



Market Structure Report

04-10-2024

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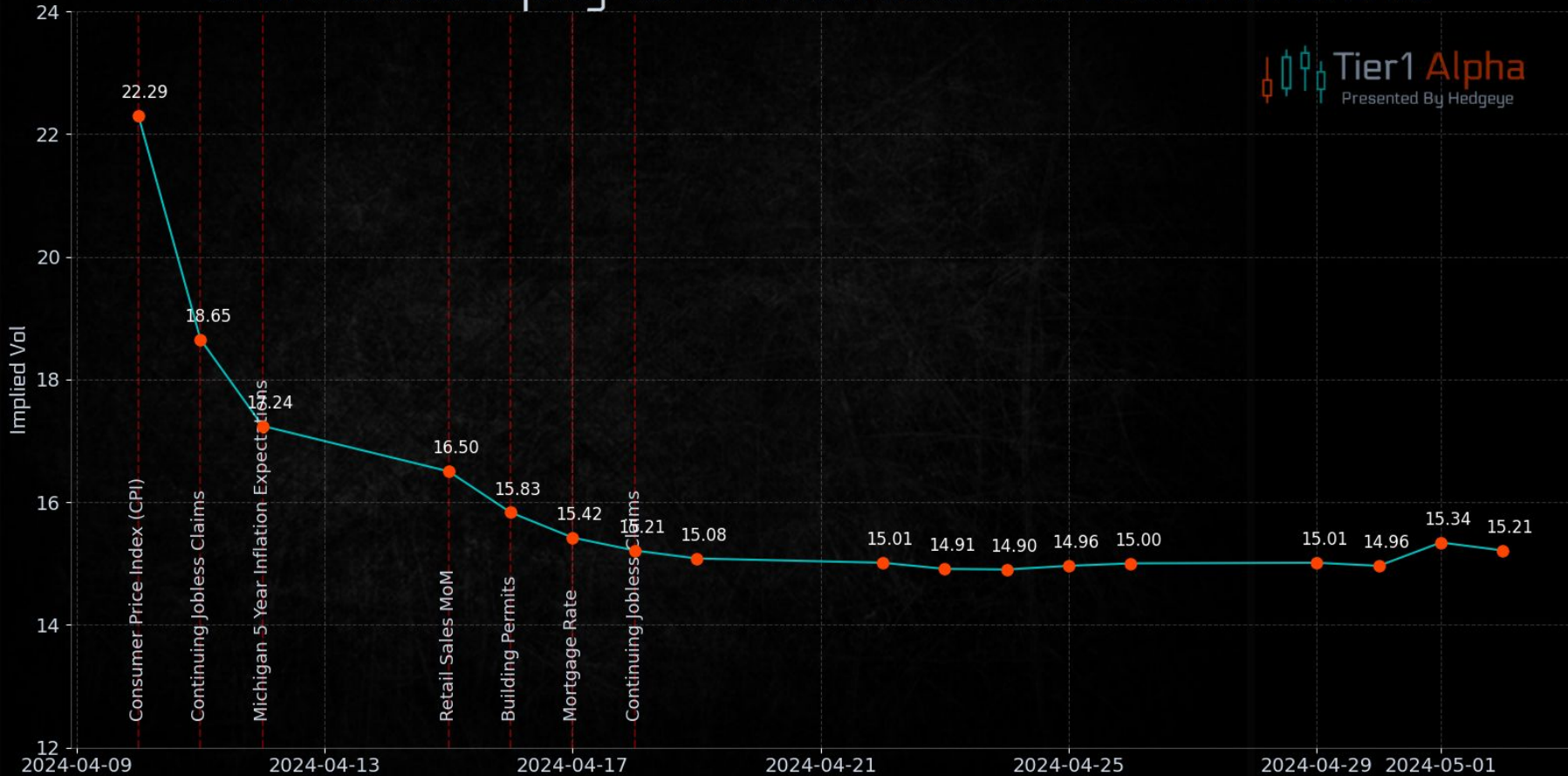
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Summary:

- Market makers are still modestly short gamma heading into today's CPI event, which implies there is a higher probability of gamma-induced response.
- Under these conditions, we typically see markets overreact to the data being released as dealers will be forced to chase momentum in either direction to minimize their delta exposure. However, with SPX sitting just 30bps below our gamma flipping point, we suspect these vol-supplying flows will mostly be towards the downside, as a move higher would place dealers back into a neutral position.
- From a directional standpoint, we generally see today playing out in one of two scenarios. The first scenario is the favorable one, where the CPI data comes in as expected, and the associated risk around the event starts to dissipate.
- In this case, we'd expect to see the rapid monetization of short-dated hedges, which would allow dealers to repurchase their delta positions and inject some bullish flows into the market. This is our "Hedged pot never boils" scenario.
- On the other hand, if the market reacts negatively to the CPI data, likely due to a hot print, we'd expect to see investors seek protection by buying longer-dated put options.
- To hedge the risk of these sold puts, dealers would need to short the underlying (e.g., SPX Futures) to maintain delta neutrality. This selling pressure from dealers would add some accelerant flow to the downside, exacerbating volatility and increasing the overall negative gamma exposure the dealers hold.
- Unfortunately, we don't get the script ahead of time, so we don't know exactly how the market will respond today. However, we do have a strong understanding of the mechanics that will likely drive the following momentum, and under that context, we can use our PV bands as a guide.
- The implied trading range is fairly straightforward today, with the 5275 strike to the topside and the 5150 strike towards the downside. Notable levels in between are the 5200 and 5250 strikes, with anything in-between fair game.

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

Short-dated Equity Vol Term Structure vs Economic Events



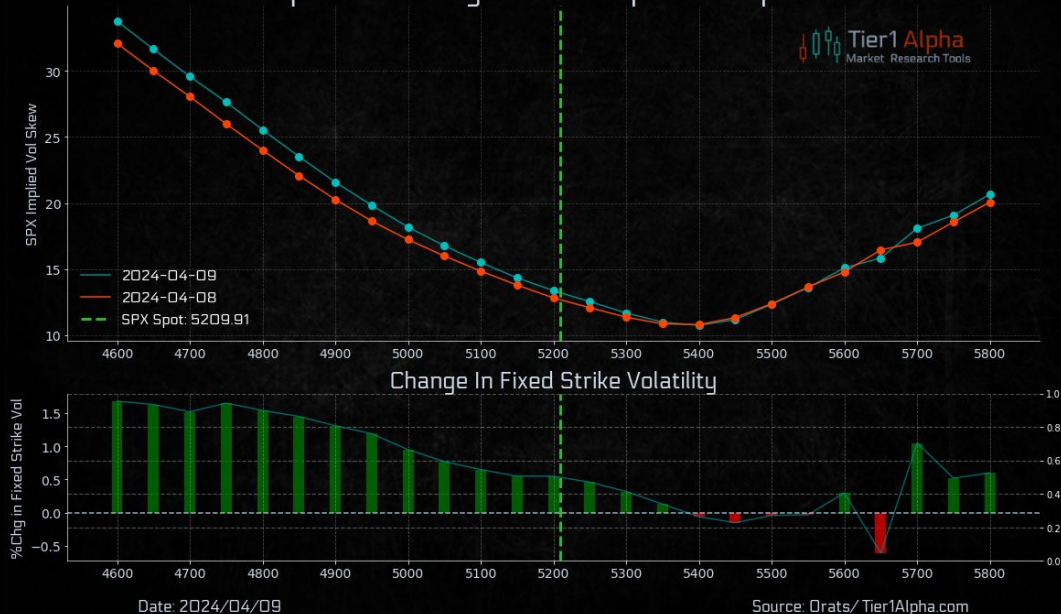
Date: 2024/04/09

Source: Drats/Tier1Alpha.com 4

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
2024-04-10	Mortgage Rate	--	6.91	low	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	Mortgage Applications	--	-0.6	low	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	MBA Mortgage Refinance Index	--	453.5	low	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	MBA Purchase Index	--	145.6	low	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	Core Inflation Rate MoM	0.3	0.4	high	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	Core Inflation Rate	3.7	3.8	high	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	Inflation Rate Mom	0.3	0.4	high	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-10	Inflation Rate	3.4	3.2	high	27.97	18.53	23.25	+/- 1.21%	1.07	2.45
2024-04-11	Continuing Jobless Claims	--	1791.0	low	23.55	15.24	19.4	+/- 1.43%	1.52	2.42
2024-04-11	Initial Jobless Claims	215.0	221.0	medium	23.55	15.24	19.4	+/- 1.43%	1.52	2.42
2024-04-11	Producer Price Inflation MoM	0.3	0.6	high	23.55	15.24	19.4	+/- 1.43%	1.52	2.42
2024-04-12	Michigan 5 Year Inflation Expectations	--	2.8	low	21.28	14.4	17.84	+/- 1.61%	1.55	2.18

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
4700.0	29.58	1.52	20.19	0.12	19.69	0.05
4750.0	27.65	1.65	19.31	0.11	19.01	0.07
4800.0	25.55	1.54	18.42	0.08	18.32	0.04
4850.0	23.53	1.45	17.58	0.06	17.64	0.03
4900.0	21.59	1.31	16.76	0.04	16.97	0.01
4950.0	19.84	1.19	15.96	0.03	16.33	0.01
5000.0	18.19	0.95	15.2	0.01	15.7	0.0
5050.0	16.77	0.77	14.48	0.02	15.1	0.0
5100.0	15.51	0.65	13.8	0.02	14.53	0.0
5150.0	14.35	0.55	13.16	0.02	13.97	-0.01
5200.0	13.38	0.55	12.57	0.02	13.46	0.0
5250.0	12.55	0.46	12.06	0.01	12.98	-0.02
5300.0	11.69	0.32	11.62	0.01	12.55	-0.01
5350.0	11.0	0.13	11.25	-0.01	12.16	-0.01
5400.0	10.75	-0.06	10.96	-0.02	11.82	-0.02
5450.0	11.19	-0.15	10.75	-0.05	11.52	-0.01
5500.0	12.35	-0.04	10.67	-0.05	11.27	-0.03
5550.0	13.61	-0.03	10.71	-0.05	11.08	-0.03
5600.0	15.1	0.3	10.9	-0.1	10.94	-0.06
5650.0	15.85	-0.61	11.17	-0.11	10.84	-0.08
5700.0	18.09	1.05	11.53	-0.17	10.82	-0.1

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



Strikes In Play

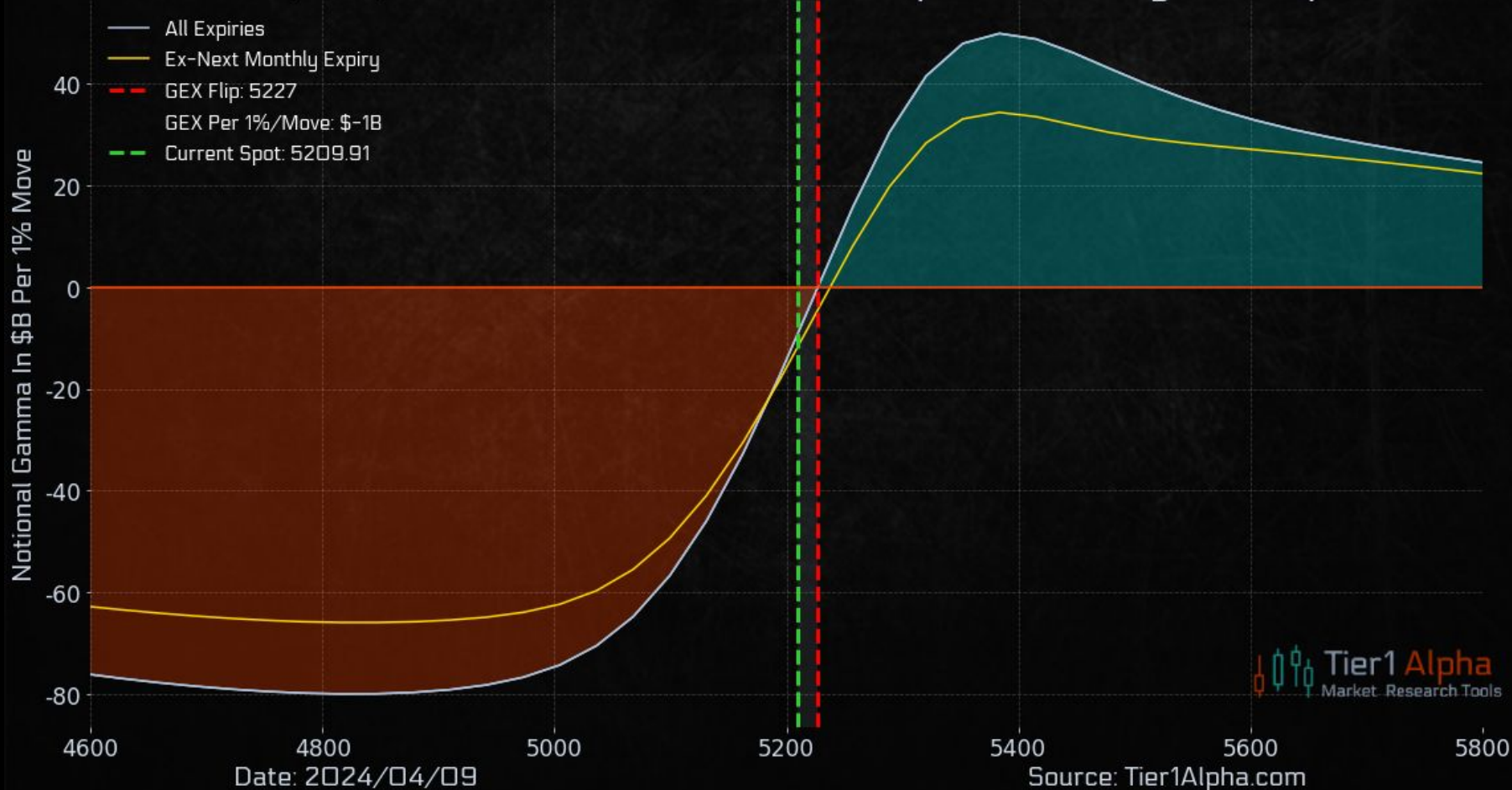
5150.0
5175.0
5200.0
5225.0
5250.0



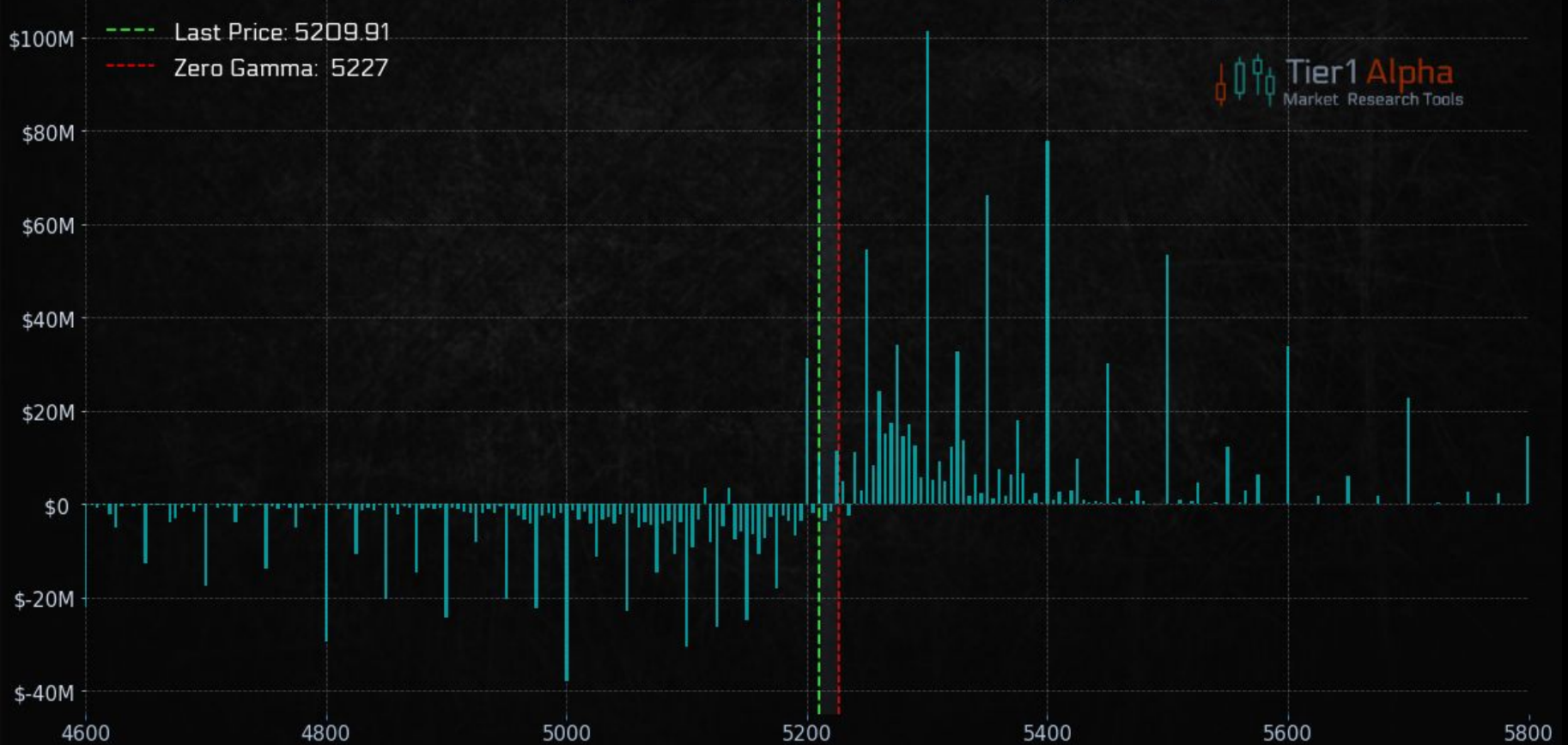
Date: 2024/04/09

Source: Intrinio/Tier1Alpha.com

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



SPX Total Gamma Exposure By Strike -- Weighted Expirations



Date: 2024/04/09

Source: Intrinsic/Tier1Alpha.com

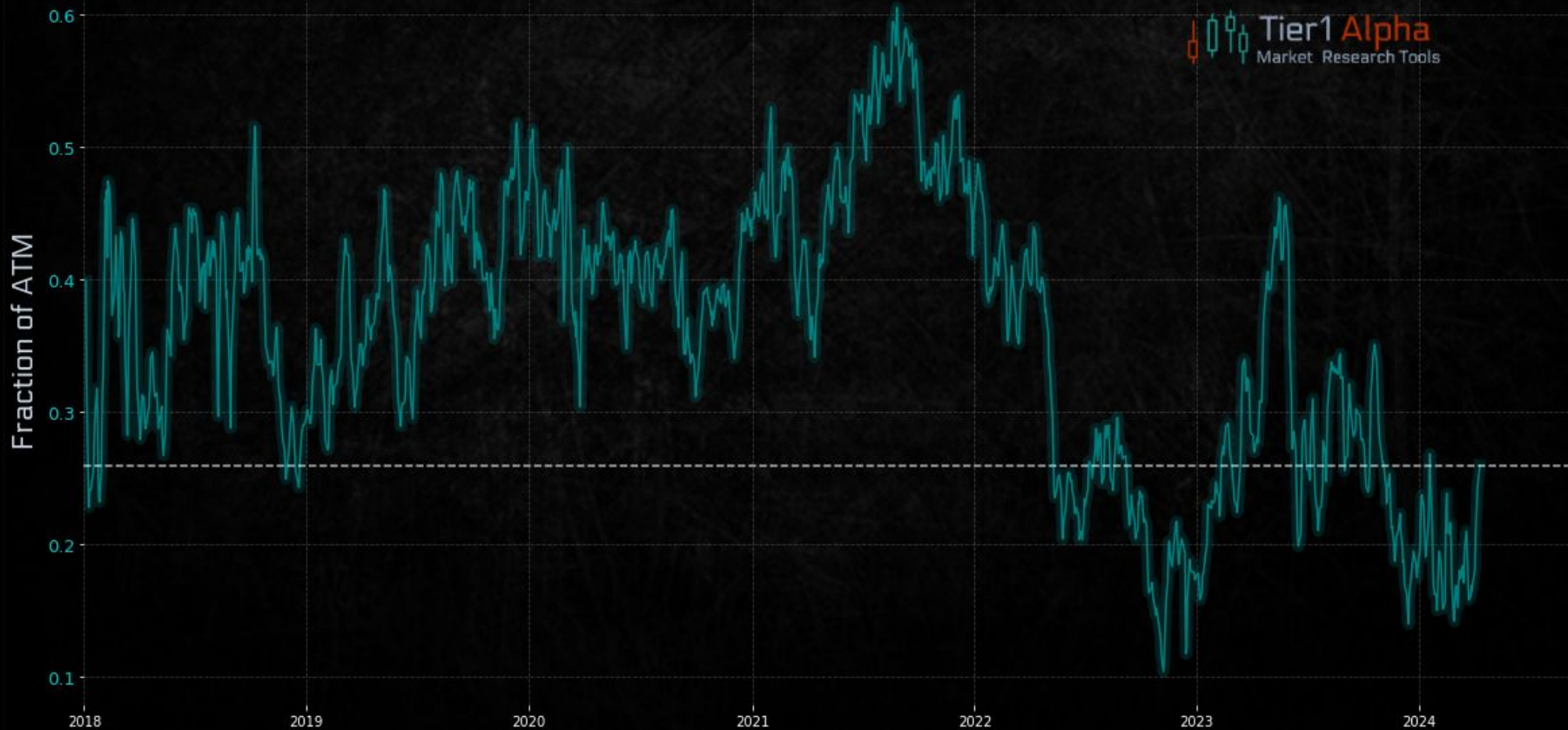
SPX 1DTE 50-Delta Implied Volatility Vs. CPI Event



Date: 2024/04/09

Source: Tier1Alpha.com

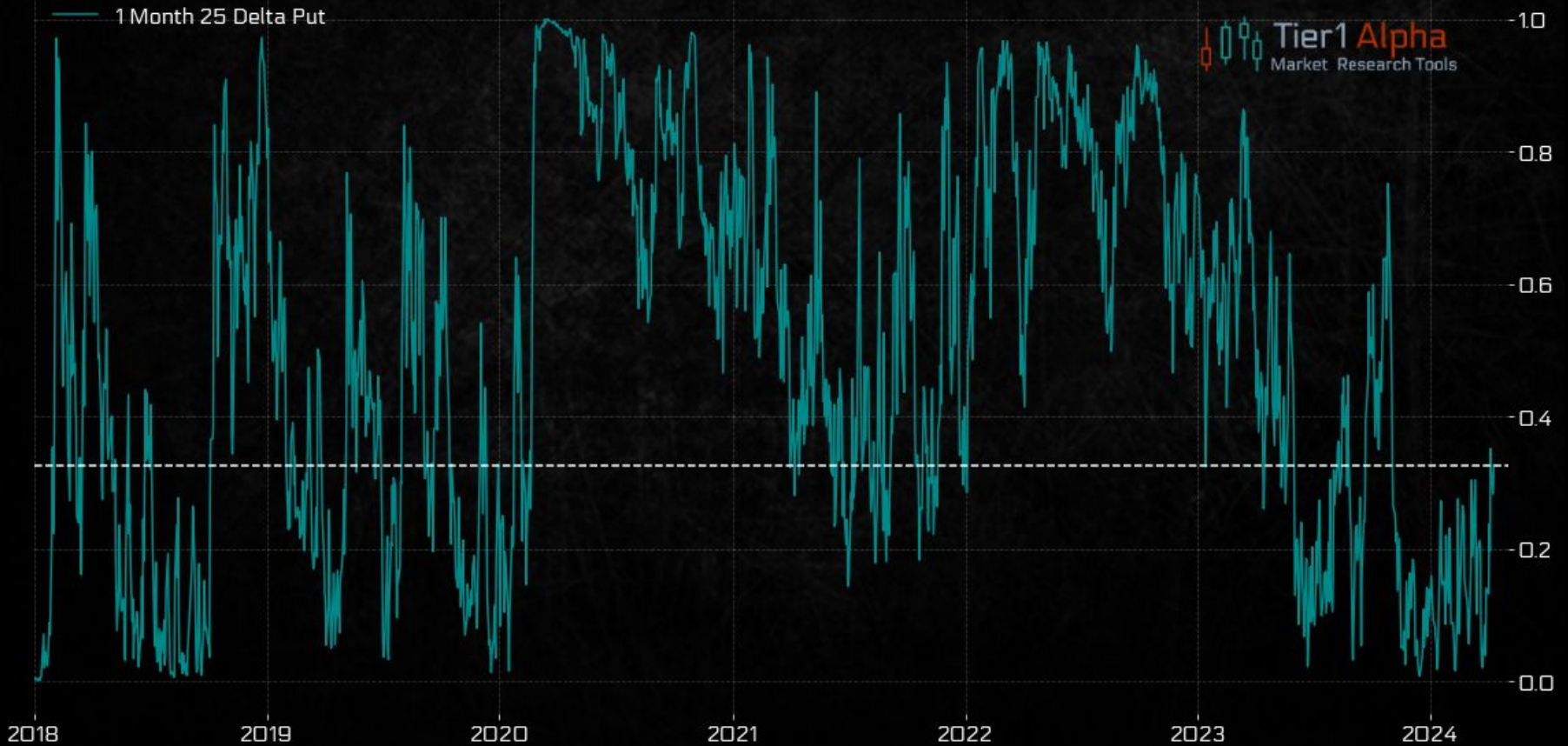
1-Month 25-Delta Put vs 25-Delta Call Implied Volatility Skew, Normalized



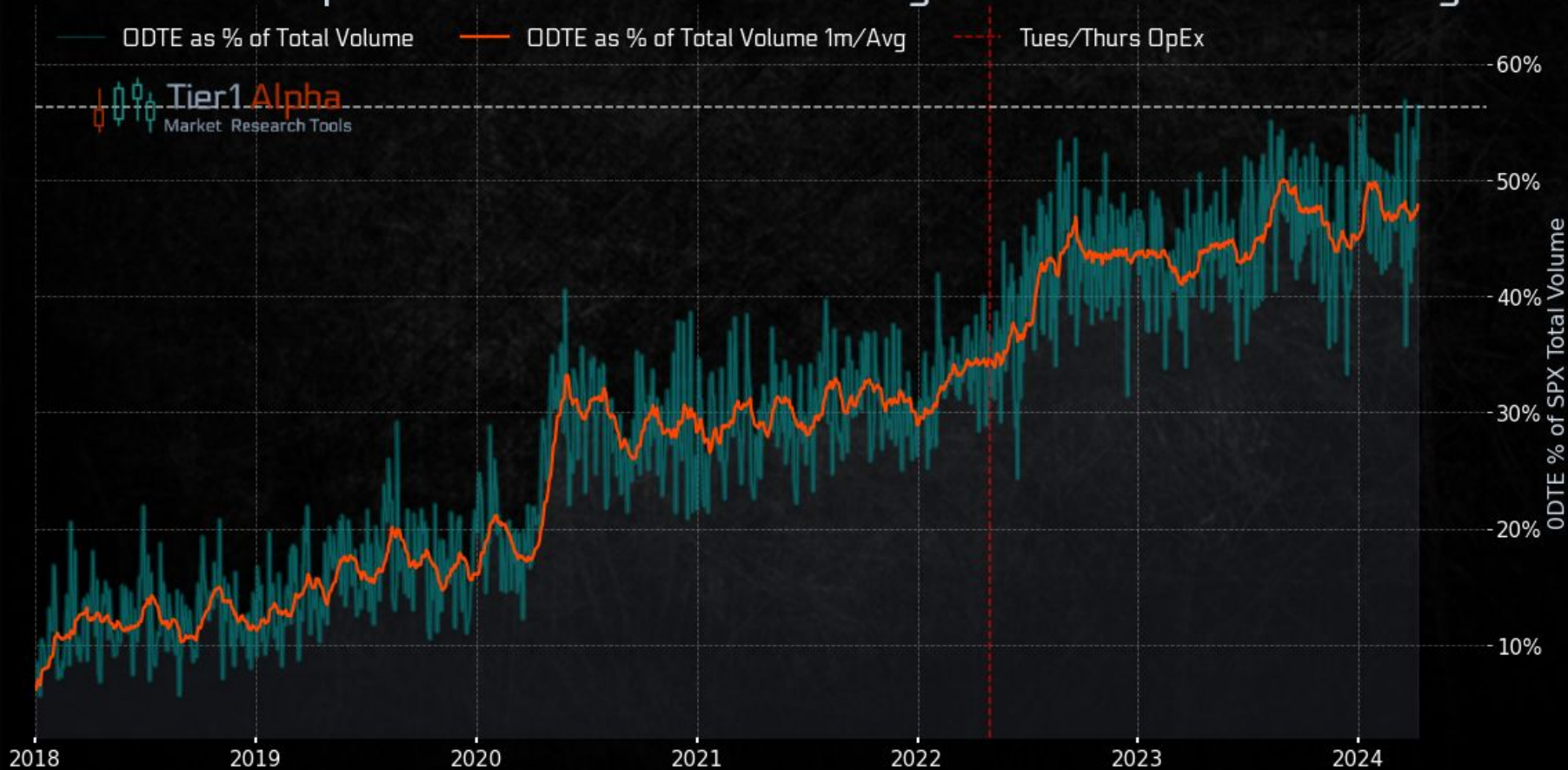
Date: 2024/04/09

Source: Tier1Alpha.com

Rolling Cost of 1 Month 25 Delta Put Options Percentile Rank



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



Date: 2024/04/09

Source: Tier1Alpha.com

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



Date: 2024/04/09

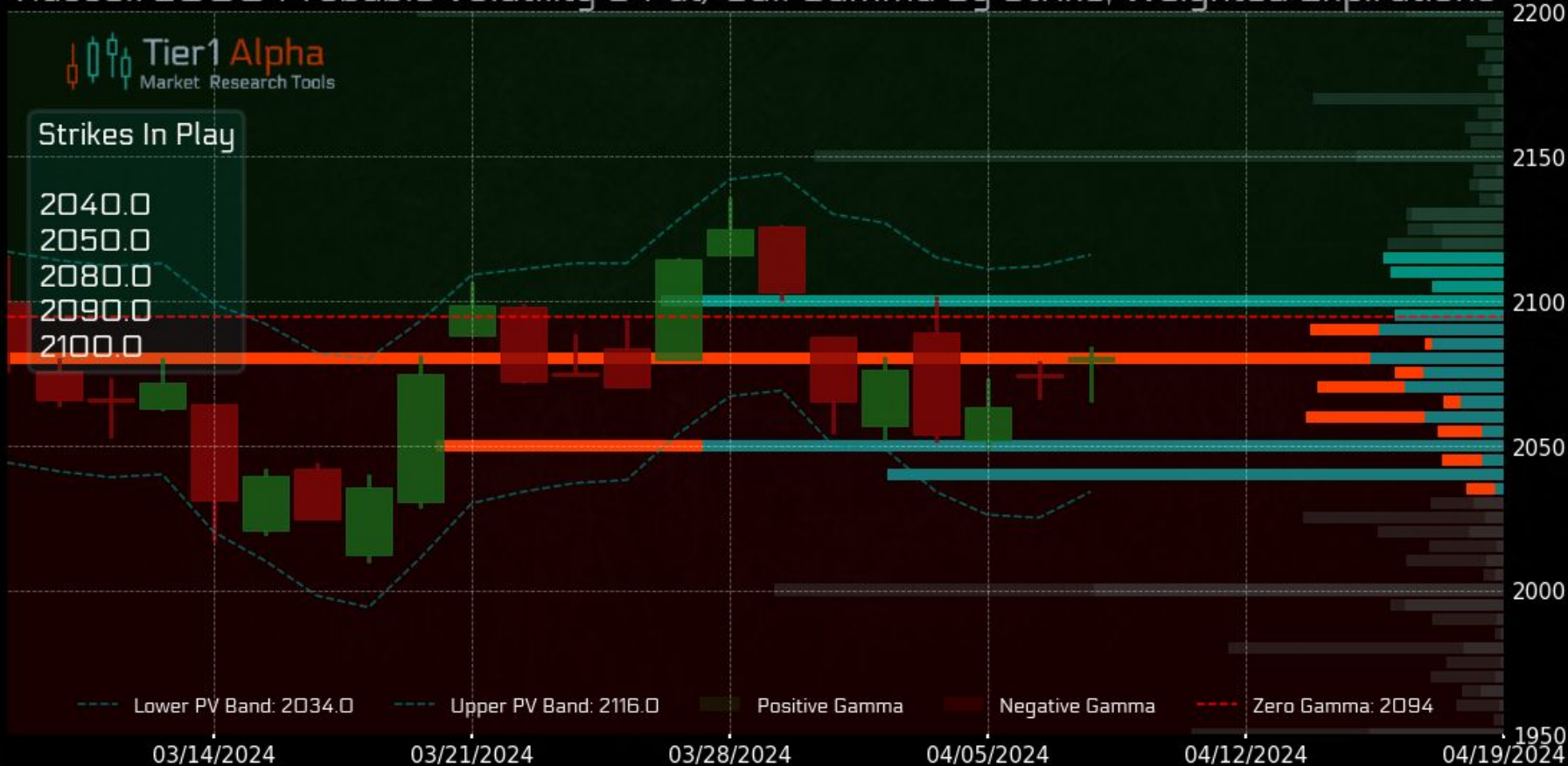
Source: Intrinio/Tier1Alpha.com

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



Strikes In Play

2040.0
 2050.0
 2080.0
 2090.0
 2100.0



--- Lower PV Band: 2034.0 --- Upper PV Band: 2116.0 Positive Gamma Negative Gamma --- Zero Gamma: 2094

03/14/2024

03/21/2024

03/28/2024

04/05/2024

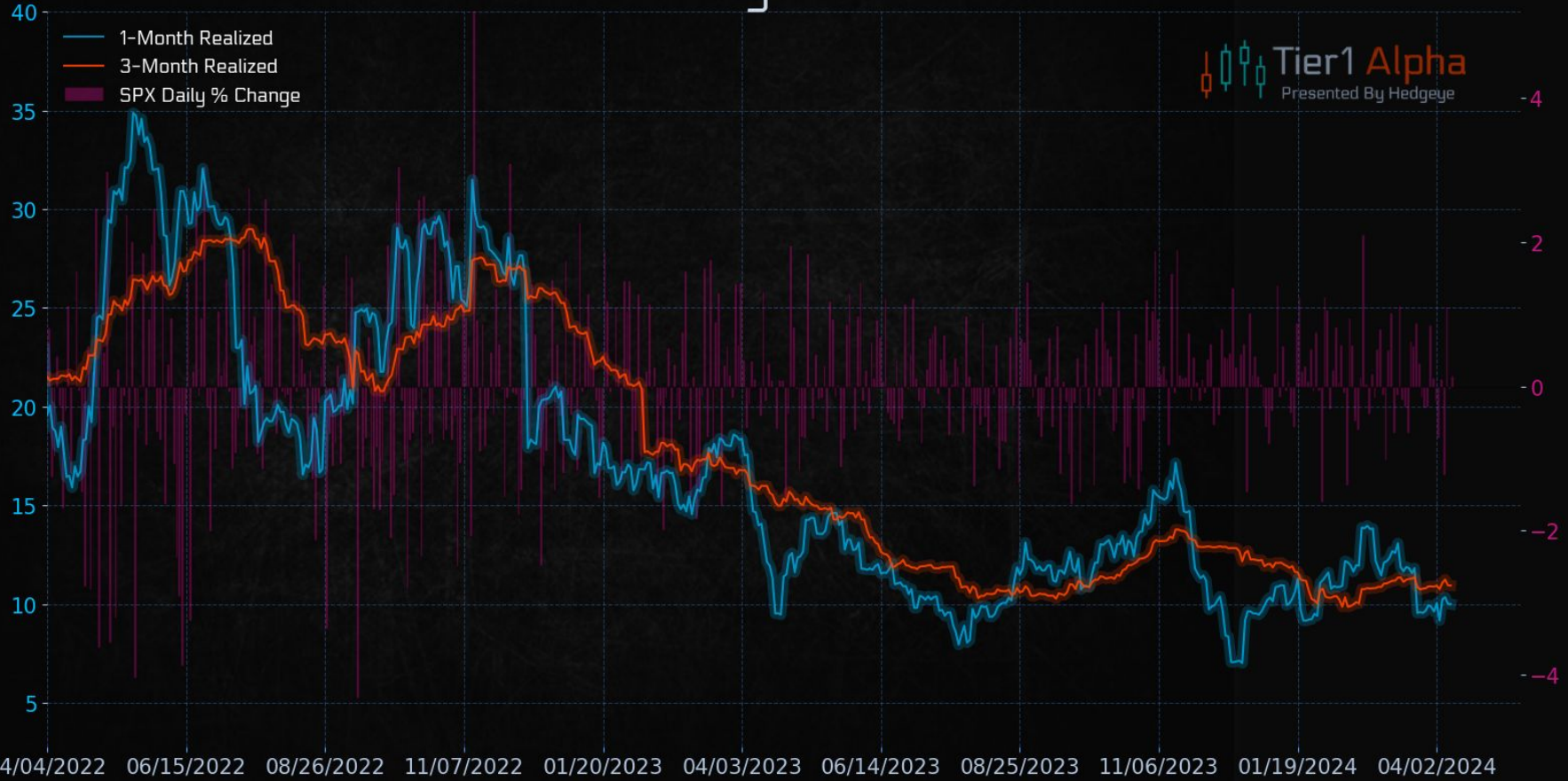
04/12/2024

04/19/2024

Date: 2024/04/09

Source: Intrinio/ Tier1Alpha.com

SPX Realized Volatility -- 1 Month vs 3 Month



Tier1 Alpha
Presented By Hedgeye

Date: 2024/04/09

Source: Tier1Alpha.com

Vol Control Implied Notional Flows

Tier1 Alpha
Presented By Hedgeye

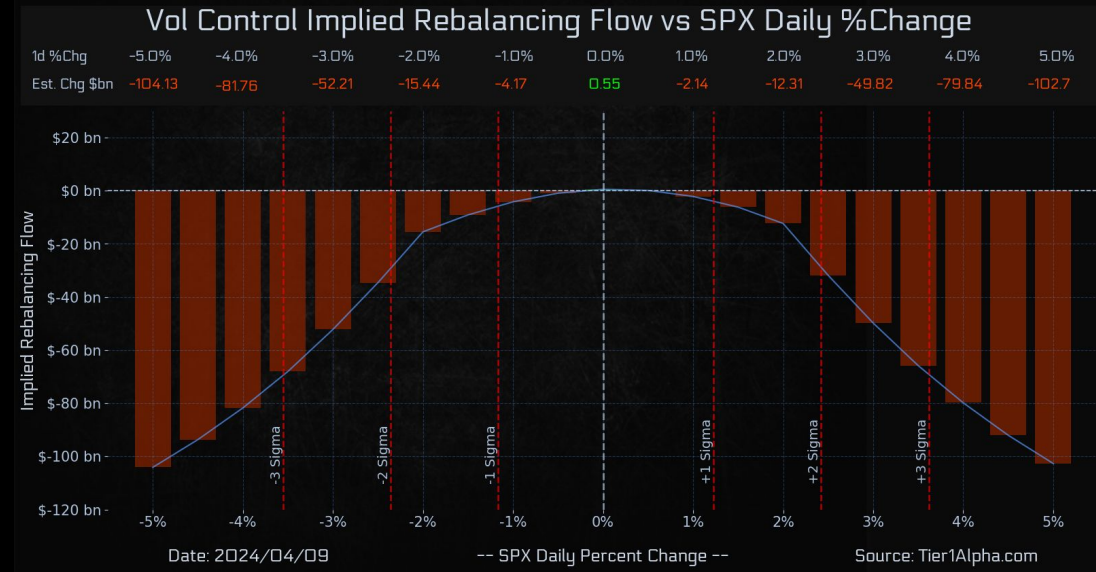


Date: 2024/04/09

Source: Tier1Alpha.com

SPX Realized Vol Data In Sample for 2024-04-10

Dropoff	1m Dates	1m Drop %	3m Dates	3m Drop %
T+1	2024-03-12	1.1%	2024-01-10	0.6%
T+2	2024-03-13	-0.2%	2024-01-11	-0.1%
T+3	2024-03-14	-0.3%	2024-01-12	0.1%
T+4	2024-03-15	-0.6%	2024-01-16	-0.4%
T+5	2024-03-18	0.6%	2024-01-17	-0.6%
T+6	2024-03-19	0.6%	2024-01-18	0.9%
T+7	2024-03-20	0.9%	2024-01-19	1.2%
T+8	2024-03-21	0.3%	2024-01-22	0.2%
T+9	2024-03-22	-0.1%	2024-01-23	0.3%
T+10	2024-03-25	-0.3%	2024-01-24	0.1%

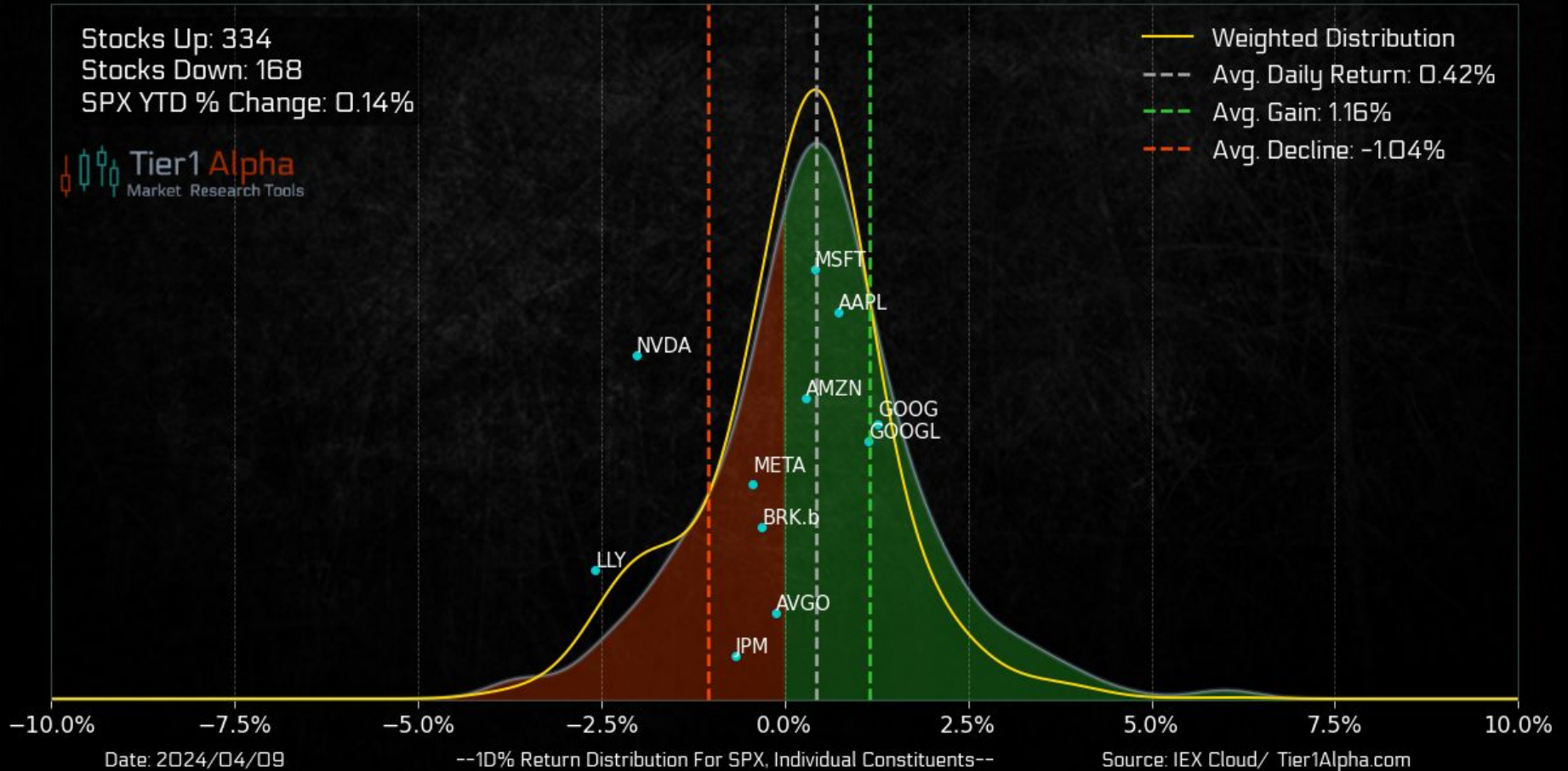


S&P 500 MBAD Indicator for 2024/04/09

Stocks Up: 334
Stocks Down: 168
SPX YTD % Change: 0.14%



- Weighted Distribution
- - - Avg. Daily Return: 0.42%
- - - Avg. Gain: 1.16%
- - - Avg. Decline: -1.04%

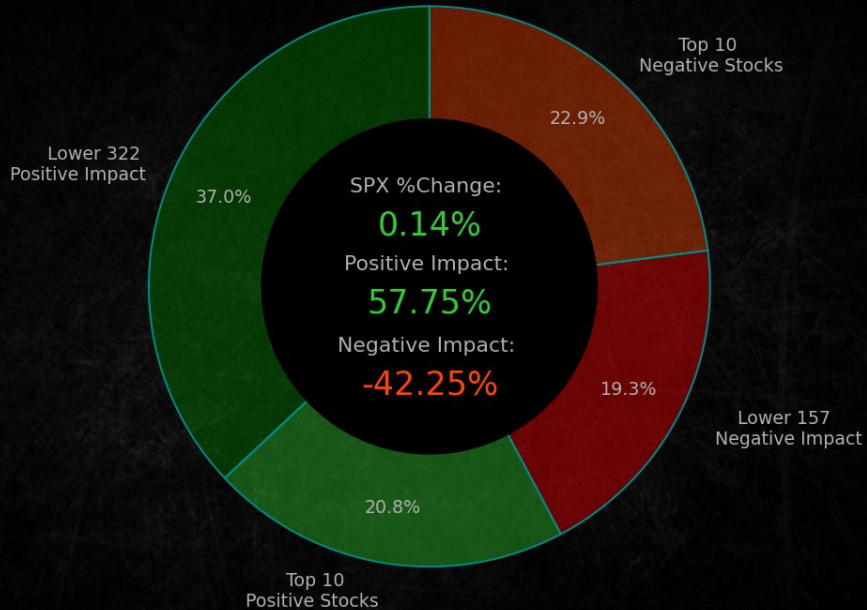


Date: 2024/04/09

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

Source: IEX Cloud/ Tier1Alpha.com

SPX Constituents Relative Impact By Market Cap



Date: 2024/04/09

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
AAPL	0.7%	4.4%	5.61%	NVDA	-2.0%	-11.1%	5.07%
MSFT	0.4%	3.1%	7.17%	LLY	-2.6%	-3.8%	1.38%
TSLA	2.3%	2.7%	1.1%	MA	-1.4%	-1.4%	0.9%
GOOGL	1.1%	2.5%	2.08%	META	-0.5%	-1.2%	2.46%
GOOG	1.3%	2.4%	1.75%	ETN	-3.7%	-1.1%	0.28%
CSCO	3.7%	1.8%	0.46%	NFLX	-1.6%	-1.0%	0.6%
AMZN	0.3%	1.0%	3.76%	JPM	-0.7%	-0.9%	1.31%
TMO	1.8%	1.0%	0.51%	VZ	-2.1%	-0.9%	0.4%
ADBE	1.7%	1.0%	0.52%	PGR	-2.7%	-0.8%	0.28%
TXN	2.4%	0.9%	0.36%	AXP	-1.9%	-0.6%	0.3%

S&P 500 Percent of Stocks Above 200 Day Moving Average



Date: 2024/04/09

Source: IEX Cloud/ Tier1Alpha.com



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