



# Market Structure Report

04-24-2024

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# Summary:

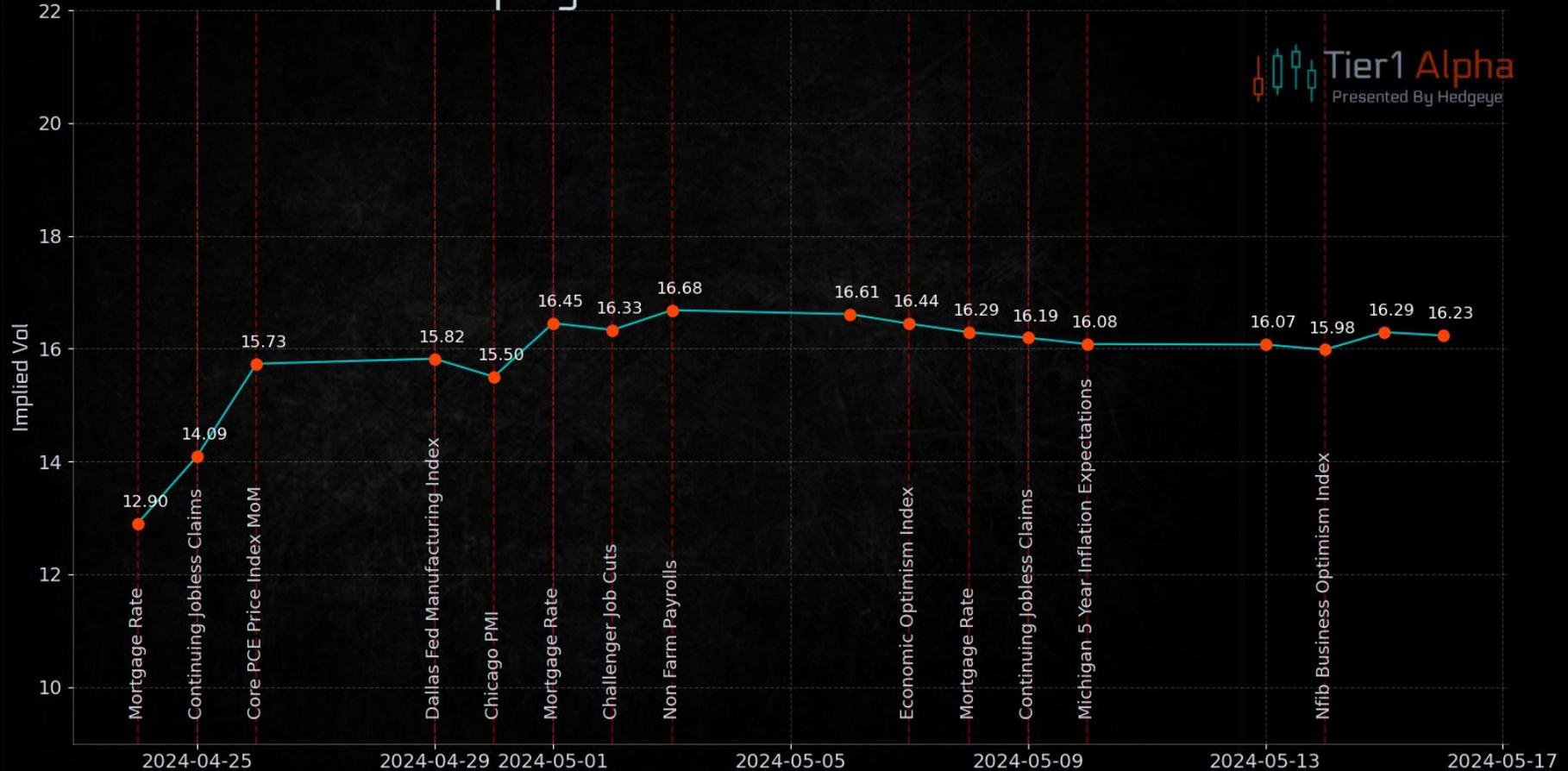
- Yesterday, we had a continuation of Monday's trend where a growing number of investors decided to abandon their geopolitically motivated tail hedges from the previous week. This enabled market makers to repurchase their deltas by buying SPX futures, which injected bullish flow into the market, consequently driving both markets and volatility higher.
- This serves as another compelling illustration of dealers' hedging strategies operating in both directions, with the net outcome being a general increase in volatility. In fact, we finally started to see an uptick in realized volatility, as yesterday's rally lacked the typical late-day mean reversion that we saw play out most of last week.
- Nevertheless, dealers remain in a negative gamma regime, which implies the elevated volatility will continue, at least until the SPX surpasses the 5130 strike, which is a little over 1% away.
- Yesterday, our expectations for some consolidation around the 5000 strike were quickly foiled, which led to a sharp upturn in our Probable Volatility bands
- While our upper range is still short of the gamma flipping point, there is now a clearer path back to more favorable conditions, especially if SPX can retest the 5100 strike on the back of some positive earnings mixed with the further capitulation of unprofitable tail hedges.
- However, we'd be surprised to see markets rise much further than that in the near term since our upper PV band is just north of that level at the 5110 strike.
- Remember, as long as dealers remain in negative gamma, this will continue to be a highly dynamic market, so we'd caution against being overly confident until conditions improve further.
- For today, our more tactical trading range is between the 5000 level on the downside and the 5100 strike towards the upside, which represents a ~2% window.

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

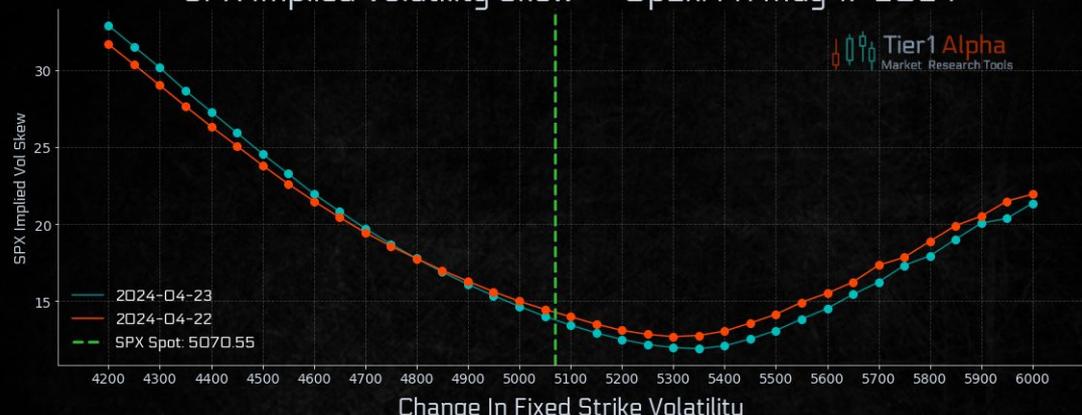
# Economic Event Calendar With Short-Dated Options Positioning

Date	Event	Estimate	Previous	Impact	Call IV	Put IV	SPX IV	Expected Move	P/C Vol	P/C DI
2024-04-24	Mortgage Rate	--	7.13	low	15.23	11.37	13.3	+/- 0.69%	1.02	1.69
2024-04-24	Mortgage Applications	--	3.3	low	15.23	11.37	13.3	+/- 0.69%	1.02	1.69
2024-04-24	MBA Mortgage Refinance Index	--	500.7	low	15.23	11.37	13.3	+/- 0.69%	1.02	1.69
2024-04-24	MBA Purchase Index	--	145.6	low	15.23	11.37	13.3	+/- 0.69%	1.02	1.69
2024-04-24	Durable Goods Orders	2.5	1.3	high	15.23	11.37	13.3	+/- 0.69%	1.02	1.69
2024-04-25	Continuing Jobless Claims	1810.0	1812.0	low	16.46	12.27	14.36	+/- 1.06%	1.26	2.64
2024-04-25	GDP Growth Rate	2.5	3.4	high	16.46	12.27	14.36	+/- 1.06%	1.26	2.64
2024-04-25	Initial Jobless Claims	215.0	212.0	medium	16.46	12.27	14.36	+/- 1.06%	1.26	2.64
2024-04-26	Core PCE Price Index MoM	0.3	0.3	high	17.88	14.03	15.95	+/- 1.44%	1.9	1.59
2024-04-26	Personal Income	0.5	0.3	high	17.88	14.03	15.95	+/- 1.44%	1.9	1.59
2024-04-26	Personal Spending	0.6	0.8	high	17.88	14.03	15.95	+/- 1.44%	1.9	1.59
2024-04-26	Michigan 5 Year Inflation Expectations	3.0	2.8	low	17.88	14.03	15.95	+/- 1.44%	1.9	1.59

# Short-dated Equity Vol Term Structure vs Economic Events



## SPX Implied Volatility Skew -- OpEx: Fri May 17 2024



Date: 2024/04/23

Source: Orats/ Tier1Alpha.com

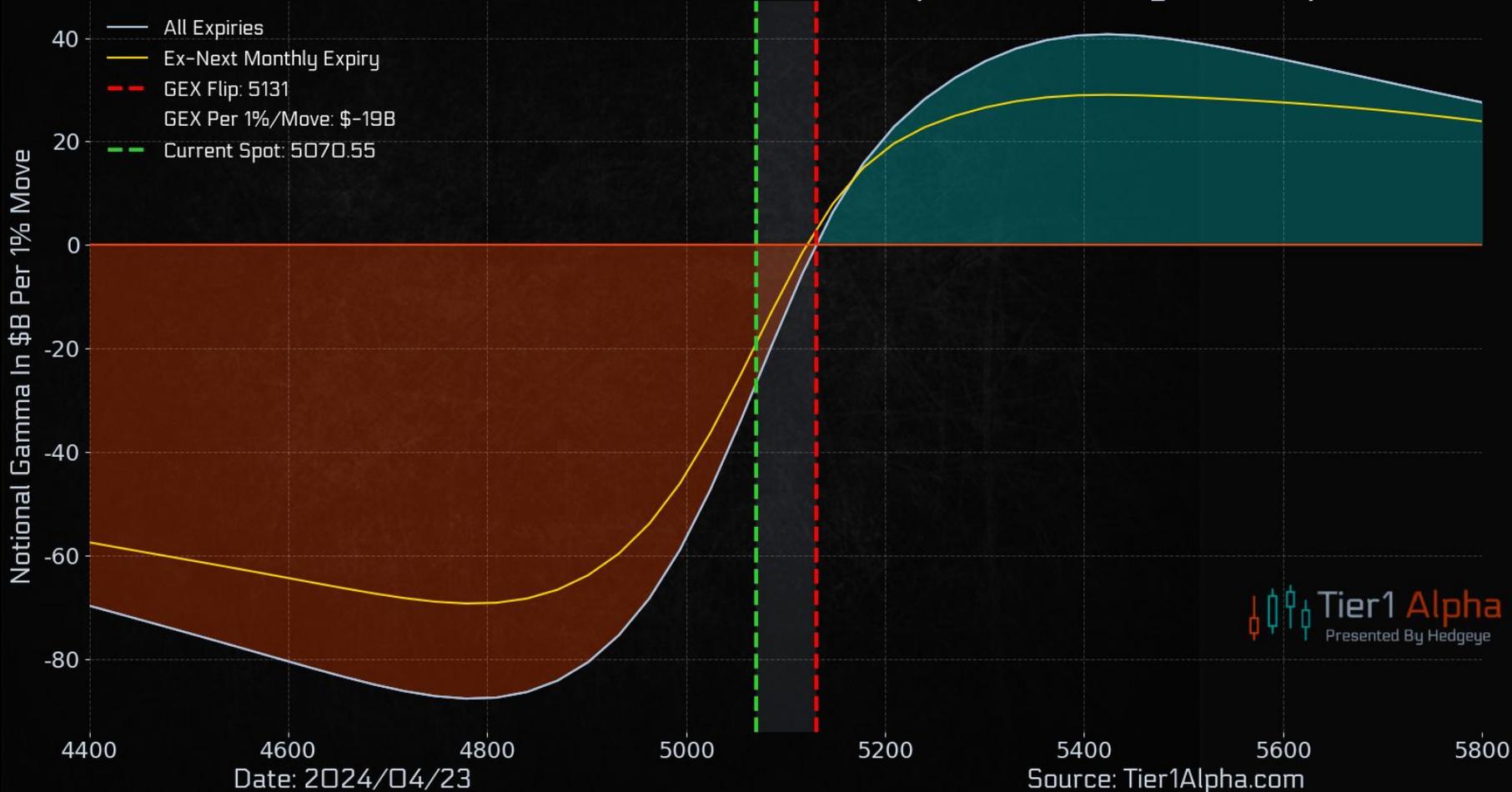
## SPX Implied Volatility with Fixed Strike Vol

Expiration	Fri May 17 2024		Fri Jun 21 2024		Fri Jul 19 2024	
	Implied Vol	FSV Change	Implied Vol	FSV Change	Implied Vol	FSV Change
4400.0	27.3	0.96	23.4	0.14	20.33	0.02
4450.0	25.94	0.85	22.57	0.11	19.68	-0.01
4500.0	24.57	0.75	21.76	0.08	19.03	-0.04
4550.0	23.28	0.66	20.99	0.07	18.41	-0.05
4600.0	21.97	0.47	20.23	0.02	17.81	-0.07
4650.0	20.84	0.39	19.52	0.03	17.22	-0.07
4700.0	19.73	0.27	18.8	0.0	16.63	-0.11
4750.0	18.71	0.13	18.1	-0.06	16.09	-0.14
4800.0	17.78	0.01	17.45	-0.09	15.56	-0.16
4850.0	16.9	-0.11	16.82	-0.12	15.04	-0.19
4900.0	16.1	-0.2	16.19	-0.15	14.58	-0.2
4950.0	15.36	-0.26	15.6	-0.18	14.13	-0.23
5000.0	14.67	-0.33	15.03	-0.21	13.71	-0.29
5050.0	14.02	-0.45	14.49	-0.26	13.33	-0.32
5100.0	13.45	-0.55	14.0	-0.29	13.0	-0.33
5150.0	12.94	-0.57	13.52	-0.38	12.7	-0.37
5200.0	12.52	-0.59	13.12	-0.44	12.43	-0.39
5250.0	12.19	-0.66	12.77	-0.45	12.18	-0.42
5300.0	11.99	-0.71	12.45	-0.47	11.97	-0.44
5350.0	11.92	-0.86	12.15	-0.5	11.8	-0.48
5400.0	12.1	-0.96	11.9	-0.52	11.66	-0.51
5450.0	12.55	-1.03	11.7	-0.57	11.56	-0.53
5500.0	13.1	-1.05	11.53	-0.62	11.48	-0.56
5550.0	13.84	-1.09	11.44	-0.66	11.45	-0.61
5600.0	14.53	-0.99	11.44	-0.7	11.48	-0.65
5650.0	15.44	-0.8	11.47	-0.78	11.59	-0.65
5700.0	16.24	-1.1	11.64	-0.73	11.7	-0.69

# SPX Probable Volatility & Put/Call Gamma By Strike, Weighted Expirations

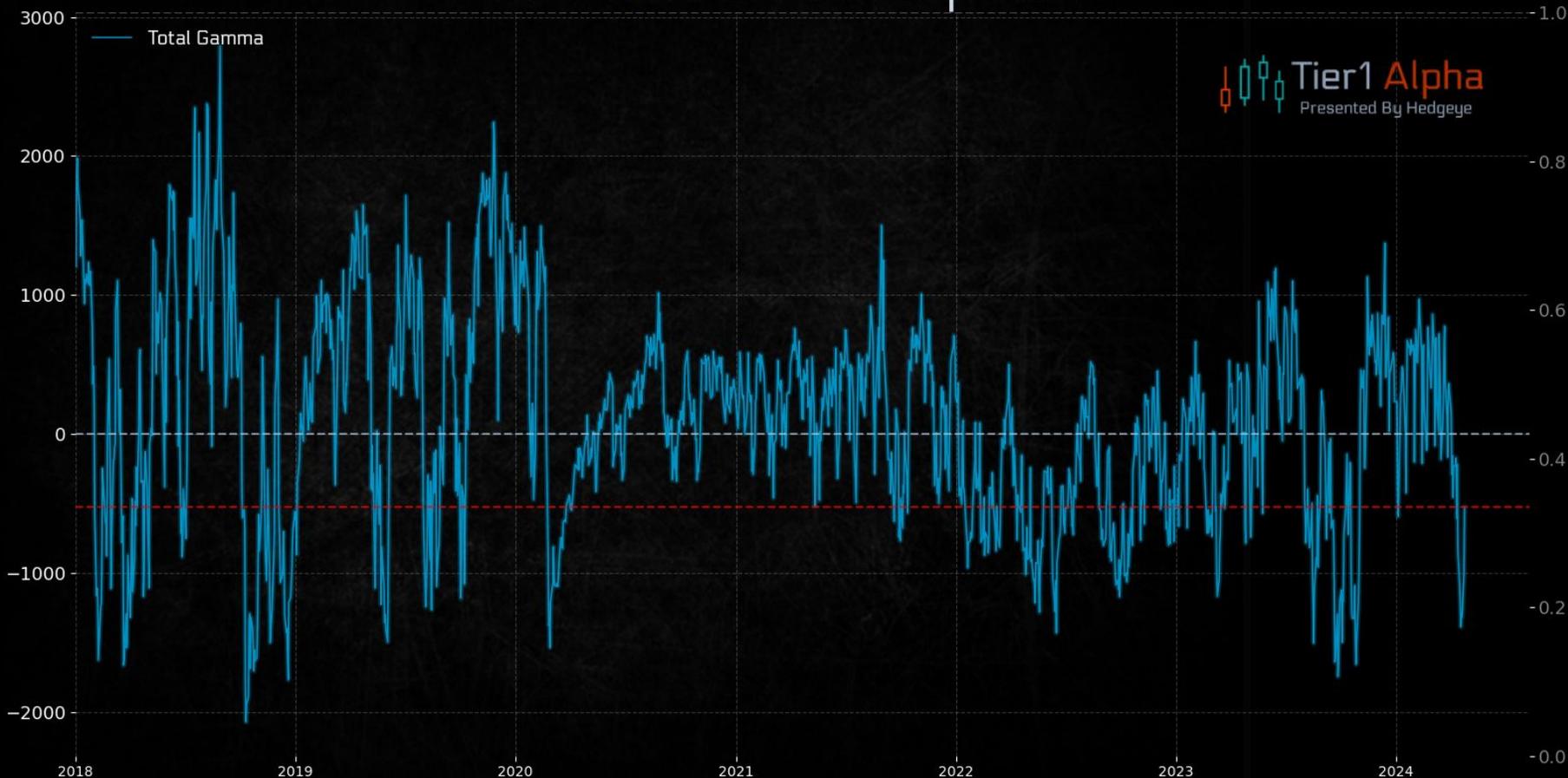


# S&P 500 (SPX) Estimated Dealer Gamma Exposure - Weighted Expirations



Tier1 Alpha  
Presented By Hedgeye

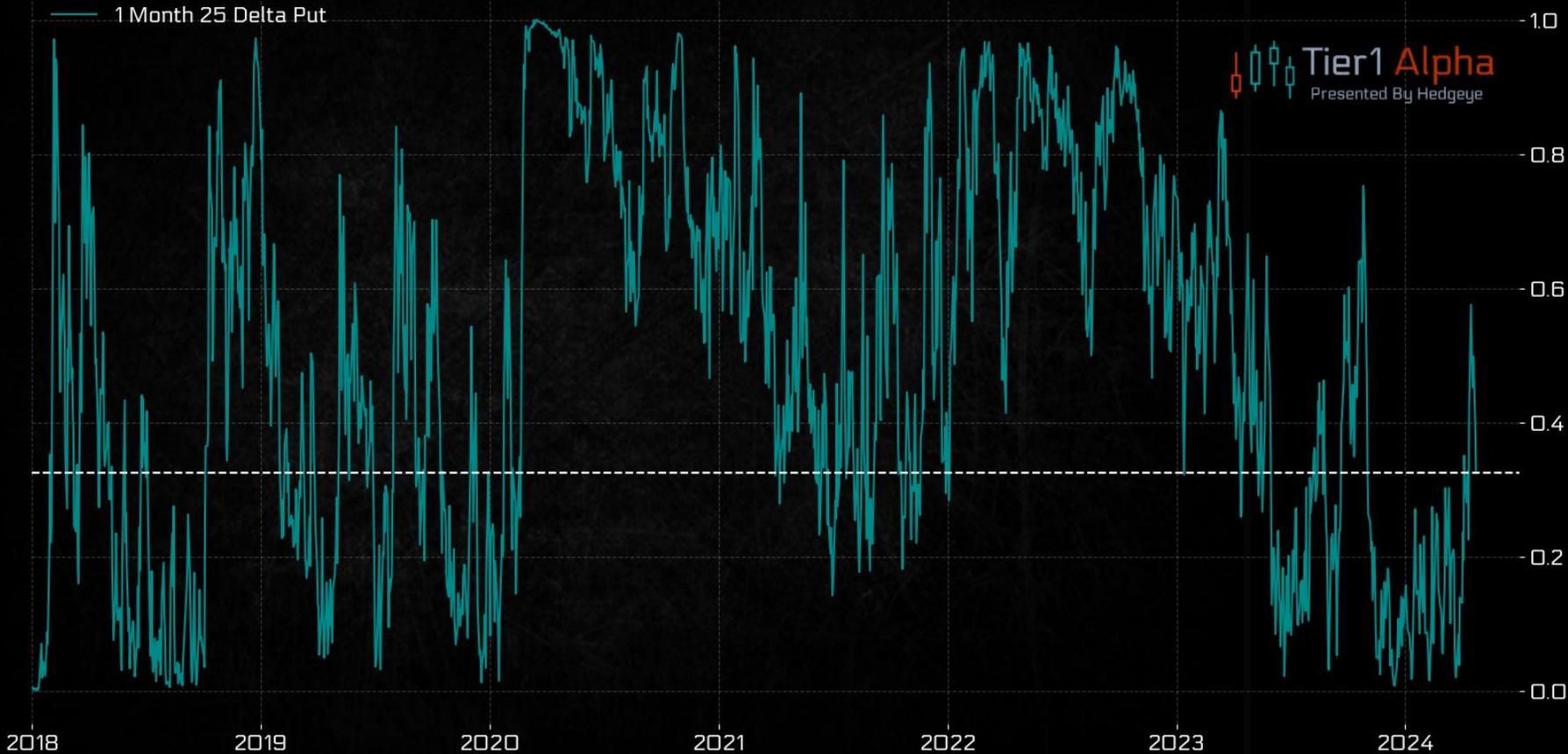
# SPX Total Gamma Exposure



Date: 2024/04/23

Source: Tier1Alpha.com

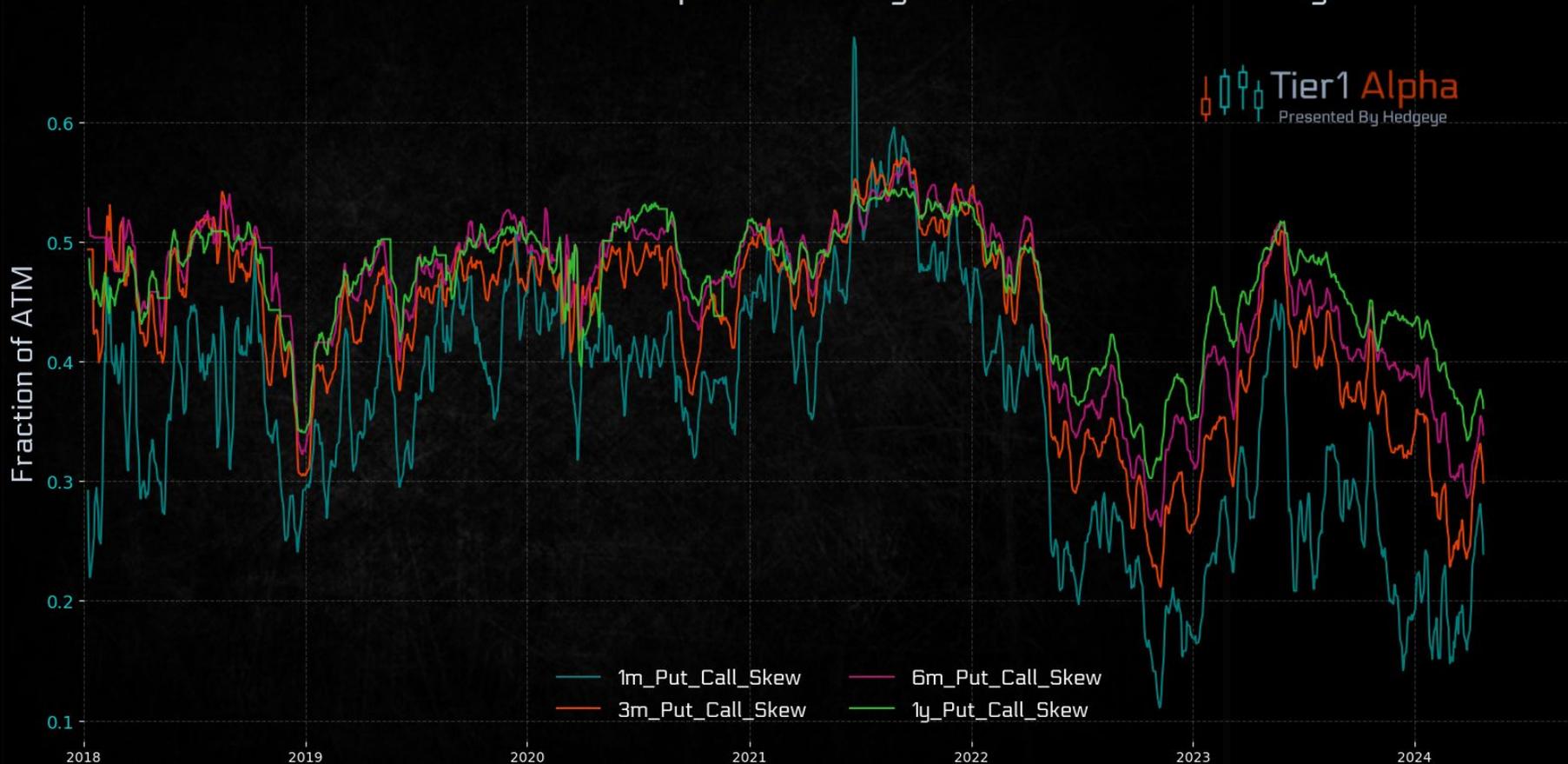
# Rolling Cost of 1 Month 25 Delta Put Options Percentile Rank



Date: 2024/04/23

Source: Tier1Alpha.com

# 25-Delta Put vs 25-Delta Call Implied Volatility Skew, Constant Maturity, Normalized



Date: 2024/04/23

Source: Tier1Alpha.com

SPX+SPXW ODTE Put/Call Ratio Open Interest 5d Avg.



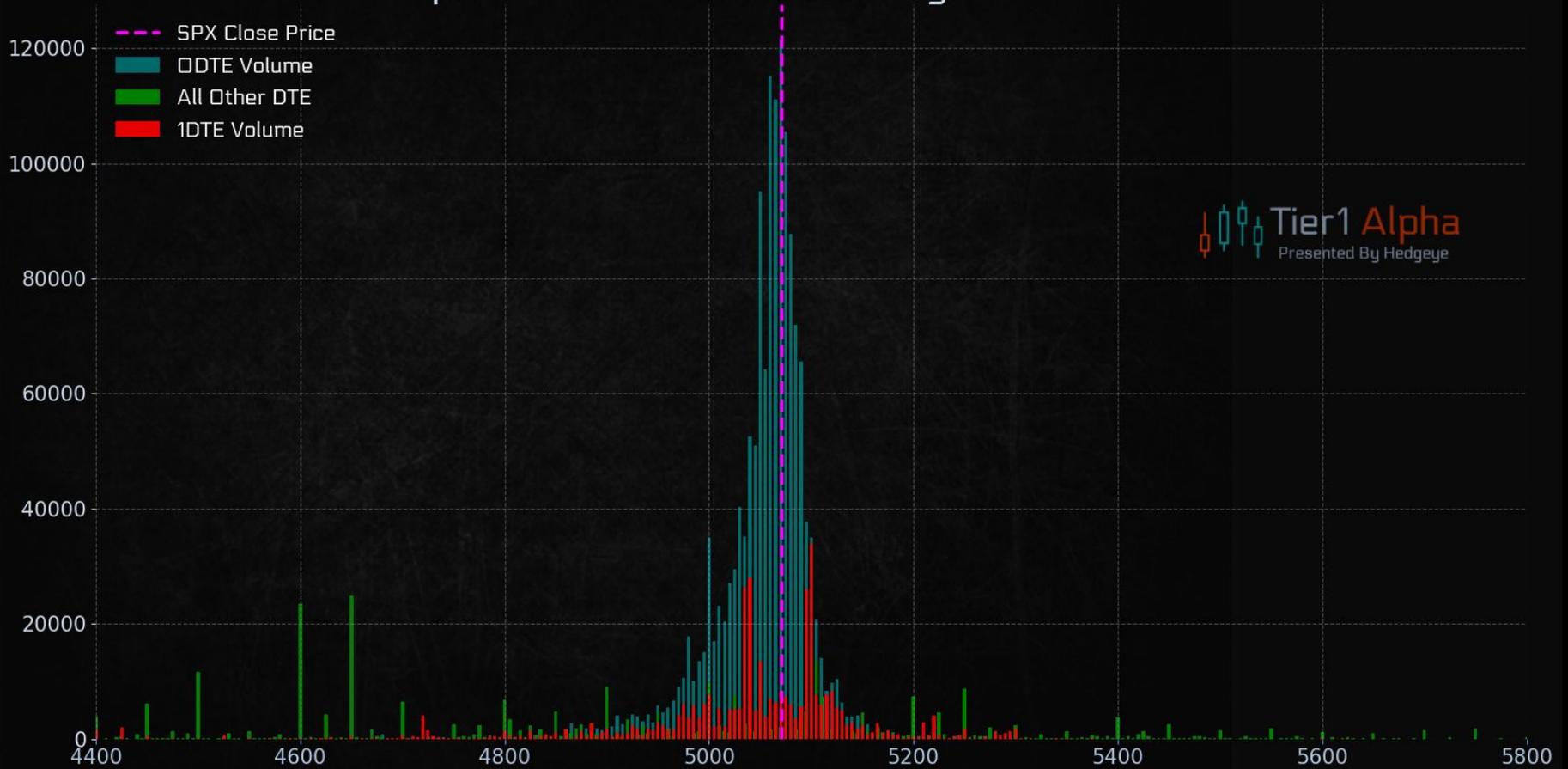
SPX+SPXW ODTE Put/Call Ratio Volume 5d Avg.



Date: 2024/04/23

Source: Intrinio/Tier1Alpha.com

# SPX Options Call + Put Volume, By DTE: 2024-04-23



Tier1 Alpha  
Presented By Hedgeye

Date: 2024/04/23

Source: Intrinio/Tier1Alpha.com

# ODTE SPX Option Volume as a Percentage of Total Volume 1m Avg.



 Tier1 Alpha  
Presented By Hedgeye

Date: 2024/04/23

Source: Tier1Alpha.com

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



Date: 2024/04/23

Source: Intrinio/ Tier1Alpha.com

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

Tier1 Alpha  
Presented By Hedgeye



Strikes In Play

- 1950.0
- 1960.0
- 1970.0
- 1980.0
- 2000.0

Date: 2024/04/23

Source: Intrinio/ Tier1Alpha.com

# Summary:

- The 1-month realized volatility shot higher yesterday, overtaking the 3-month volatility by a 0.64-point lead. This change in the hierarchy will have an important impact on most Vol control funds that deploy a strategy known as volatility scaling, where funds will use the higher of either the 1-month volatility or the 3-month volatility to calculate how much equity exposure to hold in their portfolios.
- While we've been focusing a lot on CTA funds the past week, we're now starting to see Vol control funds step up their selling as well. Just yesterday, we estimate that these funds were forced to sell approximately \$15 billion in equity exposure in response to the surge in upside volatility.
- This marks one of the most significant single-day selling events of the year for Vol control strategies and something we view as a major red flag for the market. Now that CTAs and Vol control funds have both started the deleveraging process, there is a higher probability it may lead to a mechanically-driven feedback loop where selling leads to even more selling, until these funds risk mandates are met.
- Despite the recent strength in equities, our warning from last week remains in effect. The setup continues to present significant risks, and if volatility continues to rise, so will the probability of these flows destabilizing the markets.

# Systematic Positioning Index Vs. SPX

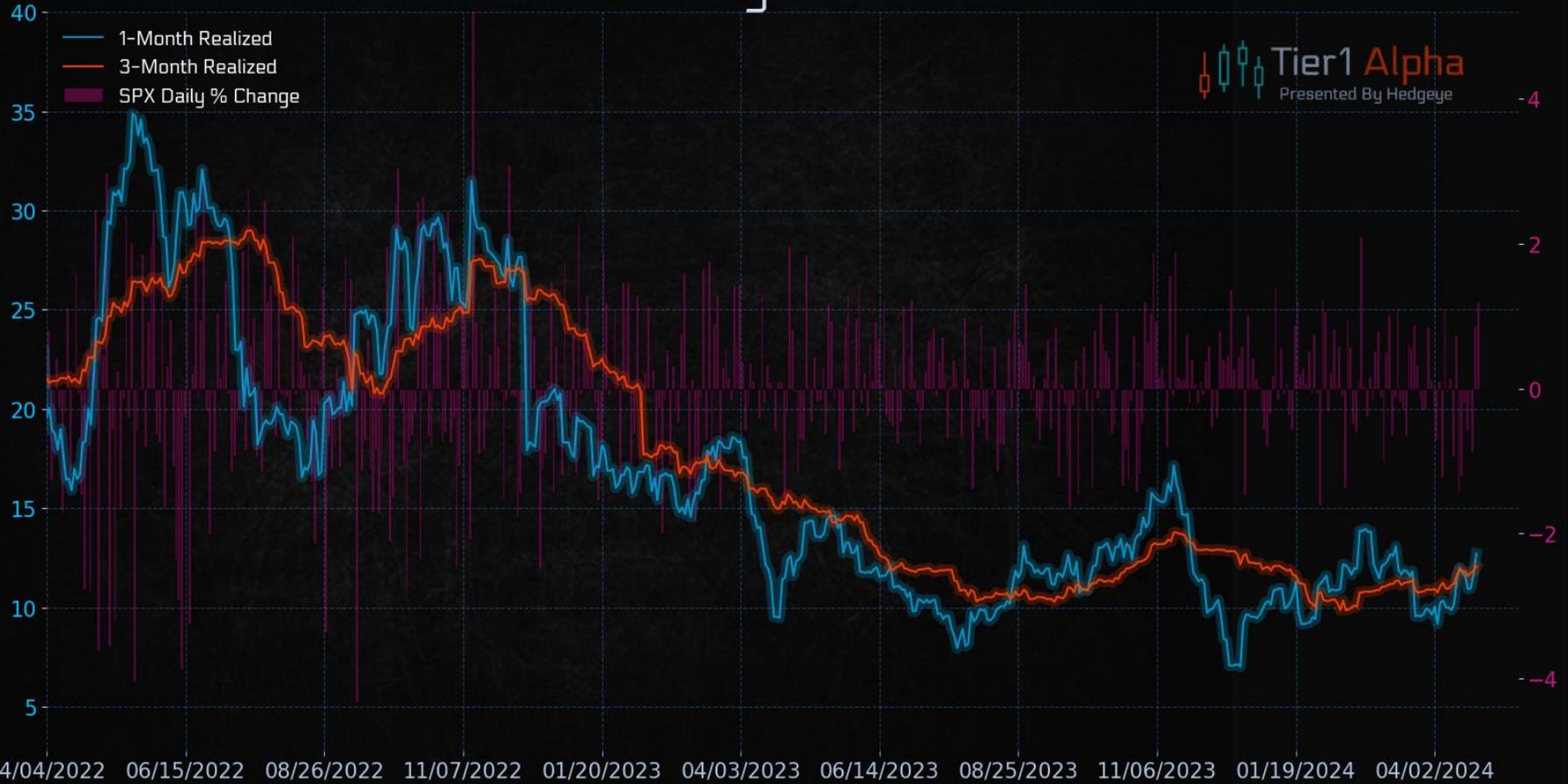
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Date: 2024/04/23

Source: Tier1Alpha.com

# SPX Realized Volatility -- 1 Month vs 3 Month

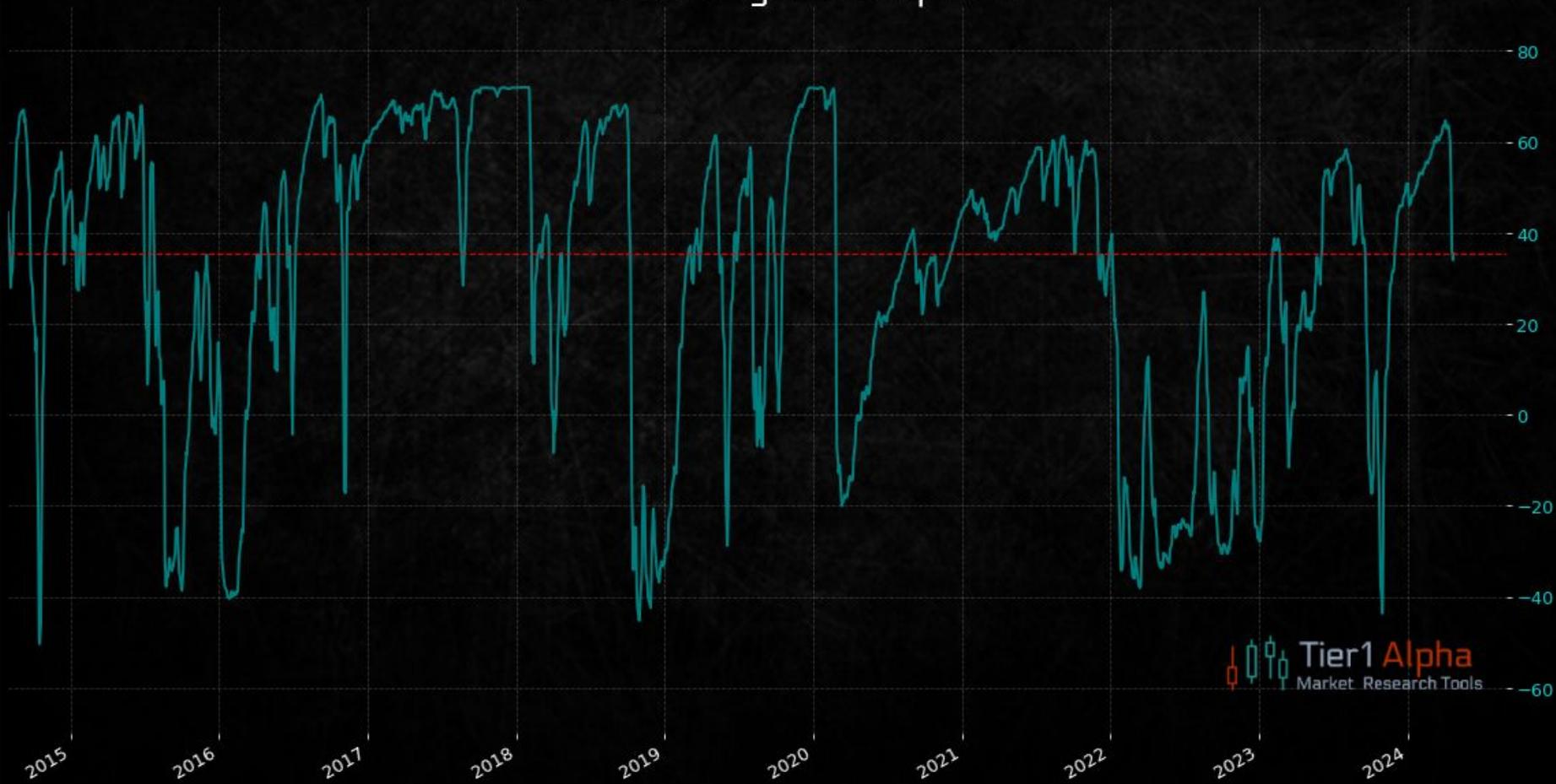


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Source: Tier1Alpha.com

# CTA Positioning in US Equities



 Tier1 Alpha  
Market Research Tools

# Vol Control Implied Notional Flows

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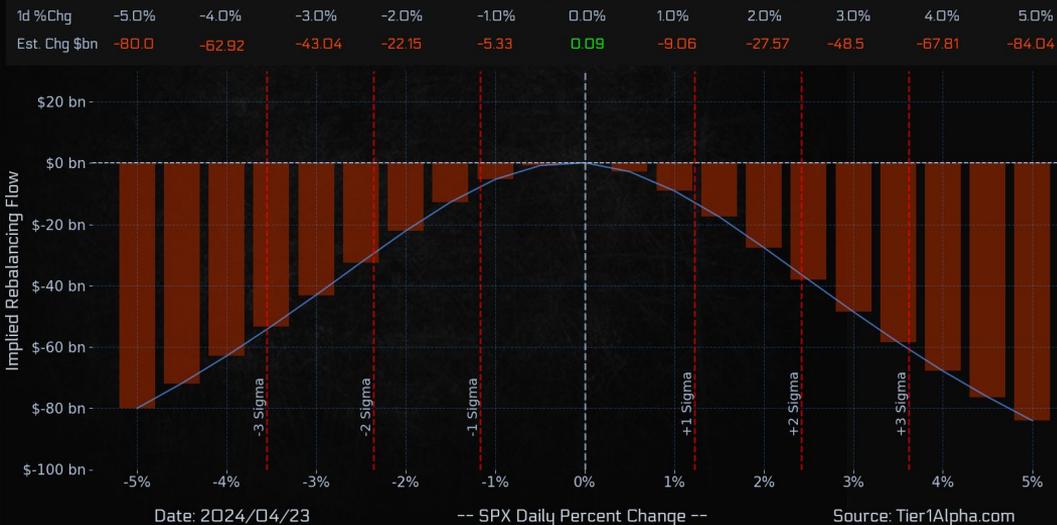
Date: 2024/04/23

Source: Tier1Alpha.com

### SPX Realized Vol Data In Sample for 2024-04-24

Dropoff	1m Dates	1m Drop %	3m Dates	3m Drop %
T+1	2024-03-26	-0.3%	2024-01-25	0.5%
T+2	2024-03-27	0.9%	2024-01-26	-0.1%
T+3	2024-03-28	0.1%	2024-01-29	0.8%
T+4	2024-04-01	-0.2%	2024-01-30	-0.1%
T+5	2024-04-02	-0.7%	2024-01-31	-1.6%
T+6	2024-04-03	0.1%	2024-02-01	1.2%
T+7	2024-04-04	-1.2%	2024-02-02	1.1%
T+8	2024-04-05	1.1%	2024-02-05	-0.3%
T+9	2024-04-08	-0.0%	2024-02-06	0.2%
T+10	2024-04-09	0.1%	2024-02-07	0.8%

### Vol Control Implied Rebalancing Flow vs SPX Daily %Change

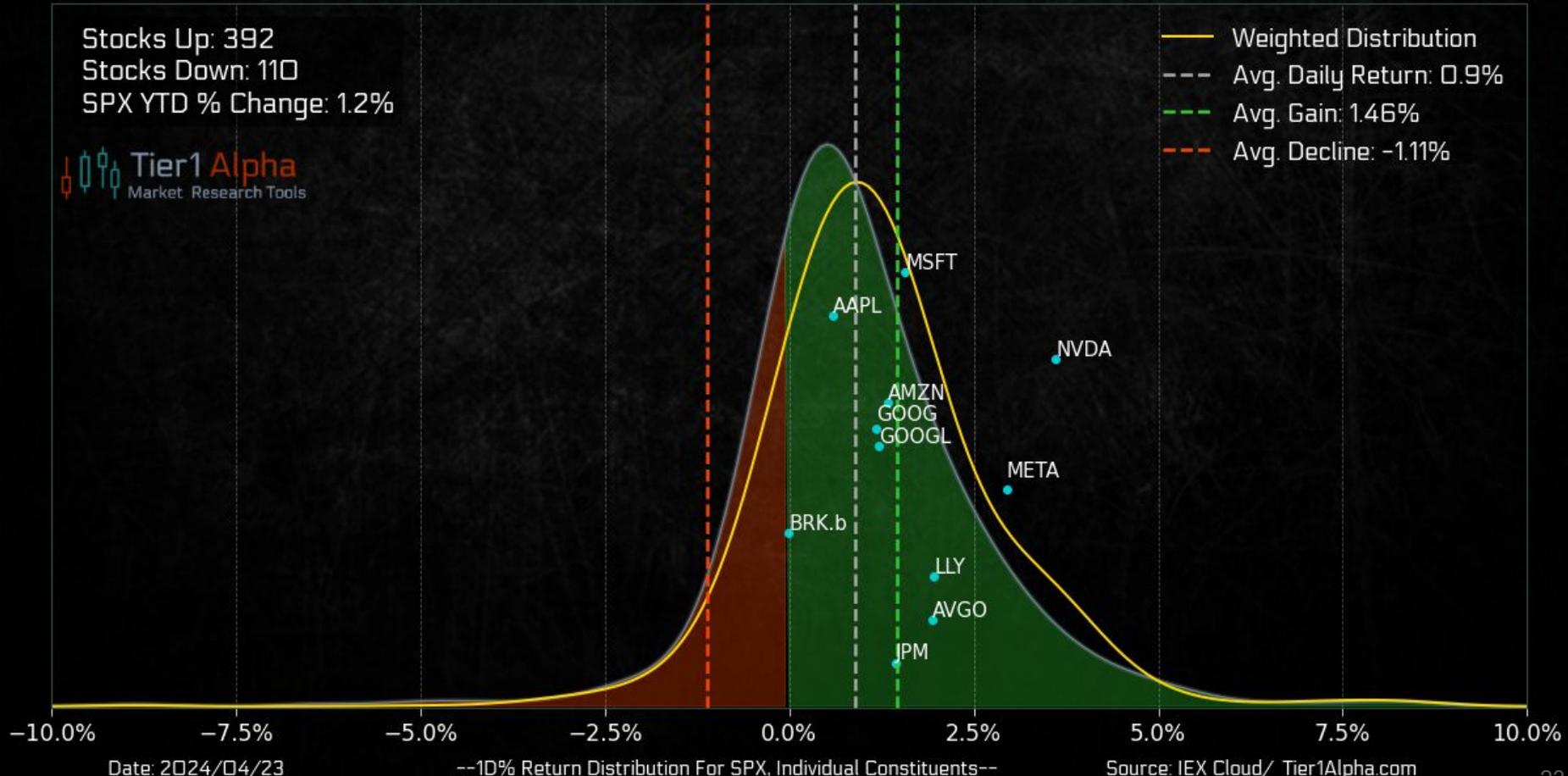


# S&P 500 MBAD Indicator for 2024/04/23

Stocks Up: 392  
Stocks Down: 110  
SPX YTD % Change: 1.2%



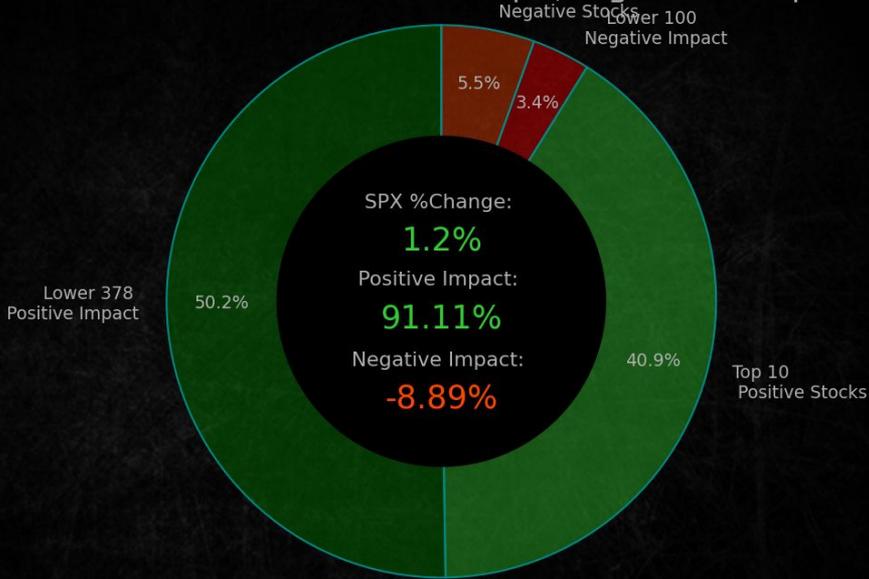
- Weighted Distribution
- Avg. Daily Return: 0.9%
- - - Avg. Gain: 1.46%
- - - Avg. Decline: -1.11%



Date: 2024/04/23

Source: IEX Cloud/ Tier1Alpha.com

## SPX Constituents Relative Impact By Market Cap



## SPX Constituents Relative Impact By Market Cap

### Largest Positive Impact

### Largest Negative Impact

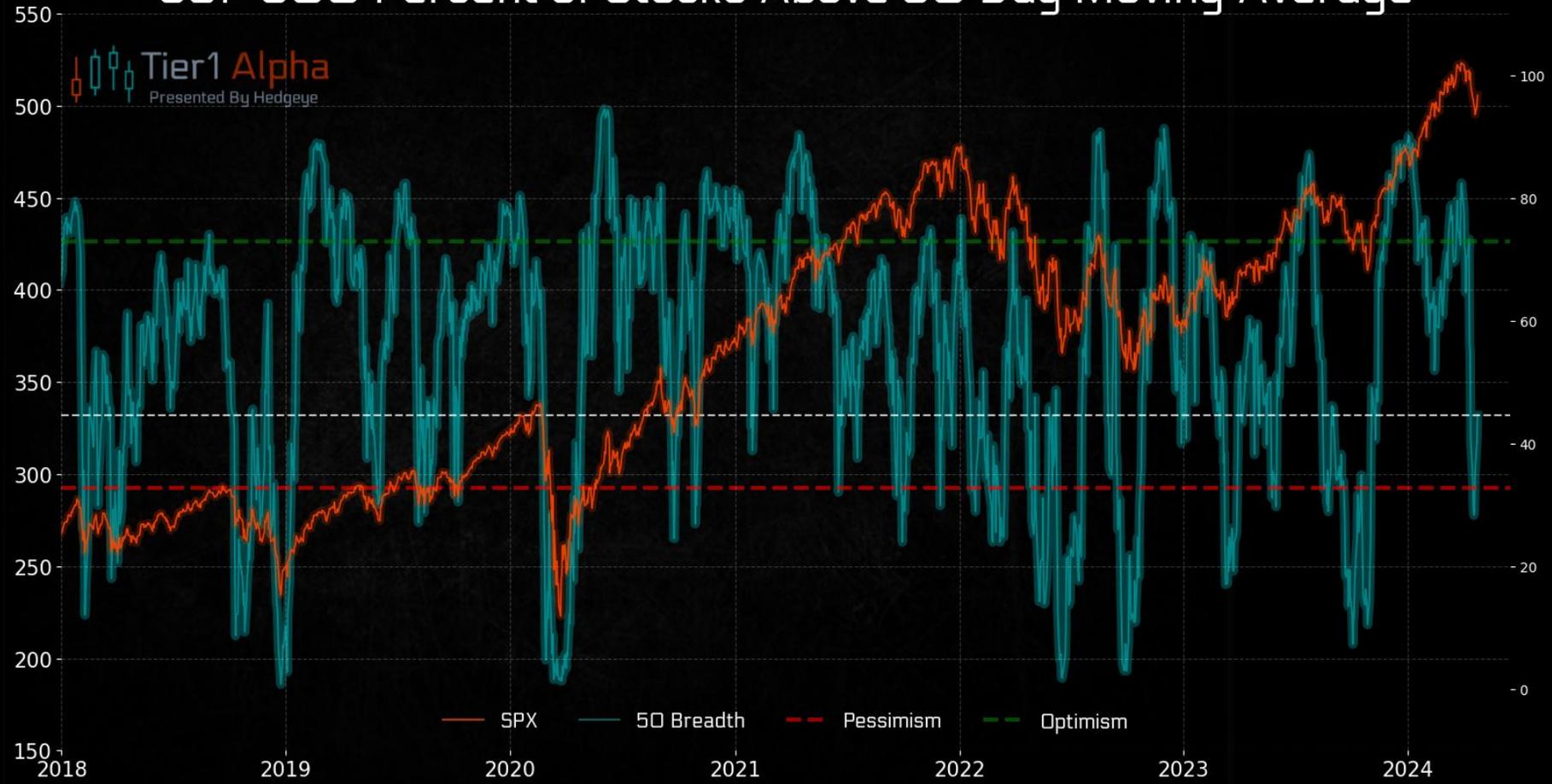
Top Contributor	Daily %Return	Positive Impact	% Weight	Top Detractor	Daily %Return.1	Negative Impact	% Weight.1
NVDA	3.6%	12.3%	4.97%	PEP	-3.0%	-1.1%	0.56%
MSFT	1.6%	7.7%	7.14%	MSCI	-13.4%	-0.9%	0.1%
META	2.9%	5.3%	2.62%	UNH	-1.0%	-0.8%	1.08%
AMZN	1.3%	3.6%	3.89%	WMT	-1.7%	-0.7%	0.6%
AAPL	0.6%	2.3%	5.76%	NUE	-8.9%	-0.7%	0.11%
GE	8.3%	2.3%	0.4%	LKQ	-14.6%	-0.3%	0.03%
LLY	2.0%	1.9%	1.41%	SHW	-2.2%	-0.3%	0.17%
DHR	7.2%	1.8%	0.37%	CVS	-1.6%	-0.2%	0.21%
GOOGL	1.2%	1.8%	2.19%	FCX	-2.0%	-0.2%	0.17%
NFLX	4.1%	1.8%	0.63%	AMP	-3.2%	-0.2%	0.1%

Date: 2024/04/23

Source: Tier1Alpha.com

# S&P 500 Percent of Stocks Above 50 Day Moving Average

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Date: 2024/04/23

Source: IEX Cloud/ Tier1Alpha.com



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