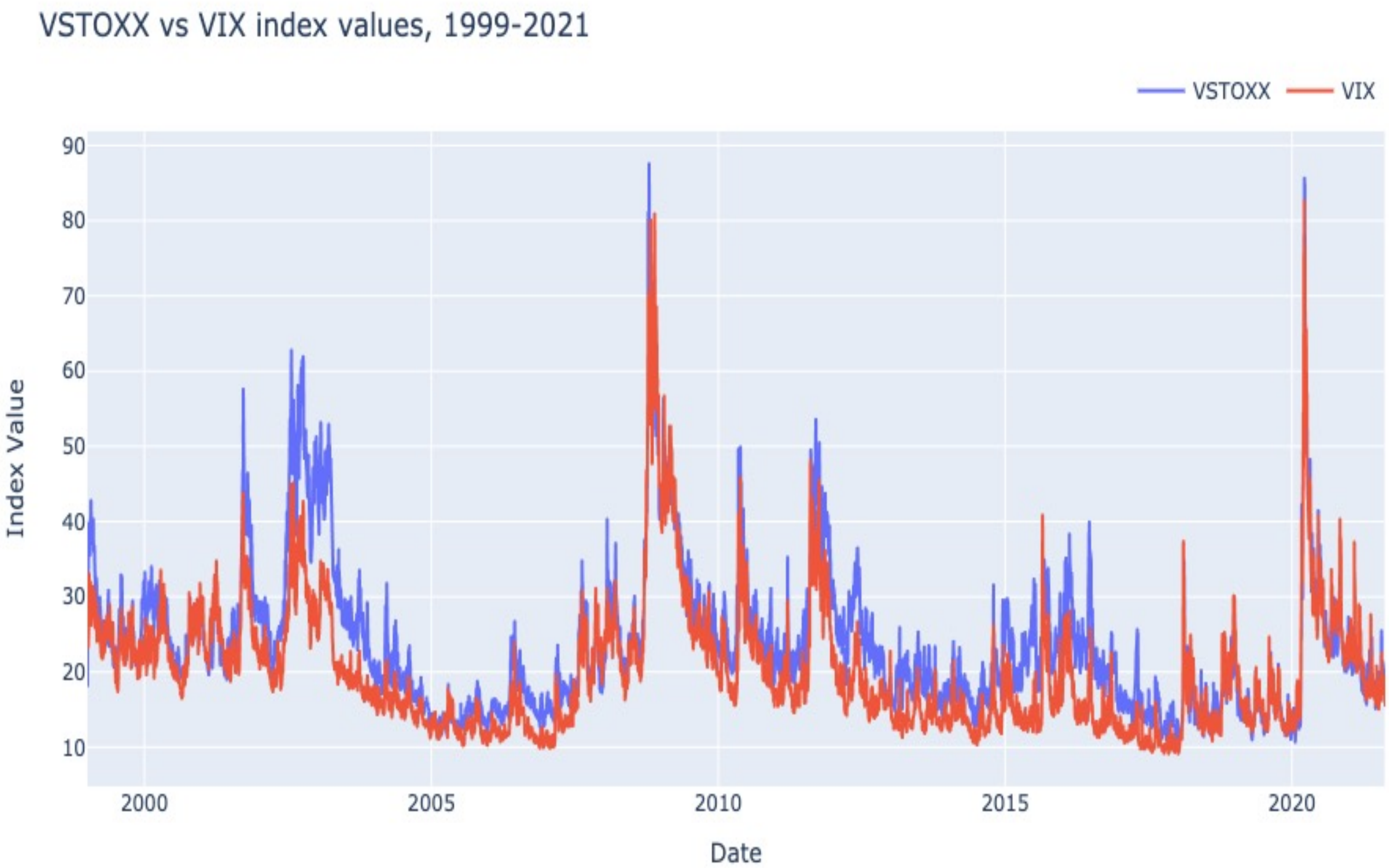
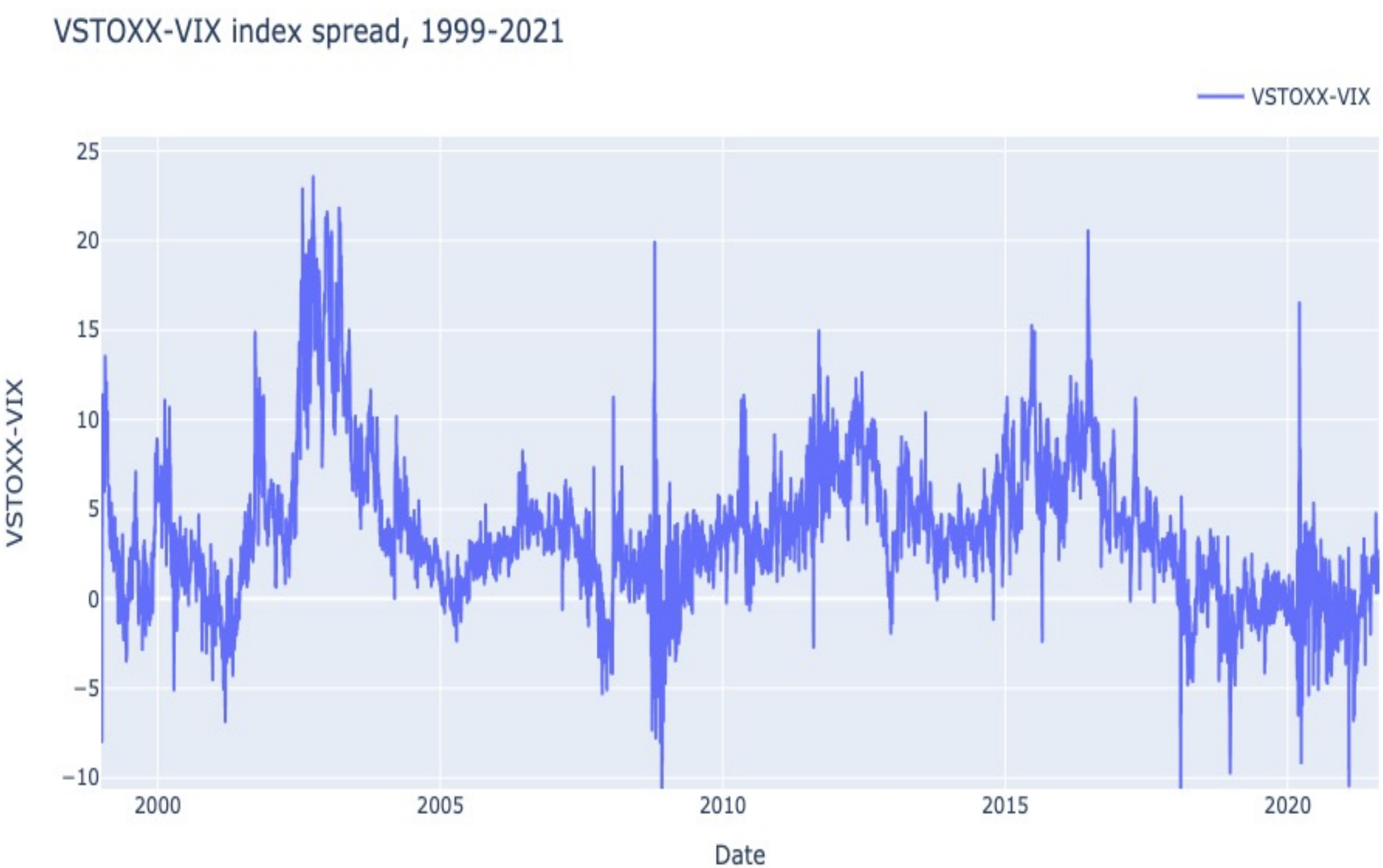
Source: Interactive Brokers

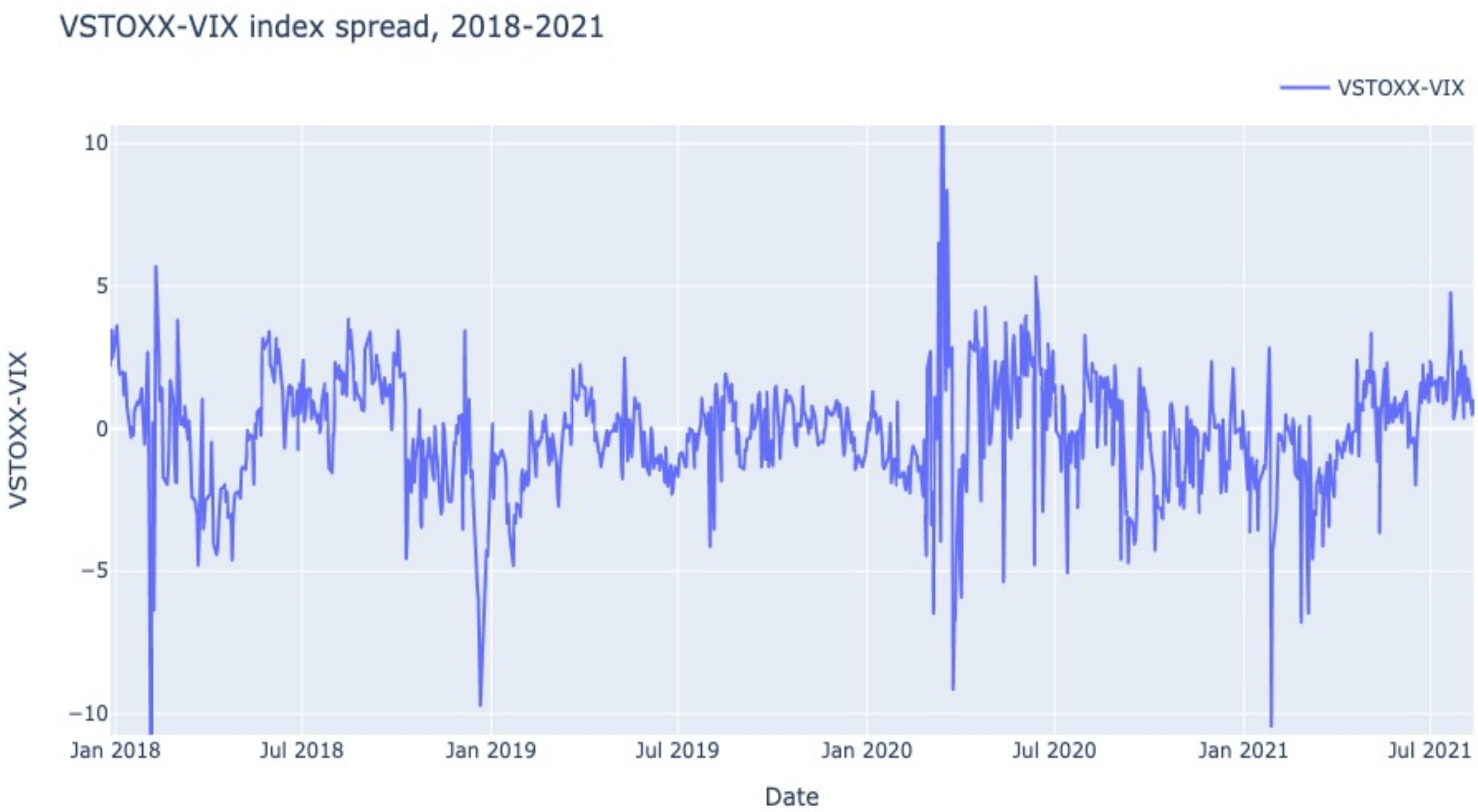


Source: *CBOE* (*https://www.cboe.com/tradable_products/vix/vix_historical_data/*)
STOXX (*https://www.stoxx.com/index-details?symbol=V2TX*)

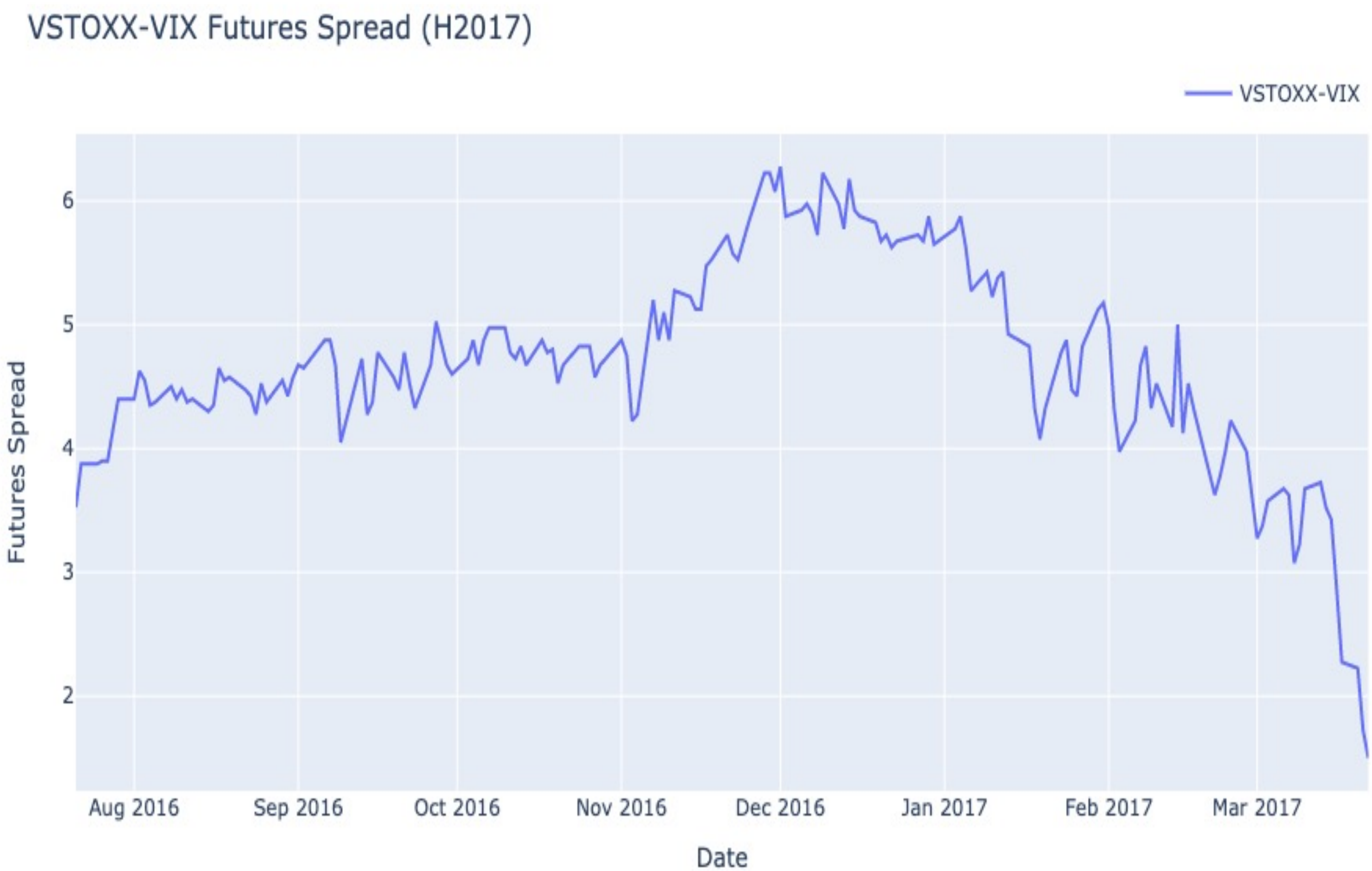


Source: *CBOE* (*https://www.cboe.com/tradable_products/vix/vix_historical_data/*)
STOXX (*https://www.stoxx.com/index-details?symbol=V2TX*)

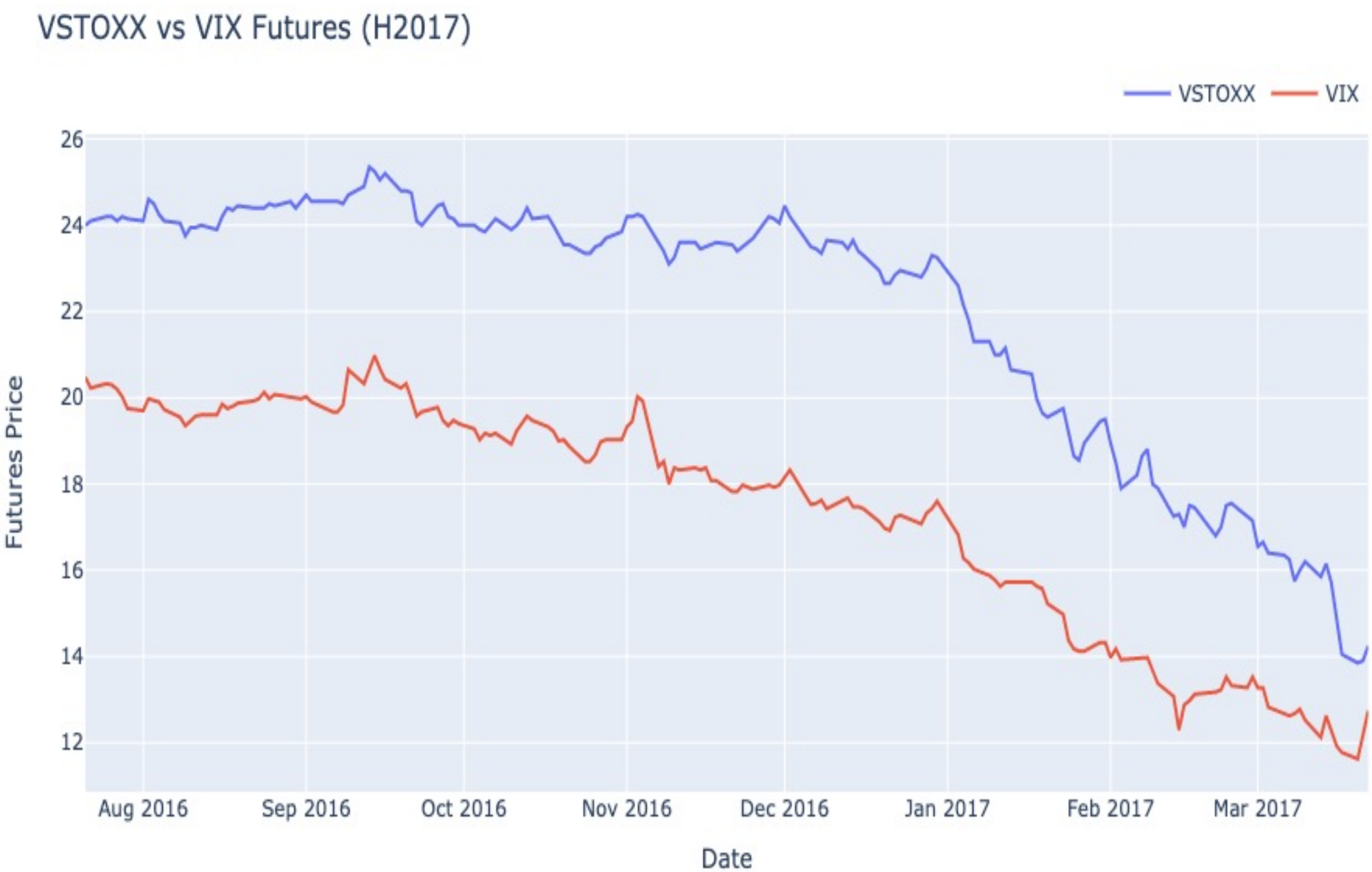
Zooming in on the last three years



Source: *CBOE (https://www.cboe.com/tradable_products/vix/vix_historical_data/)*
STOXX (https://www.stoxx.com/index-details?symbol=V2TX)



Source: CBOE, STOXX and Quandl.com (https://www.quandl.com/)



Source: CBOE, STOXX and Quandl.com (https://www.quandl.com/)

Sample option outcomes on sample scenario

Assume VSTOXX 24->14, VIX 20->13

- If buy VIX 20 call / sell VSTOXX 24 call → both expired worthless

- If buy VSTOXX 24 put / sell VIX 20 put:
  - VSTOXX option gained +€1,000, vs
  - VIX option lost -US$700

Main points to remember

- Options let you fine-tune your risk/reward, but make sure you are very clear what this is.

- Vertical spreads provide very precise minimum/maximum payoffs, and are primarily skew trades, on a specific date.
- Calendar spreads on VSTOXX or VIX are far more sensitive to term structure than calendar spreads on stock indexes.

- VSTOXX vs VIX spreads cross currencies and time zones, but also details on whether you use calls vs puts and at what strikes.

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