



Market Structure Report

04-19-2024

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Summary:

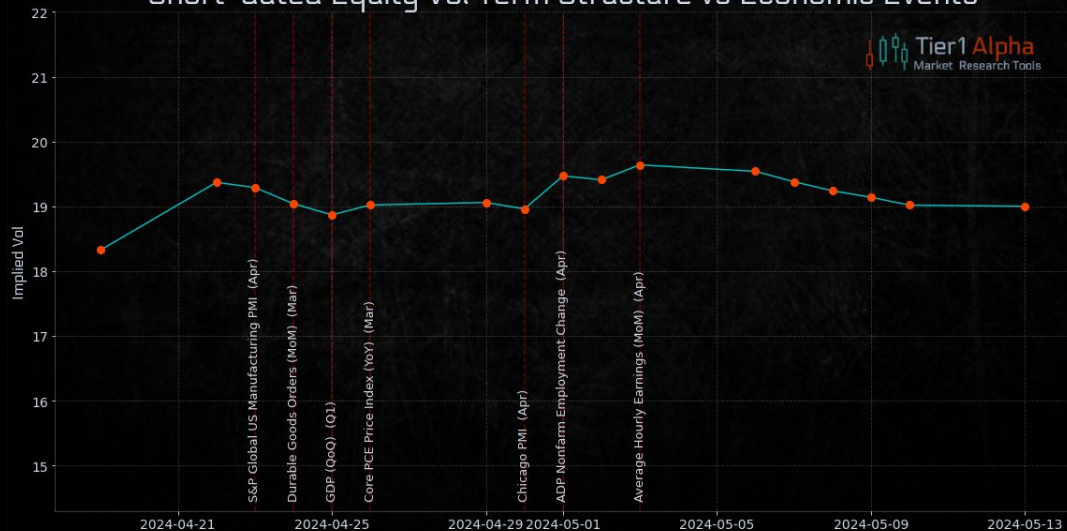
- Dealers continue to tread in negative gamma, which suggests the market remains susceptible to a sudden increase in volatility.
- However, after today's expiration, we should see a significant amount of gamma removed from the market, which will ease some of the hedging requirements market makers face. Overall, we expect to see around \$1.3T in notional open interest either expire or be rolled into the next month's contracts, which is slightly above average for a monthly expiration.
- Even after OpEx, we expect market makers will remain in negative territory, since the gamma flipping point will shift back up to the 5200 strike, which is around 3.75% higher.
- This means we'll be entering the heart of earnings season in a higher volatility regime, while at the same time, geopolitical risks are rapidly escalating, and CTA funds have started deleveraging at the fastest pace in nearly 8 months. Given even just one of those factors and we'd consider it a high-risk setup, but the confluence of all four vastly raises the potential for a more significant volatility event.
- For today, the 4975 strike is back in play on the downside, although SPX futures have already broken this level after hours due to the escalation between Israel and Iran. Because of this, we're less confident that our lower range will hold today, especially since dealers will be forced to sell as the market moves lower.
- CTAs have sold off an estimated \$20B in equities since Monday, but the selling flows from Vol control funds and Risk parity strategies have been much less aggressive. In fact, Vol control funds have actually been adding back around \$7B in equity exposure over the past two days, although we suspect that's the last bullish flow we'll see until the end of the month.
- In any case, that leaves a lot of potential deleveraging risk on the table if volatility increases from here, which is why we're still considering this an extremely dangerous setup from a positioning standpoint, especially as we head deeper into the Q1 earnings season.

Volatility Regime:	Low	Neutral	High
Flow Risk:	Bullish	Neutral	Bearish
PV Band Risk/Reward:	Long	Neutral	Short

Economic Event Calendar

Date	Event	Estimate	Previous	Impact	SPX IV
2024-04-23	S&P Global US Manufacturing PMI (Apr)	nan	51.9	High	19.29
2024-04-23	S&P Global Services PMI (Apr)	nan	51.7	High	19.29
2024-04-23	New Home Sales (Mar)	nan	662K	High	19.29
2024-04-24	Durable Goods Orders (MoM) (Mar)	nan	1.4%	High	19.04
2024-04-24	Crude Oil Inventories	nan	2.735M	High	19.04
2024-04-25	GDP (QoQ) (Q1)	nan	3.4%	High	18.87
2024-04-25	Initial Jobless Claims	nan	nan	High	18.87
2024-04-26	Core PCE Price Index (MoM) (Mar)	nan	0.3%	High	19.02
2024-04-26	Core PCE Price Index (YoY) (Mar)	nan	2.8%	High	19.02
2024-04-30	Chicago PMI (Apr)	nan	41.4	High	18.96
2024-04-30	CB Consumer Confidence (Apr)	nan	104.7	High	18.96
2024-05-01	ADP Nonfarm Employment Change (Apr)	nan	184K	High	19.47
2024-05-01	S&P Global US Manufacturing PMI (Apr)	nan	nan	High	19.47
2024-05-01	ISM Manufacturing PMI (Apr)	nan	50.3	High	19.47
2024-05-01	ISM Manufacturing Prices (Apr)	nan	55.8	High	19.47

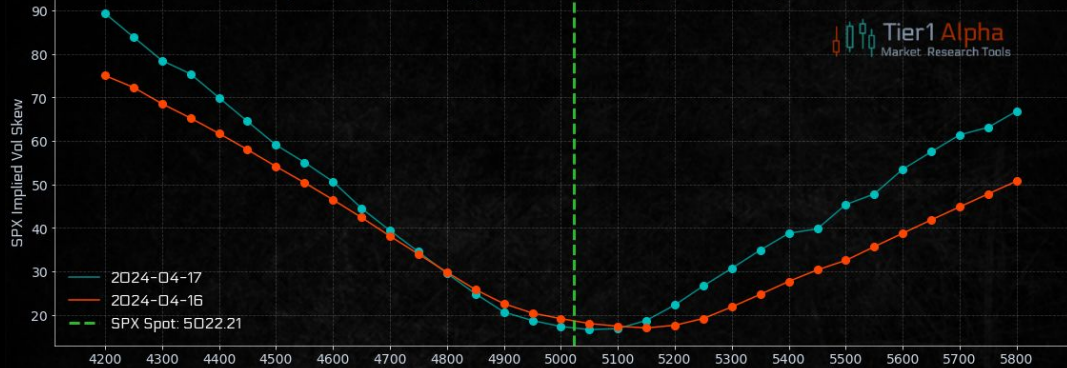
Short-dated Equity Vol Term Structure vs Economic Events



Date: 2024/04/18

Source: Intrinio/ Tier1Alpha.com

SPX Implied Volatility Skew -- OpEx: Fri Apr 19 2024



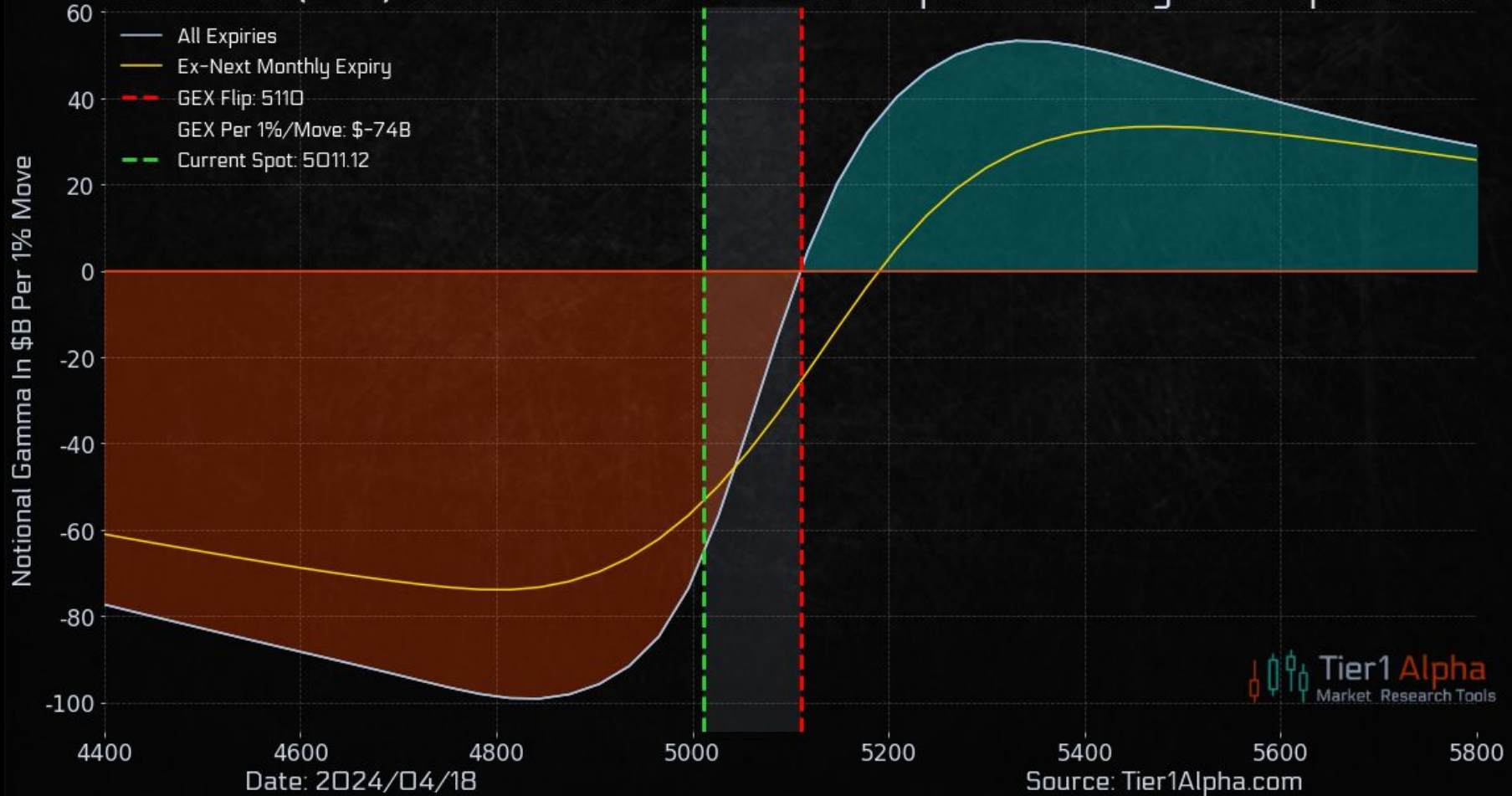
SPX Implied Volatility with Fixed Strike Vol

Expiration	Fri Apr 19 2024		Fri May 17 2024		Fri Jun 21 2024	
Strike	Implied Vol	FSV Change	Implied Vol	FSV Change	Implied Vol	FSV Change
4700.0	39.4	1.28	20.19	-0.6	19.53	-0.43
4750.0	34.52	0.53	19.38	-0.57	18.88	-0.41
4800.0	29.55	-0.27	18.6	-0.52	18.25	-0.37
4850.0	24.86	-0.96	17.85	-0.49	17.64	-0.34
4900.0	20.65	-1.92	17.11	-0.47	17.03	-0.32
4950.0	18.69	-1.73	16.4	-0.43	16.44	-0.31
5000.0	17.33	-1.8	15.7	-0.41	15.86	-0.3
5050.0	16.61	-1.4	15.03	-0.39	15.31	-0.31
5100.0	16.85	-0.54	14.41	-0.36	14.8	-0.28
5150.0	18.73	1.73	13.86	-0.32	14.31	-0.26
5200.0	22.27	4.66	13.39	-0.27	13.87	-0.23
5250.0	26.66	7.5	13.07	-0.22	13.47	-0.21
5300.0	30.72	8.89	12.88	-0.17	13.11	-0.19
5350.0	34.9	10.18	12.94	-0.02	12.79	-0.17
5400.0	38.77	11.07	13.22	0.13	12.51	-0.18
5450.0	39.78	9.43	13.56	0.3	12.32	-0.15
5500.0	45.37	12.84	13.97	0.34	12.19	-0.13
5550.0	47.81	12.13	14.64	0.53	12.14	-0.08
5600.0	53.5	14.72	15.25	0.61	12.2	-0.04
5650.0	57.5	15.66	15.83	0.64	12.31	0.0
5700.0	61.41	16.55	16.64	0.76	12.5	0.03

Date: 2024/04/17

Source: Drats/Tier1Alpha.com

S&P 500 (SPX) Estimated Dealer Gamma Exposure - Weighted Expirations



SPX Total Gamma Exposure By Strike -- Weighted Expirations



Date: 2024/04/18

Source: Intrinsic/Tier1Alpha.com

SPX+SPY Total Notional Open Interest Set To Expire 04/19/2024



Date: 2024/04/18

Source: Orats/Tier1Alpha.com

S&P 500 Post-OpEx Week Returns by Month and Year (2018-Present)

	2018	2019	2020	2021	2022	2023	2024	Monthly Average
January	1.1%	1.53%	1.58%	-0.76%	-3.94%	-1.03%	0.01%	-0.22%
February	4.26%	1.4%	-0.02%	-0.06%	-0.87%	-0.0%	0.06%	0.68%
March	-1.41%	2.38%	-11.13%	-0.71%	4.93%	2.56%	0.52%	-0.41%
April	1.39%	0.42%	nan%	1.01%	-1.19%	-0.19%	-2.19%	-0.13%
May	-0.28%	-0.18%	-2.64%	-0.35%	-3.06%	1.79%	nan%	-0.79%
June	0.12%	2.33%	2.43%	-0.6%	-6.0%	2.95%	nan%	0.21%
July	0.11%	-0.62%	0.96%	-0.22%	-2.8%	0.65%	nan%	-0.32%
August	0.26%	-2.43%	0.38%	-1.39%	0.08%	-2.1%	nan%	-0.87%
September	0.89%	-0.02%	0.48%	0.34%	-4.08%	1.07%	nan%	-0.22%
October	0.06%	2.04%	1.06%	0.88%	2.31%	-1.15%	nan%	0.86%
November	-2.73%	0.37%	-0.09%	0.46%	-0.25%	3.7%	nan%	0.24%
December	-5.1%	1.15%	1.61%	-0.92%	-0.98%	2.5%	nan%	-0.29%
Annual Average	-0.11%	0.7%	-0.49%	-0.19%	-1.32%	0.9%	-0.4%	nan%

SPX Returns Excluding Week Of OpEx

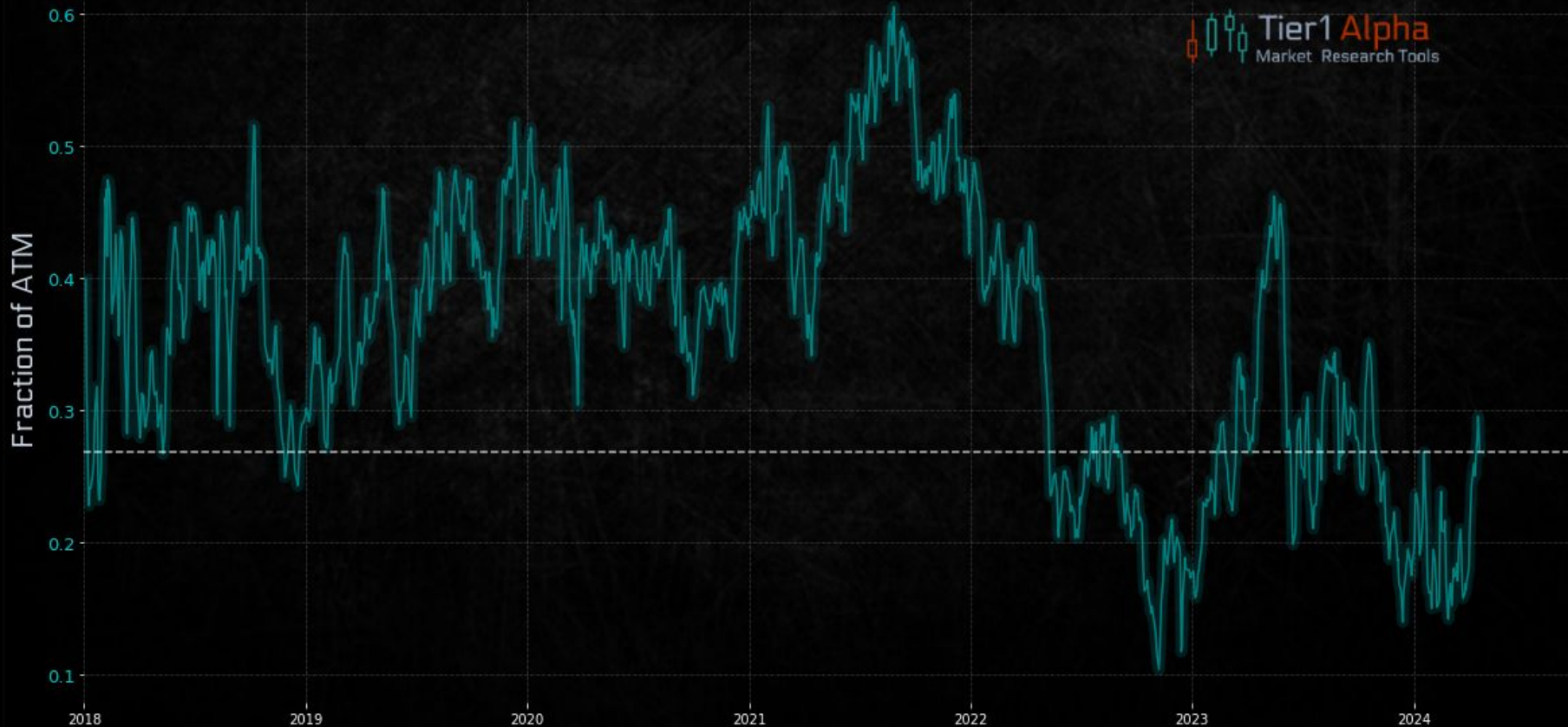


Date: 2024/04/18

Source: Tier1Alpha.com

 Tier1 Alpha
Market Research Tools

1-Month 25-Delta Put vs 25-Delta Call Implied Volatility Skew, Normalized

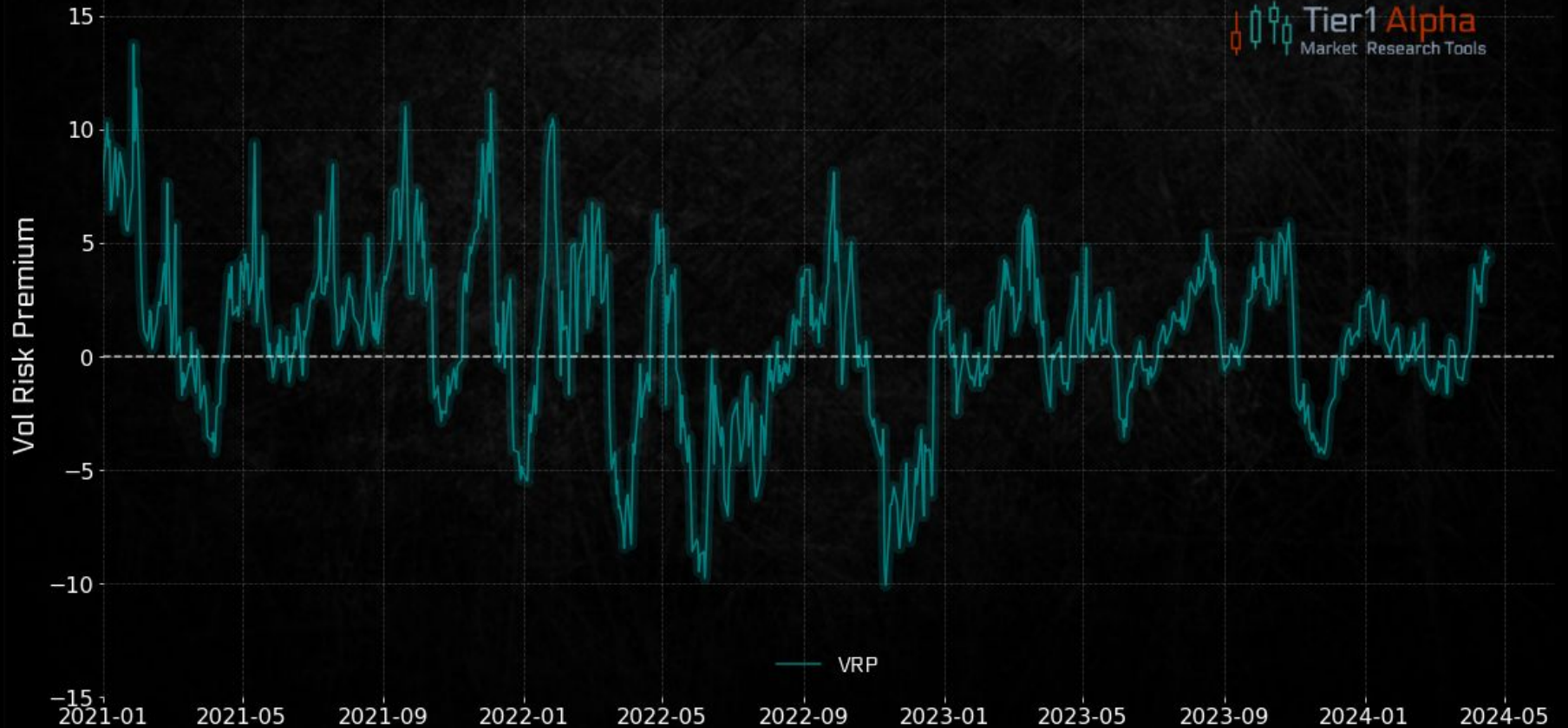


Tier1 Alpha
Market Research Tools

Date: 2024/04/18

Source: Tier1Alpha.com

SPX Volatility Risk Premium: 1m ATM Implied Vol vs 1m Realized Vol



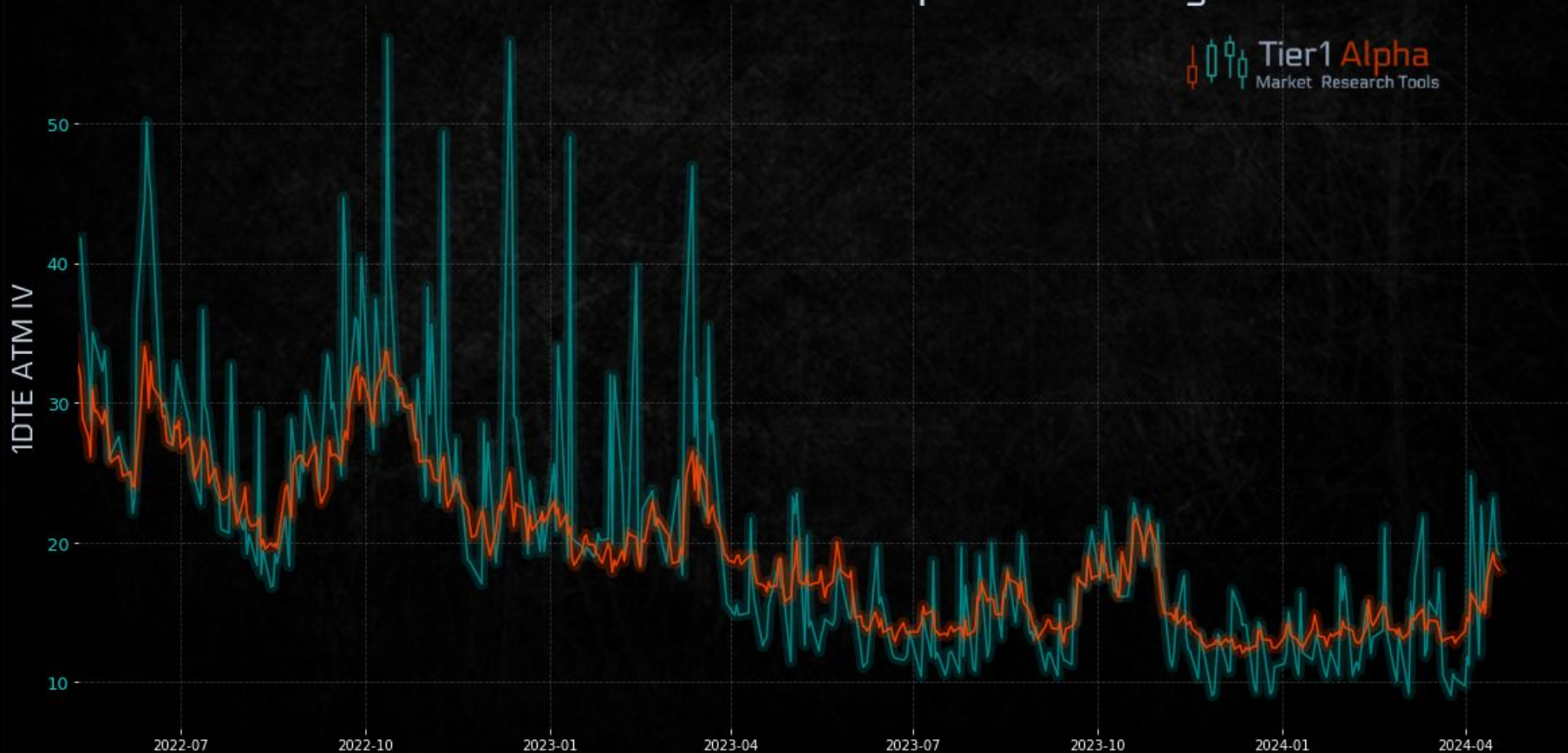
Tier1 Alpha
Market Research Tools

Date: 2024/04/18

Source: Tier1Alpha.com

SPX 1DTE 50-Delta Implied Volatility

Tier1 Alpha
Market Research Tools



Date: 2024/04/18

Source: Tier1Alpha.com

Nasdaq 100 (INDX) Probable Volatility & Put/Call Gamma By Strike, Weighted Expirations



Date: 2024/04/18

Source: Intrinio/Tier1Alpha.com

Russell 2000 Probable Volatility & Put/Call Gamma By Strike, Weighted Expirations



Strikes In Play

1940.0
1950.0
1960.0
1980.0
2000.0



--- Lower PV Band: 1914.0 --- Upper PV Band: 2011.0 Positive Gamma Negative Gamma --- Zero Gamma: 2070

03/21/2024

03/28/2024

04/05/2024

04/12/2024

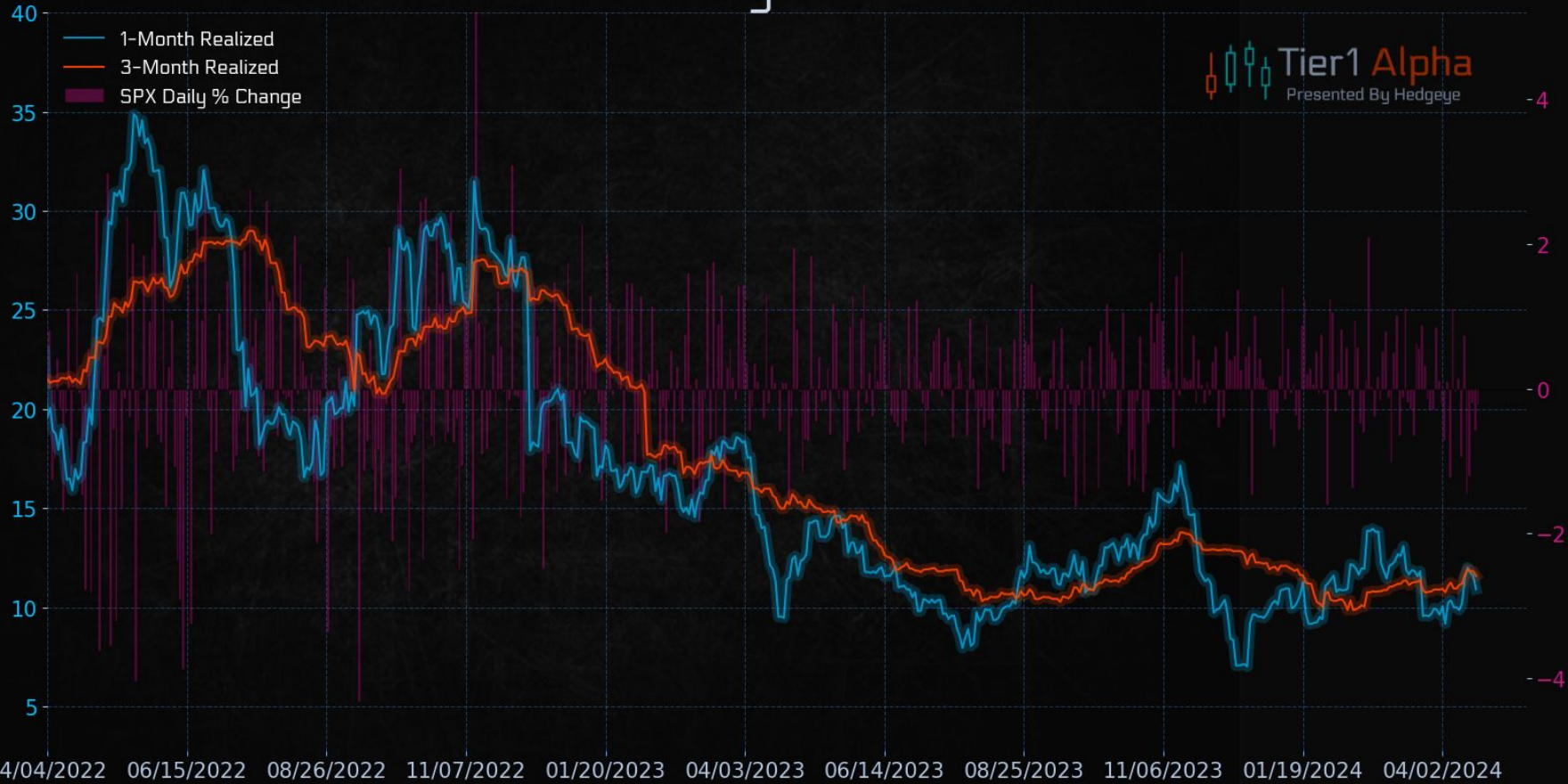
04/19/2024

04/26/2024

Date: 2024/04/18

Source: Intrinio/ Tier1Alpha.com

SPX Realized Volatility -- 1 Month vs 3 Month



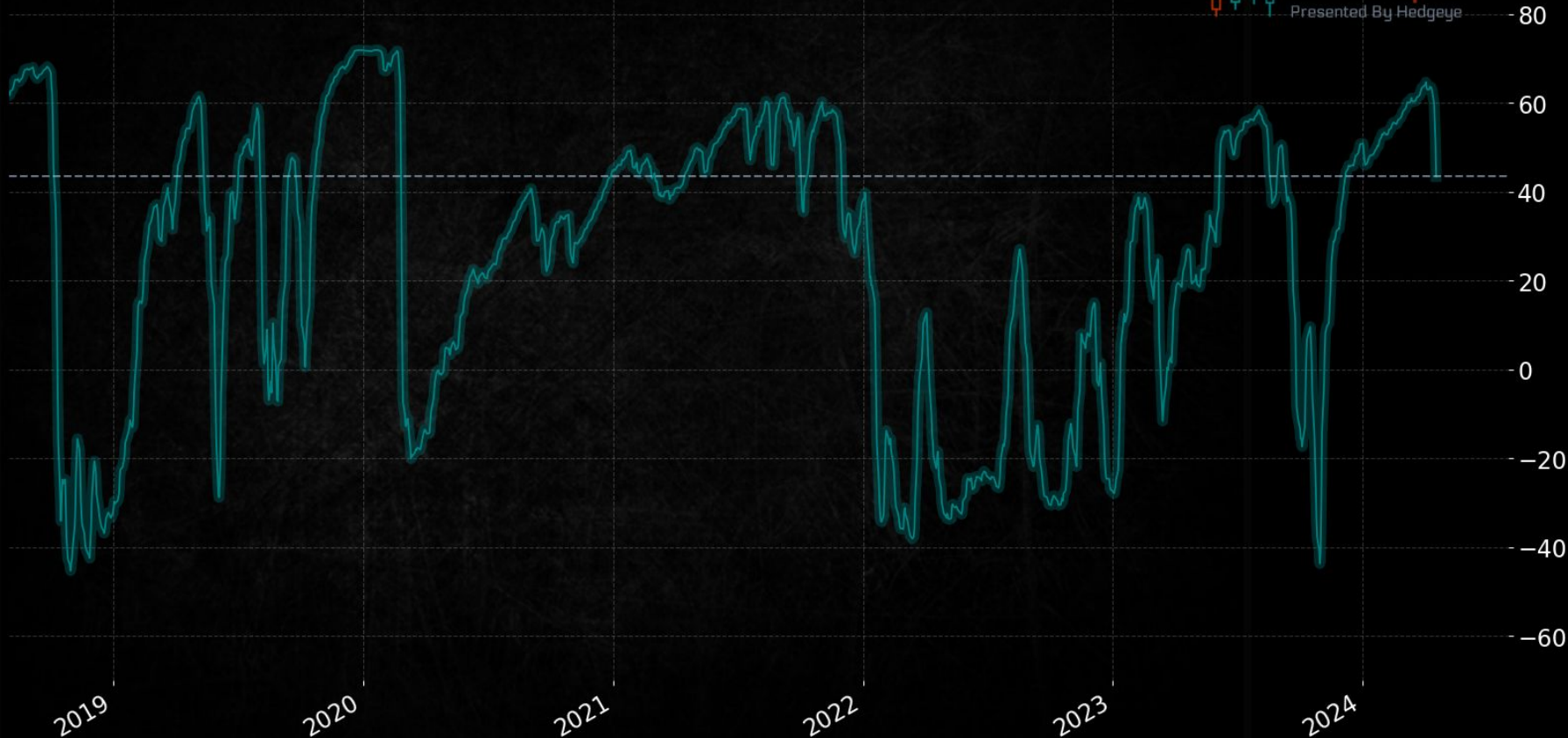
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Date: 2024/04/18

Source: Tier1Alpha.com

CTA Positioning in US Equities

Tier1 Alpha
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Date: 2024/04/18

Source: Tier1Alpha.com

Vol Control Implied Notional Flows



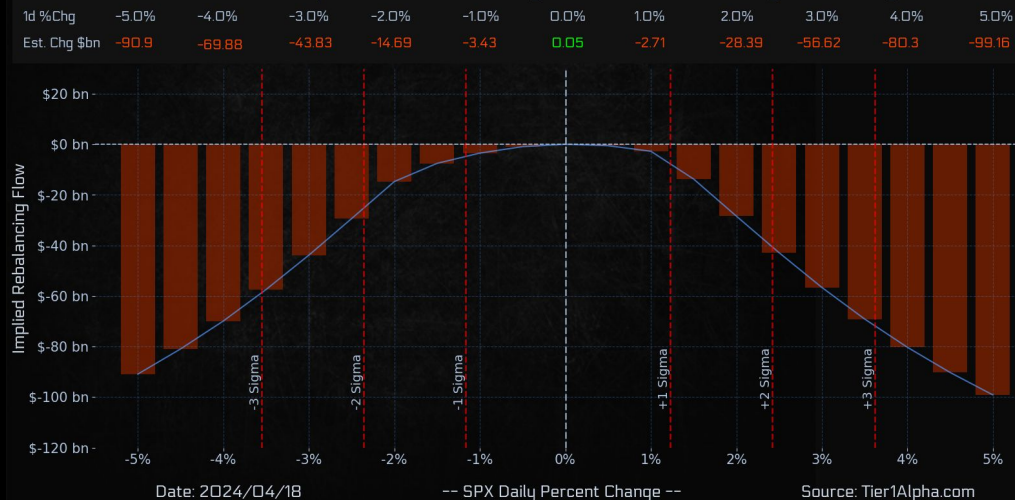
Date: 2024/04/18

Source: Tier1Alpha.com

SPX Realized Vol Data In Sample for 2024-04-19

Dropoff	1m Dates	1m Drop %	3m Dates	3m Drop %
T+1	2024-03-21	0.3%	2024-01-22	0.2%
T+2	2024-03-22	-0.1%	2024-01-23	0.3%
T+3	2024-03-25	-0.3%	2024-01-24	0.1%
T+4	2024-03-26	-0.3%	2024-01-25	0.5%
T+5	2024-03-27	0.9%	2024-01-26	-0.1%
T+6	2024-03-28	0.1%	2024-01-29	0.8%
T+7	2024-04-01	-0.2%	2024-01-30	-0.1%
T+8	2024-04-02	-0.7%	2024-01-31	-1.6%
T+9	2024-04-03	0.1%	2024-02-01	1.2%
T+10	2024-04-04	-1.2%	2024-02-02	1.1%

Vol Control Implied Rebalancing Flow vs SPX Daily %Change

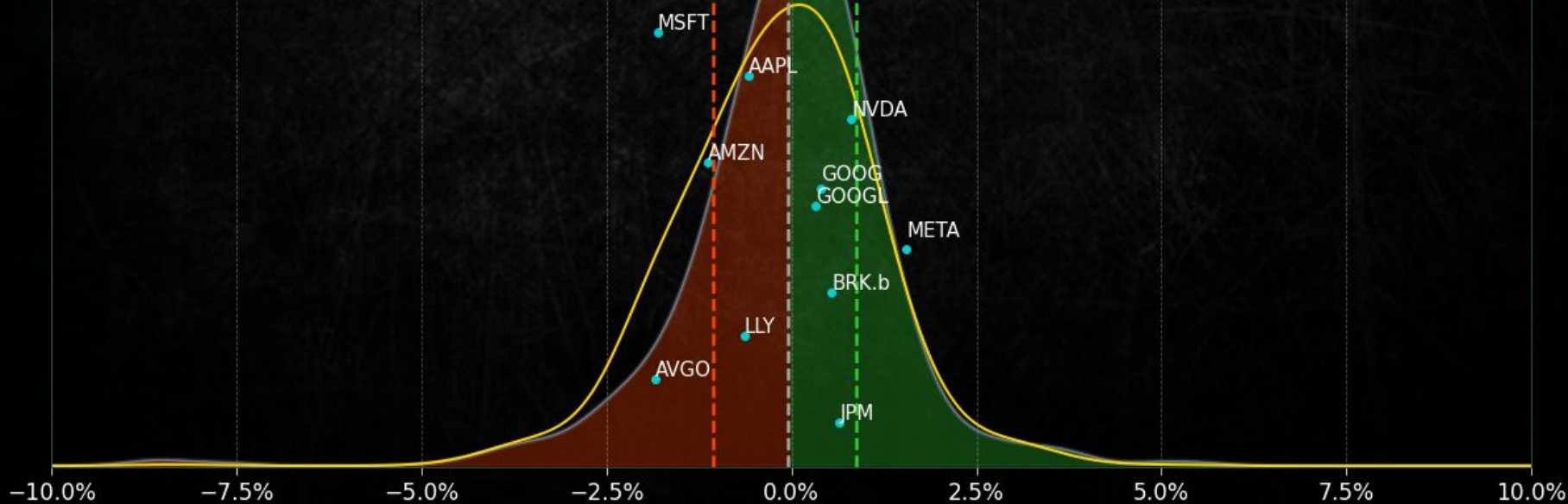


S&P 500 MBAD Indicator for 2024/04/18

Stocks Up: 264
Stocks Down: 238
SPX YTD % Change: -0.22%



- Weighted Distribution
- - - Avg. Daily Return: -0.04%
- - - Avg. Gain: 0.88%
- - - Avg. Decline: -1.07%

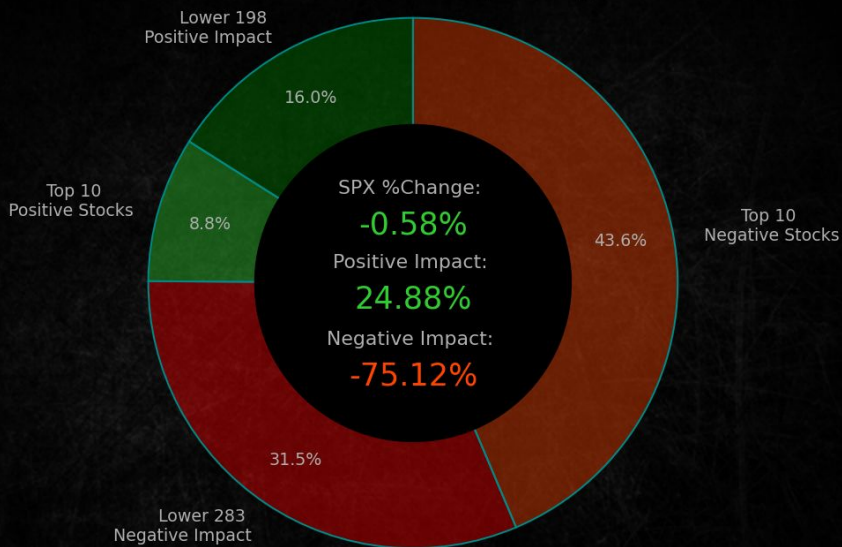


Date: 2024/04/18

--10% Return Distribution For SPX, Individual Constituents--

Source: IEX Cloud/ Tier1Alpha.com

SPX Constituents Relative Impact By Market Cap



Date: 2024/04/17

Source: Tier1Alpha.com

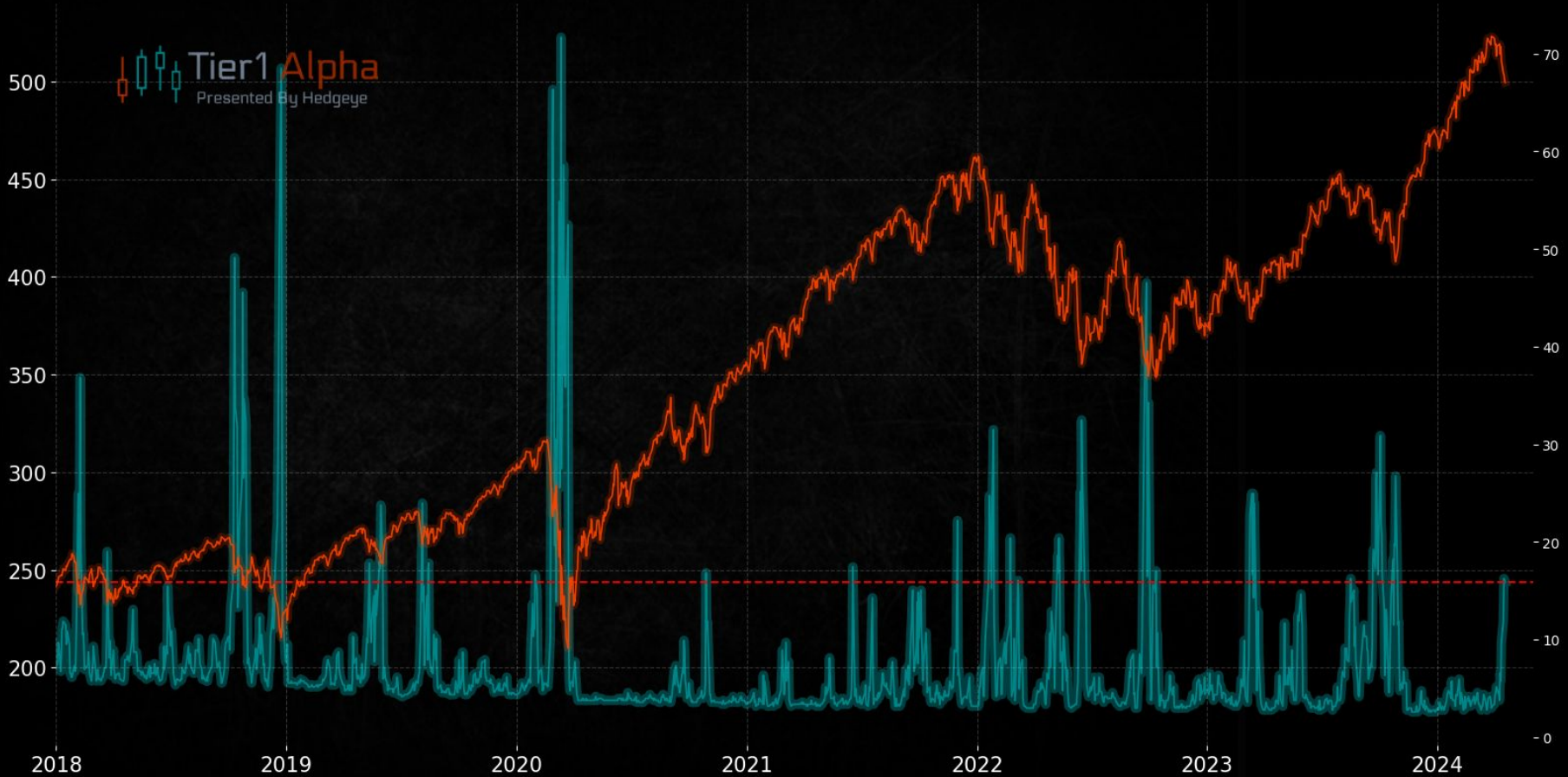
SPX Constituents Relative Impact By Market Cap

Largest Positive Impact

Largest Negative Impact

Top Contributor	Daily %Return	Positive Impact	% Weight	Top Detractor	Daily %Return.1	Negative Impact	% Weight.1
UNH	2.2%	1.8%	0.97%	NVDA	-3.9%	-17.0%	5.0%
GOOGL	0.7%	1.3%	2.15%	AAPL	-0.8%	-4.2%	5.9%
GOOG	0.6%	0.9%	1.82%	MSFT	-0.7%	-4.2%	7.23%
NEE	3.4%	0.9%	0.3%	AVGO	-3.5%	-4.2%	1.36%
BAC	1.6%	0.8%	0.58%	AMZN	-1.1%	-3.9%	3.95%
MCD	1.7%	0.7%	0.45%	AMD	-5.8%	-3.1%	0.61%
LLY	0.5%	0.7%	1.41%	META	-1.1%	-2.5%	2.59%
ABBV	1.1%	0.6%	0.67%	AMAT	-4.6%	-1.6%	0.4%
WFC	1.4%	0.6%	0.48%	PLD	-7.2%	-1.6%	0.25%
PEP	1.2%	0.6%	0.54%	LRCX	-5.3%	-1.3%	0.29%

S&P 500 Breadth: % of Stocks with RSI Below 30



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2018 2019 2020 2021 2022 2023 2024

Date: 2024/04/18

Source: IEX Cloud/ Tier1Alpha.com



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