

# AAll San Diego Options Trading

## ***Volatility ETFs***

<https://aaiisandiego.com/sub-groups/options-trading/>





Please note:

- Keep microphones on mute
- Unmute to ask a question during the presentation
- Submit written questions via the chat facility
- We are recording the session; please turn off your camera if you prefer privacy
- See [aaisandiego.com](http://aaisandiego.com) for other meetings



# Agenda:

- ▶ UVXY, VXX and VIXY are all examples of exchange traded funds (ETFs) which allow investors to trade market volatility as if it was an asset in its own right.  
(We'll just cover two examples; some are very similar)
- ▶ What exactly are these ETFs doing?
- ▶ How well do they actually track market volatility?
- ▶ And why would an investor want to “play” volatility in the first place?

# Summary of ETFs

- ▶ Trade just like shares of stock
- ▶ Some of them can be illiquid
- ▶ Have increased tremendously in popularity over the last decade
- ▶ Basic premise: to make it easy for investors to trade complex, illiquid, or expensive investments (original ETFs were index funds)
- ▶ No promises of beating the market! Their goal is to match the index/sector/strategy that they're tracking.



# Summary of volatility

- Volatility is unique as an “asset”
- There will never be a sustained upward trend in volatility like we see with some stocks
- Volatility can't go bankrupt!
- The pattern is: spikes in volatility, followed by volatility declining, followed by trading in a range until the next spike
- The difficulties with predicting the pattern are:
  - When are the spikes coming?
  - How long will it take for volatility to subside after a spike?
  - How long can we go before the next spike in volatility?



# UVXY – long volatility



# "BLACK SWAN" HEDGE FUND ADVISED BY NASSIM TALEB RETURNS 3,612% IN MARCH



BY TYLER DURDEN

THURSDAY, APR 09, 2020 - 4:43

During the financial crisis, when most hedge funds suffered catastrophic returns forcing many to gate their investors, Mark Spitznagel, who is perhaps best known for the phrase "**I spend all my time thinking about looming disaster**", made what the [WSJ reported](#) was "*huge gains*" with his "black swan"-targeting hedge fund Universa Investments, which not incidentally is advised by Nassim Taleb. Then, in August 2015 during the infamous ETFlash crash, his fund reportedly made a gain of about \$1 billion, or 20%, during a single, turbulent day when the VIX briefly broke and ETF trading went haywire for several hours.

Fast forward to March when the biggest "looming disaster" in decades finally struck, and when Universa hit the proverbial payday it was waiting for ever since the inception of its tail-hedge fund - which is basically deep out of the money puts which roll every month - in March 2008.

"It is a good time to reflect again on how we have performed for you as a risk mitigation strategy, if for no other reason than to give you some reassurance and even solace following one of the scariest months for markets on record" Spitznagel writes in his investor letter sent out to clients earlier today, and then delivers the good news: **the fund generated a 3,612% return on invested capital in March, and a phenomenal 4,144% year to date.**

# “Tail risk” hedging

*The Risk Mitigation Scorecard*

Strategy	March 2020	CAGR		LTD (Since Mar 2008)	2008 (Mar-Dec)
		Since 2019	Since 2015		
Universa Tail Hedge (3.33%) + SPX (96.67%)	0.4%	16.2%	8.3%	11.5%	9.9%
CBOE Eureka hedge Tail Risk (3.33%) + SPX (96.67%)	-11.4%	5.2%	6.3%	7.7%	-29.4%
iShares 20Y+ Treasury (25%) + SPX (75%)	-6.8%	12.2%	7.3%	8.9%	-15.1%
iShares 3-7Y Treasury (25%) + SPX (75%)	-8.3%	6.9%	6.1%	7.2%	-21.1%
CBOE Eureka hedge Long Volatility (25%) + SPX (75%)	-2.3%	10.7%	6.1%	8.2%	-13.8%
Gold (25%) + SPX (75%)	-9.1%	8.4%	6.5%	7.4%	-25.4%
Hedge Fund Index (25%) + SPX (75%)	-10.3%	4.4%	5.6%	6.7%	-27.5%
CTA Index (25%) + SPX (75%)	-8.7%	5.6%	5.3%	6.6%	-21.5%
SPX (100%)	-12.4%	4.5%	6.6%	7.9%	-30.7%



# UVXY – long volatility



## UVXY – long volatility

- How well do they actually track market volatility?
- Tracks volatility pretty well, but...
  - ...underperforms it in the long run.
- In fact, we can expect that the long-run trend of any ETF that's long volatility will be downwards.
- Why?

## UVXY – long volatility

- And why would an investor want to “play” volatility in the first place?
- Great hedge/protection against a market crash (see March 2020)
- Reliable negative correlation with the market (partly explains the negative long-run trend)

# UVXY Holdings

## ProShares Ultra VIX Short-Term Futures ETF (UVXY)

NYSEArca - NYSEArca Delayed Price. Currency in USD

[Add to watchlist](#)

[Visitors trend](#) 2W ↑

**11.28** +0.14 (+1.26%) **11.19** -0.09 (-0.80%)

At close: 4:00PM EST

After hours: 6:53PM EST

[Summary](#)

[Chart](#)

[Conversations](#)

[Historical Data](#)

[Profile](#)

[Options](#)

[Holdings](#)

[Performance](#)

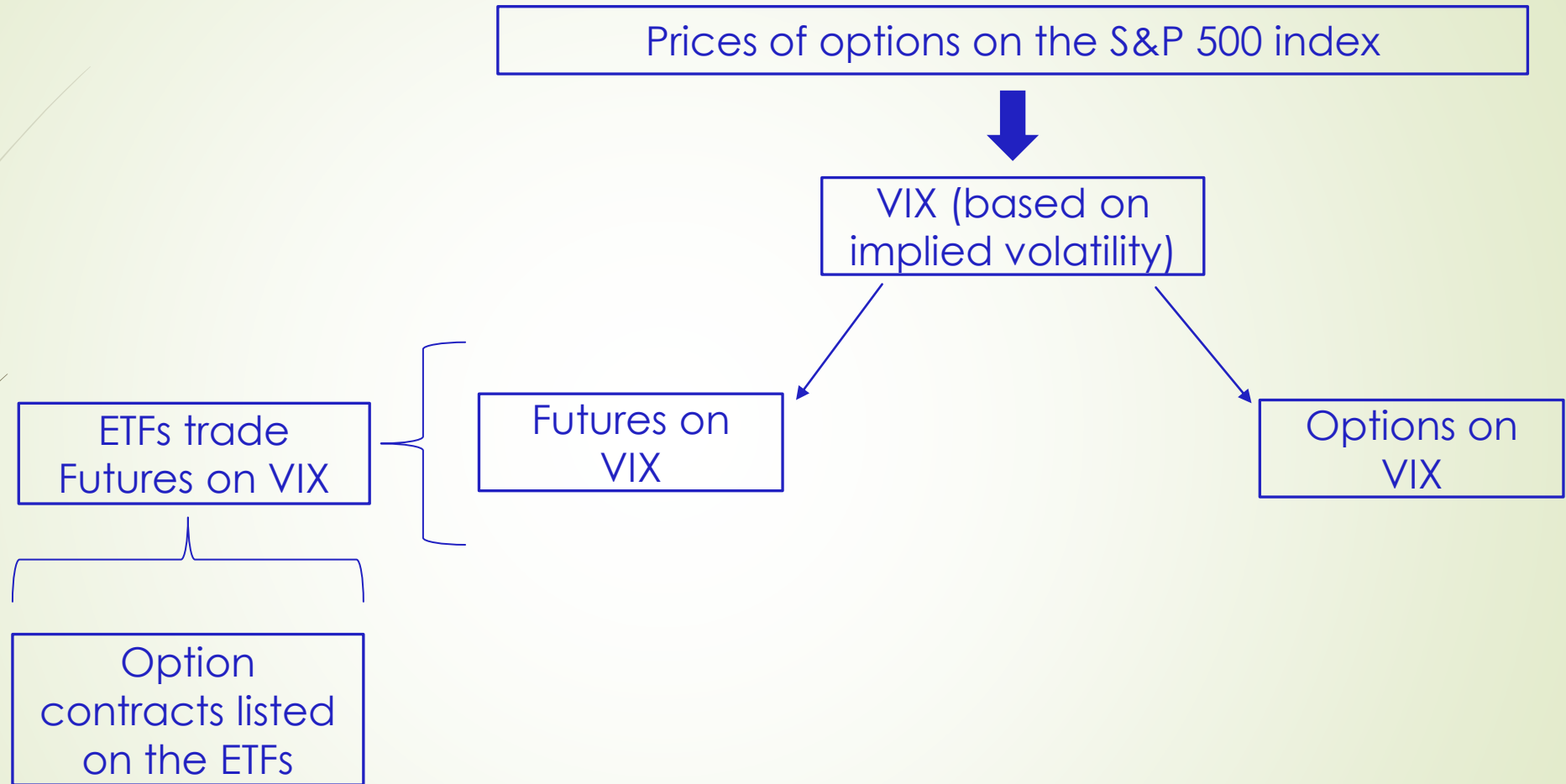
[Risk](#)

### Top 3 Holdings (150.00% of Total Assets)

[Get Quotes for Top Holdings](#)

Name	Symbol	% Assets
Cboe Vix Future Nov20	N/A	88.43%
Cboe Vix Future Dec20	N/A	58.99%
Ipath Series-B S&P 500 Vix Sht-Term Fut Swap - Gs	<b>VXX</b>	2.58%

# In case it's not obvious how crazy this all is...





# VIX futures

## Futures Chains for VX

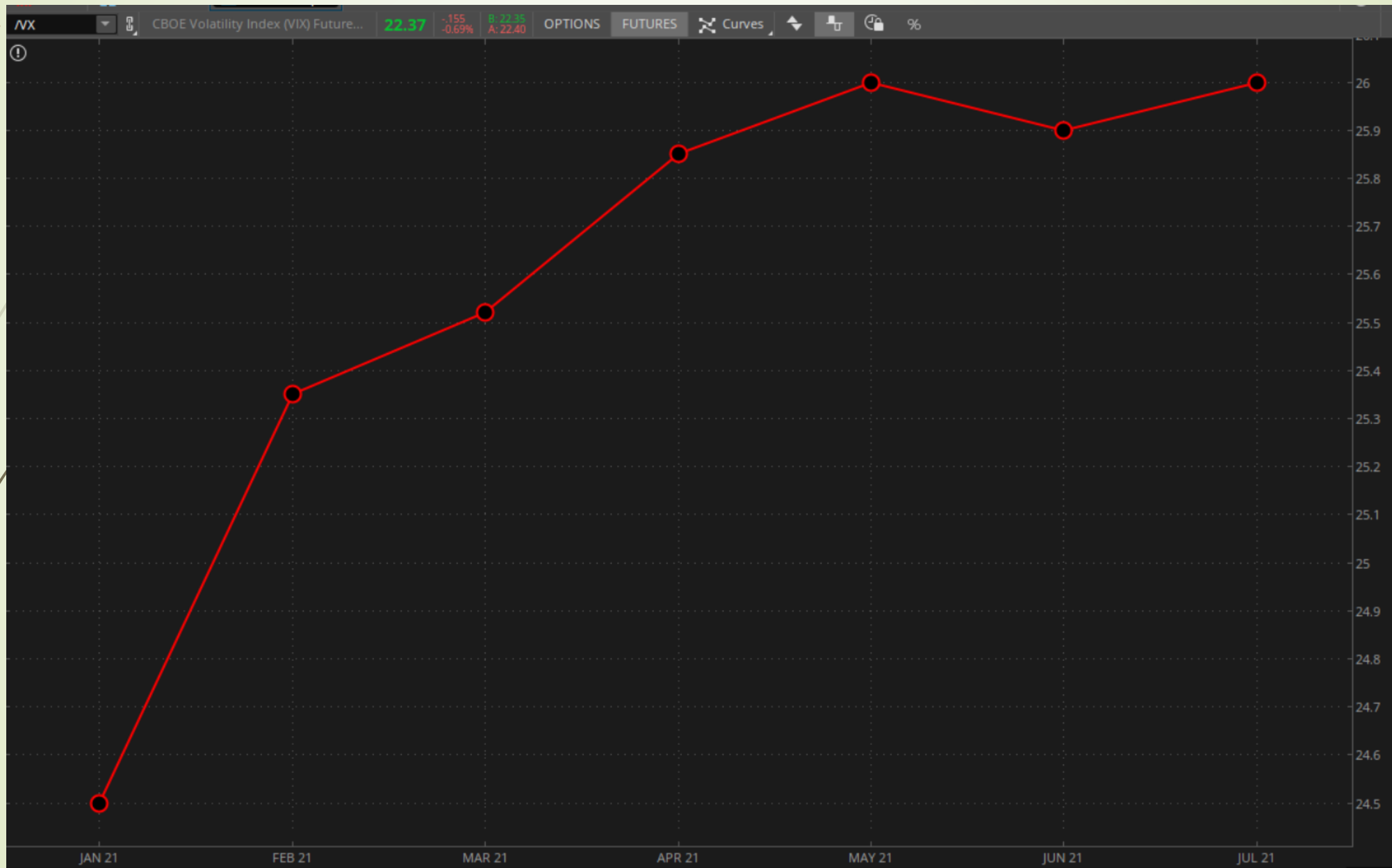
Symbol  Range  Type  Expiration  [View Chain](#)

[Find Symbol](#) | [Futures](#)

### Futures

Symbol	Month	Last	Chg	Bid	Ask	Day High	Day Low	Vol	OpInt
VXZ20	DEC 2020	22.37	▼-0.18	22.35	22.4	22.50	22.35	72	68,958
VXF21	JAN 2021	24.50	▼-0.15	24.5	24.55	24.60	24.50	118	162,834
VXG21	FEB 2021	25.35	▼-0.05	25.3	25.35	25.35	25.35	17	36,265
VXH21	MAR 2021	25.52	▼-0.03	25.5	25.55	25.53	25.52	3	14,726
VXJ21	APR 2021	25.825	▼-0.025	25.75	25.85	0	0	0	9,332
VXK21	MAY 2021	25.925	▼-0.075	25.8	25.95	0	0	0	7,385
VXM21	JUN 2021	25.90	▼-0.05	25.8	25.95	25.95	25.90	8	3,757
VXN21	JUL 2021	26.00	0	25.85	26.05	0	0	0	232

# VIX futures



# VIX futures

- Upward-sloping term structure (“contango”. 2020 was mostly an exception to this. Post-covid crash in March, VIX futures were commonly in “backwardation”)
  - Rollover losses
- Near-dated contract is more volatile than later-dated contracts (2020 no exception to this)
  - Higher margin requirements
  - Margin requirements change as contract approaches expiry

# VIX futures

- Can we do better than UVXY with a similar strategy?
- Consider:
  - Long futures contracts on VIX
  - Sell when there's a spike in VIX (term structure changes to backwardation)
  - Only continue with the strategy when contango is restored
- Challenges:
  - Timing of sale after spike
  - Margin requirements

# VIX futures – margin requirements

## VXZ20 – Volatility Index DEC 2020

Bid Size <a href="#">i</a>	14
Ask Size <a href="#">i</a>	5
Day Range	22.35 - 22.5
Primary Ex	CFE
Volume	126
Open Interest <a href="#">i</a>	68,958

### Details

Contract Size	\$1000 X VIX Index
Contract Months	All Months
Settlement	Cash Settled
Daytrading Margin	n/a
First Notice Day <a href="#">i</a>	n/a
Tick <a href="#">i</a>	0.05 = \$50.00
Trading Hours	6:00 PM - 5:00 PM ET
Initial Margin <a href="#">i</a>	\$20,625.00
Maintenance Margin <a href="#">i</a>	\$18,750.00
Last Trading Day <a href="#">i</a>	12/16/2020

## VXF21 – Volatility Index JAN 2021

Bid Size <a href="#">i</a>	41
Ask Size <a href="#">i</a>	3
Day Range	24.5 - 24.6
Primary Ex	CFE
Volume	138
Open Interest <a href="#">i</a>	162,834

### Details

Contract Size	\$1000 X VIX Index
Contract Months	All Months
Settlement	Cash Settled
Daytrading Margin	n/a
First Notice Day <a href="#">i</a>	n/a
Tick <a href="#">i</a>	0.05 = \$50.00
Trading Hours	6:00 PM - 5:00 PM ET
Initial Margin <a href="#">i</a>	\$16,005.00
Maintenance Margin <a href="#">i</a>	\$14,550.00
Last Trading Day <a href="#">i</a>	1/20/2021

**Note:** you can reduce margin requirements with spread trades



# Options on UVXY

PROSHARES ULTRA VIX SHORT TERM FUTURES ETF (UVXY) Last 11.28 Change 0.14 Bid 11.17 Ask 11.18 Volume 46,175,838 Trade | News | Chart

## June 18 2021 Calls

**UVXY @ 11.28**  
190 Days to Exp

## June 18 2021 Puts

Choose a Strategy ▾ Trade Get Quote P&L Calc Clear Selections

IV	Delta	Open Int	Vol	Change	Last	Bid	Ask	Strike	Bid	Ask	Last	Change	Vol	Open Int	Delta	IV
118.38	0.879	82	2	0.00	6.10	5.85	6.50	6.00	0.90	1.15	1.04	-0.05	42	948	-0.125	126.57
130.20	0.836	1,143	0	0.00	5.61	5.65	6.00	7.00	1.55	1.70	1.61	-0.03	73	166	-0.164	134.51
137.27	0.800	668	19	0.13	5.40	5.30	5.70	8.00	2.24	2.38	2.25	0.00	0	295	-0.198	141.57
141.99	0.768	365	8	0.14	4.91	5.00	5.40	9.00	2.81	3.00	3.00	0.11	10	516	-0.232	141.72
156.86	0.750	2,145	96	0.18	4.73	4.75	5.70	10.00	3.50	3.80	3.71	0.04	32	1,877	-0.261	145.94
187.45	0.757	556	158	0.25	4.55	4.45	7.00	11.00	4.25	4.90	4.37	-0.17	38	1,194	-0.280	154.96
146.02						4.20	4.45	12.00	5.00	5.40	5.10	-0.40	2	1,731	-0.312	151.76
197.41						4.05	7.00	13.00	5.75	6.20	6.05	0.00	0	518	-0.336	152.99
154.50						3.85	4.30	14.00	6.65	7.00	6.93	0.00	0	344	-0.355	155.90
157.47						3.75	4.15	15.00	7.40	7.85	7.70	0.06	12	746	-0.377	156.45
158.22						3.60	3.95	16.00	8.30	8.70	8.42	0.00	0	562	-0.394	158.83
158.48	0.585	141	0	0.00	3.20	3.25	3.95	17.00	9.10	9.60	9.60	0.00	0	126	-0.412	159.90

**Calls quite cheap considering that this was above \$40 as recently as summer 2020.**

# Summary of long volatility ETFs

- Good hedge against a market crash, but very strong downward trend in price over time
- Compared to buying OTM put options on the index for protection:
  - Easier, don't have to choose strike price or expiry.
  - Don't have to monitor position, know when expiry is coming up.
- Buy call options on the ETF?
  - Can be very cheap
  - ...but, cheap because of the general downward drift in value, so we have time decay and "price" trend working against us
  - ...but, HUGE bang for the buck when there is a crash (10X increase in value feasible to help reduce our other losses)
- Buy call options on the VIX directly?

# Short volatility - SVXY



# Short volatility – SVXY

-Note that previous short volatility funds have ended badly

## Volatility ETN collapsing

VelocityShares Daily Inverse VIX Short-Term ETN (XIV:NASDAQ)

USD

Extended Hours

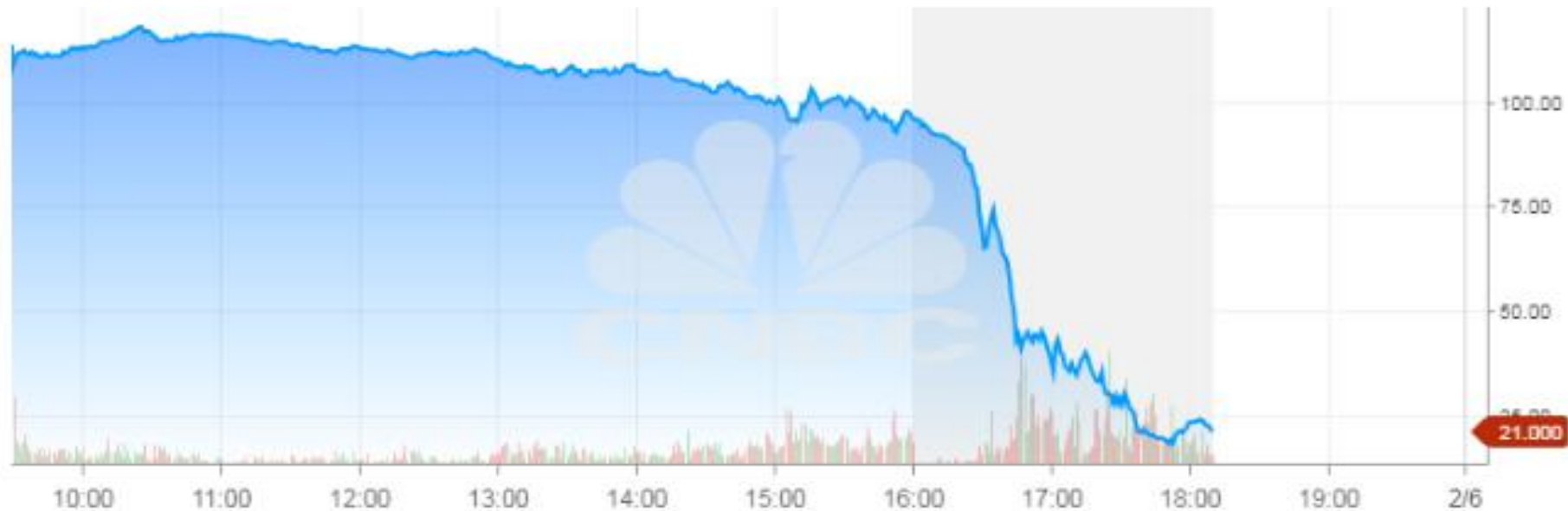
Last | 6:11:20 PM EST

Close | 4:00:00 PM EST

**21.00** -78.21 (-79.00%)

**99.00** -16.55 (-14.3228%)

1 Day



# Short volatility – SVXY

-Note that previous short volatility funds have ended badly

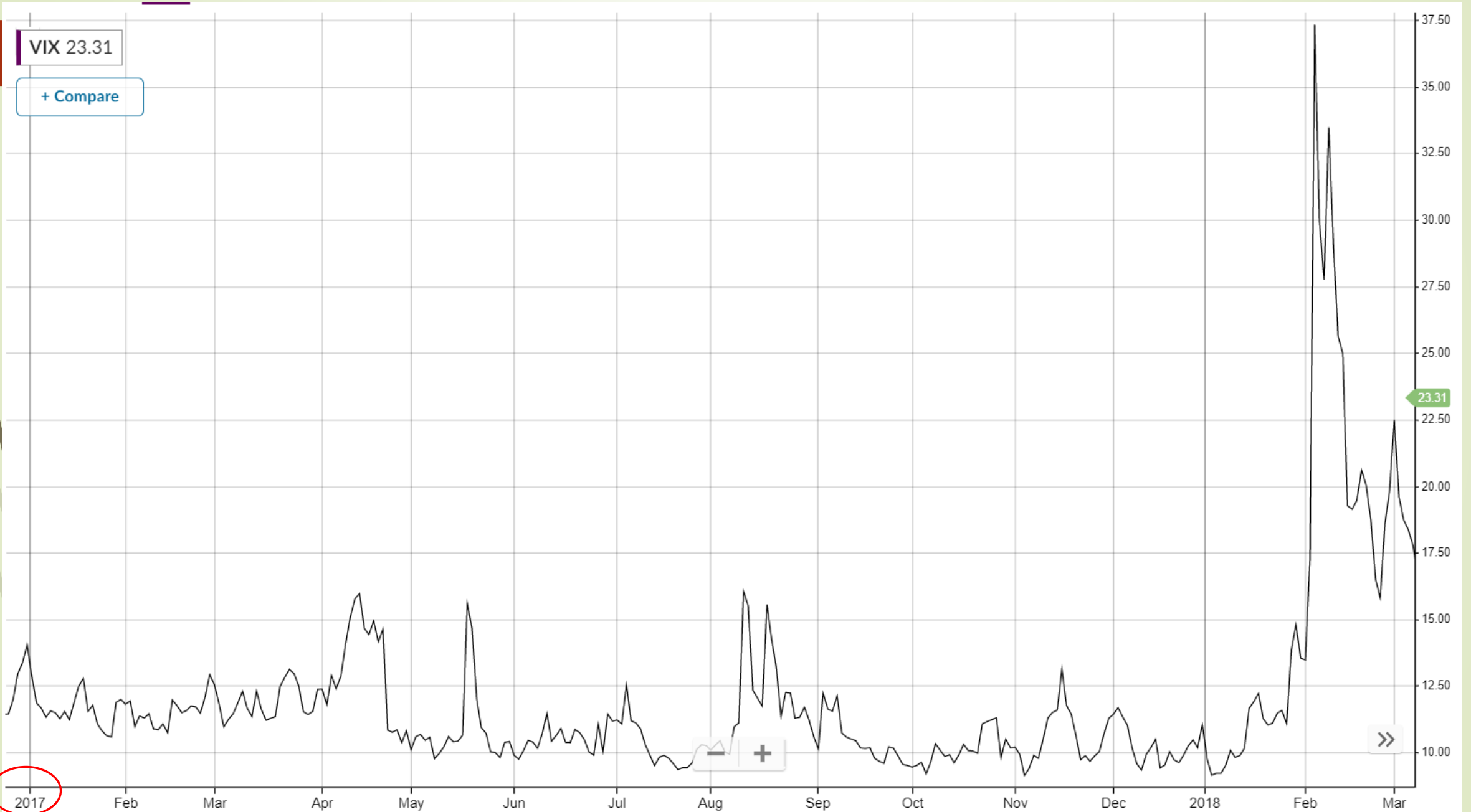




## SVXY – short volatility

- ▶ How well do they actually track market volatility?
- ▶ Actually steady, strong gains in value during periods of calm, but...
  - ▶ ...crashes when volatility spikes.

# Steady, strong gains during periods of calm





## SVXY – short volatility

- And why would an investor want to “play” volatility in the first place?
- The steady, strong gains during calm market times are attractive.
- The shape of the futures prices works to the advantage of the ETF as they short futures.

# Summary of short volatility ETFs

- Make steady money in calm market periods
- Prone to blowups which wipe out most/all of the gains which have accumulated
- I haven't used them ... seems the only way to succeed is invest for some period and then get out (and hope there wasn't a market downturn of any strength during the holding period!)

# What's worked for me

- ▶ Put spreads on VXX (Remember, as an ETF the long-run trend is expected to be downwards)
  - ▶ Worked especially well after the March crash (and managed to survive the crash itself)
- ▶ Generally, buying puts on VXX, selling shorter-dated OTM puts, and buying calls on VIX
  - ▶ Rules:
    - ▶ keep rolling over short puts
    - ▶ take profits on call after any spike in volatility
    - ▶ (re-establish call when futures curve back to contango)