US Equity Market Structure Compendium

2024 Market Metrics & Looking to 2025 with Our Market Structure Survey

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In 2024, the S&P 500 returned an impressive 23.3%. We have not seen two 20% plus return years for the S&P 500 since the 1990s – 2023 return was +24.2% – a phenomenon which has only occurred four times since the 1920s.

Markets – the second year in a row of >+20% returns: The full index outperformed all other selected segments except for growth. It was a year for large cap and growth stocks. Returns declined across the year: 2H < 1H; 4Q < 1H and 2H; Dec not kind to markets. Concentration: Mega caps 58.5% of the index by market cap, 8.4% by stock count; technology 31.7% of the index, Mag 7 34.0%, "true technology" 46.0%; Mag 7 + 2 others >$1T market cap. Mag 7 drove the 23.3% return: only MSFT's return was below the average S&P 500 return in 2024.

Equity volumes – surpassing the 12B shares level: 2024 ADV 12.2B shares, +10.2% Y/Y. Top 15 volume days ranged from 1.3x to 2.0x times the avg for the year. 6 of top 15 and 2 of top 3 were around the Sept & Dec FOMC meetings. Retail % total volumes 17.9%, settling around the 18 level for the last three years (up from 10% historically). After hours trading was 10.8% of total equity volumes, with 5.5% in the 4-4:30pm EST time slot, right after the market closes. On the trading of low-priced stocks, 28% of shares traded were priced $5 or below, with 13.5% priced under $1.

ETF volumes – moderate growth for the year: On average in 2024, ETF volume was 2.4 billion shares, +5.8% Y/Y vs. +11.3% for single stocks & +10.2% for total equities. ETFs represented 19.6% of total equity volumes, -4.0 pps Y/Y.

Options volumes – can you say 70M contracts?: 2024 ADV 47.3M contracts, +9.0% Y/Y. Index options ADV 4.1M contracts, +7.9% Y/Y; ADV has grown 127.2% since 2020. Short-dated options grew 318.3% since 2018, from 6.0M contracts to 25.1M contracts, vs. +148.4% growth for total options.

Capital formation – the good and the not so good news: Positive – $31.3B IPO deal value +55.8% Y/Y, closer in line with historical average. Not so good – # of listed operating companies now 9.1% below the 6,000 threshold.

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What Happened in 2024

In 2024, the S&P 500 returned an impressive 23.3%. By now we all know the numbers. We have not seen two 20% plus return years for the S&P 500 since the 1990s – 2023 return was +24.2% – and that phenomenon has only occurred four times going back to the 1920s.

One of the most commonly discussed themes for equity markets in 2024 was market concentration. In 2024, the Magnificent 7 (Mag 7) represented 34.0% of the total S&P 500 market capitalization (market cap). The adjusted technology sector – the officially classified technology stocks plus the four Mag 7 names not labeled technology but traded as technology plays, which we call "true technology" – group represented 46.0% of the index. Investors had to worry about single stock concentration as well. The market caps for the Mag 7 were each over 2%: Apple (AAPL) 7.3%, Nvidia (NVDA) 6.3%, Microsoft (MSFT) 6.0%, Alphabet (Google, GOOGL) 4.5%, Amazon (AMZN) 4.4%, Meta Platforms (META) 2.9%, and Tesla (TSLA) 2.5%. So as this group went, the market went.

Not to be outdone by stock price performance, equity volumes grew significantly as well. Equity average daily trading volume (ADV) was 12.2 billion shares in 2024, +10.2% Y/Y. What is interesting – and will be shown later in this report – is that many market participants believed equity volumes were settling down into the 11-12 billion shares range. Then, late in 2024, we started seeing 16, 17, 19, even 20+ billion shares trading days. This moved the annual average up over the 12 billion shares threshold.

You often hear people say market movements last year were all about the Federal Reserve (Fed). It might be more aptly said that market moves were driven by the Fed and inflation data, which of course drove the Fed's monetary policy moves. The top fifteen equity volume days ranged from 15.9 billion to 23.8 billion shares, +30.9% and +95.4% to the annual average respectively.

Of the top fifteen highest equity volume days, five were around the Fed's Federal Open Market Committee (FOMC) meetings and four were around inflation data releases, whether for the Consumer Price Index (CPI) or Personal Consumption Expenditures (PCE). The sixth highest volume day was after the US Presidential election, and the other top volume days were around general economic data releases.

Interestingly, four of the top volume days were around a single short time period, the December FOMC and then PCE release a few days later (December 18 and 20). Markets went on a wild ride during this time. The S&P 500 dropped after the FOMC meeting, during which expectations for rate cuts in 2025 were lowered. People may remember Fed Chair Powell's comment, "It's like driving on a foggy night or walking into a dark room with furniture, you just slow down." The markets then rebounded after the PCE report came in softer than expected, reigniting hopes for 2025 rate cuts.

As to volatility, the VIX was able to push through negative news, events, and data releases last year. The average VIX for the year was 15.61, in line with historical – we should say pre COVID – averages. This lower level occurred despite having pockets of elevated volatility, related to not just FOMC meetings, but also the unwinding of the carry trade[1], heightened geopolitical tensions, poor technology stock earnings, the hurricane aftermath – which really equates back to economic data – or pre-election jitters. We did an analysis on what the average VIX would be without some of these pockets. There were fifty-one days where the VIX was over 18, which is roughly +15% to the annual average. If you set some of these pockets equal to the average for the first half of the year – excluding the stretch in October where heightened volatility extended for weeks – the VIX could have ended up below 15.

Looking to 2025

To start the year, many market participants were optimistic about the equities market this year. There are two clarifiers on this position. First, people are not 20% optimistic. As mentioned above, two 20% plus return years for the S&P 500 have only occurred four times in history. A three-year 20% plus return period has only occurred once. The mid to late 1990s experienced a period of four years with 20% plus returns for the S&P 500.

Market participants are 8-10% optimistic, which would put us at the historical return level (on average since 1928, the S&P 500 returned 8.0%). Of note, the consensus estimate from equity strategists for the S&P 500 price target to end this year is 6,600 to 6,700 (at the writing of this report). Looking at the numbers, this would represent an almost 14% increase from the end of year price. However, if you look at the price of the S&P 500 prior to the December FOMC meeting – the one where the Fed spooked markets by lowering expectations for rate cuts in 2025 – it represents a 10-11% return.

The second clarifier is that the optimism is for the whole year – and twelve months is a long time. For our own mental health, we may want to not look at our screens in the near term. Until President Trump's policies are fully known, there remains much uncertainty about what he will and can do. There are many questions around the balance between negotiation rhetoric versus actual implementation levels and scope of tariffs and immigration policies and what this could mean for inflation and therefore monetary policy. It is also interesting to note that additional uncertainty in this area is what will be the net effect of those potential inflationary policies once accounting for the offsets from his administration's pro-growth policies.

As such, the optimism is there for the year but tempered by near term uncertainty.

As to drivers for equity market performance this year, we break this apart by looking at what drove markets last year and can that theme continue throughout this year. These themes include:

- The artificial intelligence (AI) boom – is there more room to run? Many market participants believe yes, as we move from infrastructure and hardware to a focus on applications to improve productivity and garner efficiencies. We will see if this changes after the emergence of DeepSeek.
- Market concentration – can the Mag 7 and the technology sector more broadly keep driving markets? Many market participants believe yes, not +171% yes (a reference to NVDA's performance last year), but yes.
- Higher for longer rates – can we have a positive stock market performance with higher interest rates? Many market participants believe yes, after we work through an adjustment period.

[1] Carry trade: A currency trading strategy where an investor borrows money in a currency with the low interest rate – Japanese yen (JPY) – and invests in another currency with a higher interest rate – U.S. dollar (USD) – profiting from the interest rate differential between the two currencies. On July 31, the Bank of Japan unexpectedly raised its central bank rate by 25 bps, ending its longstanding zero (/negative) rate policy and signaling further rate hikes. The JPY appreciated, and the less favorable interest rate differential triggered the unwinding of the carry trade.

- Earnings growth – many market participants believe we should see greater focus on earnings growth this year. There is a good economic backdrop to set this up. The labor market is healthy, and the consumer is spending. Technological advancements are expected to drive efficiencies and increase productivity. That said, any earnings misses could cause volatility, as we saw last July (the VIX temporarily moved above 18 after poor technology stock earnings were reported).

Following up on the equity markets' ability to post a positive return under higher rates, there will be an adjustment period, as we have seen to start this year. However, we have seen this story. In the June 2024 jobs report, there was apprehension that the labor market was cooling off, and market participants were concerned about vulnerabilities in the economy. Markets reacted negatively when the Fed did not cut the rate at the July FOMC meeting (to be fair, the unwind of the carry trade occurred immediately after that FOMC meeting, impacting volatility and markets).

It is interesting that the market focus centers on the Fed Funds rate. The consumer is actually impacted by the 10 year Treasury and the 30 year mortgage rate, which is based off of the 10 year. The 10 year ended 2024 at 4.58%, rising 0.7 bps. The 10 year reached almost 4.8% in January until ticking back down after softer inflation data (around 4.5% as of the writing of this report). The 30 year mortgage rate rose to end the year at 6.76%. It is at 7% today. Factors other than the short term rate, the Fed Funds rate – high Treasury issuance levels and shifting holders – have impacted the 10 year Treasury. This is visible in the increased term premium, peaking over 0.80% in January (monthly average 0.74%), up 0.6 pps since the September FOMC. Let us restate that, the Fed cut rates by 50 bps in September – and then another 50 bps by year end, typically positively correlated to moves in the 10 year – yet the 10 year rose 0.93 bps in that time period. This was a result of the increase in the term premium.

Now that we have reviewed drivers for the year, we highlight some potential market risks for 2025, beginning with potential **downside risks**:

- High valuations can make stocks more vulnerable to market corrections. To put this in context, since 2000, the average price-to-earnings (PE) ratio for the S&P 500 was 18.70x. The index ended 2024 with a 24.73 PE ratio. This is not a guarantee of a market downturn, but high valuations do open the door for lower returns than last year.
- Market concentration – over 30% of the S&P 500 returns last year were from NVDA alone. If the Mag 7 underperform, the S&P 500 could struggle to reach an 8-10% return. Underperform does not mean simply returns come in lower than last year, rather it means that they experience declines.
- Geopolitical risks remain, whether it be Russia-Ukraine, tensions in the Middle East (despite the recent ceasefire between Israel and Gaza), concerns over China and Taiwan.
- Global economic environments. The economic health of other countries/regions matter, as over 40% of the S&P 500's earnings come from outside of the US.
- The Fed and inflation – if inflation reaccelerates and the Fed has to stop rate cuts completely or, worse, begin to hike rates, this could hurt the economy and earnings.
- President Trump's policies as we know them – tariffs and immigration could ignite inflation.[2]

[2] In addition to impacting stock performance, executive orders, as well as stays and reversals of policies, can increase market volatility.

Next, we look at potential **upside risks** to markets in 2025:

- A broadening of market performance is expected for this year, relieving some of the pressure for Mag 7's performance. Yes, market concentration remains. If small caps can hit their expected returns in the teens and the Mag 7 meet their expectations, the S&P 500 could still hit it's 8-10% expected return. Interestingly, despite the ups and downs to start the year, analyst estimates have increased since the end of December for all but AAPL and MSFT, which are essentially flat. Whether looking at analyst estimates at the end of December or currently in January, the math shows that the S&P 500 has the potential to return 10-11%. And that is with only a 10% return assigned to the other 493, at the lower end of strategists estimates.
- Continued good earnings growth from companies can support higher stock valuations. Earnings for the index grew 9.5% last year. Equity strategy consensus estimates are for 10-15% earnings growth in 2025. Even if markets do not get multiple expansion this year, strong earnings can support markets.
- Productivity Gains – technology driven increases in productivity could increase corporate profits and therefore stock prices.
- A continuation of the AI boom continues to support technology and Mag 7 stock prices. As Nvidia CEO Jensen Huang noted, we are only in the early stages of the AI revolution. We moved from perception AI to generative AI, and we are now entering the era of agentic AI that can reason, plan, and act. We will see how the emergence of DeepSeek impacts this theme.
- The Fed and inflation – if inflation moderates faster, the Fed could cut rates further and faster, benefiting stocks, particularly growth stocks like the Mag 7.
- President Trump's policies as we know them – deregulation and tax cuts could boost growth.

Stay tuned for what could be an interesting year.

Recapping 2024: Metrics

Before we can look to the future, we must assess the past. Although, since this is a markets note, I should say past performance is not indicative of future results. Over the next few pages, we highlight key metrics for 2024 across equity markets, volatility, volumes for equities, exchange-traded funds (ETF), and options, and capital formation.

To summarize, markets continued to climb higher, with the S&P 500 surpassing the 6,000 level. Volumes grew in equities, ETFs, and options. Yet, volatility declined. IPOs – and all other areas of equity capital formation – grew, albeit deal value remains below historical levels.

	Average	Peak	Trough
Market Performance (index price)			
S&P 500	5,428.24	6,090.27	4,688.68
DJIA	40,323.13	45,014.04	37,266.67
Nasdaq	17,247.45	20,173.89	14,510.30
Russell 2000	2,128.00	2,422.03	1,913.17
Volatility & Volumes			
VIX (price)	15.61	38.57	11.86
Equity ADV (B shares)	12.2	23.8	8.7
ETF ADV (B shares)	2.4	5.2	1.4
Options ADV (M contracts)	47.3	70.6	32.0
Capital Formation ($B)			
Total (ex-SPACs)	221.4	31.8	8.9
Secondaries	168.3	27.5	4.1
Preferreds	21.8	6.0	0.0
IPOs	31.3	6.9	0.1
SPACs	9.6	1.7	0.0

Source: Bloomberg, Cboe Global Markets, Dealogic, SIFMA estimates

	2024	2023	% Change
Market Performance (average index price)			
S&P 500	5,428.24	4,283.73	26.7
DJIA	40,323.13	34,121.54	18.2
Nasdaq	17,247.45	12,970.28	33.0
Russell 2000	2,128.00	1,838.22	15.8
Volatility & Volumes (averages)			
VIX (price)	15.61	16.85	-7.5
Equity ADV (B shares)	12.2	11.0	10.2
ETF ADV (B shares)	2.4	2.3	5.8
Options ADV (M contracts)	43.2	47.3	9.2
Capital Formation ($B, aggregate)			
Total (ex-SPACs)	221.4	139.0	59.3
Secondaries	168.3	107.1	57.1
Preferreds	21.8	11.8	85.1
IPOs	31.3	20.1	55.8
SPACs	9.6	3.8	148.9

Source: Bloomberg, Cboe Global Markets, Dealogic, SIFMA estimates
Note: Annual averages; Y/Y change is annual average/annual average.

Recapping 2024: Themes

To finish off our assessment of last year, we review key themes for the year:

Markets – the second year in a row of >+20% returns: While the S&P 500 returned +23.3% in 2024, the performance was not the same across all categories. The full index outperformed all other selected segments except for growth. It was a year for large cap stocks and a year for growth stocks. The performance was also not the same throughout all time periods in the year. Overall for the index, returns declined as we moved through the year. The second half of the year was lower than the first half. The fourth quarter was lower than either of the half year periods. December was not kind to markets, even the growth stocks.

	Weighting		Style		Market Cap		
	SPX	**SPW**	**SGX**	**SVX**	**SPX**	**MID**	**SML**
Index Price							
Average	5,428.2	6,858.9	3,621.2	1,845.5	5,428.2	3,002.5	1,354.2
Peak	6,090.3	7,589.9	4,250.9	2,027.5	6,090.3	3,390.3	1,544.7
Trough	4,688.7	6,239.4	2,941.2	1,689.6	4,688.7	2,691.8	1,241.6
Range	1,401.6	1,350.5	1,309.8	337.9	1,401.6	698.5	303.0
Performance							
FY24	**23.3%**	**10.9%**	**34.9%**	**9.8%**	**23.3%**	**12.2%**	**6.8%**
1H24	14.5%	4.1%	23.1%	4.6%	14.5%	5.3%	-1.6%
2H24	7.7%	6.6%	9.6%	5.0%	7.7%	6.5%	8.6%
2H/1H	-6.8%	2.5%	-13.6%	0.4%	-6.8%	1.2%	10.2%
4Q24	2.1%	-2.3%	5.8%	-3.2%	2.1%	-0.03%	-1.0%
Dec24	-2.5%	-6.4%	0.6%	-7.0%	-2.5%	-7.29%	-8.1%
Dec/4Q	-4.6%	-4.1%	-5.2%	-3.8%	-4.6%	-7.3%	-7.1%
4Q/2H	-5.6%	-8.9%	-3.8%	-8.2%	-5.6%	-6.5%	-9.6%
Slope	3.3872	3.0102	2.8889	0.7588	3.3676	1.3350	0.6138
SPX/Index		1.1x	1.2x	4.5x		2.5x	5.5x

Source: Bloomberg, SIFMA estimates

As much has been discussed about market concentration, we decided to analyze the numbers around this. We first looked an interesting pattern that emerges whether you break out the S&P 500 by count, or number of stocks, versus by market cap. Looking at cap size, the mega caps – stocks with market caps over $200 billion – represent 58.5% of the total index by market cap but only 8.4% of the index by stock count.

Next, we analyzed percentages of the total index represented by different groups, based on market cap. The top three stocks alone represent almost 20% of the total index. Add seven more of the top stocks, i.e., the top ten stocks, and this representation increases to almost 40%. The top fifty stocks represented over 60%.

You could hardly go a day in 2024 without discussing the Magnificent 7 stocks (Google, Amazon, Apple, Meta, Microsoft, Nvidia, and Tesla). The technology sector holds the highest weighting in the S&P 500, 31.7% on average in 2024. The Mag 7 alone represent a larger part of the index, at 34.0%. How can these seven stocks be greater than the whole technology sector you ask? While all of the Mag 7 stocks are traded as technology plays, four of them are not classified as technology: GOOGL and META are classified as communications, AMZN and TSLA are consumer discretionary. That means their combined 14.3 share of the index is not included under the technology sector. As such, we created a “true technology” category to get a better read of what percentage of the index are traded as technology stocks: 46.0% of the index on average in 2024. Technology, “true technology”, dominated the market in 2024.

We would be remiss to not discuss the trillion dollar club. At the end of 2024, all of the Magnificent 7 stocks had market caps over $1 trillion dollars. We also had two other stocks flirting with the trillion dollar club last year, Berkshire Hathaway and Broadcom. Given these trillion dollar club members, the Mag 7, technology sector, and our adjusted “true technology” sectors are all greater than the market cap of every other country/region in the world. Apple alone has a larger market cap than all listed companies each in Canada, Australia, and Singapore.

The concentration of the Mag 7, 34.0% of the total index on average, is what drove the 23.3% market return. Each of the Mag 7 stocks performed well last year, all above the 8% return the S&P 500 averaged over time. Only MSFT’s return was below the average S&P 500 return in 2024.

Volatility – pushed through events to come down for the year: The VIX continued its realignment to historical levels, averaging 15.61 in 2024, -7.5% Y/Y. This was despite having a higher peak than seen since 2020 (38.57, +45.4% Y/Y), the start of COVID. 2024 VIX spent more days at lower levels, 141 days to be exact. Looking at higher volatility days in 2024, the VIX surpassed the 20 level only twenty-five days, or less than 10% of the time. The one day it surpassed 30 was the unwinding of the carry trade. The VIX increased as we moved through the year, with the largest increase occurring between the second and third quarters, +22.3%.

As such, we decided to perform a what if scenario analysis, looking at days the VIX surpassed the 18 level, about a 15% increase to the 2024 average. For the first half of the year, there was only one time period when the VIX crossed this threshold, during a short-lived period of heightened geopolitical events. In the second half of the year, there were forty-seven days when the VIX crossed this level. The temporary volatility periods were around poor tech earnings, the unwinding of the carry trade, geopolitical events, or FOMC meetings. If we removed some of the brief spikes – where market jitters were associated with a brief one-time event – outside of an extended period of volatility where market jitters were more warranted, the average VIX would have ended the year below 15.

Equity volumes – surpassing the 12 billion shares level: Just when we thought equity ADV was stabilizing, volumes increased to over the 12 billion shares level (12.2 billion shares, +10.2% Y/Y). While the pattern has been a bit up and down – 11.4 billion shares in 2021, 11.9 billion shares in 2022, 11.0 billion shares in 2023 – we thought the new normal was going to be in the 11 billion shares level. Yet, equity ADV climbed to end the year over the 12 billion shares threshold. 2024 saw only sixteen days below the 10 billion shares level; there were only two days when volumes were in the 7 billion shares level, the pre-COVID historical average – and both of those were on early close days arounds holidays. Volumes surpassed the 12 billion shares level 101 days, or 40% of the time, and the 15 billion shares level twenty-six days, or 10% of the time – and over half of those were over 16 billion shares. There were two days over the 20 billion shares level.

The top fifteen volume days ranged from 1.3x to 2.0x times the average for the year. Six of the top fifteen – and two of the top three – volume days were around the September and December FOMC meetings. Five of the top fifteen volume days were around the release of inflation data, with the rest around the release of other economic data points.

A key theme last year was the growth in trading of low-priced stocks. On average in 2024, just under 50% of total shares traded were in stocks priced between $5-$50. 28% of shares traded were priced $5 or below, with 13.5%

priced under $1. The remaining 26% of shares traded were priced $50 or higher, with 2.6% in stocks with prices over $300. Trading low-priced stocks comes with risks, as evidenced by the wider spreads: stocks priced less than $1 had an average spread of 76.05 bps, 10.5x the average (7.35 bps).

Retail trades as a percentage of total market volumes was estimated at 17.9% on average in 2024, with retail participation having settled around the 18 level for the last three years. This is up from around 10% historically. This figure might be on the low side, given data collection methodology. SIFMA's annual market structure survey estimated that the level of retail volumes in the 20%-30% range, with 72.5% of responses.

Another topic frequently discussed last year was after hours trading. On average in 2024, after hours trading was 10.8% of total equity volumes. Of that total, 5.5% took place in the 4:00-4:30pm EST time slot, i.e., immediately after the market closes. The split between the 4:00-4:30pm EST and 4:30pm-9:30am EST time slots in the afterhours was essentially equal, with the later half representing mostly traders in the Asia Pacific region seeking access to US markets during their daytime hours.

ETF volumes – moderate growth for the year: On average in 2024, ETF volume was 2.4 billion shares versus 9.8 billion shares for single stock equites, a +5.8% Y/Y growth versus +11.3% for single stocks and +10.2% for total equities. ETFs represented 19.6% of total equities volume in 2024, -4.0 pps Y/Y.

US ETF AUM grew to $10.6 trillion, +32.5% Y/Y, while global ETF AUM $15.0 trillion, +31.4% Y/Y. The global ETF industry gathered $1.7 trillion in net inflows in 2024, the highest level of annual net inflows behind the $1.3 trillion in 2021, and the US ETF industry saw net inflows of $1.0 trillion in 2024, the highest on record after $919.8 billion in 2021.

Options volumes – can you say 70 million contracts?: Options volumes have been growing and continue to climb, ending 2024 with an ADV of 47.3 million contracts, +9.0% Y/Y. Average options volumes have shown solid Y/Y growth for each of the last three years: +4.8% in 2022, +7.1% in 2023, and +9.0% in 2024. The peak levels have also grown continuously, moving from 62.2 million contracts in 2022 to 70.6 million contracts in 2024, +13.5%. We saw fewer lower volume days last year – 2024 saw zero days below the 30 million contracts level – yet higher volume days were a dime a dozen. In 2024, volumes surpassed the 40 million contracts level 216 days, or 86% of the time. Volumes surpassed the 50 million contracts level 87 days, or 35% of the time, and the 60 million contracts level twelve times, including one day above the 70 million contracts level. Wow!

Index options volume continued to grow, averaging 4.1 million contracts in 2024, +7.9% Y/Y. Index options ADV have grown 127.2% since 2020. This compares to a 58.7% growth rate for equity (single stock, ETF) options volumes, albeit the index options growth rate is calculated off a smaller base.

The use of short-dated options – options contracts expiring within one week – continued as well. Total options volumes grew 148.4% from 2018 to 2024. This growth was driven by short-dated options, which grew 318.3% over this same time period, from 6.0 million contracts to 25.1 million contracts. From 2018 to 2024, short-dated options grew to 54.9% of total options volumes from 32.6%. In comparison, contracts expiring in greater than one week grew 66.1% from 2018 to 2024. Short-dated options have continued to grow as a risk management tool, particularly hedging against upcoming events. Additionally, the increase in product offerings – new weekly expirations, etc. – contributed to the growth.

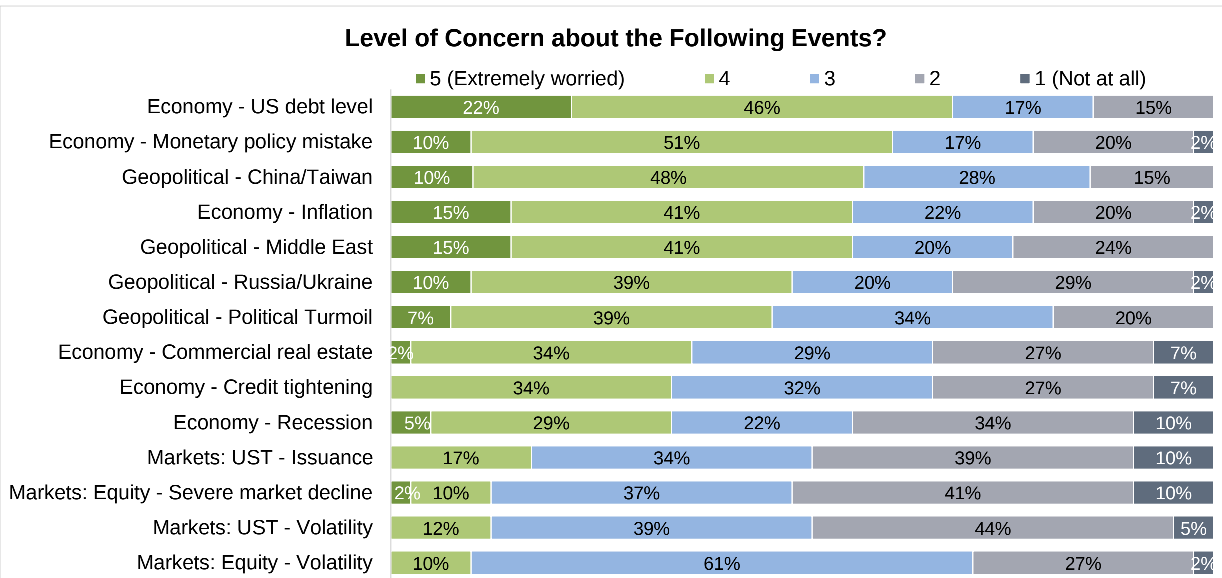
Capital formation – the good and the not so good news: On a positive note, the $31.3 billion IPO deal value grew significantly in 2024, +55.8% Y/Y, and moved closer in line with the historical average of $48.7 billion (going back to 1990), -35.7%. IPO deal value continued to climb from the post COVID lows, +56.7% to the three-year post-COVID $20.0 billion average.

On the not so good note, the number of listed operating companies declined last year to 5,455, -4.4% Y/Y, marking the third year of Y/Y declines in a row (albeit last year's decline was less than that of the prior year). We ended the year 9.1% below the 6,000 threshold to which we were once so happy to return.

Looking to 2025: Survey Results

Next, in order to assess the forward path for markets, we surveyed our equity markets and options trading committees, as well as representatives of equity and options exchanges. We questioned survey respondents about where they saw 2025 market metrics heading, as well as their views on retail investor participation. Those results are analyzed within each respective section – equity markets, volatility, equity volumes, and options volumes – and summarized at the end of this section.

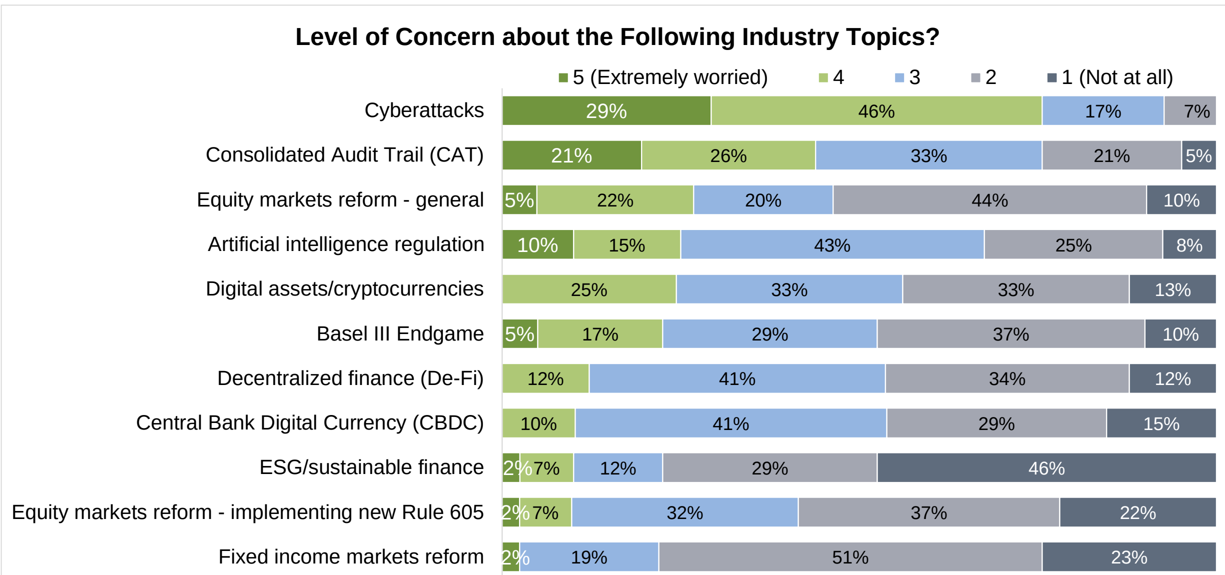
To first set the scene for where markets could go next year, we gauged respondents' concerns around current geopolitical, economic, and market events and trends. For general macro events it was mostly about the economy, with 68.3% of respondents noting that they were very or extremely worried about the US debt level, while 61.0% indicated the same level of concern around a monetary policy mistake. The next area of concern was around geopolitical events between China and Taiwan, at 57.5% of responses noting a high level of concern.



Source: SIFMA Insights market structure survey

Note: Respondents were asked to rate their level of concern about events from the U.S. perspective, using a scale of 1-5 where 1 indicated not at all and 5 indicated extremely worried. To rank results, we aggregated 4 and 5 responses, indicating extremely or very concerned.

As to financial services industry topics, respondents were most concerned about cyberattacks, with 75.6% of respondents noting that they were very or extremely worried. 46.2% indicated the same level of concern around the Consolidated Audit Trail (CAT). The next area of concern, albeit to a lower degree, was around all of the equity market reforms in general, with 26.8% of responses noting a high level of concern.



Source: SIFMA Insights conference survey
Note: Respondents were asked to rate their level of concern about events from the U.S. perspective, using a scale of 1-5 where 1 indicated not at all and 5 indicated extremely worried. To rank results, we aggregated 4 and 5 responses, indicating extremely or very concerned.

Comparing Current and Prior Surveys

The heart of our survey is to gauge respondents' expectations for market metrics in the year ahead, as well as their views on retail investor participation. In the table below, we compare results from this year's survey to last years, highlighting changes. (The full survey results are analyzed within each respective section in this report.)

While no change is expected for the level of volatility, volumes are expected to increase for both equities and options. Markets are expected to increase somewhat – at historically moderate levels – which was the same expectation for last year (oops! Since we saw an over 20% increase). As to retail investor participation, survey respondents continue to estimate this level in the 20-30% range for equities, though respondents believe this could increase somewhat in 2025.

We view the most interesting result as the increase in estimated retail participation in options, now in the 30-40% range, up from 20-30% last survey. Even more interesting is that survey respondents expect this level to continue to grow. They had the same expectation last year, and they were right.

	Current Survey	Change	Last Survey
Volatility & Volumes (expectations for the next 12 months)			
VIX (price)	High teens (55.8% of responses)	No change	15-20 (49.0% of responses)
Equity ADV (billion shares)	12-13 (48.8% of responses)	Increase	10-15 (87.8% of responses)
Options ADV (million contracts)	45-50 (51.2% of responses)	Increase	40-50 (61.7% of responses)
Market Performance (S&P 500)			
Factors driving recent performance	Post election optimism, corporate earnings, monetary policy	na	Economy/soft landing, Fed Funds rate, inflation
S&P 500 over the next 12 months	Increase somewhat (65.1% of responses)	No change	Grow at a moderate pace (51.1% of responses)
Top risks to markets – upside	Inflation/rates; Trump policies; corporate earnings, AI/tech innovations, regulations	na	Monetary policy, US presidential election, and inflation
Top risks to markets –downside	Geopolitical; inflation/rates; Trump policies, economy	na	Geopolitical, US presidential election, and monetary policy
Retail Investor Participation (percent of total volumes)			
Equities – last year	20-30% (72.5% of responses)	No change	20-30% (75.0% of responses)
Equities – next year	Increase somewhat (45.0% of responses)	Increase	Remain about the same (44.4 of responses)
Options – last year	30-40% (39.0% of responses)	Increase	20-30% (58.1% of responses)
Options – next year	Increase somewhat (61.0% of responses)	No change	Increase somewhat (44.2% of responses)

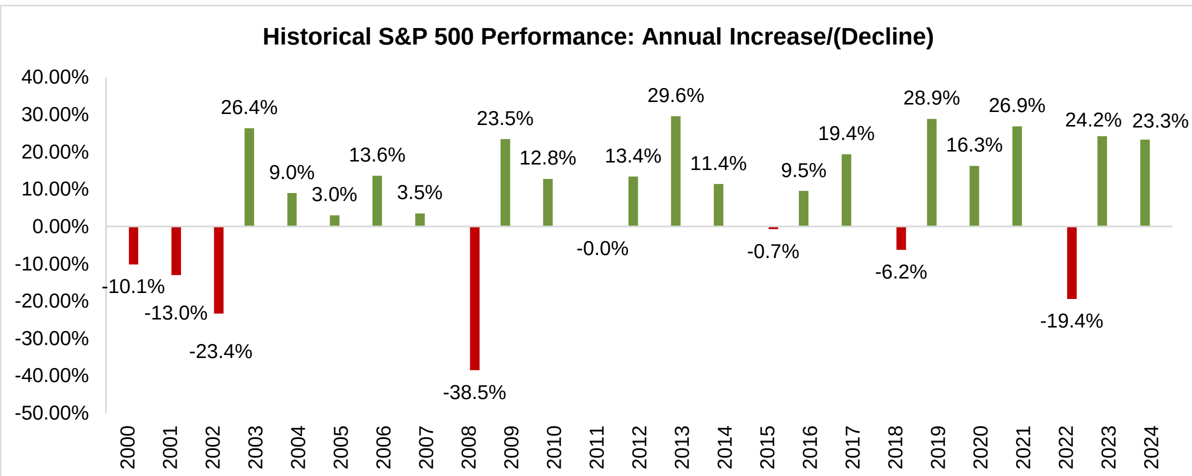
Source: SIFMA market structure survey

Note: 2024 survey was in the field January 2-17. 2023 survey was in the field January 16 to February 2.

Equity Markets

Markets: Metrics

Once again, the S&P 500 finished the year strong, returning 23.3%. As mentioned above, this market the first two year stint of 20% plus returns since the 1990s. It also added to the S&P 500's winning total. The index has been positive seventeen times since 2000, or 68.0% of the time. During this same time period, the S&P 500 returned over 20% seven times.

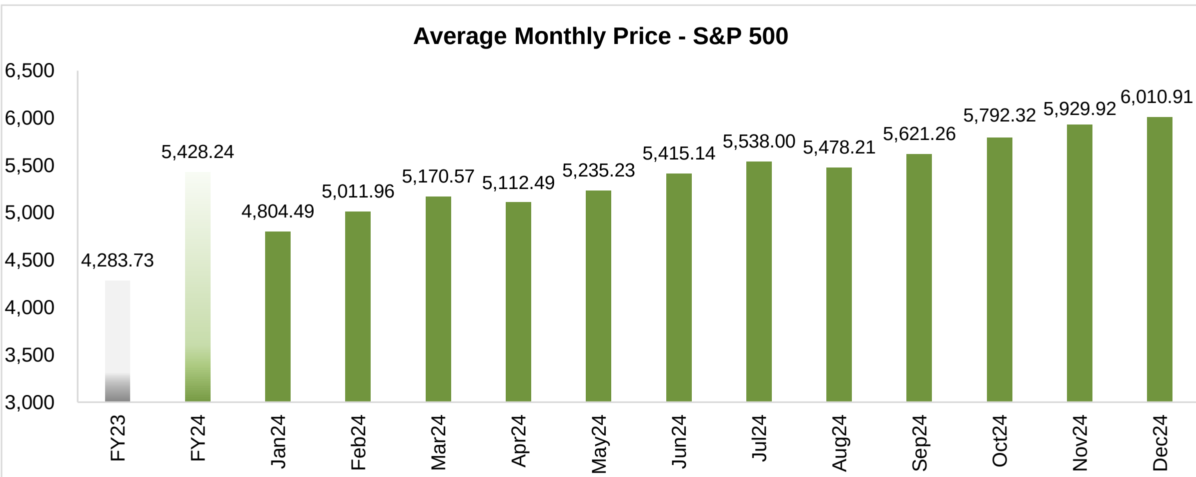


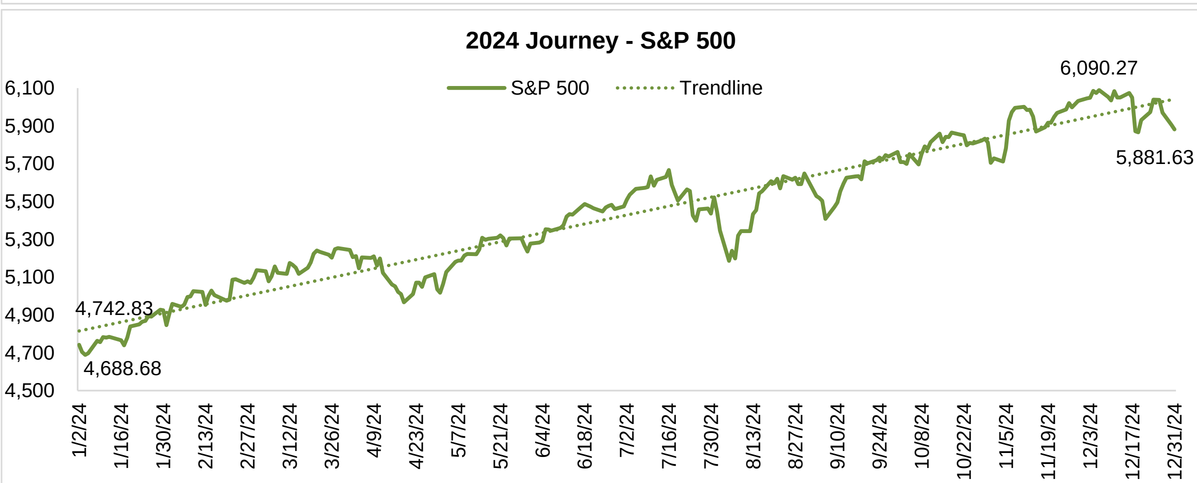
Source: Bloomberg, SIFMA estimates

On the following pages, we highlight keys trends for 2024 across the different stock market indices.

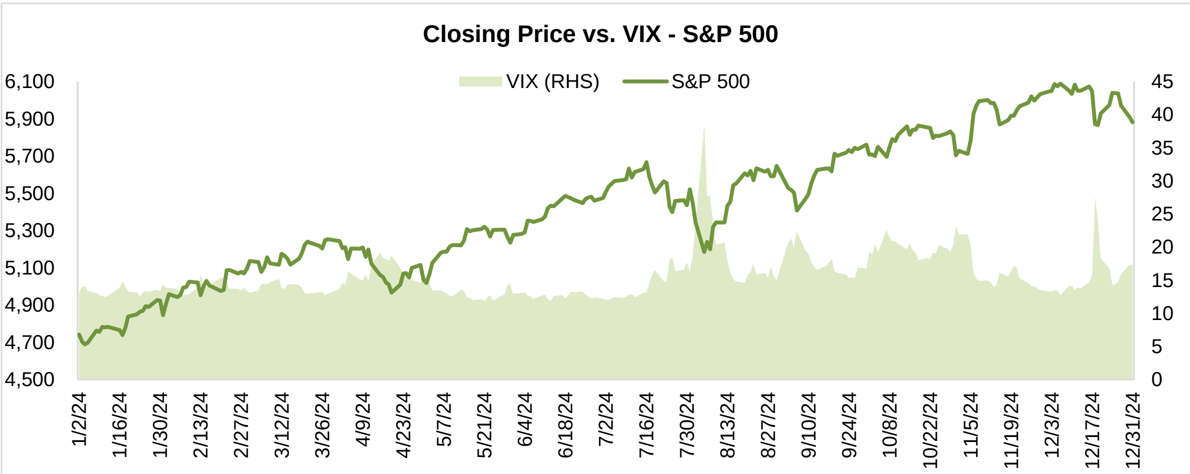
S&P 500

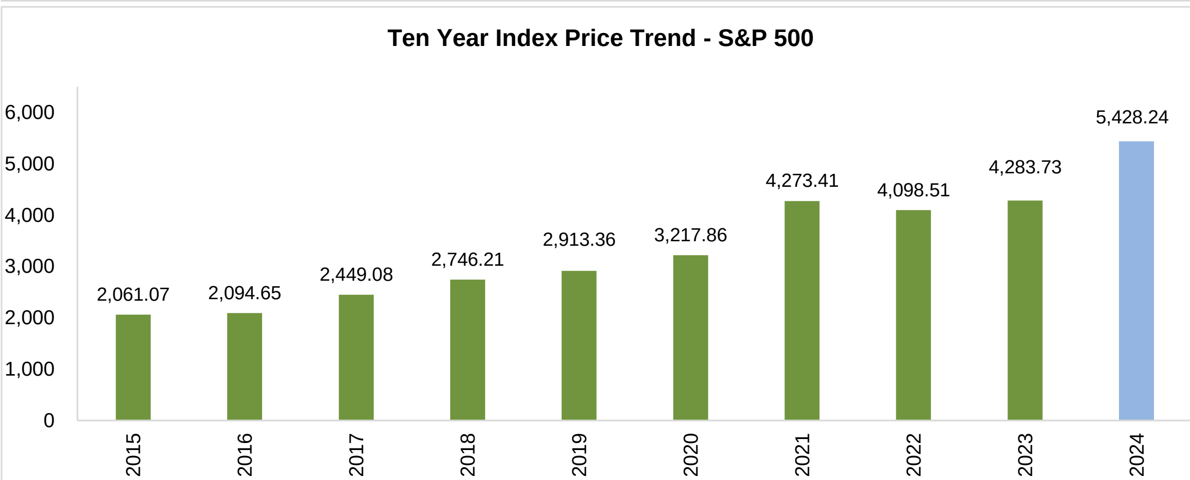
- 2024 average 5,428.24
    - +26.7% Y/Y (annual average)
    - Peak 6,090.27 on December 6
    - Trough 4,688.68 on January 4
- 5-Year CAGR +13.3%
- 10-Year CAGR +10.9%





Source: Bloomberg, SIFMA estimates

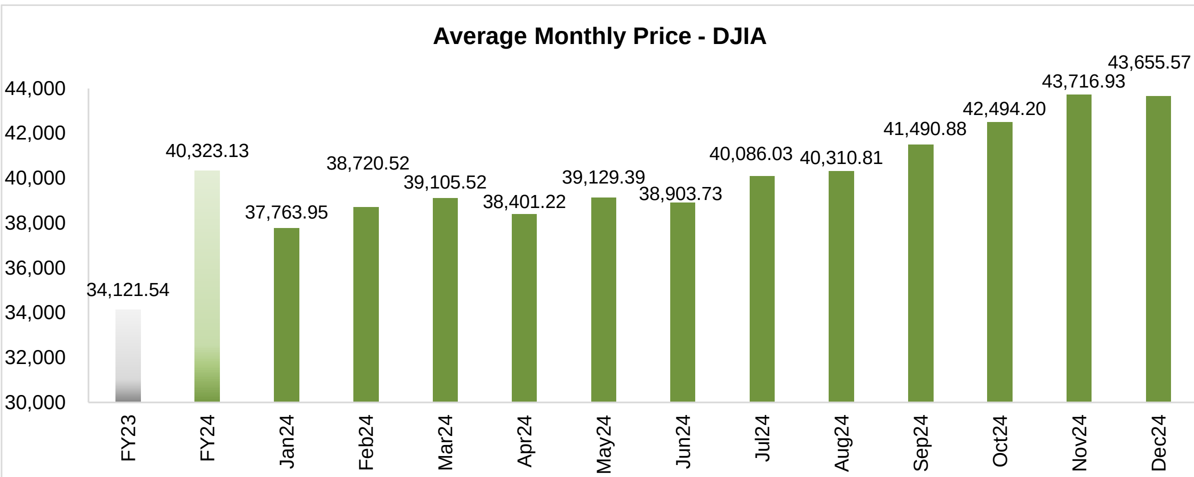


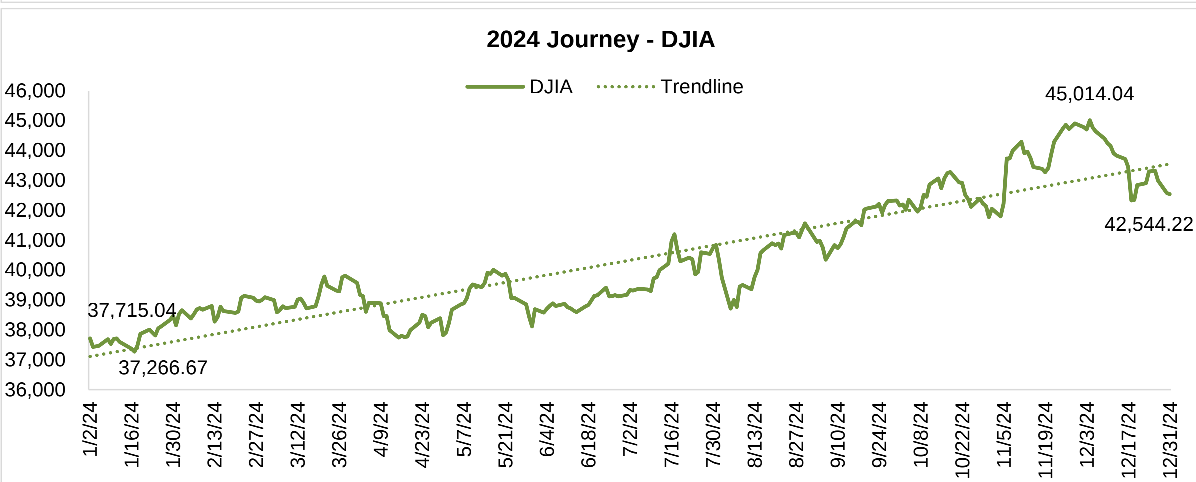


Source: Bloomberg, SIFMA estimates

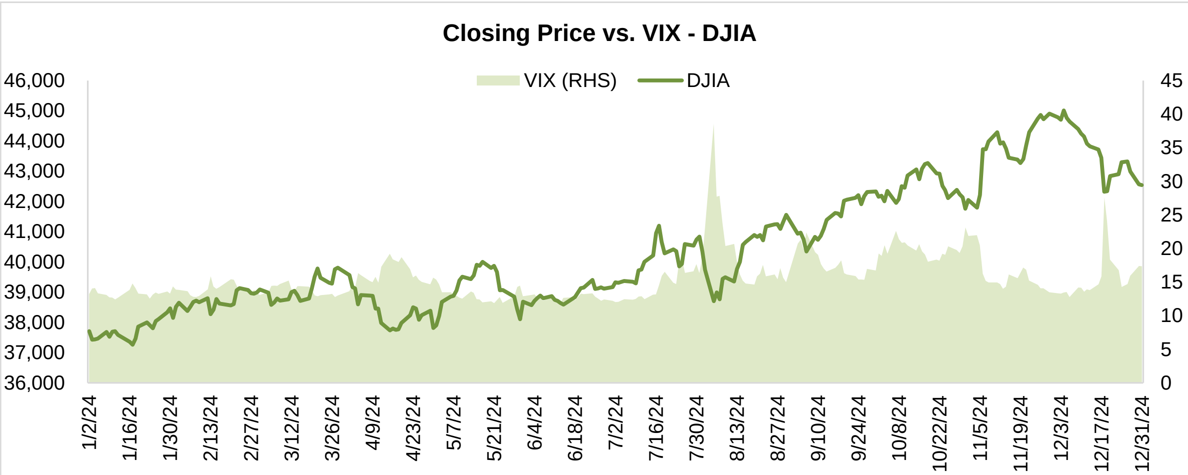
Dow Jones Industrial Average (DJIA)

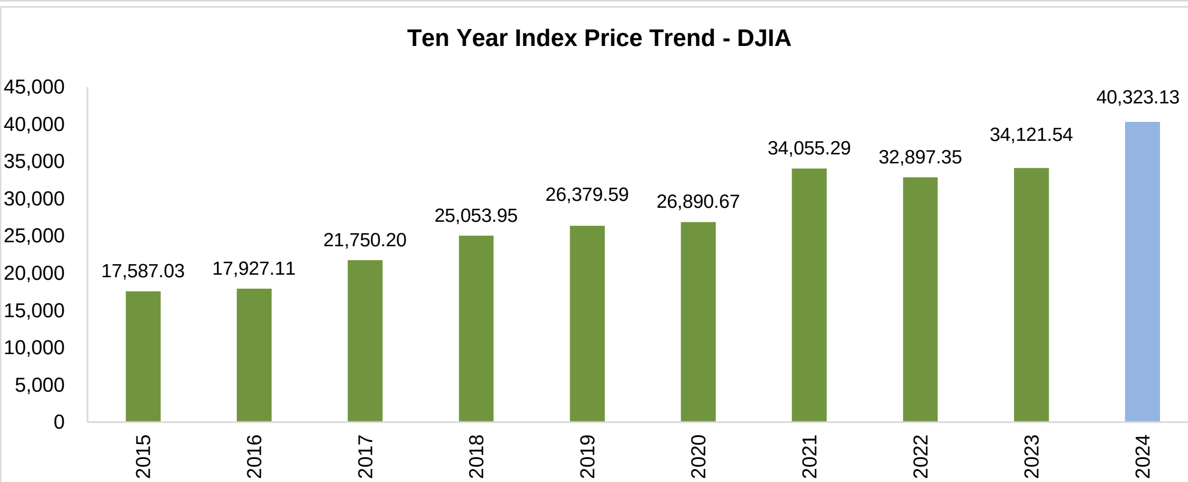
- 2024 average 40,323.13
    - +18.2% Y/Y
    - Peak 45,014.04 on December 4
    - Trough 37,266.67 on January 17
- 5-Year CAGR +8.9%
- 10-Year CAGR +9.2%





Source: Bloomberg, SIFMA estimates

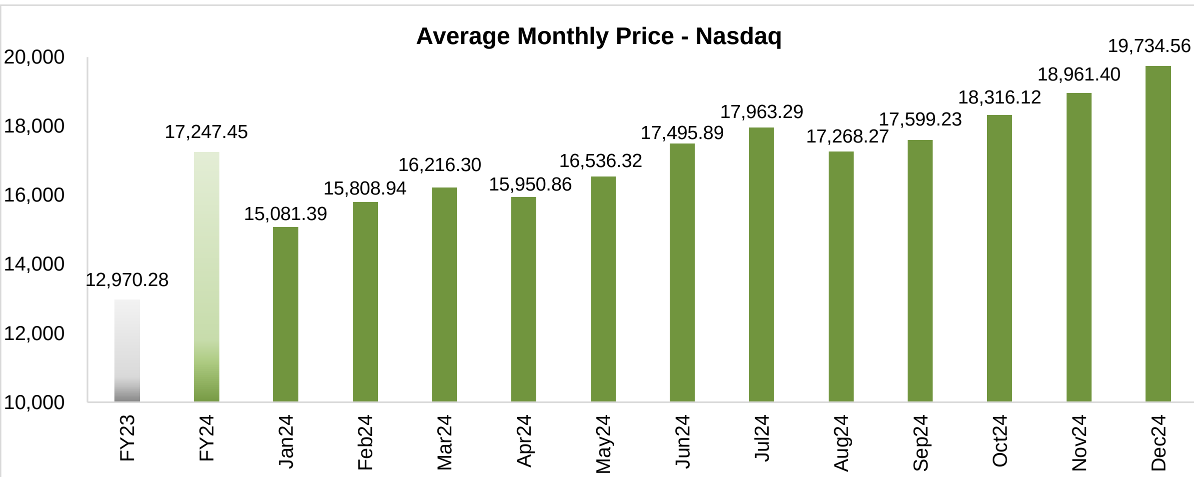


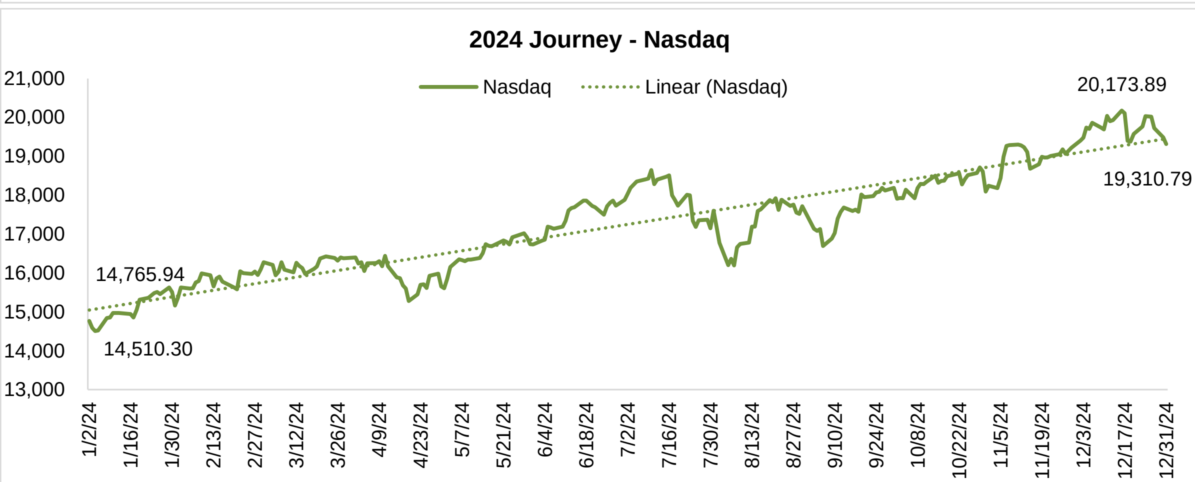


Source: Bloomberg, SIFMA estimates

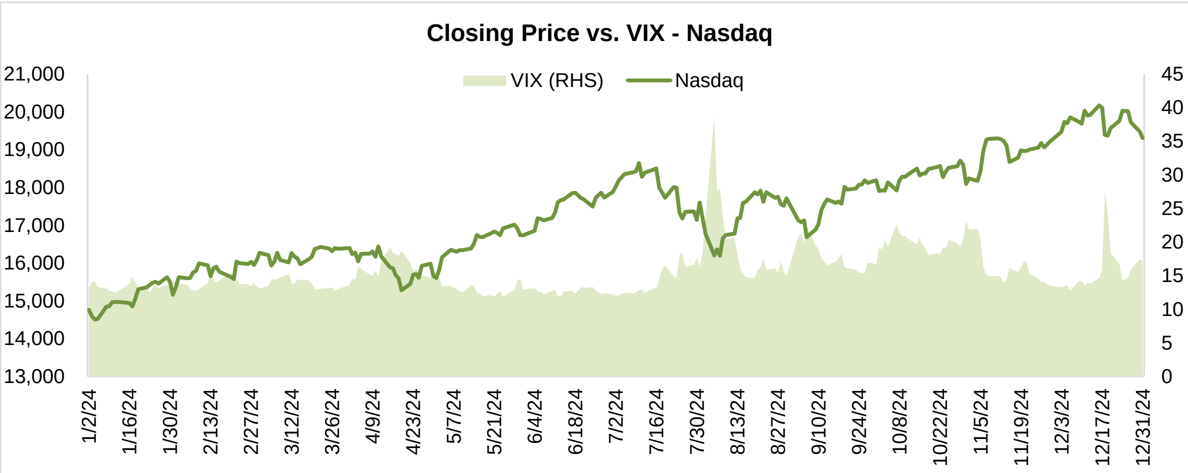
Nasdaq Composite

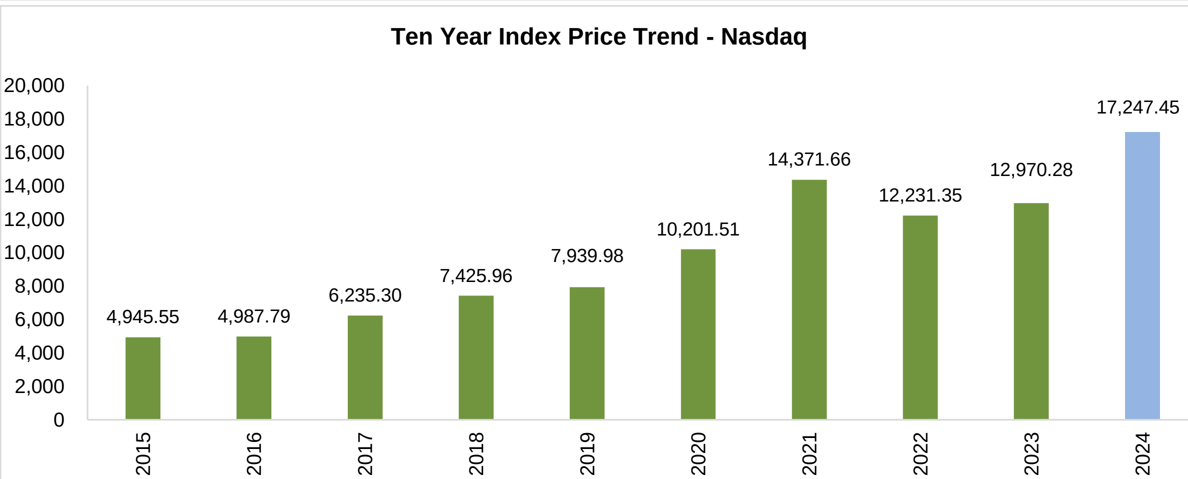
- 2024 average 17,247.45
  - +33.0% Y/Y
  - Peak 20,173.89 on December 16
  - Trough 14,510.30 on January 4
- 5-Year CAGR +16.8%
- 10-Year CAGR +14.7%





Source: Bloomberg, SIFMA estimates

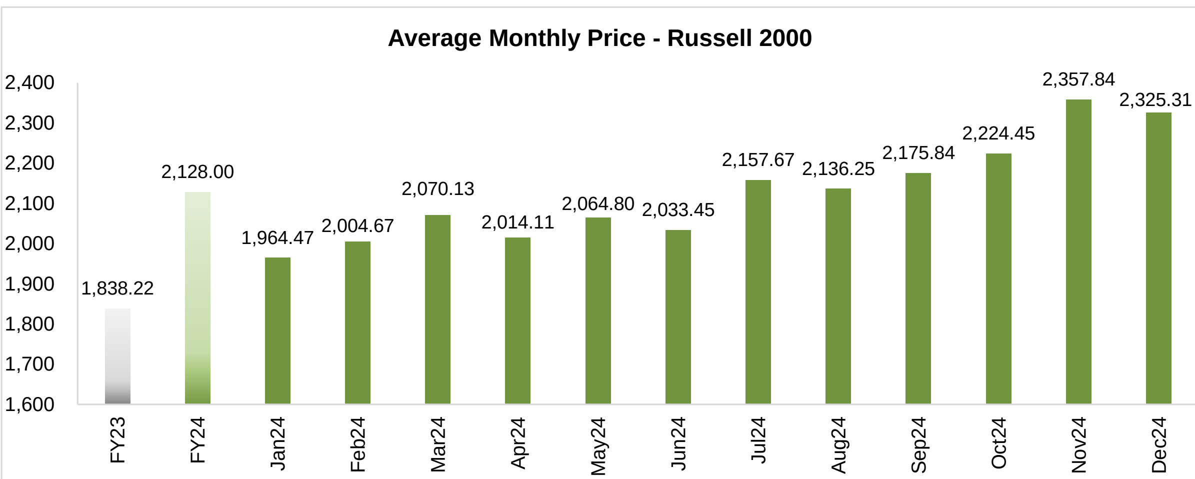


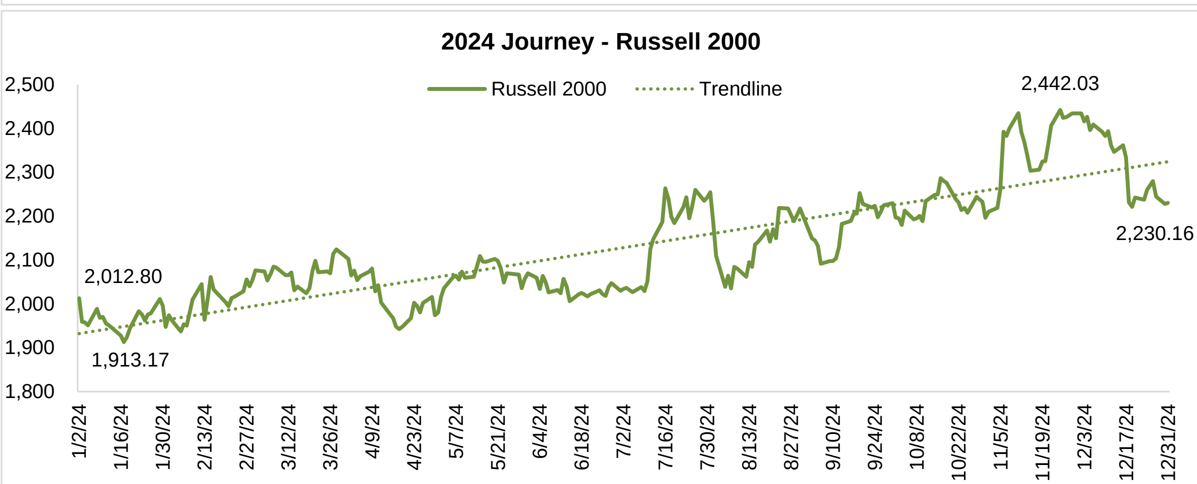


Source: Bloomberg, SIFMA estimates

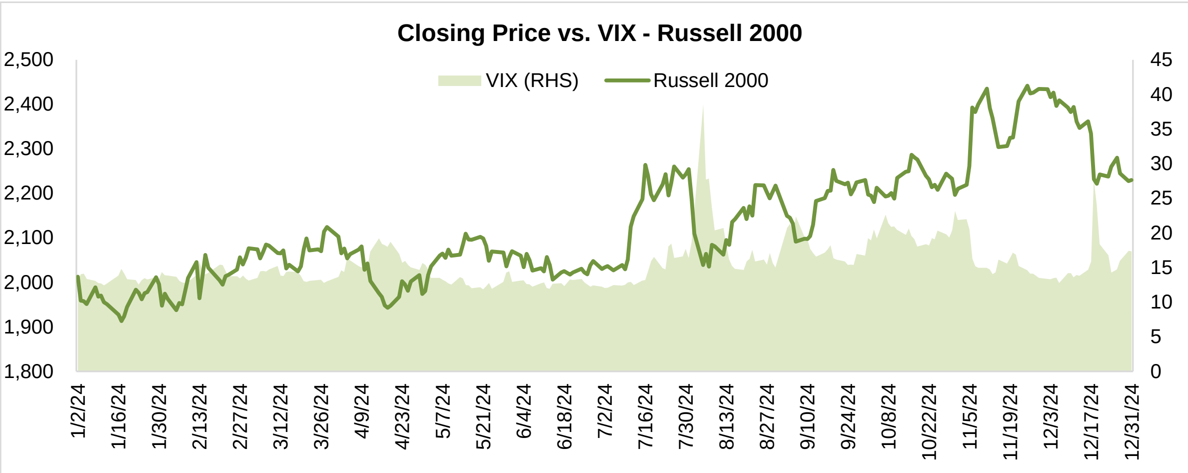
Russell 2000

- 2024 average 2,128.00
  - 15.8% Y/Y
  - Peak 2,442.03 on November 25
  - Trough 1,913.17 on January 17
- 5-Year CAGR +6.6%
- 10-Year CAGR +6.3%





Source: Bloomberg, SIFMA estimates



Source: Bloomberg, SIFMA estimates

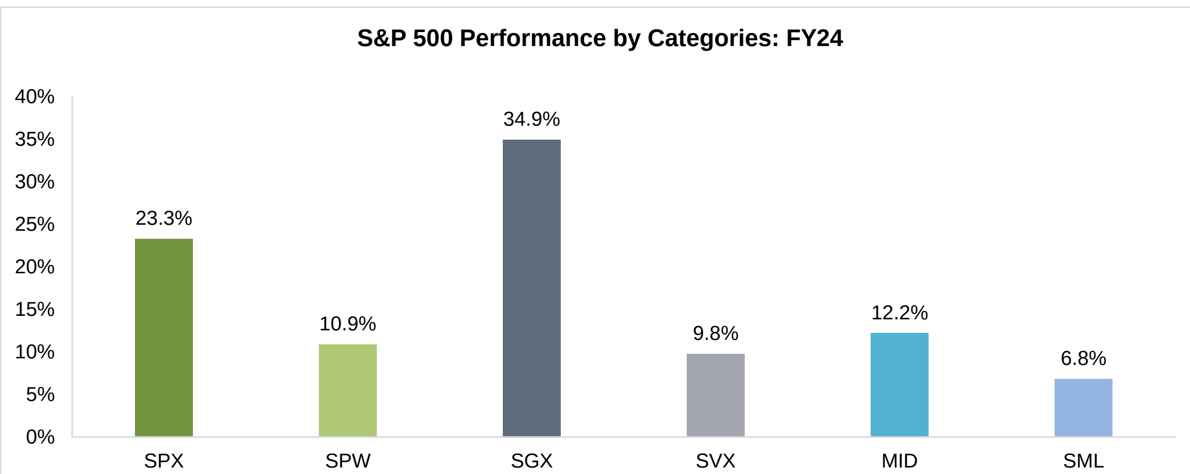
Markets: Themes

Performance Varied by Segment

While the S&P 500 (SPX index) returned +23.3% in 2024, the performance was not the same across all segments of the index. The full index outperformed all other selected segments except for growth (SGX). It was a good year for growth stocks. It was also a good year for large cap stocks, as we will review later in this section of the report. Interestingly, that sounds like the Magnificent 7 (more on this group later).

Returns across select S&P 500 index segments were as follows:

- Weighting – market cap weighted (SPX) versus equal weighted (SPW): SPX outperformed the SPW by 2.1x.
- Style – value (SVX) versus growth (SGX): SGX outperformed the SVX by 3.6x.
- Market cap – large (SPX), mid (MID), and small (SML): SPX outperformed the MID by 1.9x and the SML by 3.4x; MID outperformed the SML by 1.8x.



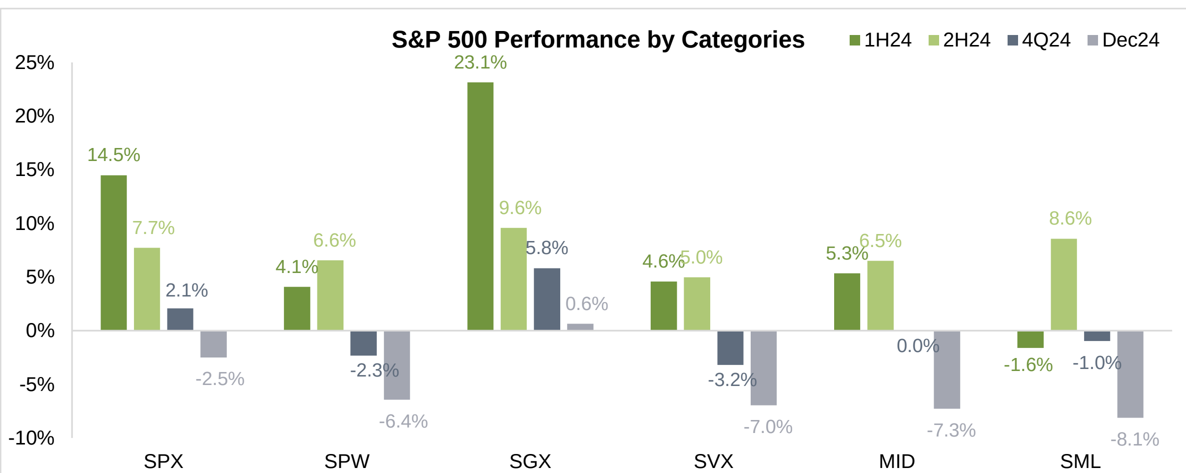
Source: Bloomberg, SIFMA estimates

Performance Varied by Time Period

The performance of the S&P 500 was also not the same throughout all time periods in the year: first half versus second half (green columns) and fourth quarter versus December (purple columns). Overall for the full index, the SPX, returns declined as we moved through the year. The second half of the year was lower than the first half. The fourth quarter was lower than either of the half year periods. December was not kind to markets, even the growth stocks (SGX).

Returns for different time periods across SPX segments were as follows:

- The SPX was positive in all selected time periods except December.
- Both the equal weighted index (SPW) and value stocks (SVX) posted positive returns in each of the half periods, with the second half slightly outpacing the first half of the year, but turned negative for 4Q24 and December.
- Growth stocks outperformed last year, with the SGX posting positive returns in all selected time periods.
- Midcap stocks (MID) were positive in each of the half periods, flat for 4Q24, and negative in December.
- It was not the year for the small caps (SML), which were negative for three out of four of the selected time periods.
- December was negative for all but growth stocks (SGX) which had a slightly positive return at +0.6%.



Source: Bloomberg, SIFMA estimates

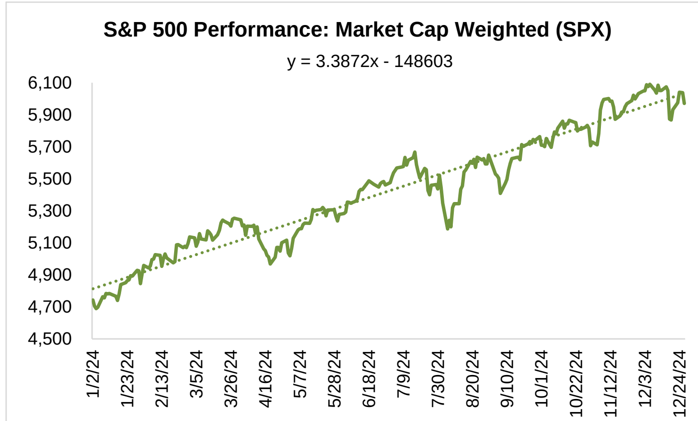
Market Cap versus Equal Weight

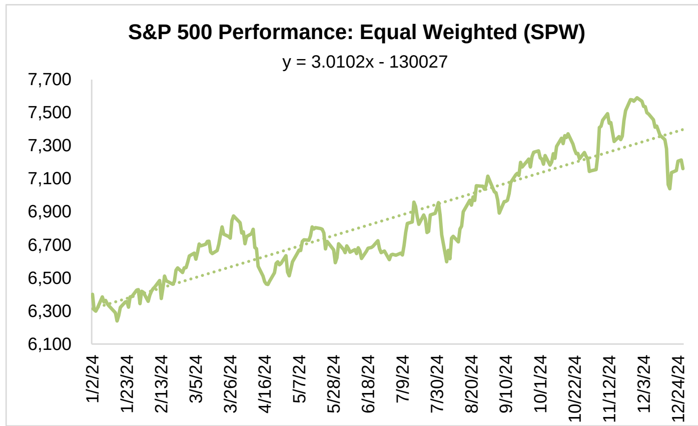
In a market cap weighted index, each stock is weighted by the size of its market cap – the higher the market cap the higher the influence on the total index performance. In an equal weighted index, each stock is given the same weight regardless of market cap or other financial metrics.

In general, both the market cap weighted (SPX) and equal weighted (SPW) indices were upward sloping for 2024. The SPX outpaced the SPW, with a slope 1.1x that of the SPW.

For 2024, the SPX returned 23.3% versus +10.9% for the SPW. Looking at the half-year splits, the SPX first half outpaced the second half by 6.8 pps, +14.5% versus +7.7%. The SPW followed a reverse pattern, at +4.1% and +6.6% respectively, a 2.5 pps increase in the second half of the year.

Both indices showed a decline from their fourth quarter to December performances: SPX +2.1% and -2.5%, -4.6 pps; SPW -2.3% and -6.4%, -4.1 pps.





Source: Bloomberg, SIFMA estimates

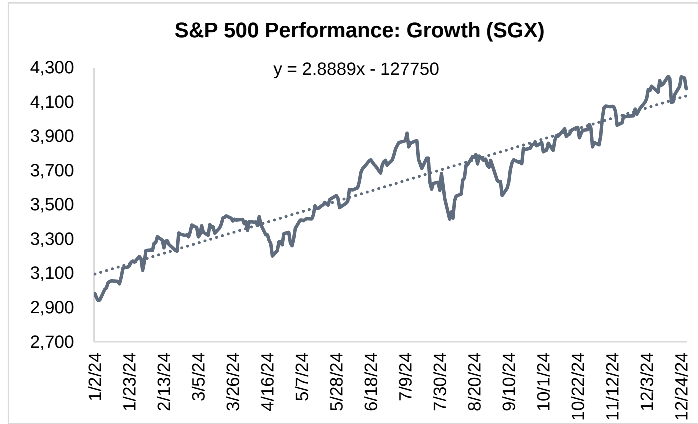
Growth versus Value

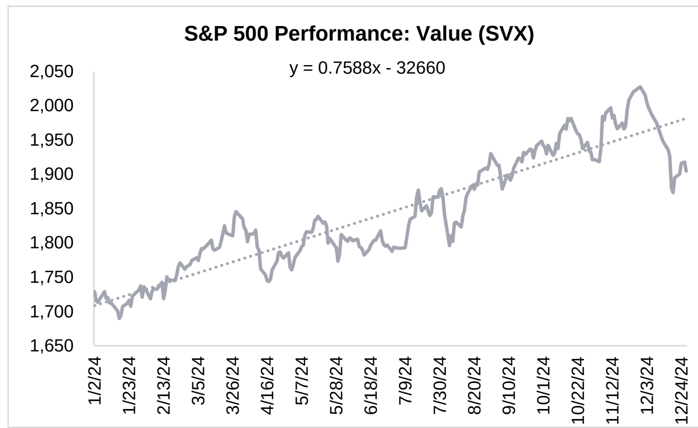
Investors can look to diversify portfolios by style, growth versus value. Growth investing looks for companies growing revenue, earnings, or cash flow at a faster than market or sector average pace. These companies tend to be more interest rate sensitive[3]. Value investing seeks out companies priced below intrinsic value to find attractively priced stocks. Historically, value investing outperformed growth. However, growth stocks have been outperforming value given other fundamental factors making the sectors and companies more attractive.

In general, both the growth (SGX) and value (SVX) indices were upward sloping for 2024. The SGX outpaced the SVX, with a slope 3.8x that of the SVX.

For 2024, the SGX was up 34.9% – outpacing the SPX at +23.3% – versus +9.8% for the SVX. Looking at the half-year splits, the SGX first half outpaced the second by 13.6 pps, +23.1% versus +9.6%. The SVX followed a different pattern, at +4.6% and +5.0% respectively, a 0.4% increase in the second half of the year.

Both indices showed a decline from their fourth quarter to December performances: SGX +5.8% and +0.6%, -5.2 pps; SVX -3.2% and -7.0%, -3.8 pps. Yet, the SGX remained positive in all four time periods.





Source: Bloomberg, SIFMA estimates

[3] Higher interest rates mean a higher discount rate used in calculations, thereby lowering valuations.

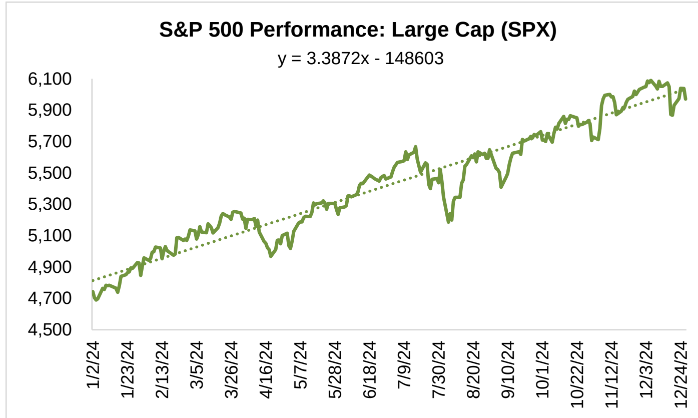
Small, Mid, and Large Cap Differences

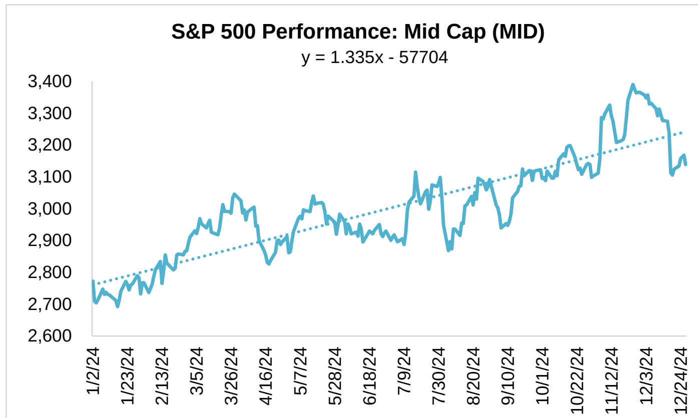
Market capitalization (market cap) is the total dollar value of a company's shares outstanding, or stock price times number of shares[4]. In investing, large cap (>$10 billion market cap) companies are typically considered safer as they are usually well established companies with longer histories and good positioning in their industries. They also tend to be more international – and therefore more regionally diversified to macroeconomic trends – than smaller firms. Mid cap ($2-$10 billion market cap) companies are typically in the expansion phase of their business cycle and offer growth potential for investors. Small cap (<$2 billion market cap) companies tend to be younger or serve a niche sector or smaller markets. They can also be more domestically focused. As such, they are considered higher risk investments.

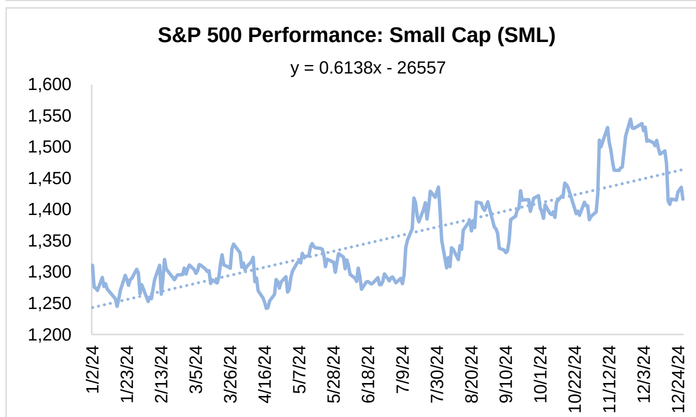
In general, the large (SPX), mid, (MID), and small (SML) cap indices were upward sloping for 2024. The SPX outpaced the MID, with a slope 2.5x that of the MID (and 5.5x the SML). The slope of the MID was 2.5x that of the SML.

For 2024, the SPX was up 23.3%, versus +12.2% for the MID and +6.8% for the SML. Looking at the half year splits, the SPX first half outpaced the second by 6.8 pps, +14.5% versus +7.7%. The MID showed a reverse pattern, at 5.3% and +6.5% respectively, a 1.2 pps increase. The SML followed the same pattern posting a -1.6% first half but +8.6% second half, a 10.2 pps increase.

All indices showed a decline from their fourth quarter to December performances: SPX +2.1% and -2.5%, -4.6 pps; MID -0.03% and -7.3%, -7.3 pps; SML -1.0% and -8.1%, -7.1 pps.







Source: Bloomberg, SIFMA estimates

[4] While market cap accounts just for the company's share value, enterprise value includes debt and cash reserves, or market cap plus debt minus cash.

Next, we put this all together to analyze last year's market performance. For the full year, no matter which way you segmented the S&P 500, returns were positive, ranging from +6.8% (the SML, small caps) to +34.9% (the SGX, growth stocks).

While any investor indexed to the full S&P 500 had a great year with a +23.3% return, the numbers clearly show that large cap and growth stocks outperformed, despite high interest rates.

	Weighting		Style		Market Cap		
	SPX	SPW	SGX	SVX	SPX	MID	SML
Index Price							
Average	5,428.2	6,858.9	3,621.2	1,845.5	5,428.2	3,002.5	1,354.2
Peak	6,090.3	7,589.9	4,250.9	2,027.5	6,090.3	3,390.3	1,544.7
Trough	4,688.7	6,239.4	2,941.2	1,689.6	4,688.7	2,691.8	1,241.6
Range	1,401.6	1,350.5	1,309.8	337.9	1,401.6	698.5	303.0
Performance							
FY24	**23.3%**	**10.9%**	**34.9%**	**9.8%**	**23.3%**	**12.2%**	**6.8%**
1H24	14.5%	4.1%	23.1%	4.6%	14.5%	5.3%	-1.6%
2H24	7.7%	6.6%	9.6%	5.0%	7.7%	6.5%	8.6%
2H/1H	-6.8%	2.5%	-13.6%	0.4%	-6.8%	1.2%	10.2%
4Q24	2.1%	-2.3%	5.8%	-3.2%	2.1%	-0.03%	-1.0%
Dec24	-2.5%	-6.4%	0.6%	-7.0%	-2.5%	-7.29%	-8.1%
Dec/4Q	-4.6%	-4.1%	-5.2%	-3.8%	-4.6%	-7.3%	-7.1%
4Q/2H	-5.6%	-8.9%	-3.8%	-8.2%	-5.6%	-6.5%	-9.6%
Slope	3.3872	3.0102	2.8889	0.7588	3.3872	1.3350	0.6138
SPX/Index		1.1x	1.2x	4.5x		2.5x	5.5x

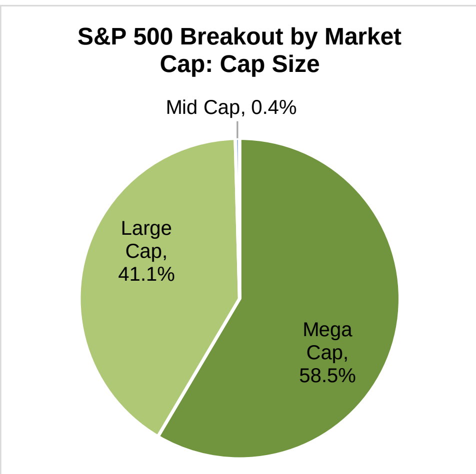
Source: Bloomberg, SIFMA estimates

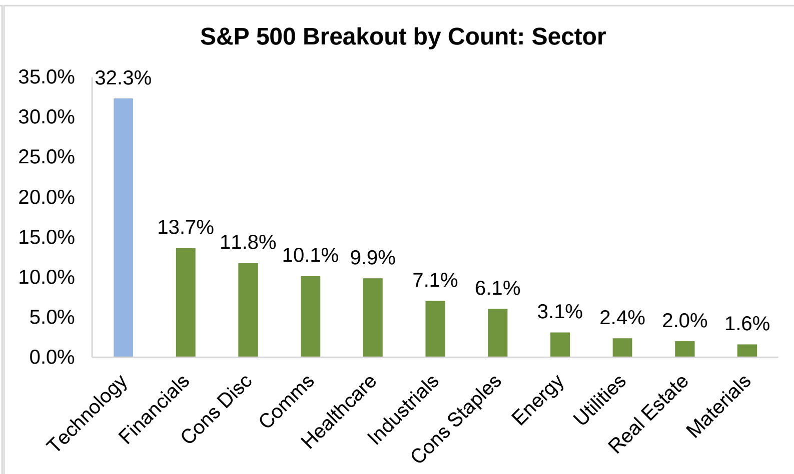
Market Concentration

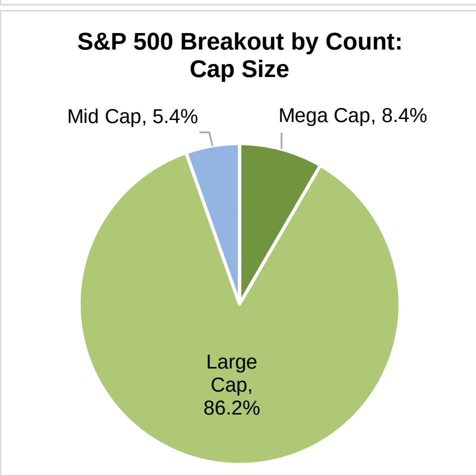
As much has been discussed about market concentration, we decided to analyze the numbers around this, looking at this theme from several different angles.

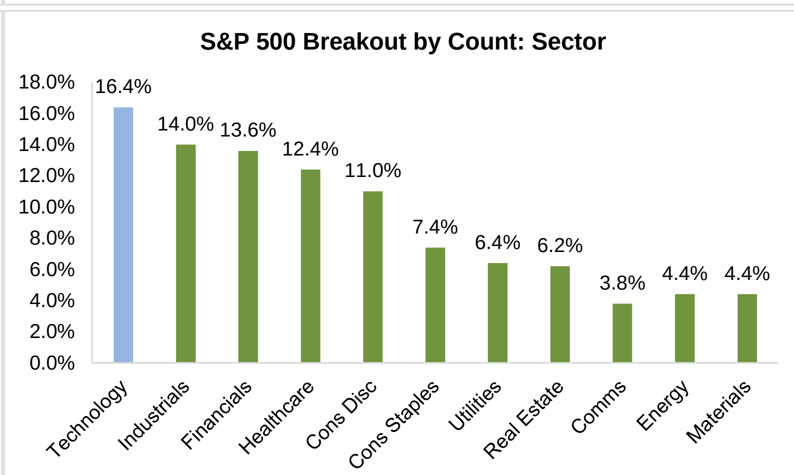
Market cap versus count: We first looked an interesting pattern that emerges whether you break out the S&P 500 by count, or number of stocks, versus by market cap. Looking at cap size, the mega caps – stocks with market caps over $200 billion – represented 58.5% of the total index by market cap on average last year but only 8.4% of the index by stock count. Or, 42 stocks out of 500 (we removed duplications, or stocks with different share classes and therefore represented by two tickers in the index) hold $31.0 trillion of the total $53.0 trillion market cap in the index. Looking at this same analysis for the sector breakout, technology stocks represented 32.3% of the total index by market cap but only 16.4% of the index by stock count. Or, 82 stocks out of 500 hold $17.1 trillion of the total $53.0 trillion market cap in the index.

You can see the difference between cap and count was magnified when looking at market cap: Mega Cap 50.1 pps difference versus Technology 15.9 pps. Mega cap and technology stocks dominated the market last year.







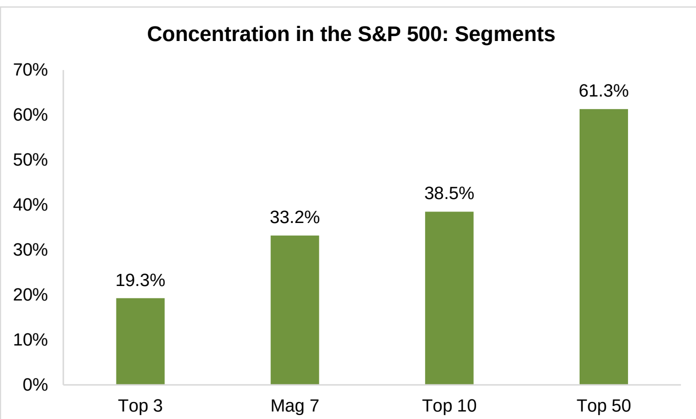


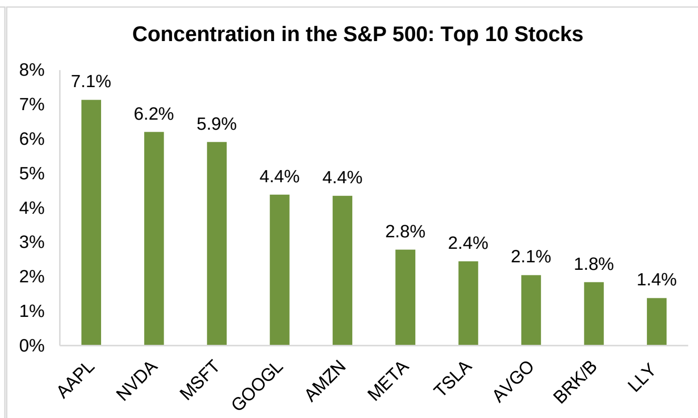
Source: Bloomberg, SIFMA estimates

Note: Market cap on the day of December 31, 2024. Mega cap = >$200B; large cap = $10-200B; mid cap = $2-10B; small cap = $250M-$2B; micro cap = <$250M. Cons Disc = consumer discretionary; Cons Staples = consumer staples; comms = communications.

Segment breakout: Next, we analyzed percentages of the total index represented by different groupings, based on market cap. The top three stocks alone represented almost 20% of the total index. Each of the top three stocks represented over 6% of the index on average. Add seven more of the top stocks, i.e., the top ten stocks, and this representation increased to almost 40%. Using simple averaging, the seven additional stocks in the top ten each represented around 3% of the index on average. However, even the distribution in the top ten is skewed. The top stock represented dover 7%, with the next two in the top three at around 6% each. The next two top stocks representation dropped to the 4% range. This level fell to the 2-3% range for the next three stops. Closing out the top ten stocks, the bottom two were on in the 1-2% range for share of the total index.

The top fifty stocks represented over 60% of the total index on average last year, with the top ten stocks representing almost 20% of this. To put this in context, the other forty stocks in the top fifty only represented just over 0.5% of the index each on average. Based on the concentration of mega caps we discussed above, the heavy weighting at the top was to be expected.





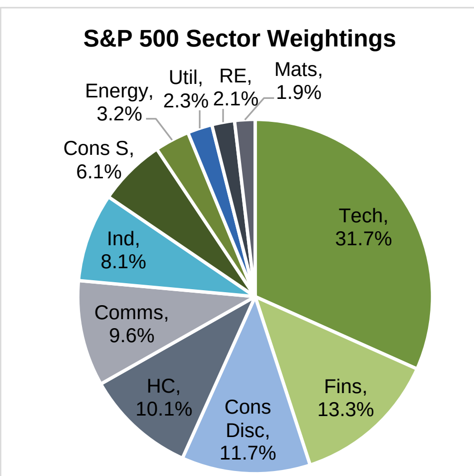
Source: Bloomberg, SIFMA estimates
Note: Market cap on the day of December 31, 2024. Top 3 = Apple (AAPL), Nvidia (NVDA), Microsoft (MSFT); Top 10 = AAPL, NVDA, MSFT, Alphabet (Google's parent company, GOOGL), Amazon (AMZN), Meta (META), Tesla (TSLA), Broadcom (AVGO), Berkshire Hathaway (BRK/B), Eli Lilly (LLY).

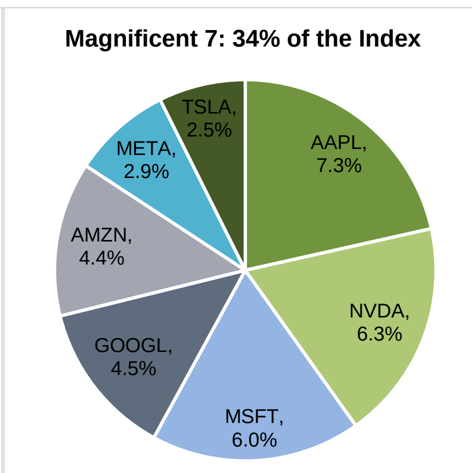
Introducing the Mag 7 and "true technology": The other category shown in the chart above showed the Magnificent 7's (Mag 7) representation in the index. You could hardly go a day in 2024 without discussing the Mag 7 stocks, which includes: Alphabet (Google's parent company, GOOGL), Amazon (AMZN), Apple (AAPL), Meta (META), Microsoft (MSFT), Nvidia (NVDA), and Tesla (TSLA).

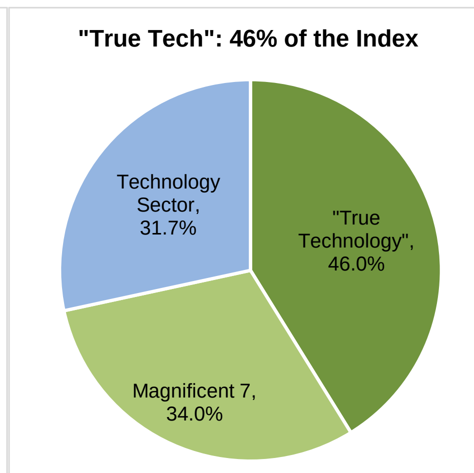
As shown above, the technology sector holds the highest weighting in the S&P 500, 31.7% on average in 2024. The Mag 7 alone represent a larger part of the index, at 34.0%. How can these seven stocks be greater than the whole technology sector you ask? While all of the Mag 7 stocks are traded as technology plays, four of them are not classified as technology under the GICS[5] methodology. GOOGL and META are classified as communications companies, while AMZN and TSLA are considered consumer discretionary entities. That means their combined 14.3% share of the index is not included within the technology sector.

As such, we created a "true technology" category to get a better read on what percentage of the index were traded as technology stocks, despite formal sector classification. Adding the remaining four Mag 7 stocks to the technology sector, "true technology" represented 46.0% of the index on average in 2024.

Technology, "true technology", dominated the market in 2024.





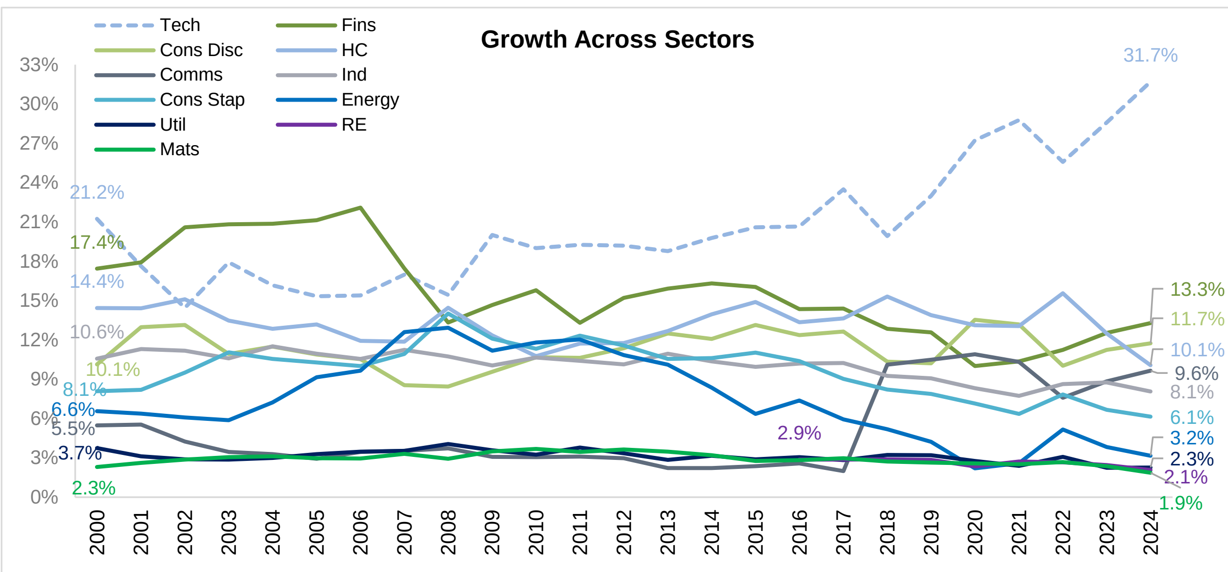


Source: Bloomberg, SIFMA estimates
Note: Market caps were the averages for 2024. Tech = technology; Fins = financials; Cons Disc = consumer discretionary; HC = healthcare; Comms = communications; Ind = industrials; Cons Staples = consumer staples; Util = utilities; RE = real estate; Mats = materials. Apple (AAPL), Nvidia (NVDA), Microsoft (MSFT), Alphabet (Google's parent company, GOOGL), Amazon (AMZN), Meta (META), Tesla (TSLA). "True Technology" = technology sector + the Mag 7 not classified as technology: GOOGL, AMZN, META, and TSLA.

[5] GICS is an industry analysis framework that helps investors understand the key business activities for companies around the world. MSCI and S&P Dow Jones Indices developed this classification standard to provide investors with consistent and exhaustive industry definitions.

Growth in the Mag 7 and "true technology": Looking back to 2000 – or 2016 for the real estate sector, at which time equity REITs and other listed real estate companies were spun off from the financials sector – we analyzed how different sectors grew over the last few decades. Only the technology, consumer discretionary, and communications sectors posted positive market share growth going back to 2000. These are the pieces of the "true technology" equation, inclusive of the Mag 7.

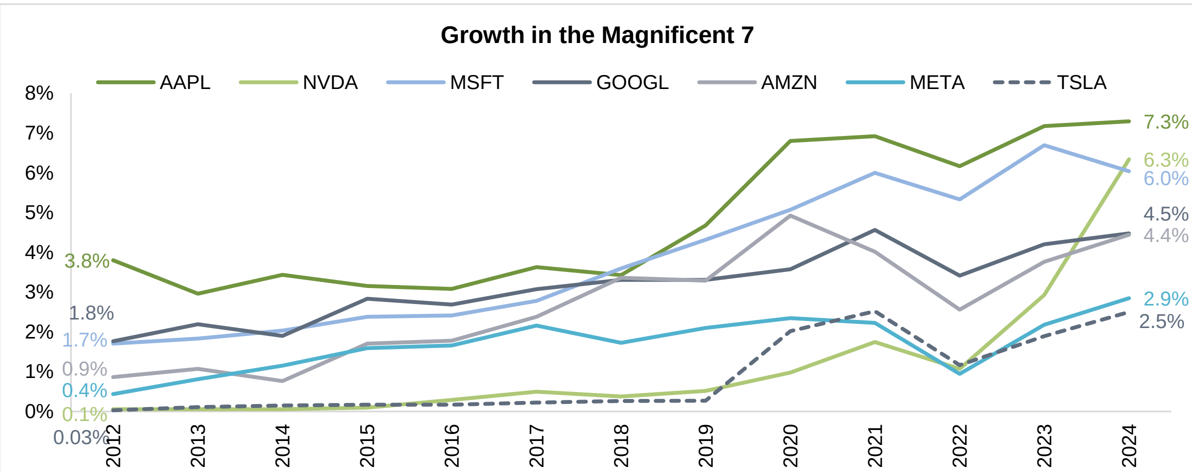
Cumulatively, these three sectors grew 16.2 pps since 2000, led by technology growing 10.5 pps. Looking at 2024 averages, technologies dominance is clearly visible. Technology represented 31.7% of the index on average in 2024. The next largest sector was financials at 13.3% of the index on average.

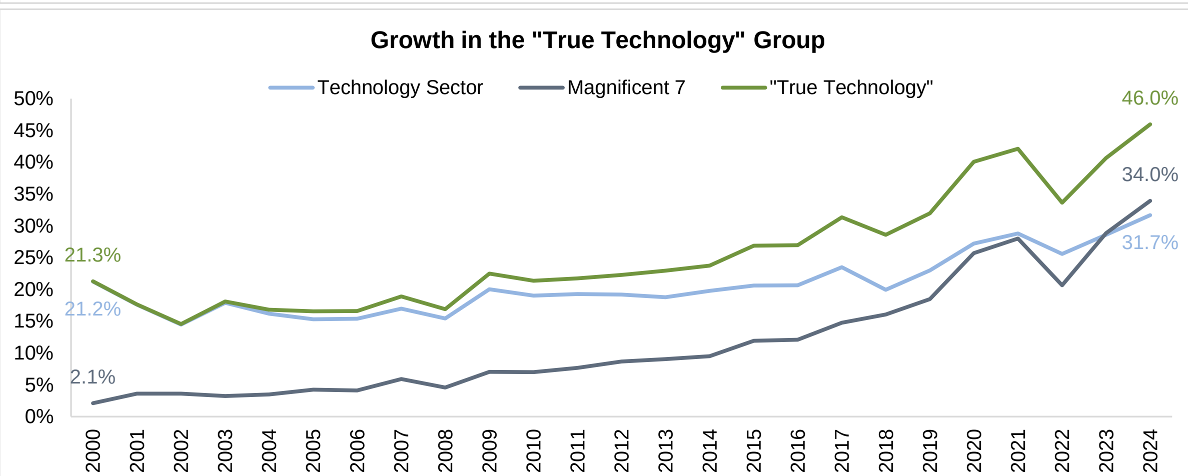


Source: Bloomberg, SIFMA estimates
Note: Market caps were the averages for 2024. Tech = technology; Fins = financials; Cons Disc = consumer discretionary; HC = healthcare; Comms = communications; Ind = industrials; Cons Stap = consumer staples; Util = utilities; RE = real estate; Mats = materials.

Next, we looked from 2012 – the first year all Mag 7 stocks became listed companies (not necessarily in the index) – to 2024. AAPL, MSFT, GOOGL, and AMZN were in the index years before 2012. AAPL's market share as a percentage of the index grew 1.9x, while GOOGL grew 2.5x. MSFT and AMZN market shares grew 3.5x and 5.2x respectively. META only IPOd in 2012 and entered the index the following year. It has seen its market share of the index grow 6.5x. TSLA was the last to join the index in 2020. If you looked at its market cap back in 2012 versus 2024, the growth would have been 85.4x. While NVDA has also been in the index a long time, its growth has been astonishing, 108.9x. NVDA had a 0.1% share for many years, only reaching 0.5% in 2017 and then 1.0% in 2020. Its real growth came in the last few years with the significant growth in demand for its chips in the AI space, reaching 2.9% in 2023 and 6.3% in 2024.

The Mag 7 growth to 34.0% from 2.1% in 2000 fueled the growth in the actual technology sector, to 31.7% from 21.2%, but also our "true technology" adjustment, to 46.0% from 21.3% back in 2000, when technology was simply technology.





Source: Bloomberg, SIFMA estimates

Note: Market caps were the averages for 2024. Mag 7 = Apple (AAPL), Nvidia (NVDA), Microsoft (MSFT), Alphabet (Google's parent company, GOOGL), Amazon (AMZN), Meta (META), Tesla (TSLA). "True Technology" = technology sector + the Mag 7 not classified as technology: GOOGL, AMZN, META, and TSLA. For simplicities sake, the analysis used market cap at the time for each of the Mag 7 divided by actual S&P 500 market cap. While the newly added Mag 7 stock would not be counted for in the actual S&P 500 market cap total, this was considered neutralized by the fact that the market cap of the stock it replaced would reduce the actual S&P 500 market cap figure.

The trillion dollar club: We would be remiss to not discuss the trillion dollar club before we close out this section. AAPL was the first US stock to reach this threshold, joining the club in August 2018 (we note that it temporarily lasted at that level through November that year, then joined the club permanently in September 2019). At the end of 2024, all of the Magnificent 7 stocks had market caps over $1 trillion dollars. We also had two other stocks flirting with the trillion dollar club last year, Berkshire Hathaway (BRK/B) and Broadcom (AVGO).

- >$3 trillion = AAPL, NVDA, and MSFT
- $2-3 trillion = GOOGL and AMZN
- $1-2 trillion = META and TSLA
- New to the $1 trillion club
  - AVGO reached this threshold in mid December last year and closed out the year at this mark.
  - BRK/B first reached this threshold in August last year, ebbed up and down around this level throughout the fall, but closed out the year just below this mark.

Larger than countries: Finally, given these trillion dollar club members, we thought it would be interesting to assess how the Mag 7 stock up versus market caps for entire countries. We note that, for the US, the market cap is for all listed companies, not just those in the S&P 500, which is why percentages are different from our earlier analyses. The Mag 7, technology sector, and our adjusted "true technology" sectors are all greater than the market cap of every other country/region in the world.

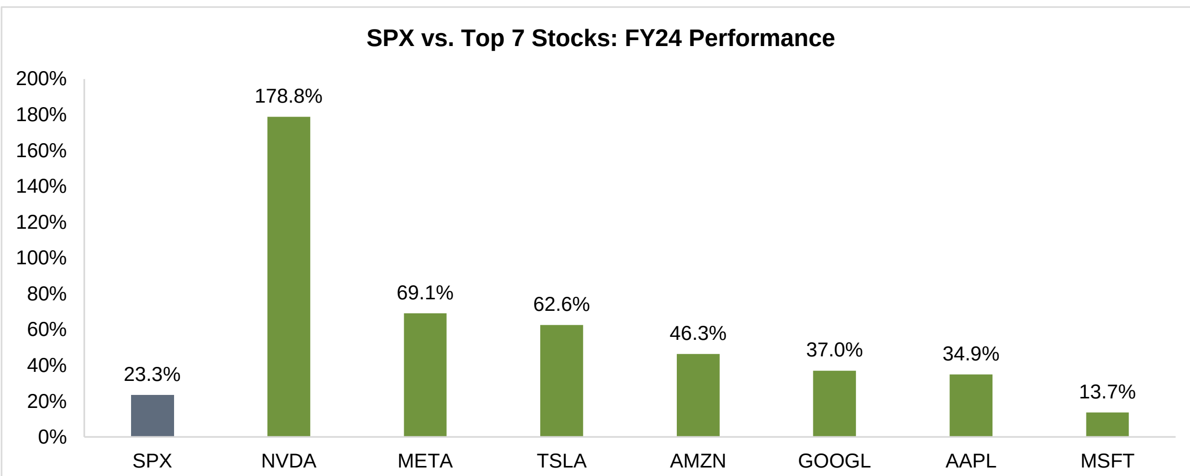
- AAPL has a larger market cap than all listed companies in each of Canada, Australia, and Singapore.
- NVDA, MSFT, GOOGL, and AMZN all have larger market caps than all listed companies in each of Australia and Singapore.
- META and TSLA all have larger market caps than Singapore.

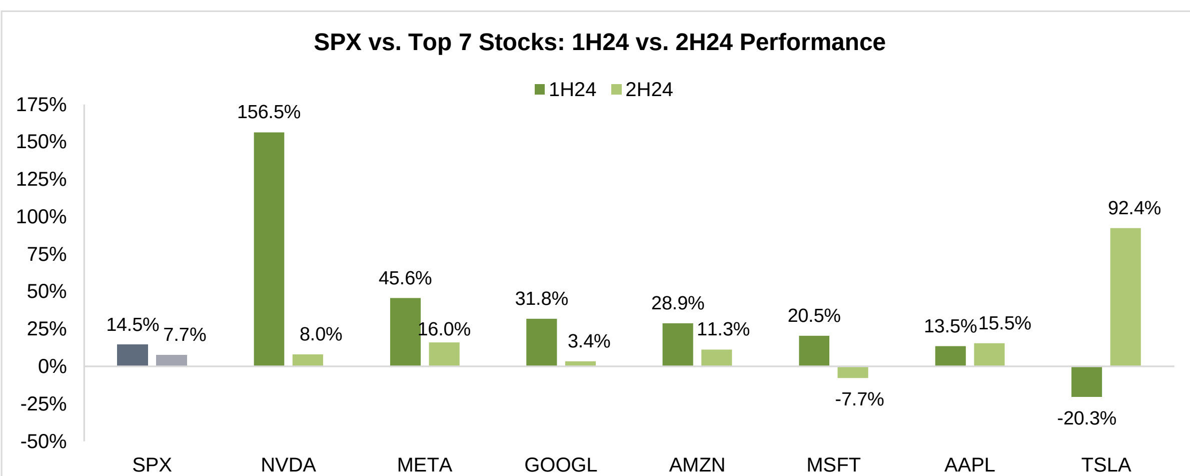
		AAPL	NVDA	MSFT	GOOGL	AMZN	META	TSLA	Mag 7	Tech Sector	"True Tech"
Market Cap ($T)		3.8	3.3	3.1	2.3	2.3	1.5	1.3	17.6	16.4	23.8
World	130.4								13.5%	12.6%	18.3%
US	61.8								28.5%	26.6%	38.6%
China	11.9								1.5x	1.4x	2.0x
EU	10.9								1.6x	1.5x	2.2x
Japan	6.4								2.8x	2.6x	3.7x
India	5.2								3.4x	3.1x	4.5x
UK	4.5								4.0x	3.7x	5.4x
HK	4.4								4.0x	3.8x	5.5x
Canada	3.6	1.1x							4.9x	4.6x	6.7x
Australia	1.9	2.0x	1.8x	1.7x	1.2x	1.2x			9.4x	8.8x	12.8x
Singapore	0.6	5.9x	5.1x	4.9x	3.6x	3.6x	2.3x	2.0x	27.5x	25.6x	37.2x
Other DM	11.6								1.5x	1.4x	2.0x
Other EM	7.6								2.3x	2.2x	3.1x

Source: Bloomberg, World Federation of Exchanges, SIFMA estimates

One last point on the Mag 7: Before we close out our market themes, we wanted to tie everything together. The concentration of the Mag 7, 34.0% of the total index on average, is what drove the 23.3% market return. Each of the Mag 7 stocks performed well last year, all above the 8% return the S&P 500 historically averages (going back to the start of the index). Only MSFT's return was below the average S&P 500 return in 2024.

Like the S&P 500, most of the Mag 7 had better first half performances than the second half of the year, with MSFT even turning negative in the second half. AAPL was about equally split for performance in each of the half years, with the second half slightly outpacing the first half. TSLA was the outlier. It had a negative performance in the first half of the year. It then posted the strongest second half performance by far versus the other Mag 7 stocks and the total index, driven by its inclusion in the post-election optimism, what was called the Trump Trade for stocks.



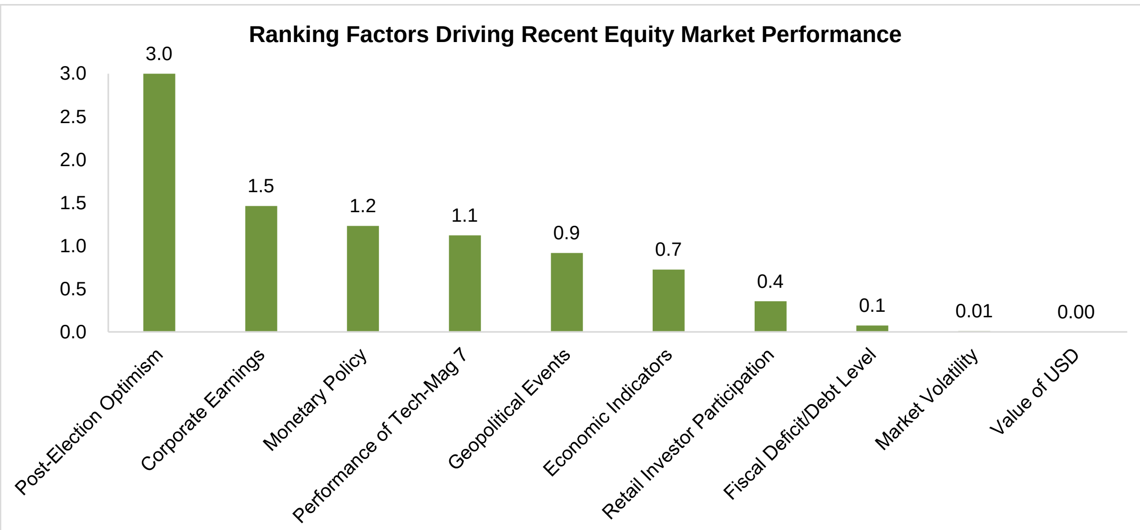


Source: Bloomberg, SIFMA estimates

Markets: Survey Says

Survey Question: Which factors do you believe are driving the recent performance of equity markets, in terms of the price of the S&P 500?

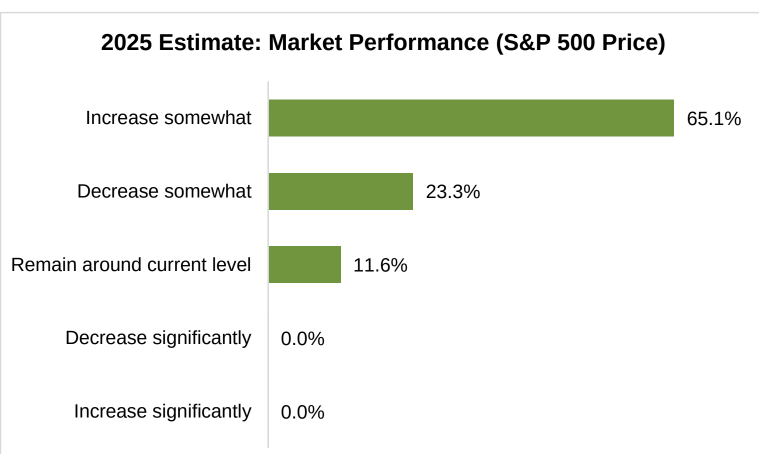
Majority Says? Respondents most attributed recent equity market performance to post-election optimism, by a noticeable margin. Corporate earnings followed, and then monetary policy and the performance of technology stocks and the Magnificent 7.



Source: SIFMA Insights market structure survey
Note: Respondents were asked to select and rank their top three factors. We created a weighted score for responses and then scaled that from o-3.

Survey Question: Over the next 12 months, do you expect markets – in terms of the price of the S&P 500 index – to? (averages: FY24 5,428.24, 4Q24 5,907.04)

Majority Says? Most respondents anticipate a mild increase in the price of the S&P 500, at 65.1% of responses. However, 23.3% of respondents instead anticipate a slight decrease, while 11.6% of respondents expect markets to remain around the current level (at the time of writing this report).

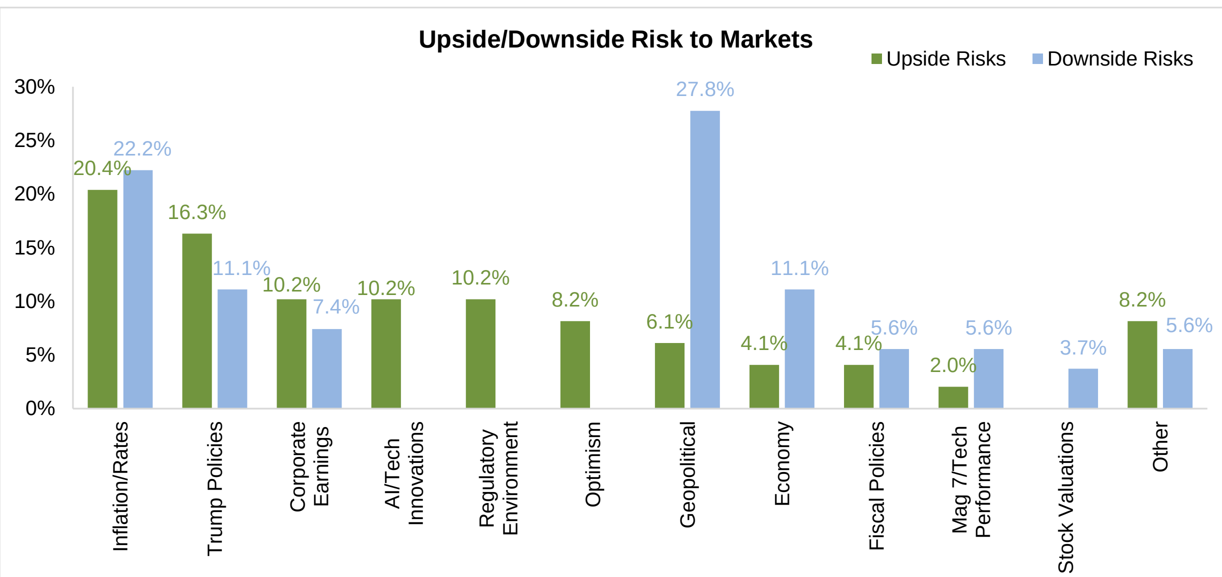


Source: SIFMA Insights market structure survey

Survey Question: What do you see as the top three risks to markets for the coming year – to the upside? To the downside?

Majority Says? Looking at the top three responses for both upside and downside risks to markets, we noticed some commonalities. Inflation and rates appeared in the top three for both, meaning what the Fed does next – and we would argue where the ten year Treasury rate moves, which is currently being driven more by fiscal policies (spending, debt level) than monetary policy – will be crucial to market performance. President Trump's policies also appeared in both upside and downside risks to markets. For upside risks, market participants acknowledge that tax policy, deregulation, and a general pro-business environment would be beneficial to corporations and therefore stocks. Additionally, respondents noted that tariffs coming in lighter than expected – and therefore less or not inflationary – would benefit markets. On the downside, tariffs and potential trade wars could reignite inflation and therefore pause rate cuts or, worse, force the Fed to reverse course and raise rates. It is interesting to note that Trump's tariff policies are tied with the economy, as they are intricately intertwined.

- Upside (green columns): Respondents' top upside risk was inflation and rates, followed by Trump's policies. Then there was three way tie for third place among corporate earnings, AI/tech innovation, and the regulatory environment.
- Downside (purple columns): The downside risks were led by concern over geopolitical tensions, followed by inflation and rates. There was again a tie for third place, between Trump's policies and the economy.



Source: SIFMA Insights market structure survey

Upside risks: Corporate earnings – better than expected. Economy includes "Goldilocks" and strong labor market. Fiscal policies – restraint, getting debt under control. Geopolitical – ceasefires, improving tensions. Inflation/rates – decreasing inflation and lower interest rates. Optimism includes animal spirits, political optimism, positioning, and momentum. Mag 7/Tech Performance – outperform expectations. Other includes energy boom, crypto, EU stocks remain "dead money", and M&A. Regulatory environment – deregulation, shifting regulatory sentiment, new SEC administration. Trump policies – taxes, pro business/markets, tariffs not as inflationary.

Downside risks: Corporate earnings – worse than expected. Economy includes recession, weak labor market, weakening consumer, and taxes (not renewing tax cuts). Fiscal policies – worsening debt levels. Geopolitical – escalating tensions. Inflation/rates – increasing inflation, higher interest rates, Fed reverses course (increases rates). Mag 7/Tech Performance – underperform expectations. Other includes post-election optimism wanes, leverage, and unpredictability. Stock valuations – "irrational" and multiple compression. Trump policies – trade wars and tariffs are inflationary.

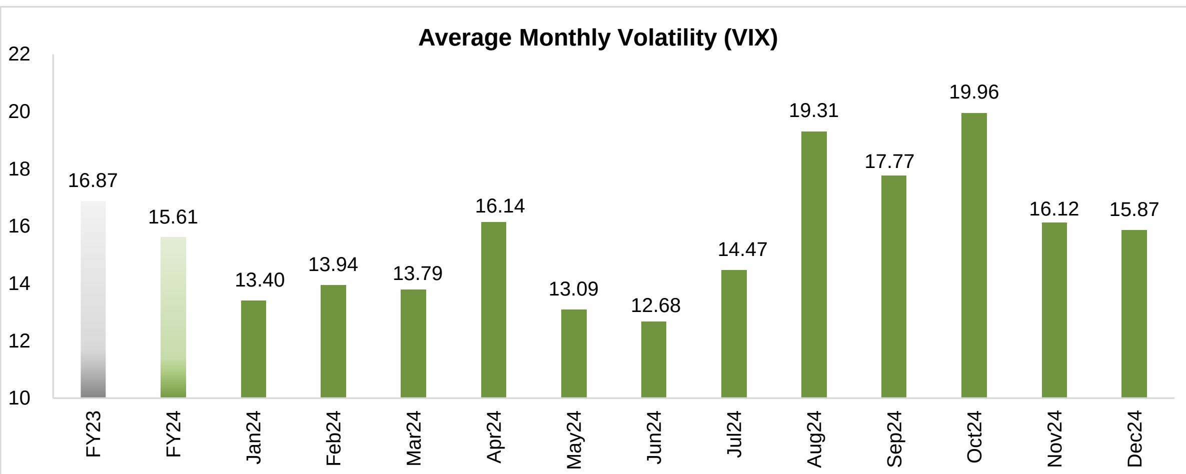
Volatility (VIX)

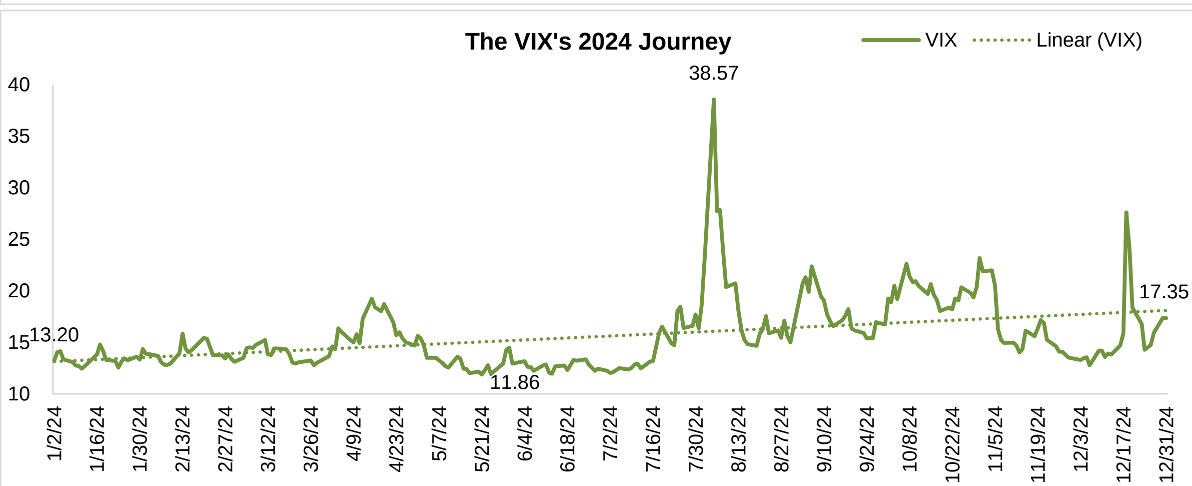
VIX: Metrics

For the most part – excluding some periods of elevated levels – volatility was muted in 2024, at 15.61 on average, -7.5% Y/Y. The overall trendline for the VIX in 2024 was slightly upward sloping.

We highlight the following trends for 2024:

- Average 15.61
  - -7.5% Y/Y
  - Peak 38.57 on August 5 (the unwind of the carry trade)
  - Trough 11.86 on May 21
- 5-Year CAGR +0.3%
- 10-Year CAGR +1.0%

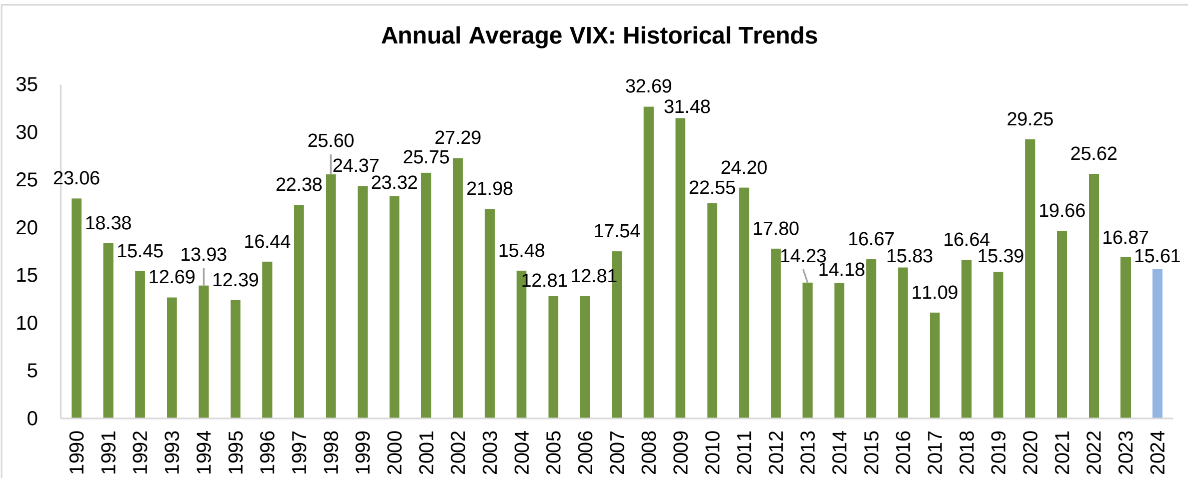




Source: Bloomberg, SIFMA estimates

Average VIX Trends

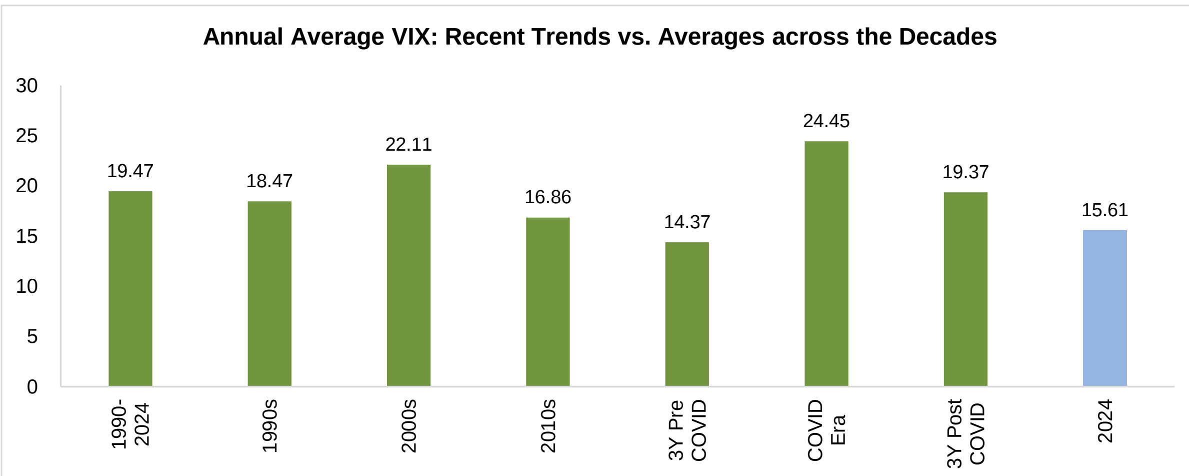
Next, we analyze the VIX time series back to 1990. At 15.61, 2024 fell to #24 out of the 35 years, a drop from last year which ranked #19. This is lower than the full time series average (from 1990-2024) of 19.47, -19.8%.

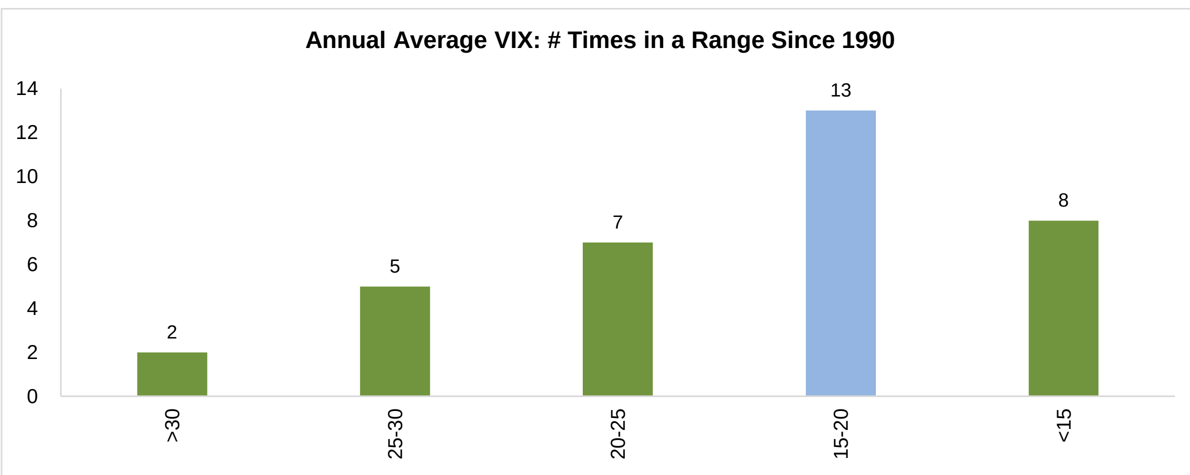


Source: Bloomberg, SIFMA estimates

Looking across decades, the 15.61 average VIX in 2024 was more in line with the 2010s decade. The 2010s had come down from the 2000s average by 23.8%, with the decline becoming more pronounced in the second half of the decade (15.12 versus 18.59 in the first half). The three years prior to COVID maintained lower volatility levels, averaging 14.37. Then COVID caused a volatility spike, averaging 24.45 across 2020 and 2021. Now that we have three years of data in the post-COVID era, we analyze this trend as well. 2024 was lower than the 3Y post COVID average of 19.37, -19.4%.

The VIX has been in this 15-20 range thirteen times since 1990.

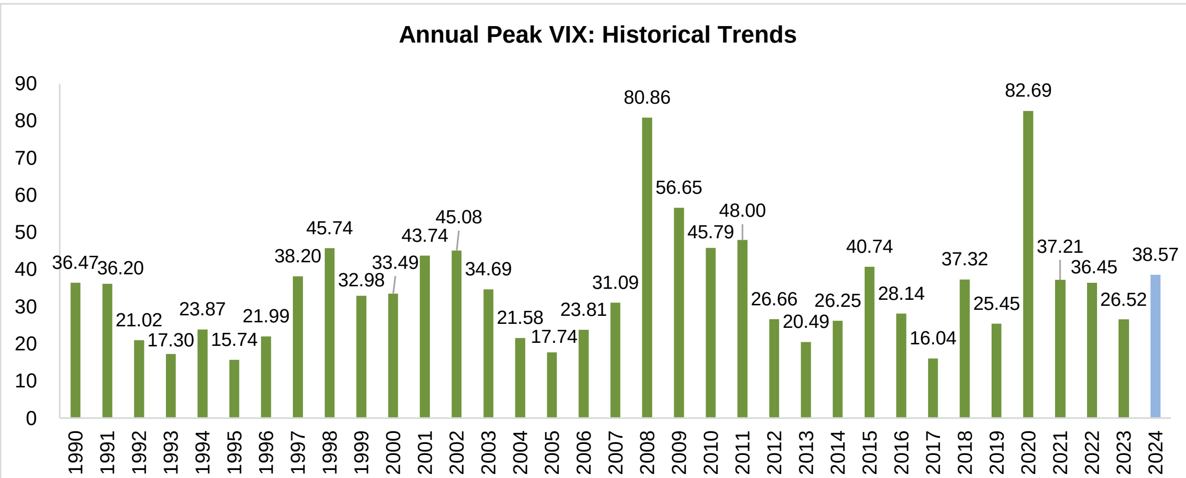




Source: Bloomberg, SIFMA estimates

Peak VIX Trends

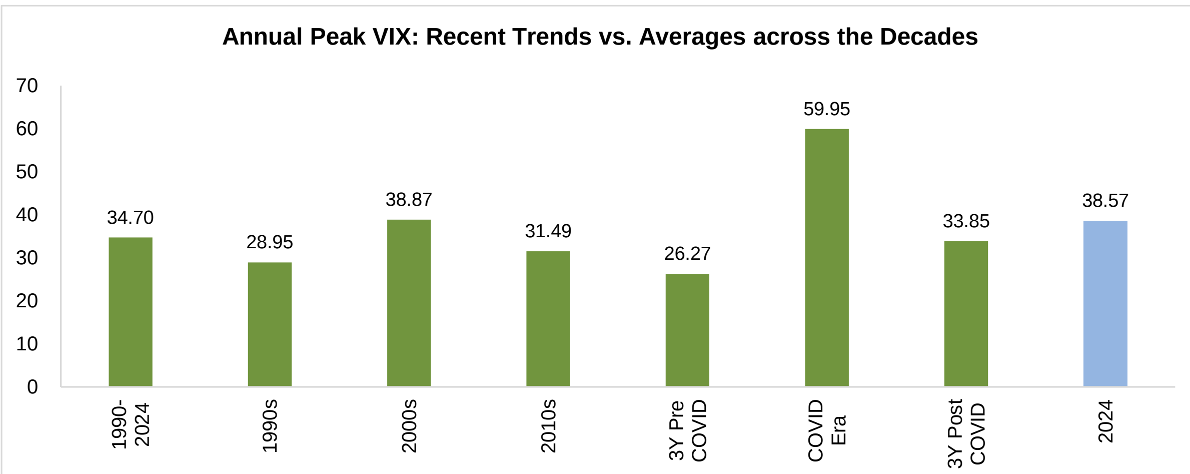
We also analyzed peak levels for the VIX going back to 1990. At 38.57, the 2024 peak VIX level ranked #10 out of the 35 years, an increase from 2023's rank of #22.

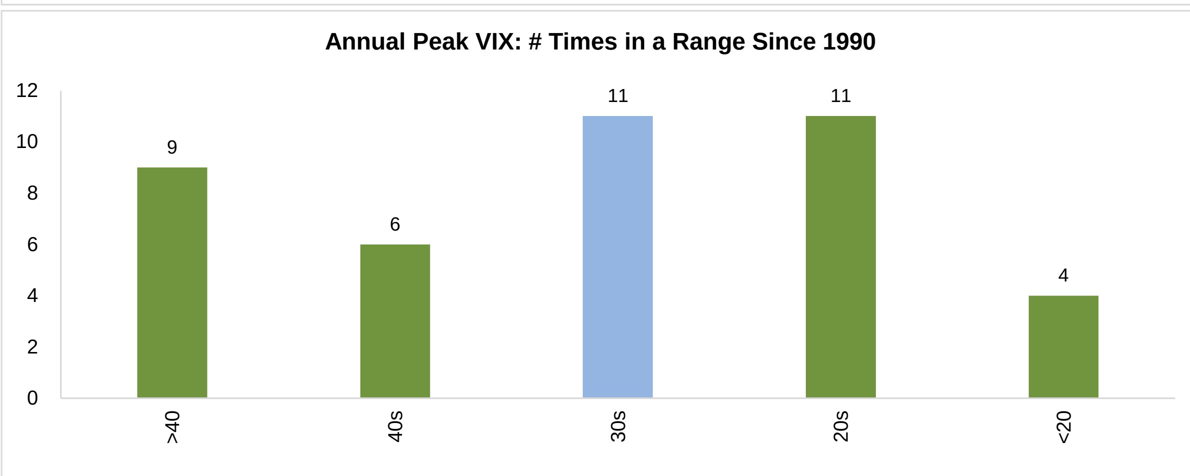


Source: Bloomberg, SIFMA estimates

Looking across decades, 2024 peak VIX was higher than the full time series average peak level (from 1990-2024) of 34.70, +11.1%. 2024 peak VIX was also more in line with the 2000s average peak VIX level. Interestingly, this one day in 2024 – the unwind of the carry trade – matched the average level for a decade which included the dotcom bubble burst (peak VIX levels over 40) and the global financial crisis (peak VIX level over 80). The 2024 peak VIX was elevated to the three years prior to COVID average, +46.8%, but down from the COVID era average, -35.7%. For the three years in the post-COVID era, 2024's peak was higher than this average of 33.85, +14.0%.

The peak VIX has been in the 30s range 11 times over the decades.





Source: Bloomberg, SIFMA estimates

VIX: Themes

Another Year, Another Lower VIX

The average VIX in 2024 was 15.61, -7.5% Y/Y. With this average, the VIX continued its realignment to historical levels.

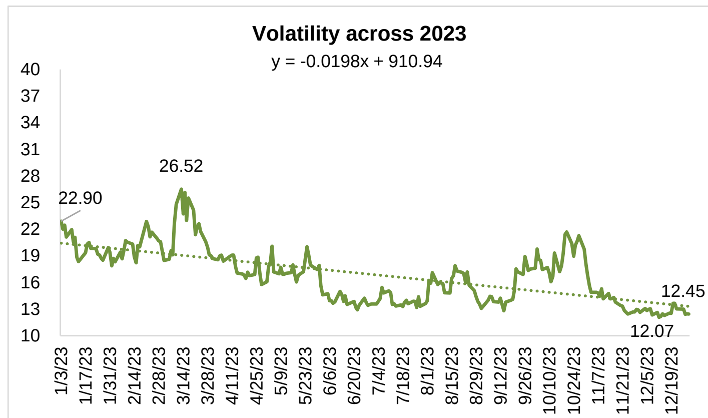
This lower average in 2024 was despite having a higher peak than seen since 2020 (38.57, +45.4% Y/Y), the start of COVID. Offsetting this peak, 2024 saw the lowest trough for the VIX in a year (11.86, -1.7% Y/Y), coming in slightly lower than the 2023 trough.

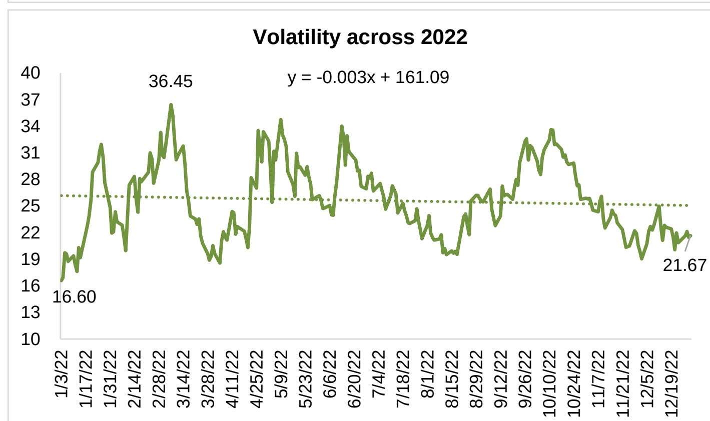
	2022	Y/Y Chg	2023	Y/Y Chg	2024	Y/Y Chg
Average	25.62	30.4%	16.87	-34.2%	15.61	-7.5%
Peak	36.45	-2.0%	26.52	-27.2%	38.57	45.4%
Trough	16.60	10.6%	12.07	-27.3%	11.86	-1.7%

Source: Bloomberg, SIFMA estimates

Looking at the charts on the right show, an interesting pattern emerges. The slope of the line chart for the 2024 VIX was essentially the same as the prior year in absolute terms, only opposite directionally. Volatility was low and stable for the first half of 2024, only to increase somewhat and experience more spikes in the second half of the year. This created an upward sloping line for the full year. The reverse was true in 2023 – a higher first half VIX but lower second half, creating a downward sloping line.

Regardless of line slopes, the averages show that the VIX has clearly coming down, in line with historical averages.





Source: Bloomberg, SIFMA estimates

Low Volatility, Despite Events

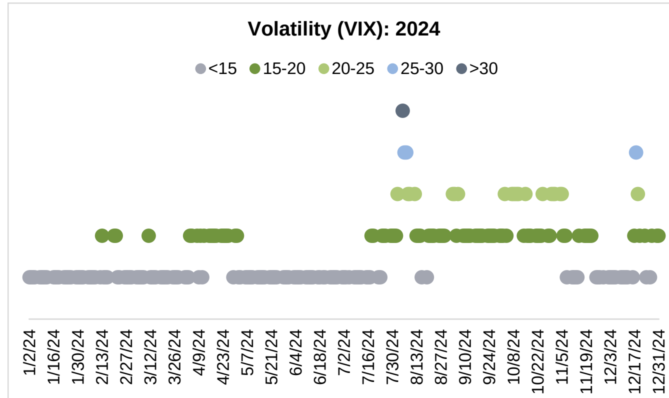
To assess where the VIX could stabilize into a new normalized level, we tracked changes in days above certain thresholds.

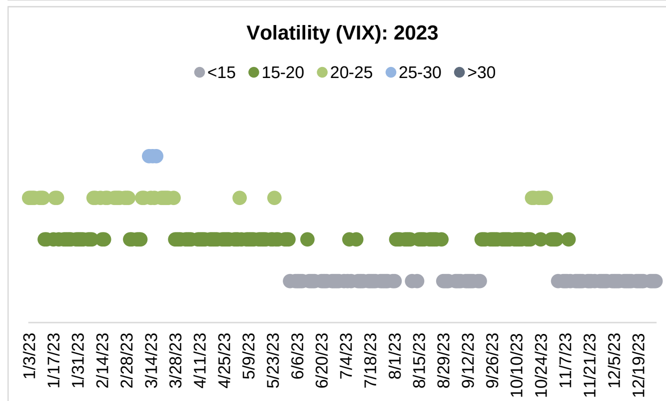
The charts to the right – showing the number of days at volume thresholds for the last three years – show the volatility picture clearly. Without question, the 2024 VIX spent more days at lower levels, 141 days under a VIX index price of 15 to be exact. This compares to ninety-three days in 2023 and zero days the prior two years.

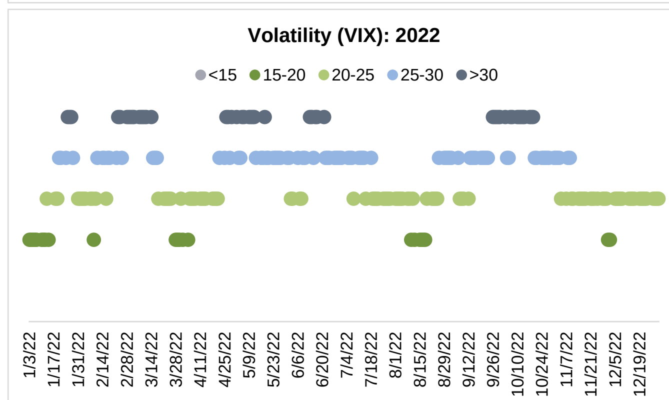
Looking at higher volatility days in 2024, the VIX surpassed the 20 level only twenty-five days, or about 10% of the time. This compares to 42 days in 2023 and over 200 days in 2022.

Of note, taking a quick glance at the 2024 VIX chart could imply we reached a new threshold above 30. This was only one day, which was around the unwinding of the carry trade (there were no days above the 30 level in 2023). Meanwhile, 2022 experienced forty-eight days above this level, and there were six days in 2021.

Volatility had settled into a lower range last year.





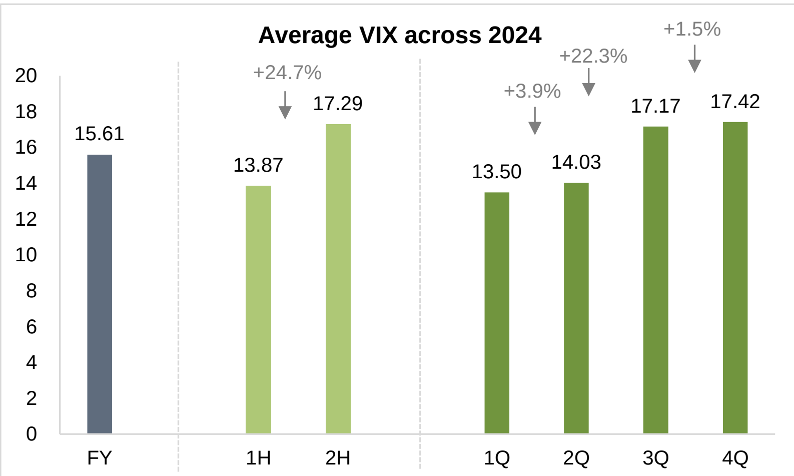


Source: Bloomberg, SIFMA estimates

A What If Scenario

As the prior section depicted, the 2024 average VIX was lower (15.61, -7.5% Y/Y), despite events causing temporary spikes in volatility. As we noted above, the first half of the year was lower and more stable than the second half of the year. As shown in the chart below, the second half VIX, 17.29 on average, increased 24.7% from the first half average, 13.87.

This chart clearly shows the continued increase in the VIX as we moved through the year, with the largest increase occurring between the second and third quarters, +22.3%. There were several periods of increased volatility around heightened geopolitical events in the third quarter, as well as the increase associated with election jitters.



Source: Bloomberg, SIFMA estimates

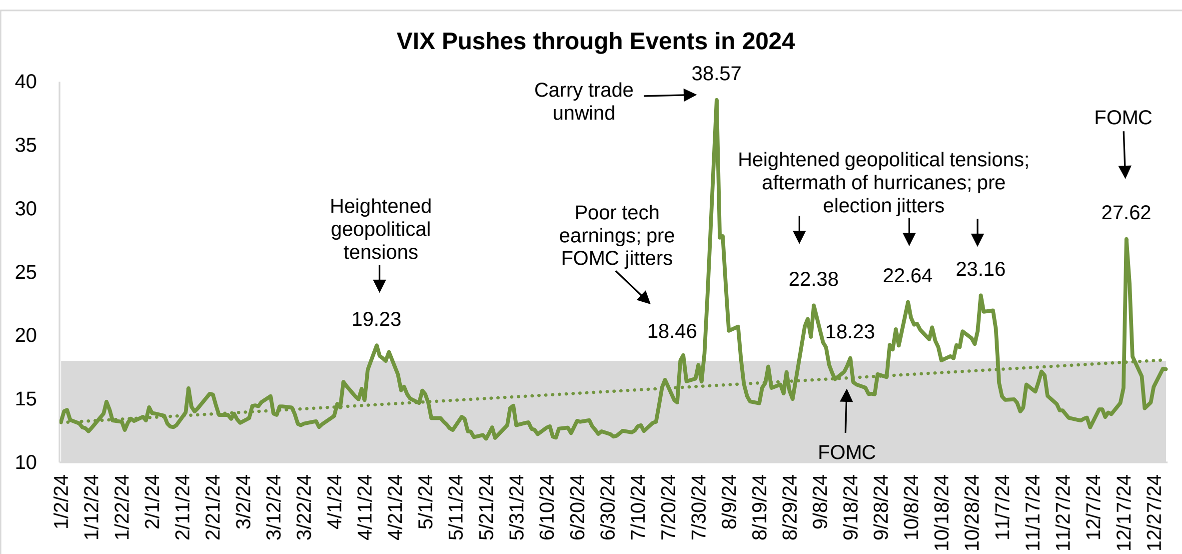
Based on the results above, we decided to perform a what if scenario analysis. In the chart below, the grey area is set at an 18.00 VIX, about a 15% increase to the 2024 average VIX of 15.61. For the first half of the year, there was only one time period when the VIX crossed this 18.00 threshold. This was a short-lived period of heightened geopolitical events, when Iran launched 300 missiles at Israel in April 2024. There were only five days when the VIX was greater than 18.00 in the first half of the year, all around this event.

Moving to the second half of the year, there were forty-seven days when the VIX crossed the 18.00 threshold. This total represents a 9.4x increase in higher volatility days. The first spike came in late July, when poor tech earnings were announced – and given the market concentration in technology stocks, investors became concerned this was a sign of trouble for the market – coupled with jitters ahead of the July FOMC meeting (two days above 18.00). Shortly thereafter, in early August, market volatility spiked and hit its peak after the unwinding of the carry trade (nine days above 18.00). There was another brief period of volatility around heightened geopolitical events (various events) in early September (six days above 18.00). We also saw short volatility spikes around the September and December FOMC meetings (one and three days above 18.00 respectively).

There was, however, an extended period of volatility running from the start of October through election day on November 5, 2024. Our what if case is simple. What if we removed some of the brief spikes – where market jitters were associated with a brief one-time event – outside of the extended period of volatility, where market jitters were more warranted, as event after event piled up. Where would the VIX have finished the year? We looked at this two ways, both of which resulted in the average VIX being below 15 for the full year:

1. We set the periods of brief spikes in volatility – those listed from April through September and then December – to the first half of the year average. The result was an average VIX of 14.82.
2. We set the same periods of brief spikes in volatility to the average of the VIX for the five trading days prior to the event. The result was an average VIX of 14.97.

The point is that brief shocks come and go. Despite short-lived volatility periods, people continued investing. Corporate margins were growing, and there was still an AI kicker benefiting markets. Then markets calmed after the election result through the end of the year (except for the short period around the December FOMC meeting).

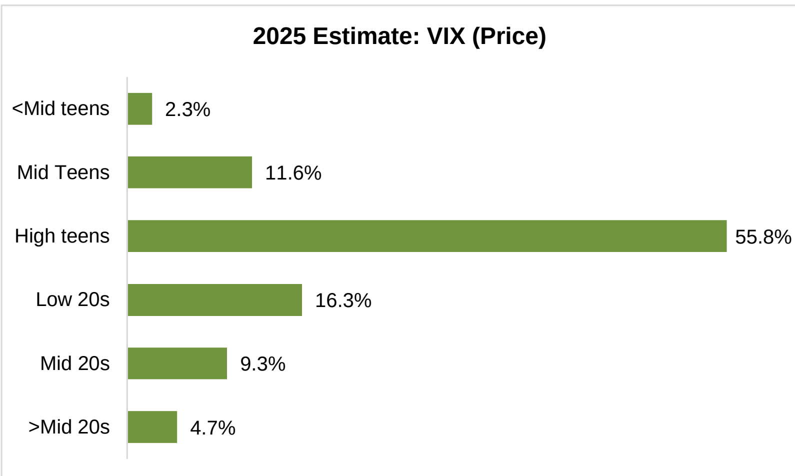


Source: Bloomberg, SIFMA estimates

VIX: Survey Says

Survey Question: Over the next 12 months, what level do you expect to see for the VIX? (averages: FY24 15.61, 4Q24 17.42)

Majority Says? Over half of respondents anticipate a VIX in the high teens over the next 12 months. The next closest response was in the low 20s, at 16.3% of responses.



Source: SIFMA Insights market structure survey

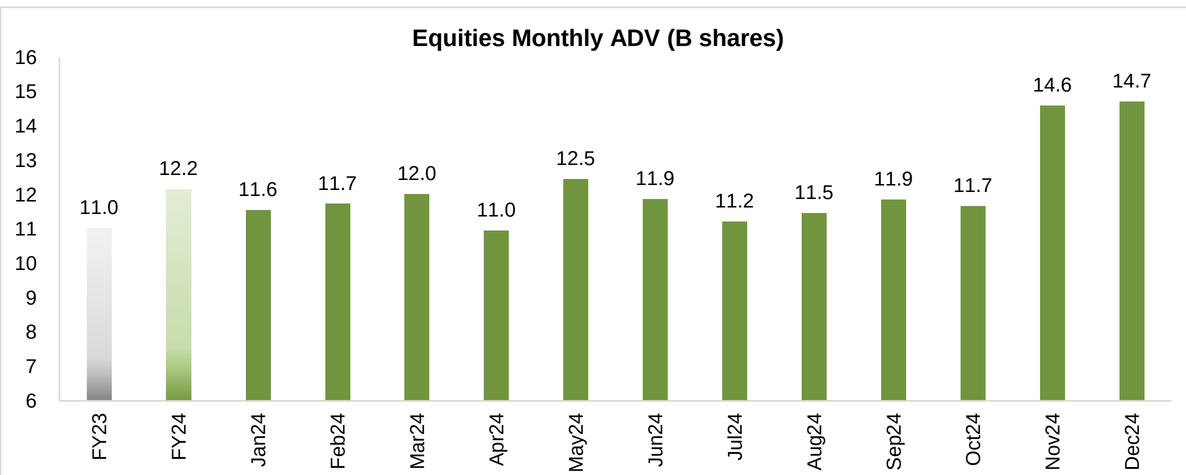
Equity Trading

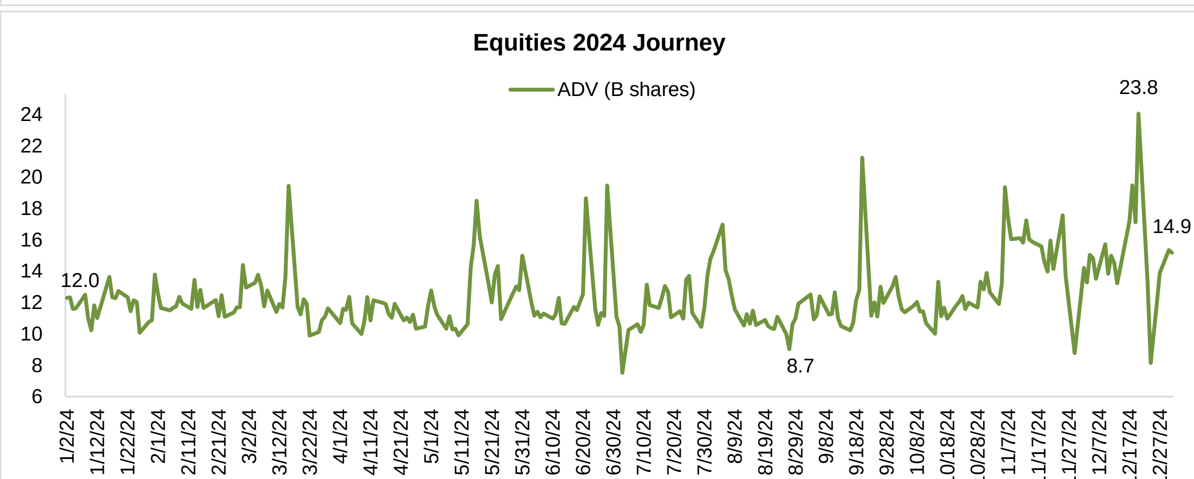
Equites: Metrics

Equity volumes remain elevated to historical levels at 12.2 billion shares on average in 2024, setting a record for annual ADV and increasing 10.2% Y/Y.

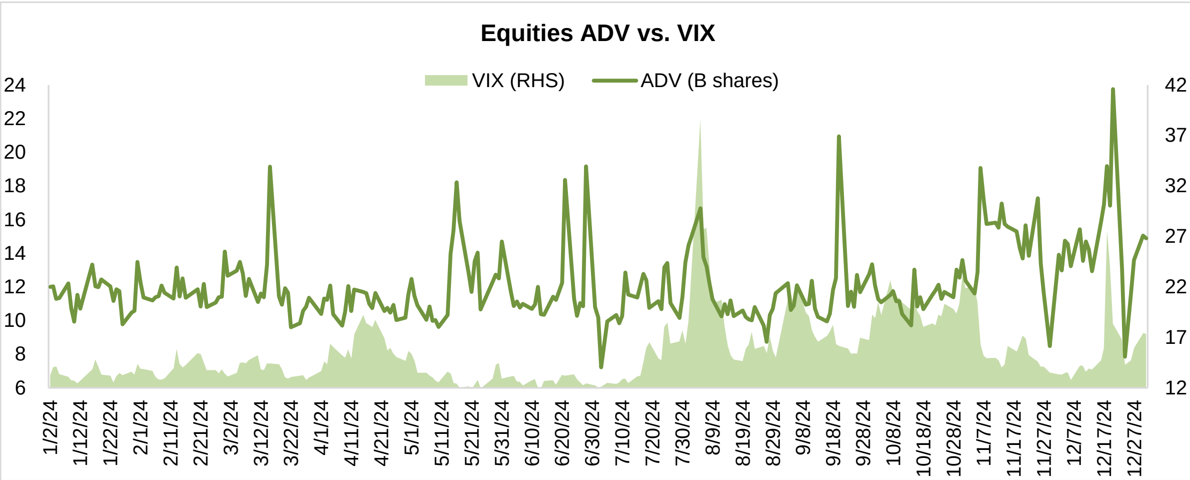
We highlight the following trends for 2024:

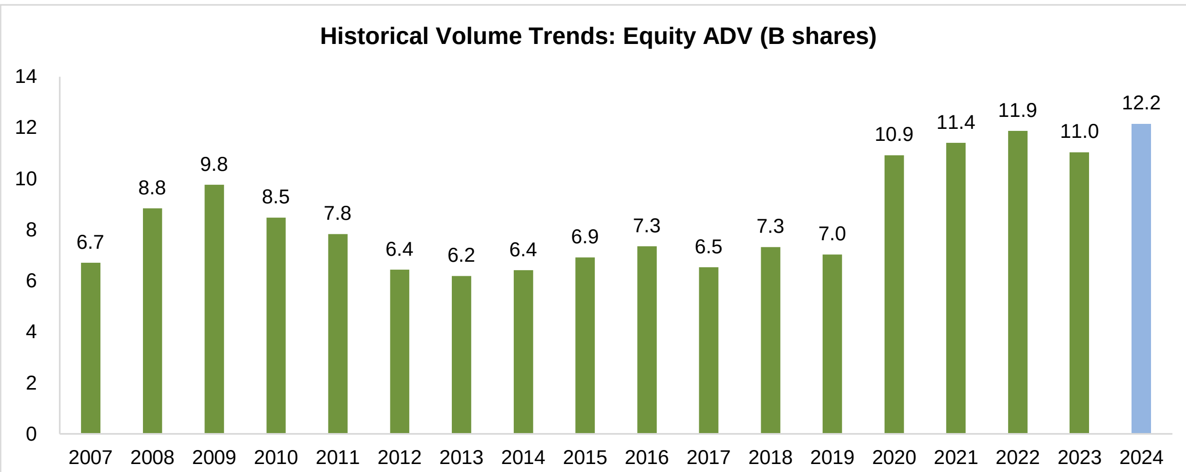
- Average 12.2 billion shares
    - +10.2% Y/Y
    - Peak 23.8 billion shares on December 20. Going back to 2007, this was the second highest volume day (there have only been seven days where volumes topped 20 billion shares).
    - Trough 8.7 billion shares on August 27
- 5-year CAGR +11.6%
- 10-year CAGR +6.6%





Source: Cboe Global Markets, SIFMA estimates

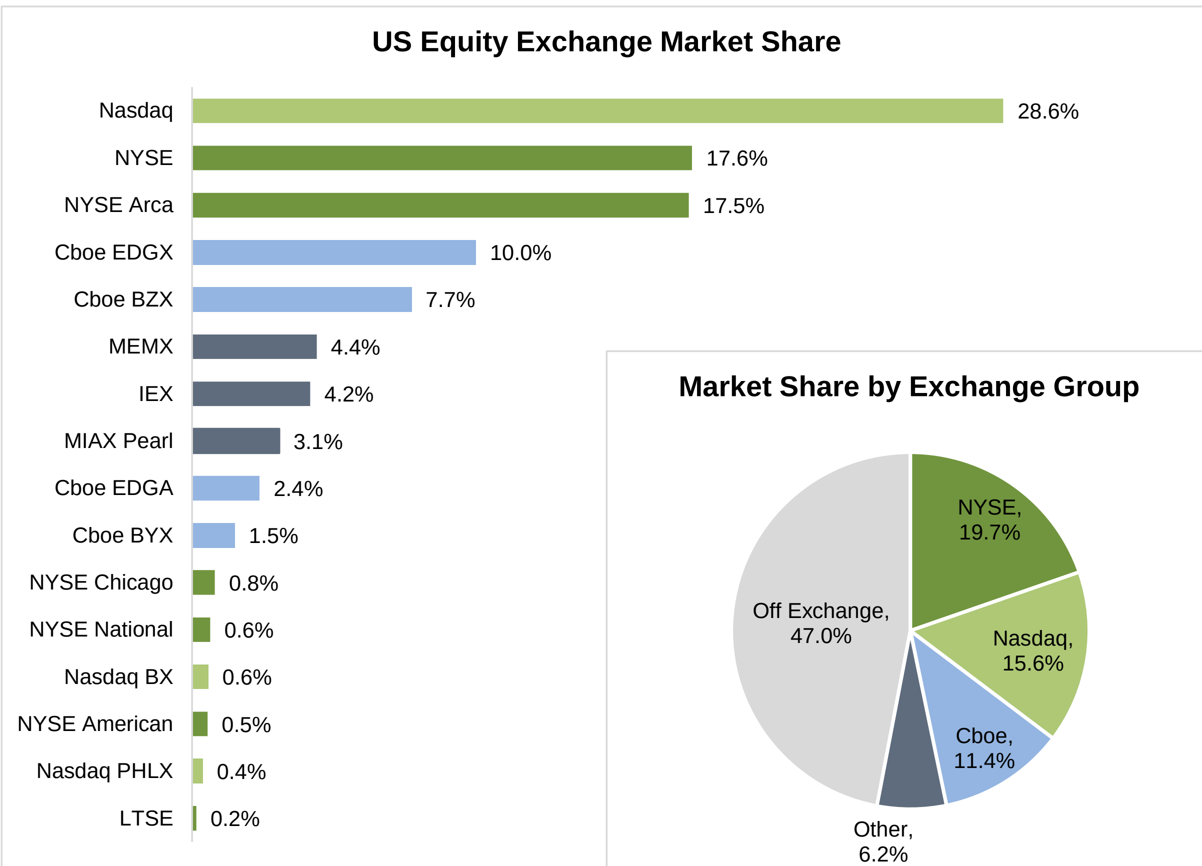




Source: Cboe Global Markets, Bloomberg, SIFMA estimates

Exchange and Parent Group Market Share

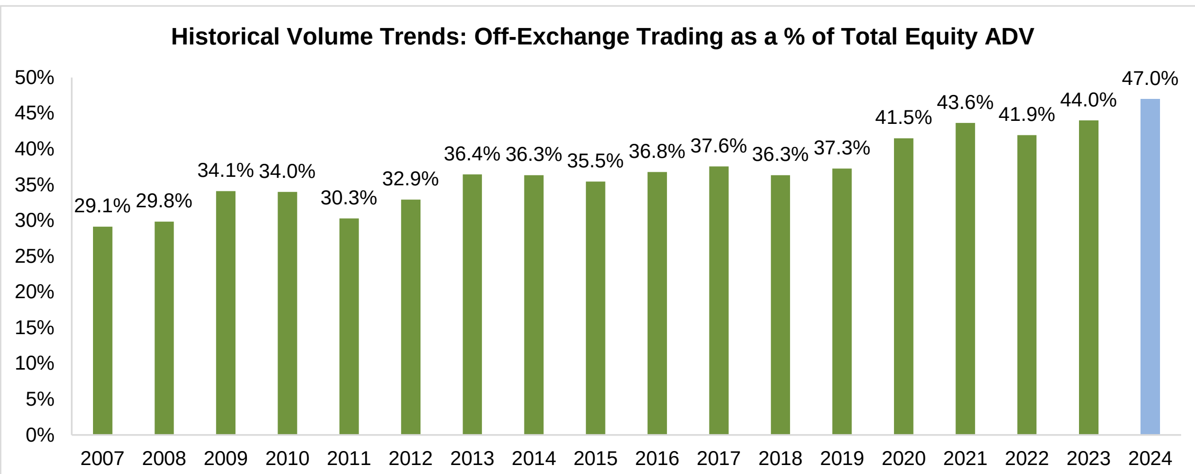
Currently, there are sixteen equities exchanges, operating under seven parent companies. Nasdaq holds the top spot among individual exchanges, with a 28.6% market share. However, NYSE holds the top spot on aggregate, i.e., by total exchange group, with a cumulative 19.7% share across its five exchanges.

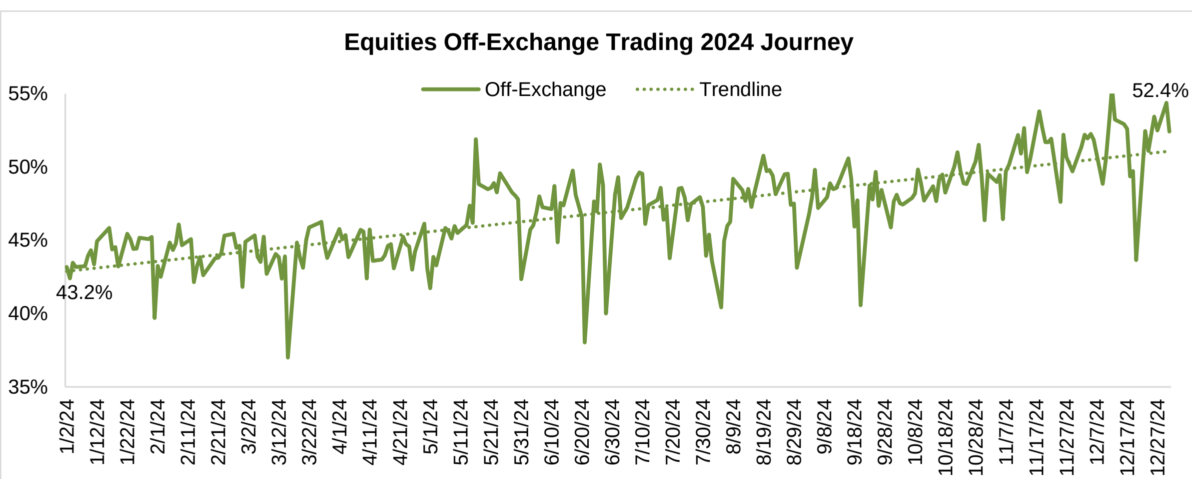


Source: Cboe Global Markets
Note: The New York Stock Exchanges (NYSE) are owned by Intercontinental Exchange (ICE). Cboe = Cboe Global Markets. Other = Members Exchange (MEMX), Investors Exchange (IEX), Miami International Securities Exchange (MIAX), and Long-Term Stock Exchange (LTSE). NYSE announced in 2025 that NYSE Chicago will reincorporate in Texas and be renamed NYSE Texas.

Off-Exchange Trading

The level of off-exchange trading is a function of market fundamentals, such as retail participation, volatility levels, and other factors. The growth in off-exchange trading over the past few years has been attributed to the growth in retail investing[6]. As retail investor participation grew as a percentage of overall volume, it is logical that off-exchange volume grew as well. However, we emphasize that off-exchange flow is more diverse than just wholesalers executing retail trades. The increase in off-exchange trading begin after 2019, when retail brokerages reduced commissions to $0. The level peaked last year at 47.0%.





Source: Cboe Global Markets, SIFMA estimates

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[6] Most retail flow has generally been executed off exchange, except for limit orders which are sent to exchanges. Retail brokerages – who route order flow based on who will provide the best execution quality, which includes price and/or size improvement for their clients' trades – may send retail order flow to market makers, who then execute some of the orders off exchange. Orders executed off exchange are immediately reported to the Trade Reporting Facilities (TRF), commonly known as the tape, to help facilitate price discovery.

Equites: Themes

~~Normalizing~~ Increasing Equity ADV

Equity ADV in 2024 was 12.2 billion shares, +10.2% Y/Y. Just when we thought equity ADV was stabilizing, volumes increased to over the 12 billion shares level.

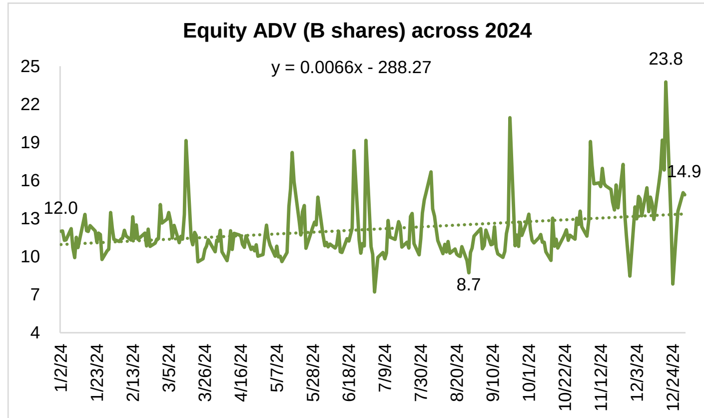
While the pattern had been a bit up and down – 11.4 billion shares in 2021, 11.9 billion shares in 2022, 11.0 billion shares in 2023 – we thought the new normal was going to be in the 11 billion shares level.

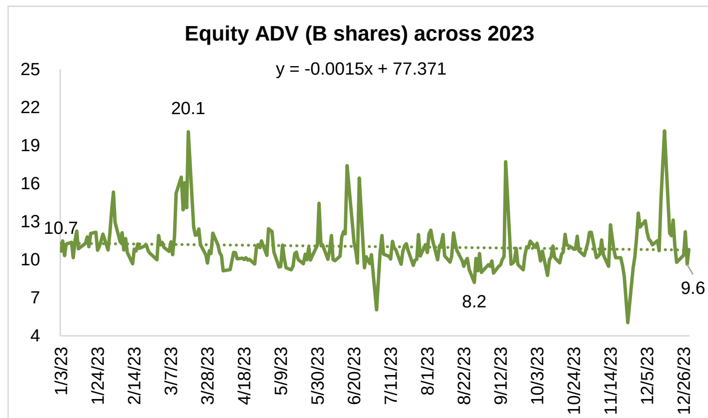
	2022	Y/Y Chg	2023	Y/Y Chg	2024	Y/Y Chg
Average	11.9	4.1%	11.0	-7.1%	12.2	10.2%
Peak	20.0	-18.5%	20.2	0.9%	23.8	17.9%
Trough	7.8	0.9%	8.2	5.5%	8.7	6.4%

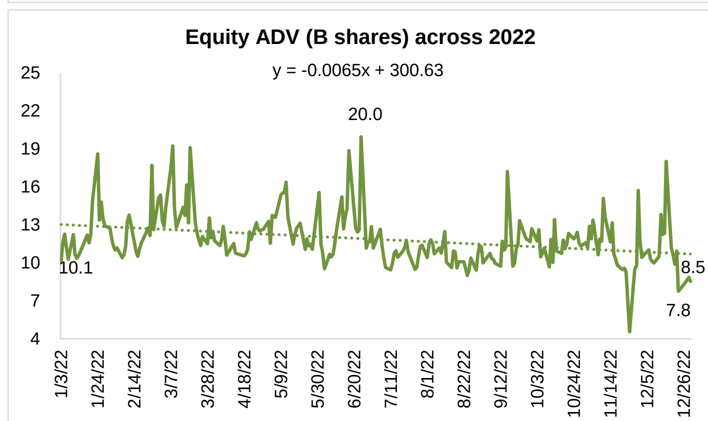
Source: Cboe Global Markets, SIFMA estimates
Note: Half trading days excluded when determining the troughs.

Looking at the charts on the right, interestingly, for 2022 and 2023, volumes were greater in the first half of the year than the second half. This pattern reversed in 2024, with the second half posting higher volumes.

Now that equity volumes have grown into the 12 billion shares level, we will continue to watch what this year brings to determine if this will be the new normal level.







Source: Cboe Global Markets, SIFMA estimates

Stabilization No More

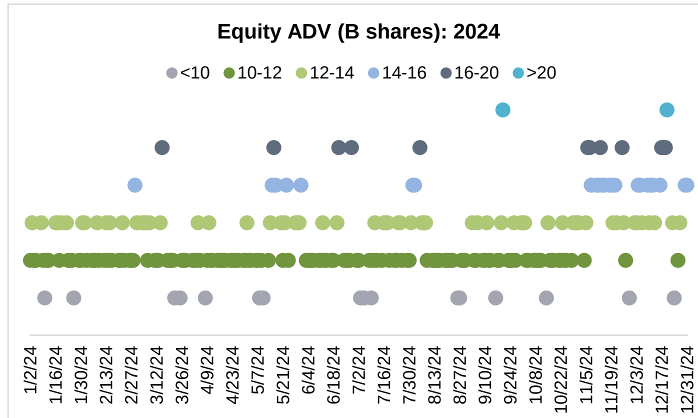
To assess where equity volumes could stabilize into a new normalized level, we tracked changes in days above certain thresholds.

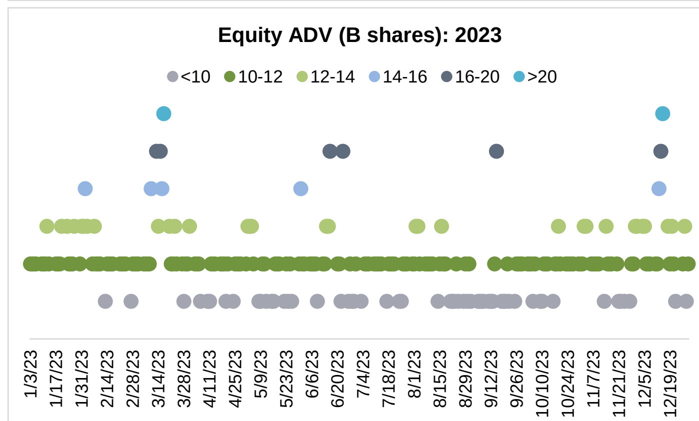
In the charts to the right, we show the number of days at volume thresholds for the last three years. We had thought that equity ADV was stabilizing around the 11 billion shares level. Then came 2024, and volumes increased. 2024 saw only sixteen days below the 10 billion shares level. This compares to an average of forty-three days the prior two years and ninety-three days back in 2021. We saw a significantly decreased number of lower volume days last year. In fact, there were only two days when volumes were in the 7 billion shares level, the pre-COVID historical average – and both of those were on early close days arounds holidays.

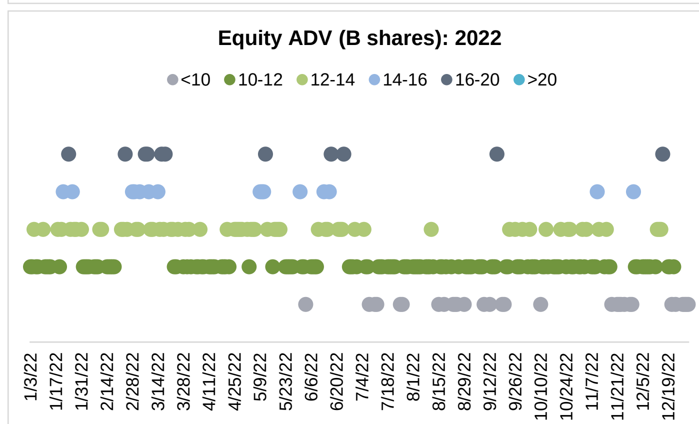
Looking at higher volume days in 2024, volumes surpassed the 12 billion shares level 101 days, or 40% of the time. This compares to an average of sixty-seven days the prior two years and 77 days in 2021.

We then increased the threshold level to 15 billion shares. In 2024, volumes surpassed this level twenty-six days, or around 10% of the time. This compares to an average of 15 days the prior two years and twenty-three days in 2021. Of these twenty-six days above 15 billion shares in 2024, over half of those were greater than 16 billion shares.

Additionally, there were two days over the 20 billion shares level. Keeping with the theme that market moves have been mostly about the Fed, the highest volume day, at 23.8 billion shares, was after the December personal consumption expenditures (PCE) inflation data was released. The second highest volume day, at 20.9 billion shares, was after the September Federal Open Market Committee (FOMC) meeting when the Fed cut interest rates for the first time. (The day after the US Presidential election "only" reached the 19 billion shares level.)





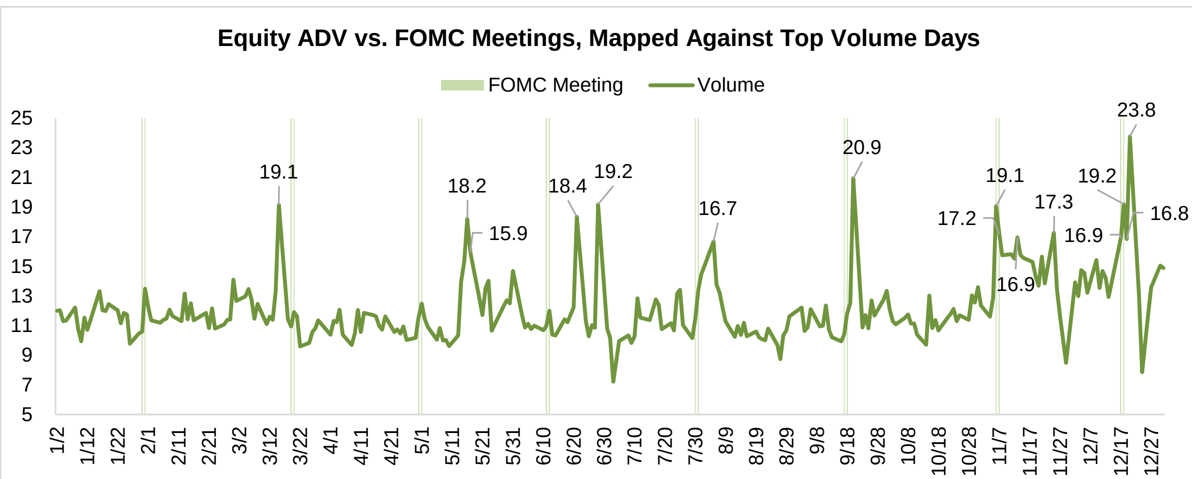


Source: Cboe Global Markets, SIFMA estimates

Top Volume Days

It's all about the Fed, or we should say the Fed and inflation. To prove this, we mapped out the top fifteen volume days last year. These top volume days ranged from 1.3x to 2.0x times the average for the year (12.2 billion shares). This is how the top fifteen breaks down (billion shares):

- Two days were >20
- Four days between 19-20
- Two days between 18-19
- Two days between 17-18
- Four days between 16-17
- One day just below 16



Source: Cboe Global Markets, SIFMA estimates
Note: 2024 FOMC meetings were on January 30-31, March 19-20, April 30-May 1, June 11-12, July 30-31, September 17-18, November 6-7, and December 17-18.

Next, we looked at the events taking place around these high volume days.

- FOMC meetings: Six of the top fifteen – and two of the top three – volume days were around the September and December FOMC meetings. September brought us the first rate cut, which was 25 bps greater than expected (50 bps). December brought us the Fed announcing a slowing in the pace of rate cuts in 2025.
- Inflation data release: Five of the top fifteen volume days were around the release of inflation data, whether PCE or CPI (or even the Producer Price Index/PPI, a lead to consumer prices, one day).
- Economic data points: The remaining four of the top fifteen volume days were around the release of other economic data points. Market participants were using these data points to get a read on the strength of the economy and therefore timing and level of rate cuts.

It really is all about the Fed and its inflation fight.

Date	Volume ($B shares)	Notes
12/20	23.8	PCE inflation data released
9/20	20.9	Post the September FOMC meeting where the Fed cut rates 50 bps cut
12/18	19.2	December FOMC meeting press conference where the Fed signaled fewer rate cuts in 2025
6/28	19.2	PCE inflation data released, boosting confidence the economy was cooling
3/15	19.1	PPI data released the day before; economic data raised concerns that inflation remained hotter than expected
11/6	19.1	Day after the Presidential election and the start of the November FOMC meeting
6/21	18.4	Economic data raised concerns over a slowing economy and timing of rate cuts
5/16	18.2	CPI inflation data was released the day before
11/25	17.3	Optimism still high post the election and positive economic data (PMI indicated economic expansion)
11/7	17.2	November FOMC meeting press conference
11/13	16.9	CPI inflation data released reinforcing expectations for a December rate cut
12/17	16.9	Start of the December FOMC meeting
12/19	16.8	Day after the December FOMC meeting with markets still digesting Fed commentary
8/5	16.7	Economic data sparked concerns about the health of the economy; post the unwinding of the carry trade at the start of the month
5/17	15.9	Economic data dampened expectations for a June rate cut

Source: Cboe Global Markets, SIFMA estimates

Note: 2024 FOMC meetings were on January 30-31, March 19-20, April 30-May 1, June 11-12, July 30-31, September 17-18, November 6-7, and December 17-18.

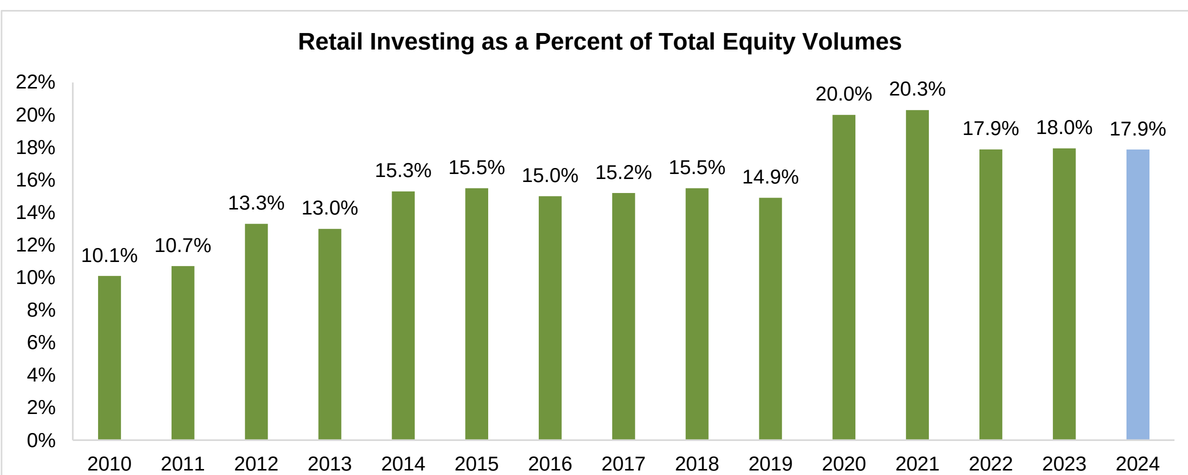
Level of Retail Trading

Historically, retail trades represented around 10% of total volumes, increasing to the mid teens in the mid 2010s. The chart below shows the increase in participation during COVID to the 20% level, carrying over into the following year. The percentage of retail trading peaked in the first quarter off 2021 at 24.0%, a quarter which included the meme stock time period. Retail as a percentage of total market volumes was estimated at 17.9% on average in 2024, with retail participation having settled around the 18% level for the last three years.

We note that this figure might be on the low side, given data collection methodology. The data is pulled from Bloomberg Intelligence, which gathered data from the SEC Rule 605 and 606 reports. However, on the 606 side, the volume data does not include several large brokers with a retail business that do not accept PFOF. This, therefore, understates the level of retail. To compensate, 605 numbers are included from wholesale market makers. This slightly overstates retail. Bloomberg Intelligence estimates retail is between the numbers you get from 606 reports and 605 reports, closer to 605.

We also note that SIFMA's annual market structure survey – participants include members of SIFMA's equity and options trading committees, exchanges, and other market participants – estimated that the level of retail volumes is in the 20%-30% range, with 72.5% of responses. Looking back over the last three surveys, at least two-thirds of respondents have estimated retail participation in this range, with each of the last two years tallying over 70% of responses.

It appears the increase in retail trading is here to stay at this new 20%-30% level.



Source: Bloomberg Intelligence, SIFMA estimates
Note: Averages for the years. 2024 is through September, the latest data available from SEC reports.

Overnight Trading

The concept of twenty-four hour trading is not new in capital markets. For example, fixed income, foreign exchange, and futures markets already trade this way. As such, it is good to discuss after hours trading in equities, which involves trading after exchanges close at 4:00 PM EST and before they reopen at 9:30 AM EST the next day. Last year, market participants spent a lot of time discussing this topic.

Why extend trading hours? Some investors view the world as getting smaller, and as such, they want exposure to US markets during their home country's trading day. Market participants do not believe this demand is cannibalizing volumes from day time slots. Instead, it is a different investor set – and much lower volumes concentrated in a few products – predominantly from investors in the Asia Pacific region looking to access US markets during their work hours, i.e., US overnight hours. It was estimated by Blue Ocean that around 85% of their after hours trading volumes come from this region.

What issues need to be resolved to scale this concept? One key difference in trading after hours is that a stock trades differently during the day and at night, as there is less transparency and available liquidity when US exchanges are closed. In general, it is not the same product as during the day – there are a broad range of challenges, from settlement to corporate actions, etc. – and these differences will need to be explained to investors. Education will be key to extending trading hours.

On the market structure side, a roadmap is needed, and that includes regulatory guidance. There are operational issues to consider. The Securities Information Processor (SIP, the consolidated tape) is not open in after hours. Regulation National Market System (Reg NMS) does not apply.

Market participants note that extending trading hours on a larger scale is inevitable. While there are complexities and many different moving pieces for the industry to work through, it is achievable.

What options exist today? Alternative trading system (ATS) Blue Ocean[7] opened in 2016, specifically to make trading more accessible after traditional US trading hours, and there are now several ATS offering this service. Last October, NYSE announced its plans to extend weekday trading on its NYSE Arca equities exchange to twenty-two hours a day, five days a week[8], and this year Cboe announced plans to offer 24-hour, five-days-a-week trading on its Cboe EDGX exchange. Last November, the Securities and Exchange Commission (SEC) approved 24X National Exchange's registration application, representing the agency's first step toward permitting overnight trading on a national securities exchange for the first time. 24X will offer trading twenty-three hours a day, five days a week[9].

[7] Core offering operates overnight in the US from 8:00 PM EST- 4:00 AM EST (Sunday-Thursday), only on calendar days when the NYSE Trade Report Facility (TRF) is open for reporting the following morning. Trades executed between 8:00 PM ET and 12:00 AM ET will carry a trade date of the following trade day. Settlement date will reflect the first business day following the transaction (T+1). The ATS does not open at 8:00 PM ET on Friday evening, because the NYSE TRF is not available for the reporting of trades on Saturday.

[8] Extended trading would take place from 1:30 am to 11:30 pm EST on all weekdays, excluding holidays, for all US-listed stocks, ETFs and closed-end funds. NYSE will also seek support for extended trading from the U.S. securities information processors (SIP). Trades will continue to be cleared by the Depository Trust & Clearing Corporation, which announced plans to extend its hours of operation.

[9] 24X National Exchange will be launched in two stages: (1) in the second half of 2025, the Exchange will operate from 4:00AM EST to 7:00PM EST on weekdays; (2) to launch once the conditions noted above are met, offering trading in US equities from 8:00PM EST on Sunday to 7:00PM EST Friday.

What percentage of total volumes is overnight? On average in 2024, after hours trading was 10.8% of total equity volumes (we note that this number includes closing cross mechanisms on and off the exchanges, which elevates the volume). Of that total, 5.5% took place in the 4:00-4:30pm EST time slot, i.e., immediately after the market closes.

Looking back to 2019, the 2024 average was only up 0.8 pps; the percentage really has not grown since that year. That said, the total did dip in 2021/2022 before recovering. The 2024 average was up 3.4 pps from the trough level of 7.4%. Also, the portion of after hours trading being done immediately after the market closes, from 4:00-4:30pm EST, has come down 3.1 pps. On average in 2024, the split between the 4:00-4:30pm EST and 4:30pm-9:30am EST time slots in the afterhours was essentially equal.

After Hours Trading: % of Total Volumes

	Pre Market	Post Market	Total After Hours	of which 4-4:30pm
2019	0.9%	9.1%	10.0%	8.6%
2020	1.8%	6.3%	8.2%	5.6%
2021	2.2%	5.2%	7.4%	4.5%
2022	2.0%	5.5%	7.5%	4.9%
2023	2.8%	6.6%	9.4%	5.6%
2024	4.0%	6.9%	10.8%	5.5%

Source: Bloomberg Intelligence, SIFMA estimates
Note: Pre market is from 8:00pm-9:30am EST. Post market is from 4:00pm-8:00pm EST.

Low-Priced Stocks

Another topic frequently discussed last year was the trading of low-priced stocks. Below we have shown several views to analyze the breakout of trading by stock price groups, including: average daily volumes (shares), average daily value (dollars), and ticker count. We highlight the following:

- **Volume (shares)**: The top two categories were stock prices of $5-20 and $20-50, representing 46% of total volumes. Low-priced stocks, categories <$1 and $1-5, represented 28% of total volumes.
- **Value (dollars)**: The top two categories were stock prices of $100-300 and >$300, representing 63% of total volumes. Low-priced stocks represented less than 1% of total volumes. This makes sense, since these are lower market cap stocks, many of which being micro caps (market cap <$250 million).
- **Count (number)**: The top two categories were stock prices of $5-20 and $20-50, representing 60% of total volumes. Low-priced stocks represented 19% of total volumes.

Regardless of viewpoint, low-priced stocks remain a small portion of the market, reaching a maximum of 28% when analyzing volumes.

Volume by Stock Price

	<$1	$1-5	$5-20	$20-50	$50-100	$100-300	>$300
Average Daily Volume	13.5%	14.3%	25.4%	20.4%	12.6%	11.2%	2.6%
Average Daily Value	0.1%	0.8%	5.6%	13.2%	17.7%	35.8%	26.7%
Ticker Count	5.4%	13.4%	25.4%	34.3%	12.8%	7.2%	1.5%

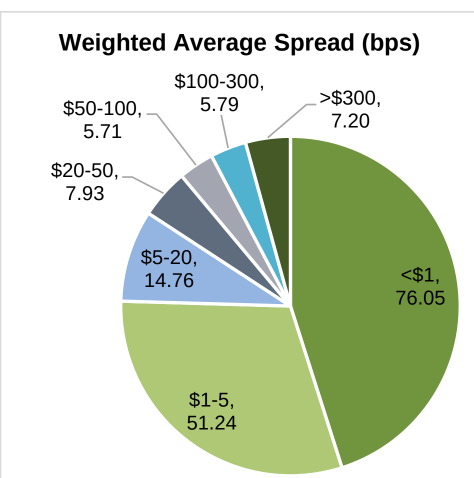
Source: Bloomberg Intelligence, SIFMA estimates

Readers may be wondering why this was such a hot topic last year. According to FINRA, there are several risks and challenges associated with trading low-priced stocks, often referred to as penny stocks or micro cap stocks. These risks include but are not limited to:

- Low Liquidity: These stocks typically have low trading volumes, making it difficult to buy or sell shares without affecting the stock price, potentially leading to significant price fluctuations.
- High Volatility: Low-priced stocks are often more volatile than higher-priced stocks, meaning their prices can change rapidly and unpredictably.
- Limited Information: Many low-priced stocks are issued by small or emerging companies that may not provide comprehensive financial information. This lack of transparency can make it hard to assess the company's true value and potential.
- Market Manipulation: These stocks are often targets for market manipulation schemes, such as "pump and dump" scams, where fraudsters artificially inflate the stock price before selling off their shares at a profit.
- Fraud Risk: There is a higher risk of fraud with low-priced stocks, especially those traded over-the-counter (OTC), as they may not be subject to the same regulatory requirements as stocks listed on major exchanges.

The chart below depicts these risks nicely. The chart below shows weighted average bid-ask spreads, or the difference between the highest price that a buyer is willing to pay for an asset (the bid) and the lowest price that a seller is willing to accept (the ask). Spreads are indicators of a stock’s liquidity and volatility measures: highly liquid stocks tend to have tighter spreads, as there are many buyers and sellers; more volatile stocks may have wider spreads, given increased risk and uncertainty about future price movements. Additionally, spreads are often factors of general market conditions, widening under times of market stress or low trading volumes.

On average in 2024, the overall weighted average bid-ask spread was 7.35 bps. However, investors only saw spreads around that level when trading stocks priced $20 or higher. Investors trading lower-priced stocks saw much higher spreads. Stocks priced in the $1-$5 range saw average spreads of 51.24 bps, 6.97x the average. This worsened for stocks priced less than $1, with an average spread of 76.05 bps, 10.5x the average.

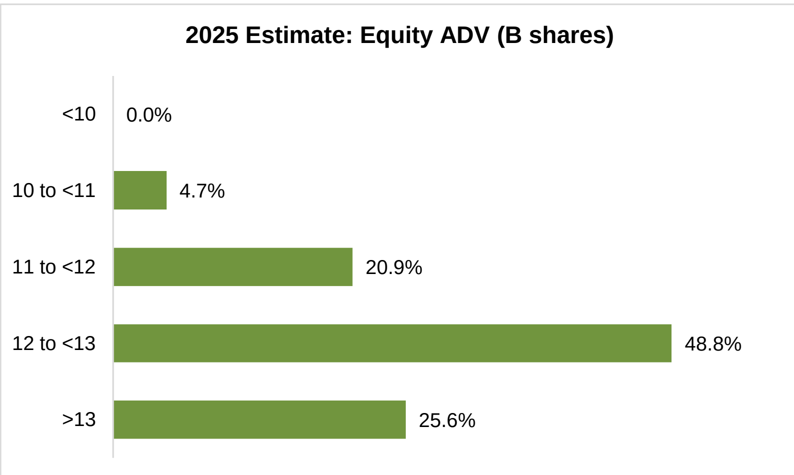


Source: Bloomberg Intelligence, SIFMA estimates

Equities: Survey Says

Survey Question: Over the next 12 months, what level do you expect to see for equity ADV (billion shares)? (averages: FY24 12.2, 4Q24 13.6)

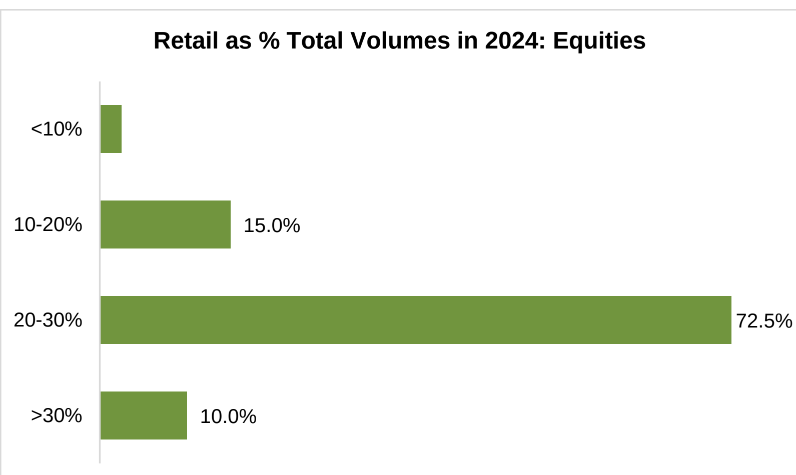
Majority Says? 48.8% of respondents expect equities ADV to remain in the 12 to 13 billion shares level. That said, 25.6% of respondents believe volumes could increase to over 13 billion shares ADV.



Source: SIFMA Insights market structure survey

Survey Question: In our survey last year, respondents estimated retail investor participation at 20%-30% for both equities and listed options. What was your estimate for retail as a percentage of total volumes last year?

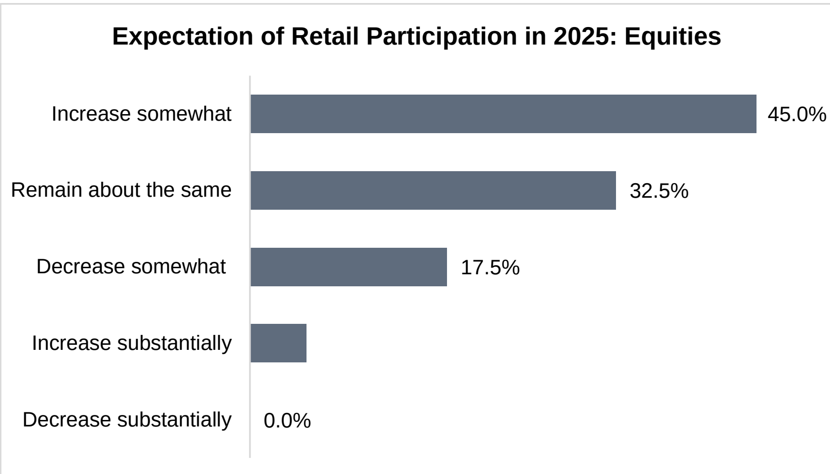
Majority Says? A strong majority, 72.5% of respondents, estimated retail investor participation at 20-30% for equities in 2024. The next closest response was that retail represented 10-20% of total equity volumes in 2024 (15.0% of responses).



Source: SIFMA Insights market structure survey

Survey Question: What is your estimate for retail as a percent of total volumes for next year?

Majority Says? 45.0% of respondents expect retail investor participation to increase somewhat for equities in 2025. The next closest response was to remain about the same (32.5% of responses).



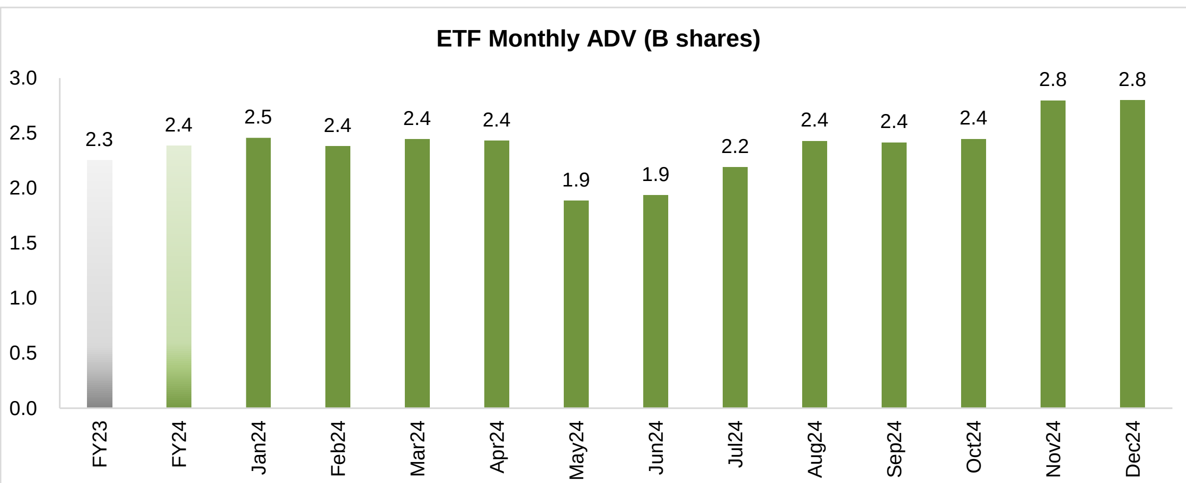
Source: SIFMA Insights market structure survey

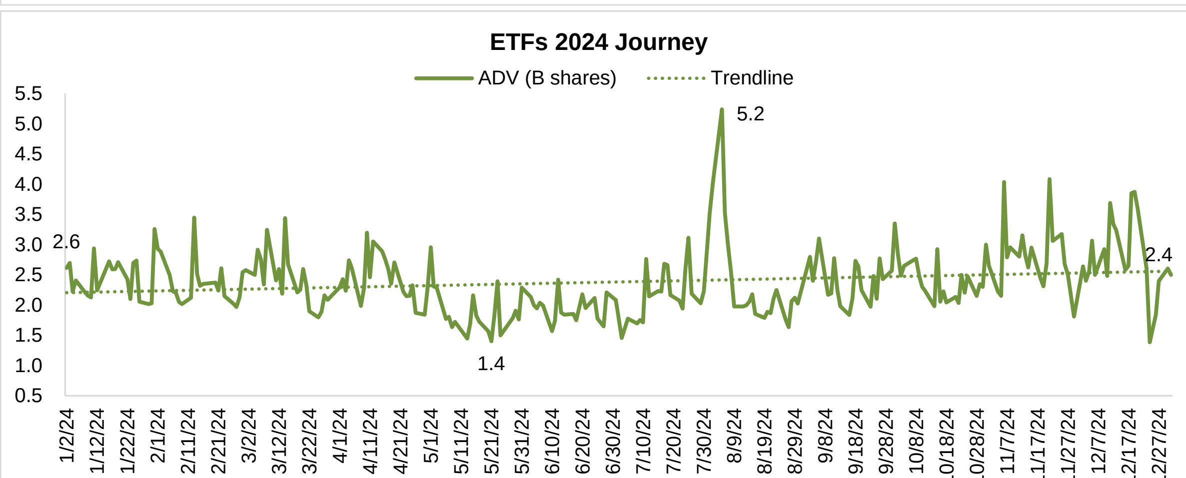
Exchange-Traded Funds (ETF)

ETFs: Metrics

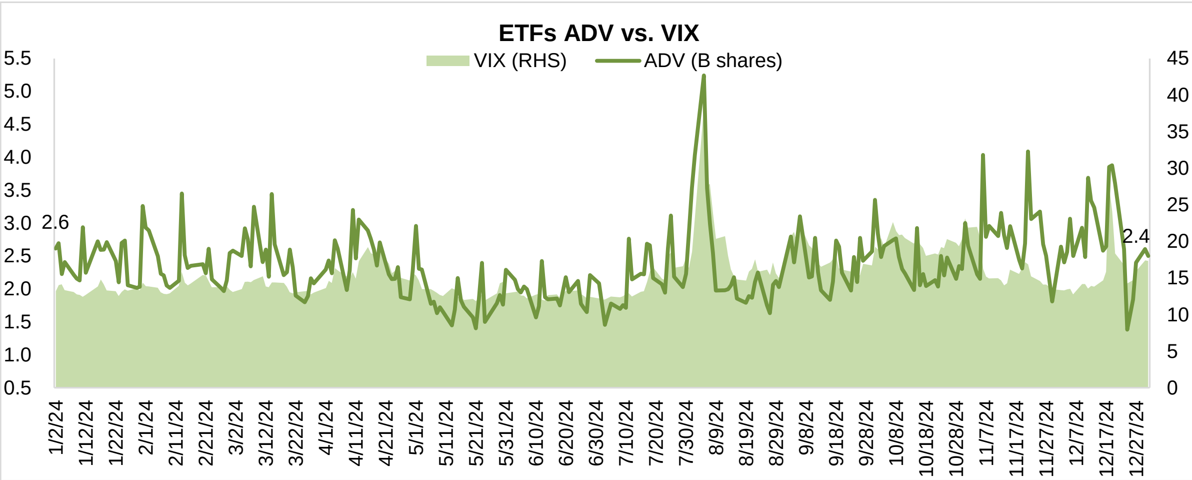
At 2.4 billion shares on average, ETF volumes remain elevated to historical levels, although not quite back to the 2022 peak of 2.6 billion shares. The overall trendline for ETF volumes in 2024 was essentially flat, with its spike – and peak level – in early August around the carry trade event. ETF volumes as a percent of total equity market volumes were 19.6%. We highlight the following trends for the year:

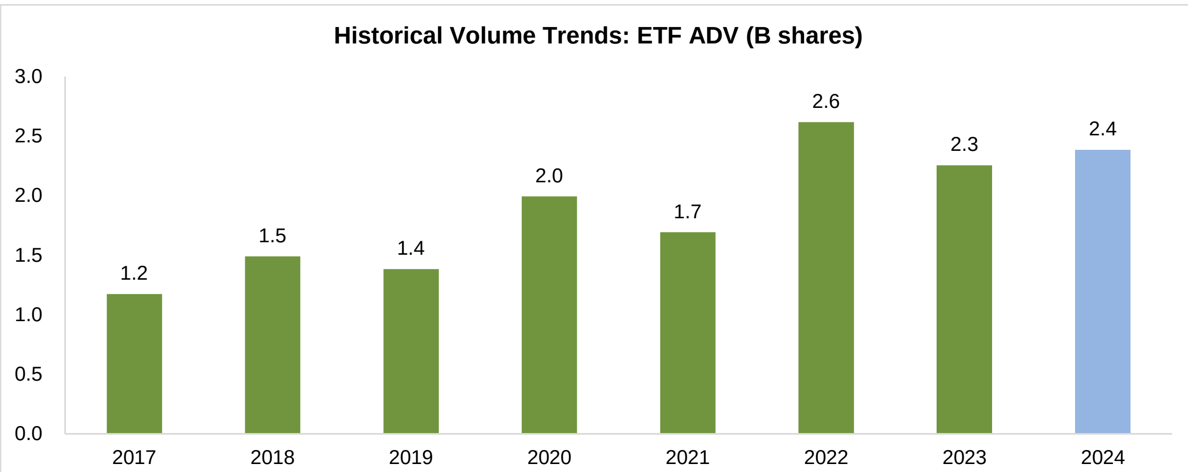
- 2024 average 2.4 billion shares
    - +5.8% Y/Y
    - Peak 5.2 billion shares on August 5
    - Trough 1.4 billion shares on May 21
- 5-Year CAGR +11.5%





Source: Cboe Global Markets, SIFMA estimates

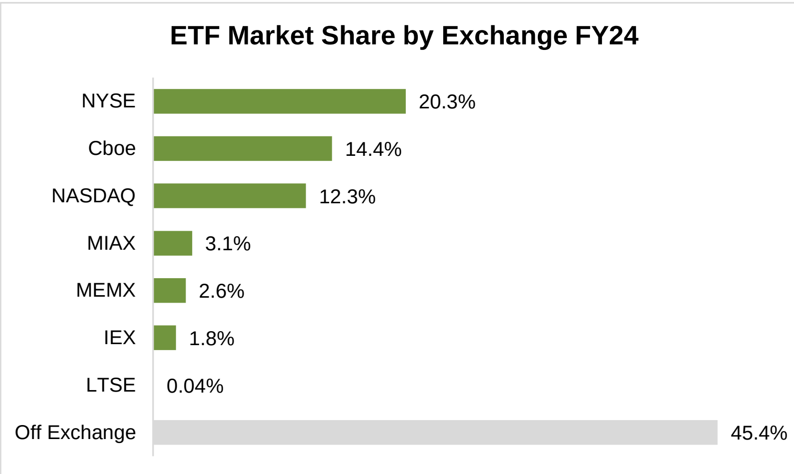




Source: Cboe Global Markets, Bloomberg, SIFMA estimates

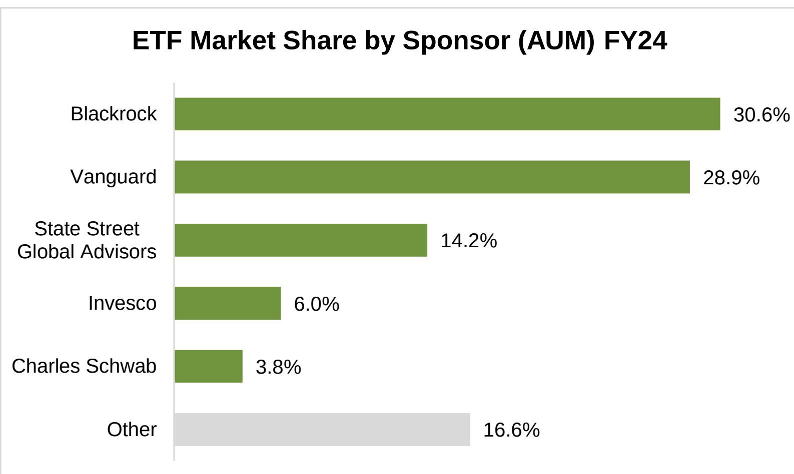
Exchange and Sponsor Market Share

Currently, there are seven exchange groups trading ETFs. NYSE holds the top spot with a 20.3% market share (based on volumes), followed by Cboe at 14.4%.



Source: Cboe Global Markets, etf.com as of December 2, 2024, SIFMA estimates

As to ETF sponsors, Blackrock holds the top spot with a 30.6% market share (based on AUM), followed closely by Vanguard at 28.9%. The top five sponsors hold a combined 83.4% of total ETF AUM.



Source: Cboe Global Markets, etf.com as of December 2, 2024, SIFMA estimates

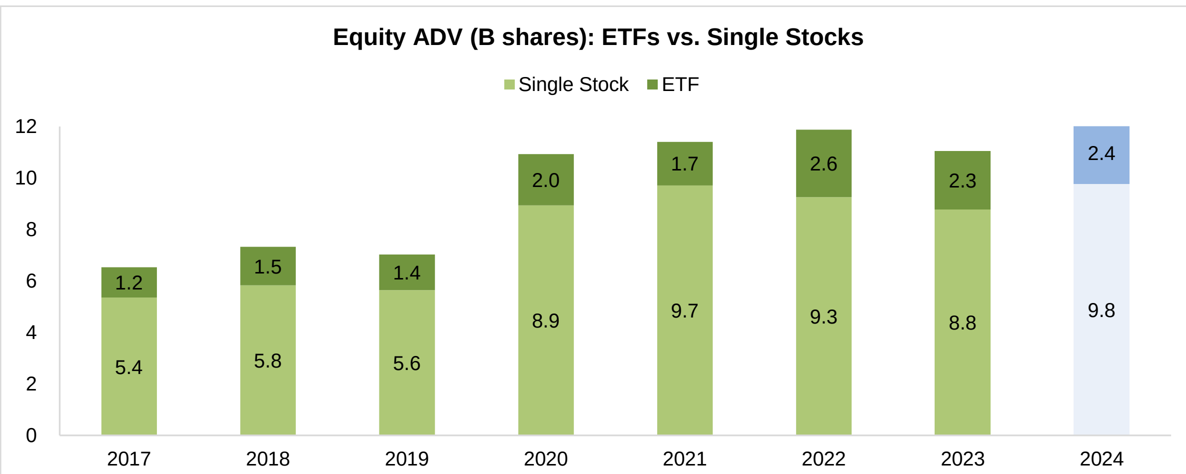
ETFs: Themes

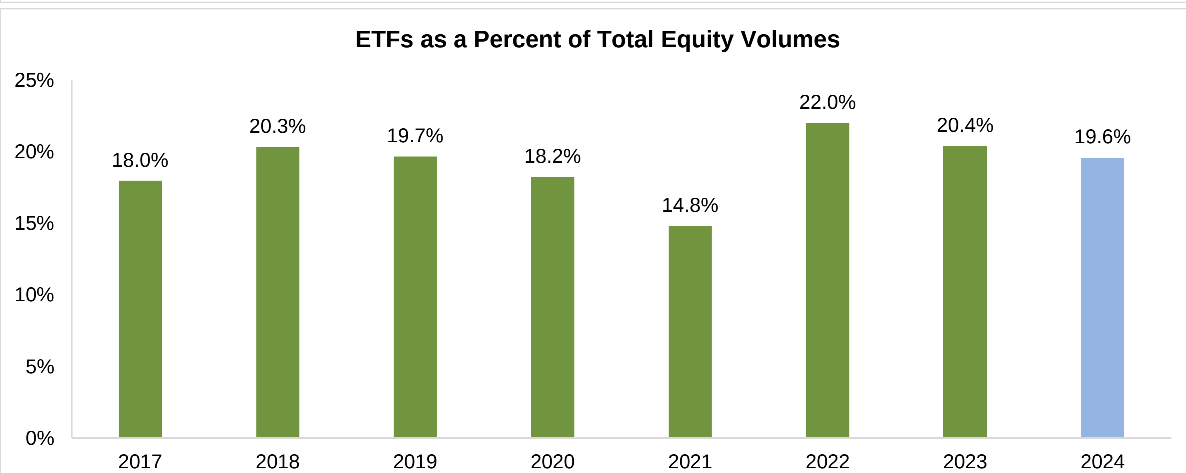
ETFs as a Percent of Total Equities

ETF shares trade on the equity markets in the secondary market, as do the underlying stocks used to create equity ETFs. On average in 2024, ETF volume was 2.4 billion shares versus 9.8 billion shares for single stock equites.

We highlight the following ETF trends:

- ETF volumes +5.8% Y/Y, versus
    - Single stock +11.3%
    - Total equities +10.2%
- 19.6% of total equities volume in 2024, -4.0 pps Y/Y





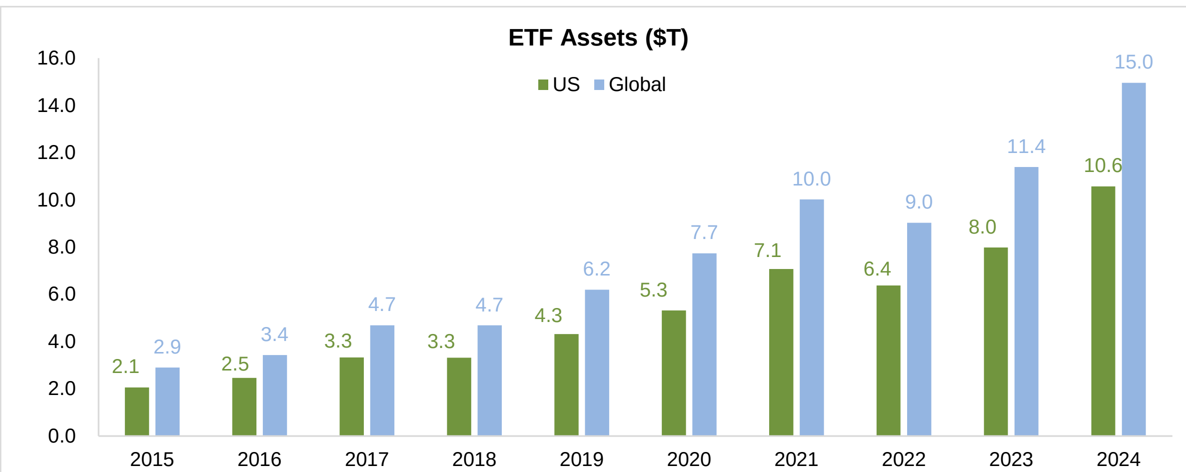
Source: Cboe Global Markets, SIFMA estimates

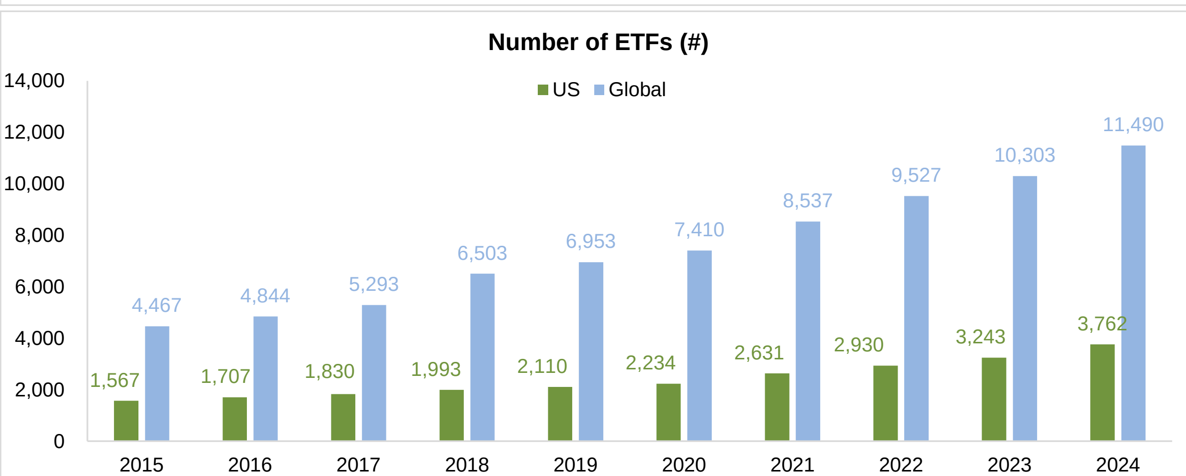
ETF AUM: US versus Global

According to ETFGI research, the global ETF industry gathered $1.7 trillion in net inflows in 2024, the highest level of annual net inflows behind the $1.3 trillion in 2021 (+29.5% Y/Y). November marked the 66th month of consecutive net inflows. The US ETF industry saw net inflows of $1.0 trillion in 2024, the highest on record after $919.8 billion in 2021 (+12.0% Y/Y). December marked the 31st month of consecutive net inflows.

We highlight the following trends on ETF assets and number of funds:

- US ETF AUM $10.6 trillion; +32.5% Y/Y, +19.6% 5-year CAGR, +18.6% 10-year CAGR (US 70.7% of total global AUM)
- US # ETFs 3,762; +16.0% Y/Y, +12.3% 5-year CAGR, +10.6% 10-year CAGR (US 32.7% of total global number of funds)
- Global ETF AUM $15.0 trillion; +31.4% Y/Y, +19.3% 5-year CAGR, +18.8% 10-year CAGR
- Global # ETFs 11,490; +11.5% Y/Y, +10.6% 5-year CAGR, +11.1% 10-year CAGR





Source: ETFGI
Note: 2024 through November

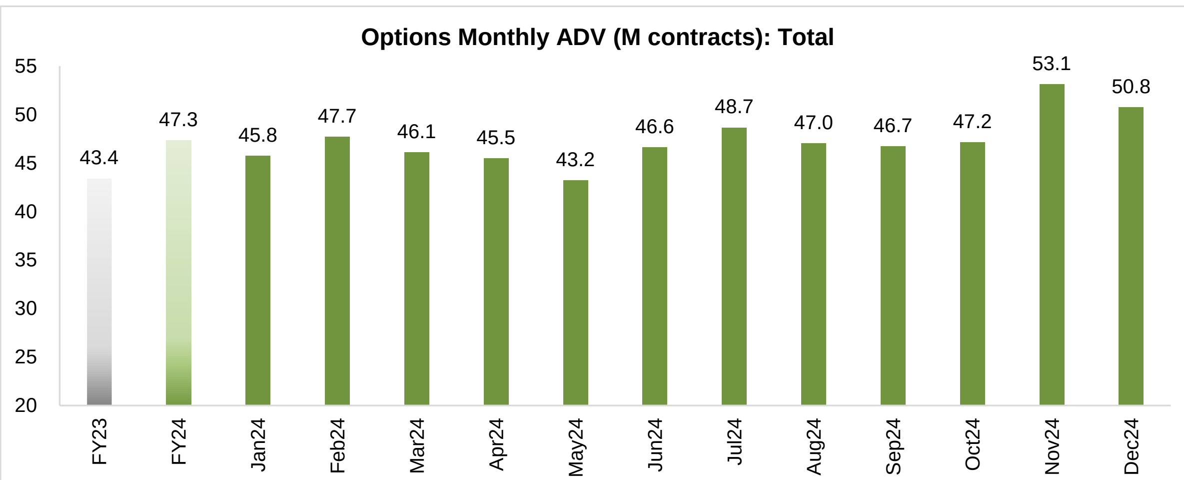
Options Trading

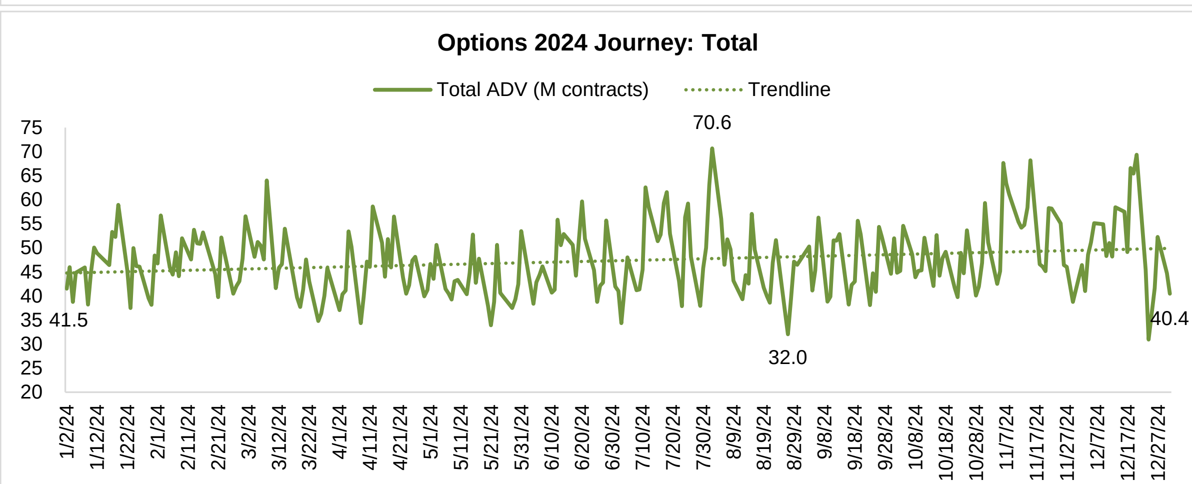
Options: Metrics

2024 saw a continuation of the growth in options volumes, ending the year at 47.3 million contracts on average, +9.0% Y/Y. The overall trendline for options volumes in 2024 was essentially flat. Markets saw seventy-five days last year with volumes between 50 and 60 million contracts and twelve days with volumes over 60 million contracts.

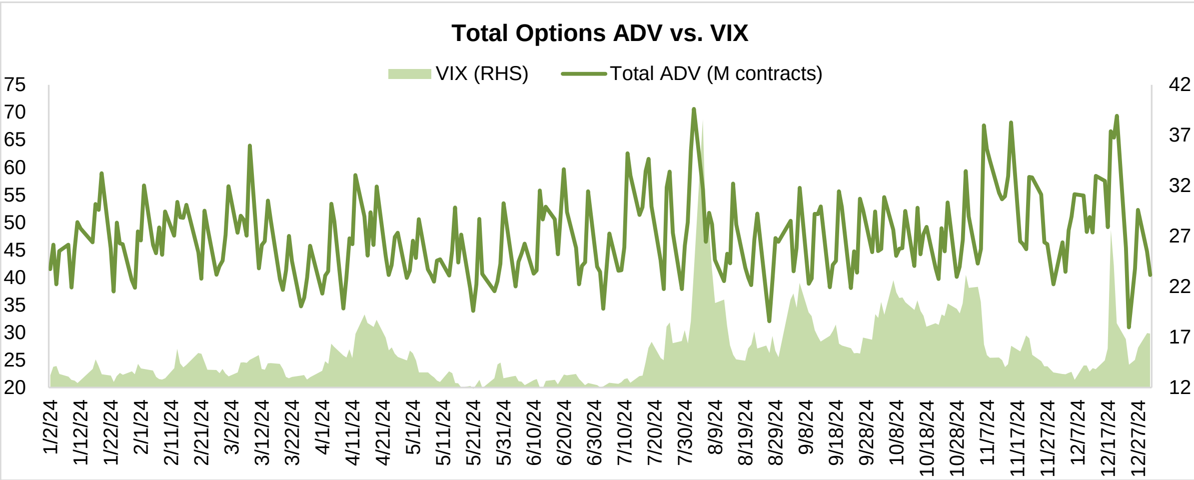
Total Options

- 2024 average 47.3 million contracts
  - +9.0% Y/Y
  - Peak 70.6 million contracts on August 2
  - Trough 32.0 million contracts on August 27
- 5-Year CAGR +20.0%
- 10-Year CAGR +10.8%

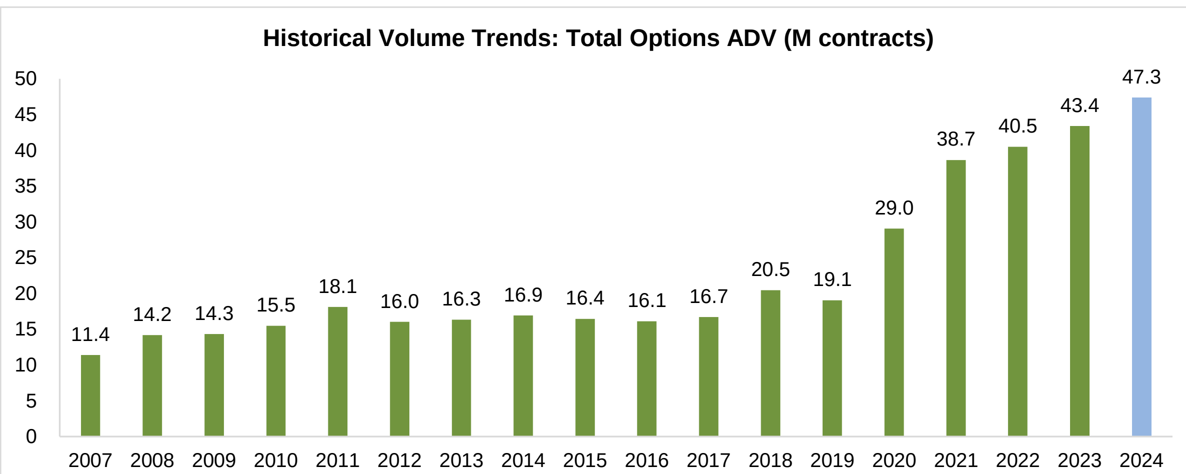




Source: Cboe Global Markets, SIFMA estimates



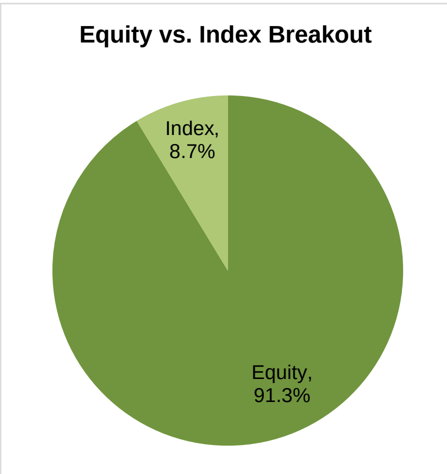
Source: Cboe Global Markets, Bloomberg, SIFMA estimates

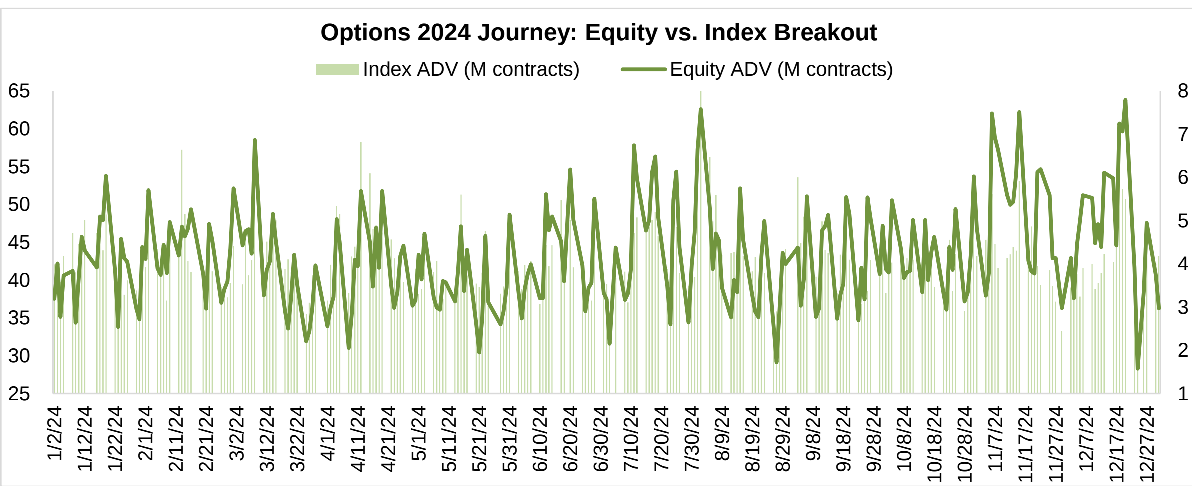


Source: Cboe Global Markets, Options Clearing Corporation, SIFMA estimates
Note: Data varies slightly from previous charts given different sources

Options Breakout

On average for 2024, the total options trading volumes breakout was: equity 91.3% and index 8.7%. Equity options ADV peaked at 94.0% and troughed at 87.6%. For index options volumes, the peak was 12.4% and trough 6.0%.

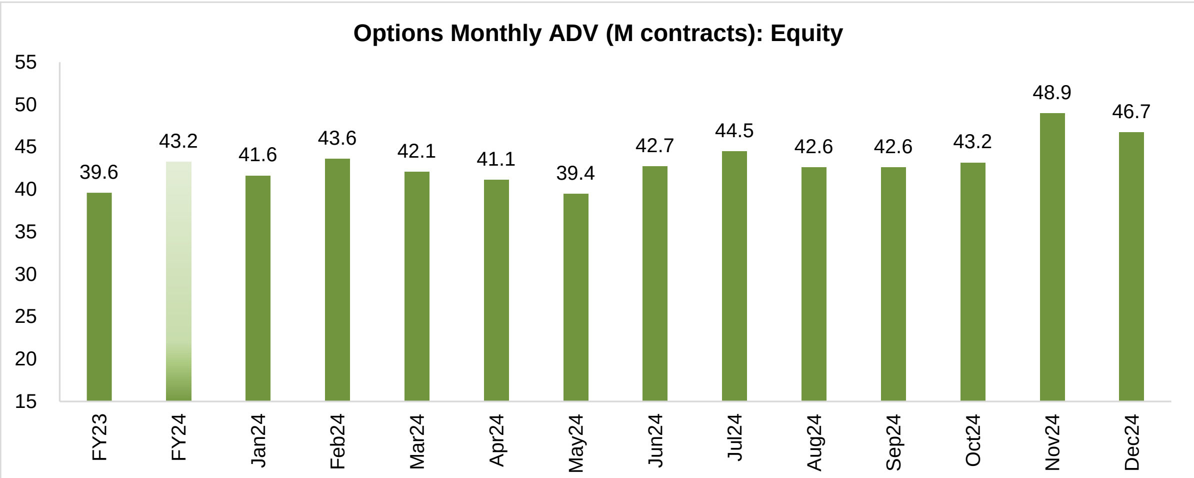


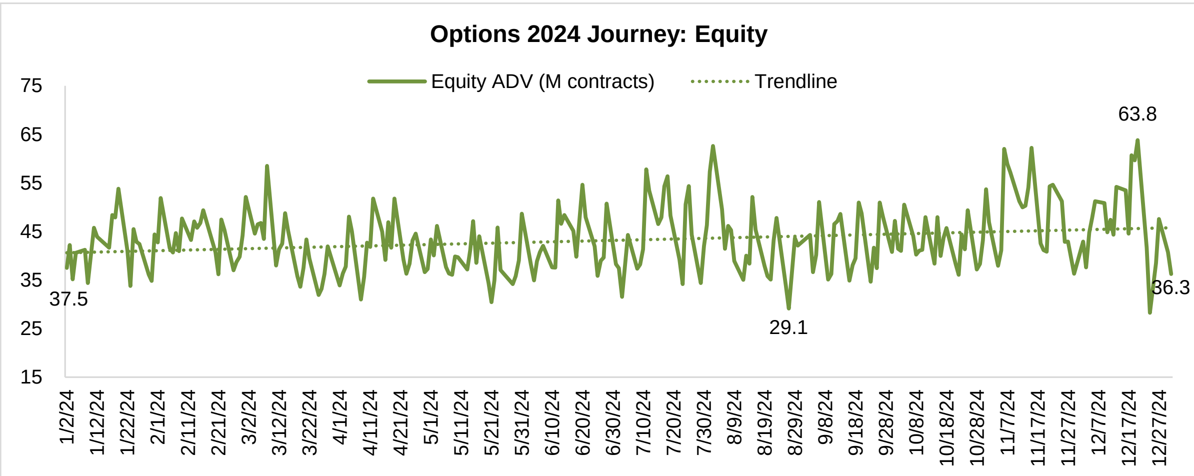


Source: Cboe Global Markets, SIFMA estimates

Equity Options

- 2024 average 43.2 million contracts
  - +9.2% Y/Y
  - Peak 63.8 million contracts on December 20
  - Trough 29.1 million contracts on August 27
- 5-Year CAGR +20.2%
- 10-Year CAGR +11.0%

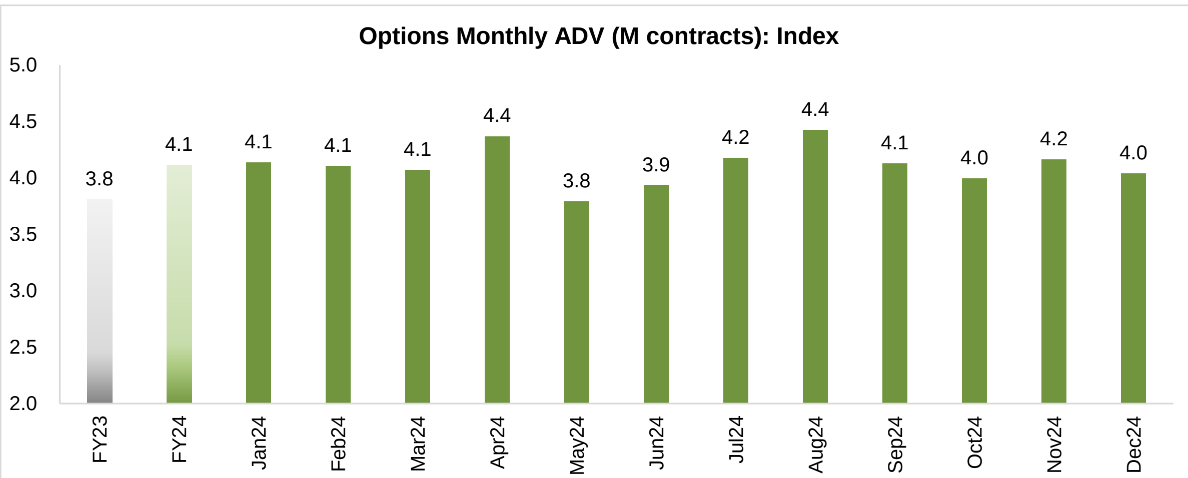


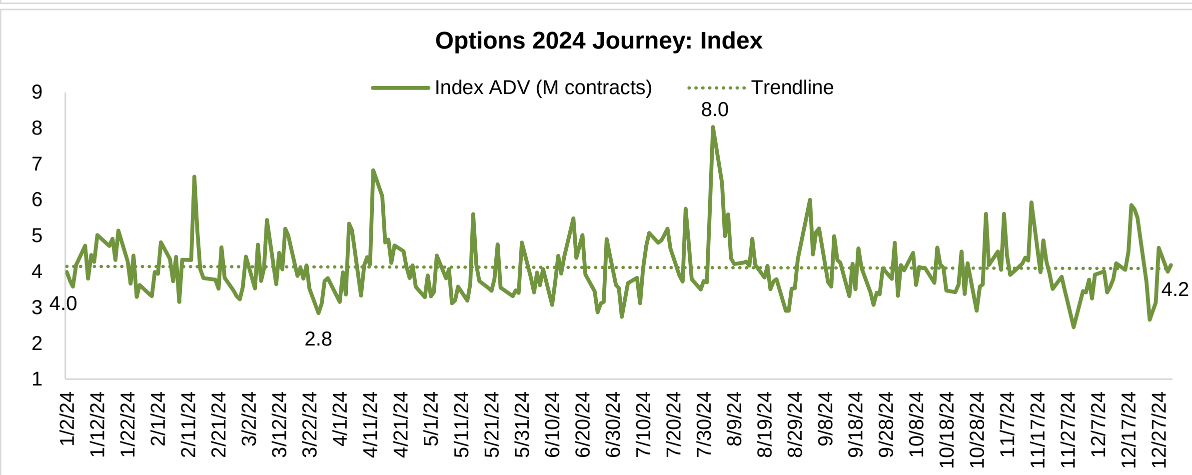


Source: Cboe Global Markets, SIFMA estimates

Index Options

- 2024 ADV 4.1 million contracts
    - +7.9% Y/Y
    - Peak 8.0 million contracts on August 2
    - Trough 2.8 million contracts on March 25
- 5-Year CAGR +17.5%
- 10-Year CAGR +9.4%

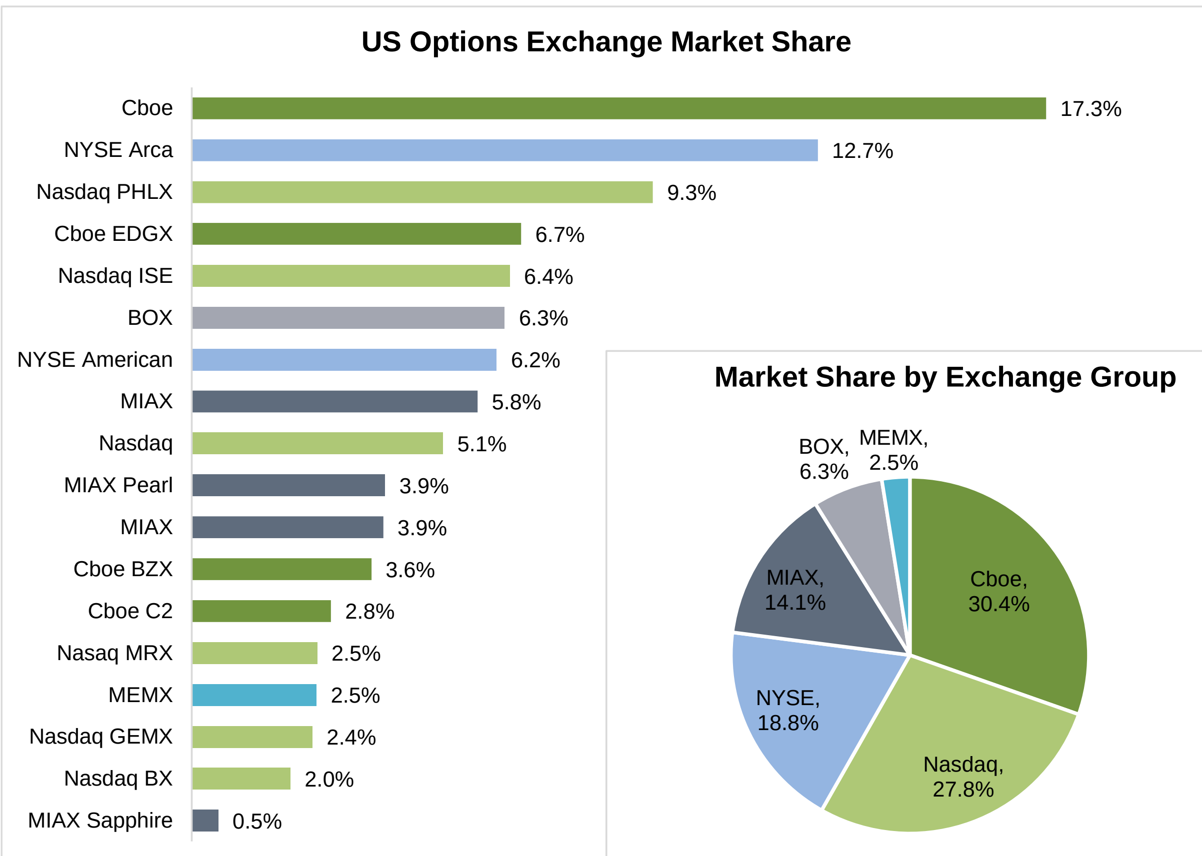




Source: Cboe Global Markets, SIFMA estimates

Exchange and Parent Group Market Share

Currently, there are eighteen exchanges, operating under six parent companies. The Cboe exchange holds the top spot among individual exchanges, with a 17.3% market share. Cboe also holds the top spot on aggregate, i.e., total by exchange group, with a cumulative 30.4% share across its four exchanges.



Source: Cboe Global Markets

Note: Cboe = Cboe Global Markets. The New York Stock Exchanges (NYSE) are owned by Intercontinental Exchange (ICE). MIAX = Miami International Securities Exchange. BOX = BOX Exchange. MEMX = Members Exchange.

Options: Themes

Another Year, Another Record

Options ADV in 2024 was 47.3 million contracts, +9.0% Y/Y. With this average, options ADV continued to climb.

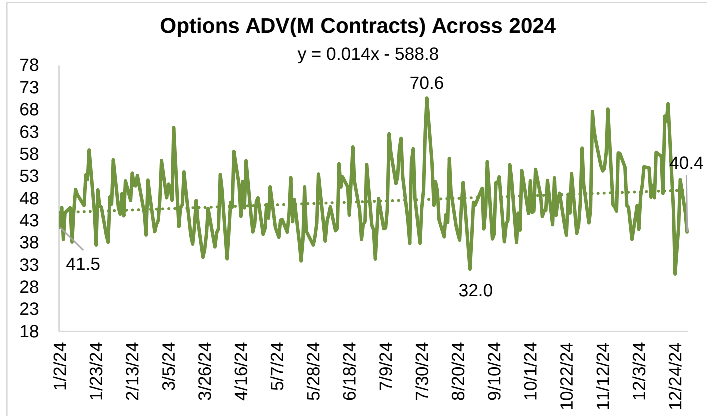
Average options volumes have shown solid Y/Y growth for each of the last three years: +4.8% in 2022, +7.1% in 2023, and +9.0% in 2024. The peak levels have also grown continuously, moving from 62.2 million contracts in 2022 to 70.6 million contracts in 2024, +13.5%.

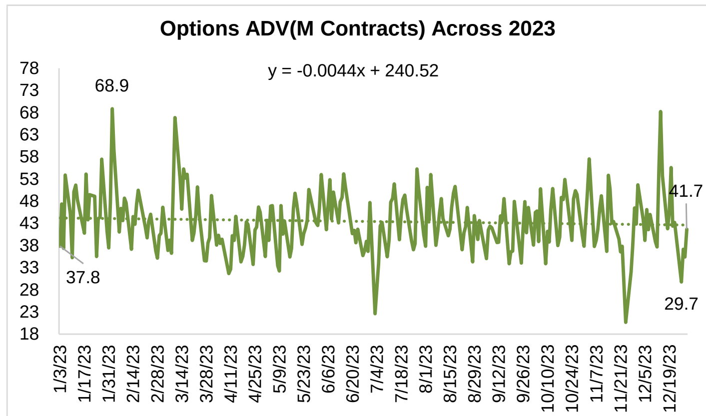
	2022	Y/Y Chg	2023	Y/Y Chg	2024	Y/Y Chg
Average	40.5	4.8%	43.4	7.1%	47.3	9.0%
Peak	62.2	5.0%	68.9	10.6%	70.6	2.6%
Trough	26.9	0.8%	29.7	10.6%	32.0	7.7%

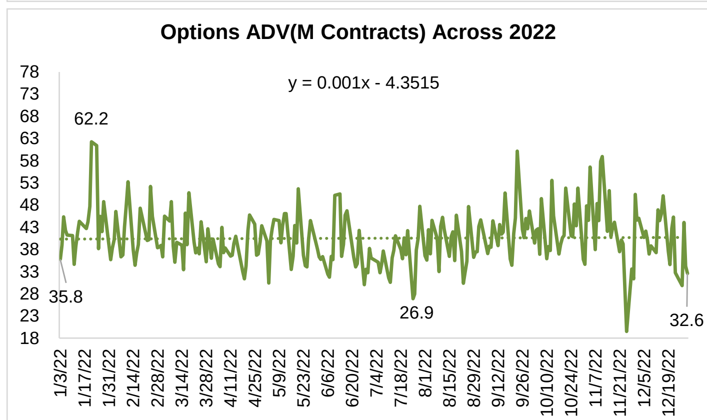
Source: Bloomberg, SIFMA estimates
Note: Half trading days excluded when determining the troughs.

Looking at the charts on the right, interestingly, the slope of the lines were essentially flat in 2022 and 2023 and only slightly upward sloping in 2024. Instead of gradual growth throughout the year, each year options ADV increases in a step function pattern.

Options volumes have been growing and continue to do so.







Source: Cboe Global Markets, SIFMA estimates

Setting New Records

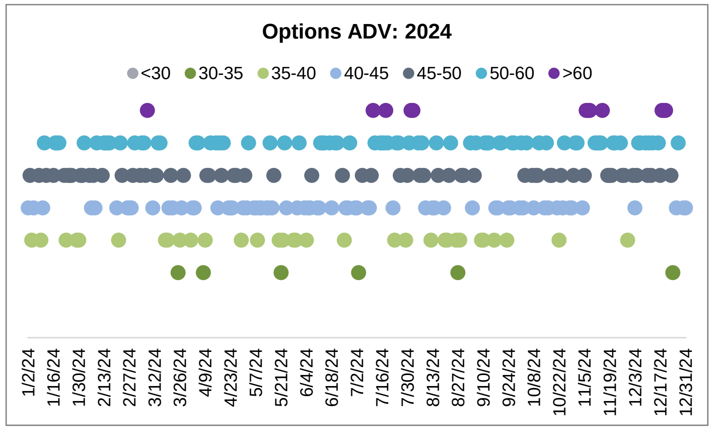
To assess where options volumes could stabilize into a new normalized level, we tracked changes in days above certain thresholds.

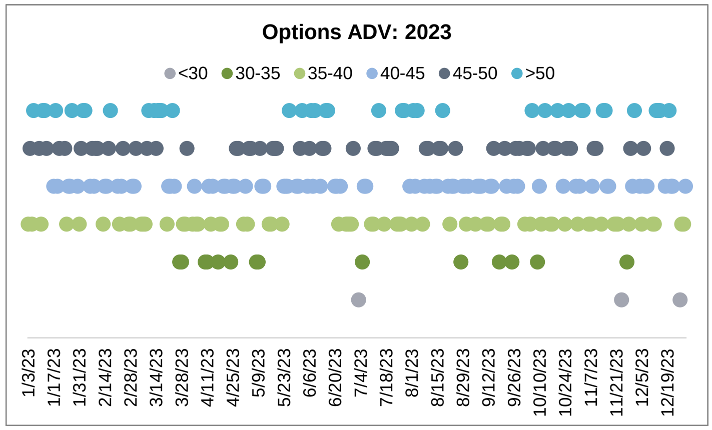
Looking at the charts to the right, showing days at volume thresholds for the last three years, the visuals depict the trends nicely. To start, 2024 saw zero days below the 30 million contracts level. This compares to three to four days the prior two years and eleven days back in 2021. We saw fewer lower volume days last year.

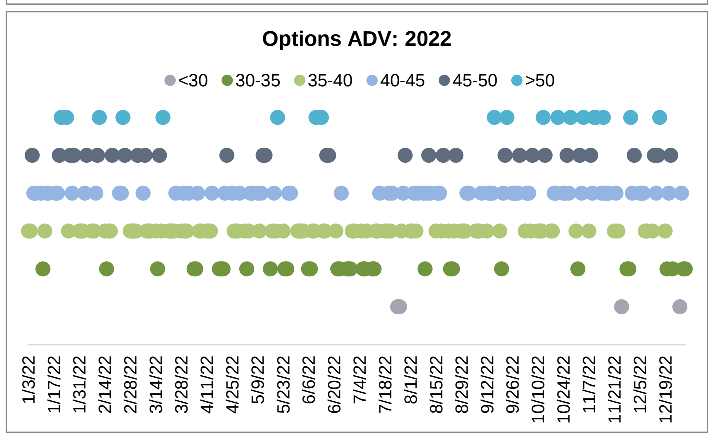
Next, we assess the higher volume days – and there were a lot of them. In 2024, volumes surpassed the 40 million contracts level 216 days, or 86% of the time. This compares to an average of 146 days the prior two years and under 100 days in 2021.

Increasing the threshold level to 50 million contracts, and the disparity grows even further. In 2024, volumes surpassed the 50 million contracts level 87 days, or 35% of the time. This compares to an average of 29 days the prior two years and only 10 days in 2021.

Additionally, we had to add a new threshold in 2024, the 60 million contracts level. 2024 volumes breached this level on 12 days, including one day above the 70 million contracts level. This day was a good example of investors and traders using options as risk management tools. This volume level was after the unwind of the carry trade, which sent volatility higher across markets globally.







Source: Cboe Global Markets, SIFMA estimates

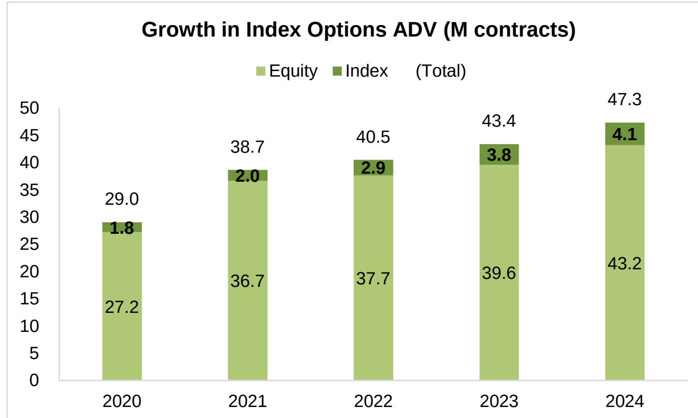
Growth in Index Options

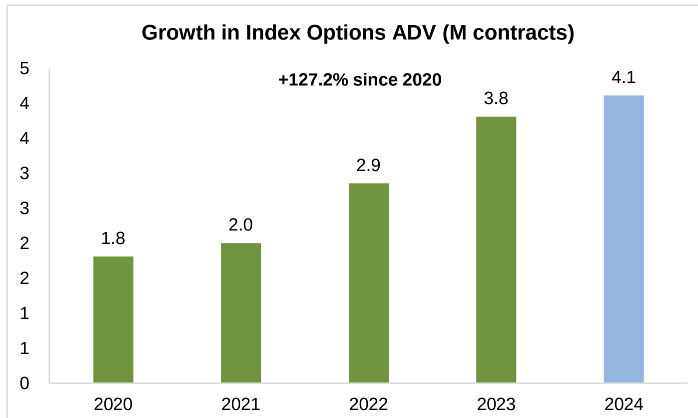
The growth in index options continued in 2024. Index options ADV averaged 4.1 million contracts in 2024, +7.9% Y/Y. Index options represented 8.7% of total options volumes in 2024.

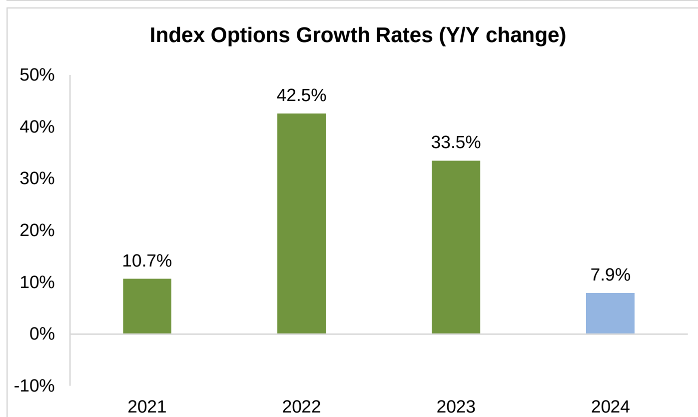
Index options ADV have grown 127.2% since 2020. This compares to a 58.7% growth rate for equity (single stock, ETF) options volumes, albeit the index options growth rate is calculated off a smaller base. Index options as a percentage of total options volumes rose 2.5 pps over this same time period.

The inflection point for the growth in index options was in 2022, when this segment of the options market grew 42.5% Y/Y. This was followed by another strong year of growth in 2023, +33.5%. While the growth rate in 2024 was more muted comparably, index options volumes crossed the 4 million contract level, a significant milestone.

Index options volumes spent 100 days last year in the 4-5 million contracts range. Index options ADV was between the 5-6 million contracts range 27 days and the 6-7 million contracts range 5 days. Index options volumes even spent one day at 8 million contracts. This day was the unwind of the carry trade.







Source: Cboe Global Markets, SIFMA estimates

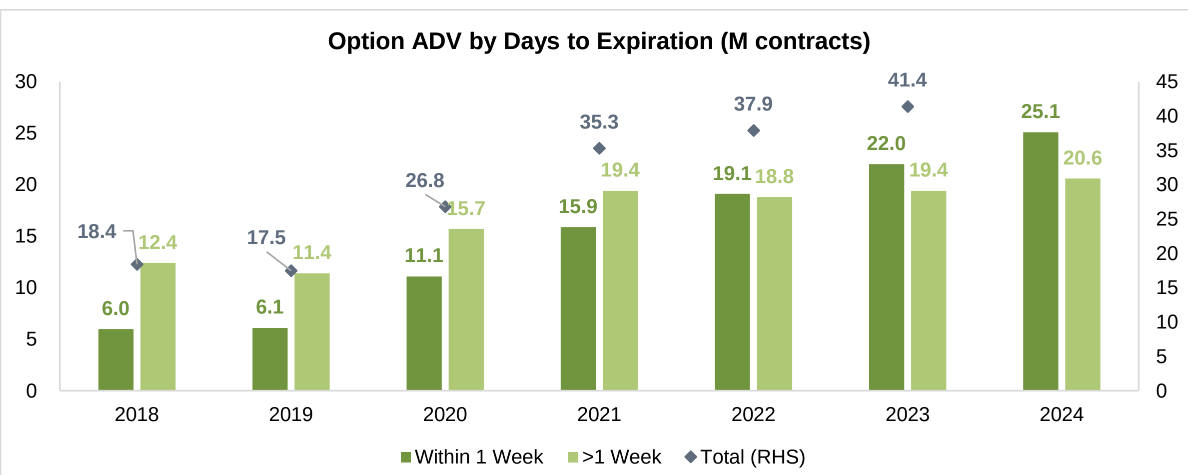
Growth in Short-Dated Options

What are short-dated options? Short-dated options contracts expire at the end of the current trading day but are generally listed one week prior to expiration.

Why have volumes grown? A main driver of total options volumes growth since 2018 has been attributed to the growing use of short-dated options (classified as options contracts expiring within one week in the analysis in this section). From 2018 to 2024, short-dated options grew 318.3% over this same time period, from 6.0 million contracts to 25.1 million contracts. From 2018 to 2024, short-dated options grew to 54.9% of total options volumes from 32.6%. In comparison, contracts expiring in greater than one week grew 66.1% from 2018 to 2024. Short-dated options have continued to grow as a risk management tool, particularly hedging against upcoming events. Traders and investors use index or ETF products to focus on single-day or event specific risks, such as a Federal Open Market Committee (FOMC) meetings or a corporate earnings release date.

Additionally, the increase in product offerings contributed to the growth, for example, the expansion of expiration dates for S&P 500 options contracts, now every day of the week versus only Fridays historically. (We note that while single name equity options only expire on Friday, Cboe indices and a few larger ETFs have midweek expirations.)

What do the numbers say? To analyze the growth in short-dated options, we looked to a presentation from Henry Schwartz, Vice President, Market Intelligence at Cboe Global Markets. Total options volumes grew 148.4% since 2018, with this growth driven by short-dated options. Over the same time period, short-dated options – options contracts expiring within one week – grew 318.3%, from 6.0 million contracts to 25.1 million contracts, while contracts expiring in greater than one week grew 66.1%. Looking at the chart below, you see the inflection point in 2022, when short-dated options volumes (dark green columns) overtook longer dated options (light green columns). Short-dated options volumes represented 54.9% of total volumes in 2024, up from 32.6% in 2018 (+22.3 pps).



Source: Taken from a presentation by Henry Schwartz, Vice President, Market Intelligence at Cboe Global Markets

In 2024, total single stock options volumes represented 52.3% of total options volumes – regardless of days to expiration (DTX) – while ETF options were 38.9% and index options were 8.8% of total options volumes.

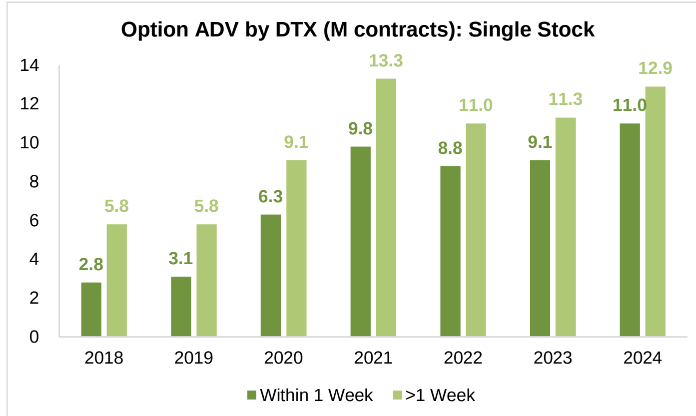
Given the strong growth in short-dated options, single stock options contracts are now the only category where short-dated options volumes are less than volumes for longer dated expiration contracts. This most likely can be attributed to a lack of mid-week expirations for these products.

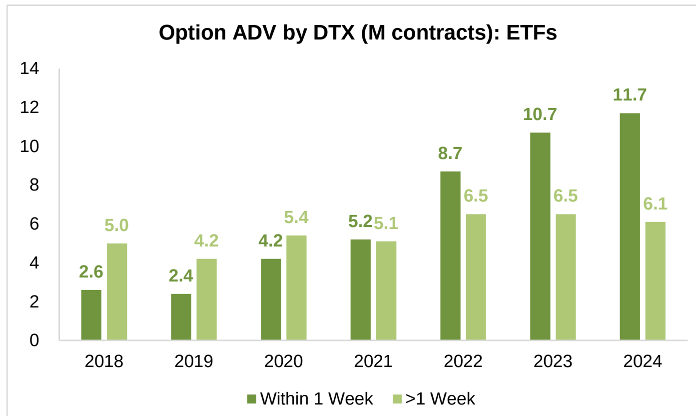
In 2024, within the volume totals for each option category, short-dated options represented:

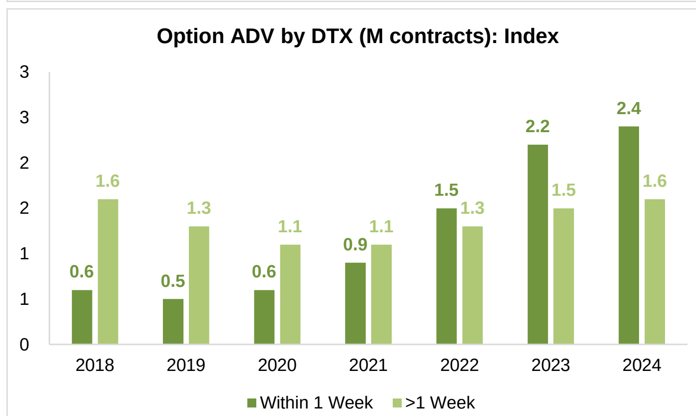
- Single stock 46.0%, +13.5 pps from 2018
- ETFs 65.5%, +31.5 pps from 2018
- Index 60.0%, +32.7 pps from 2018

The largest growth in short-dated options from 2018 to 2024 was in the ETF category, +350.0% (versus 22.0% growth for greater than one week DTX). This outpaced the growth rate for total options volumes, at +318.3%. The inflection point for ETF options was in 2021, when short-dated options as a percentage of total options ticked higher than greater than one week DTX options contracts.

Short-dated index options grew in line with aggregate short-dated options volumes growth, at +300.0%, with the inflection point occurring in 2022. Single stock options grew below the top line level, at 292.9%. While short-dated options remain less than half of total volumes, the within one week DTX segment has still grown significantly since the one-third level in 2018.





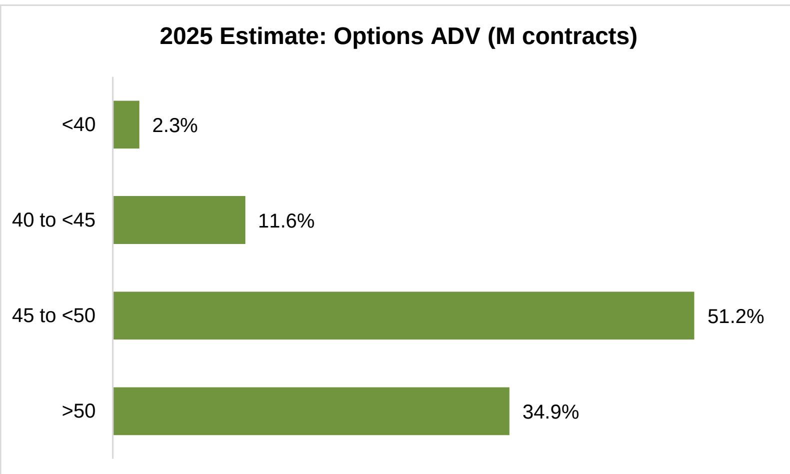


Source: Taken from a presentation by Henry Schwartz, Vice President, Market Intelligence at Cboe Global Markets
Note: DTX = days to expiration.

Options: Survey Says

Survey Question: Over the next 12 months, what level do you expect to see for options ADV (million contracts)? (averages: FY24 47.3, 4Q24 50.2)

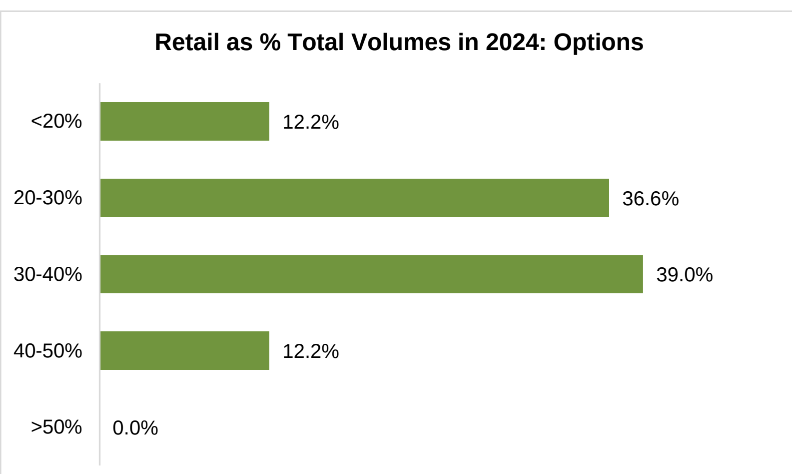
Majority Says? Just squeaking out a majority, 51.2% of respondents expect to see options ADV in the 45-50 million contracts range in 2025. Another 34.9% of respondents expect options volumes to surpass the 50 million contracts level.



Source: SIFMA Insights market structure survey

Survey Question: In our survey last year, respondents estimated retail investor participation at 20%-30% for both equities and listed options. What was your estimate for retail as a percentage of total volumes last year?

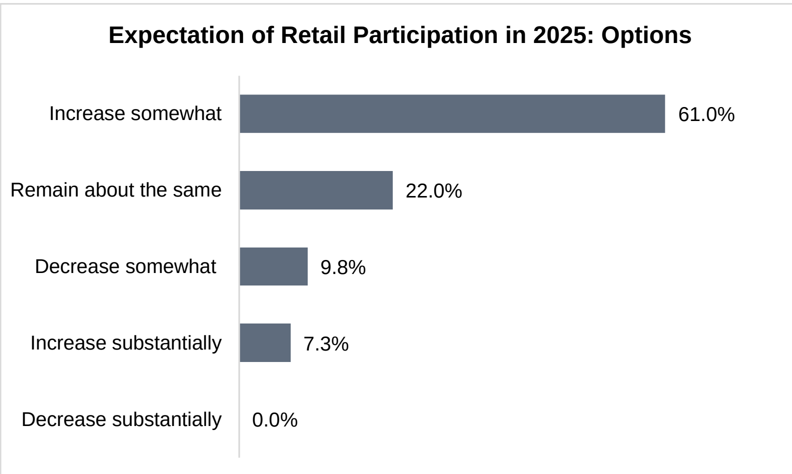
Majority Says? There is not consensus for retail participation in the options market. While 39.0% of respondents estimated retail participation for options to be 30-40% of total volumes in 2024, the second ranked response was just 2.4 pps behind. 36.6% of respondents estimated retail represented 20-30% of total volumes last year.



Source: SIFMA Insights market structure survey

Survey Question: What is your estimate for retail as a percentage of total volumes for next year?

Majority Says? 61.0% of respondents expected retail participation as percent of total options trading volume to increase somewhat in 2025. The next closest response was for retail participation to remain about the same in the year ahead (22.0% of responses).



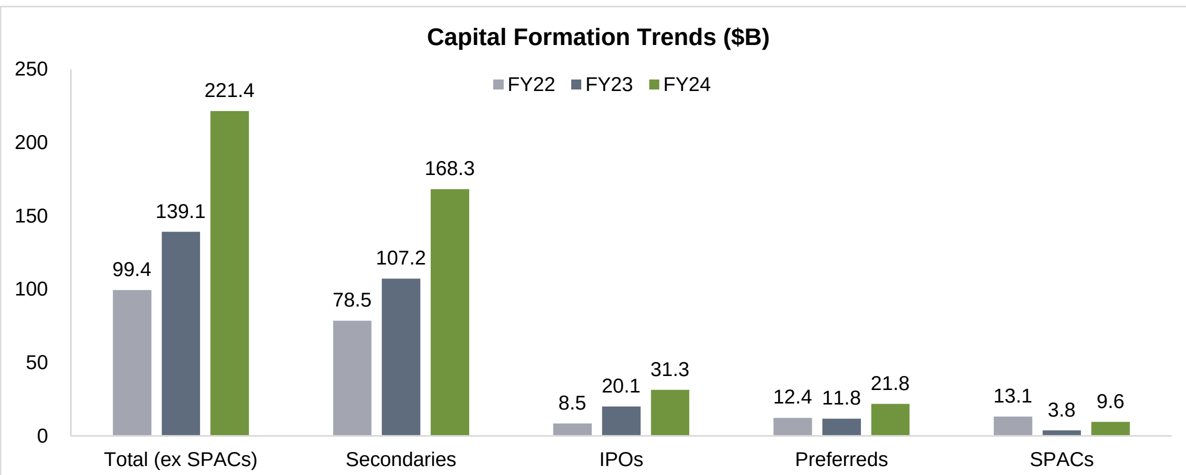
Source: SIFMA Insights market structure survey

Capital Formation

Capital Formation: Metrics

Capital markets performed well in 2024, posting solid increases versus the prior year and moving more in line with historical averages. Total equity issuance (excluding SPACs) finished last year at $221.4 billion, +59.3% Y/Y. IPO deal value was $31.3 billion last year, +55.8%.

The following pages highlight equity issuance trends seen across the year.

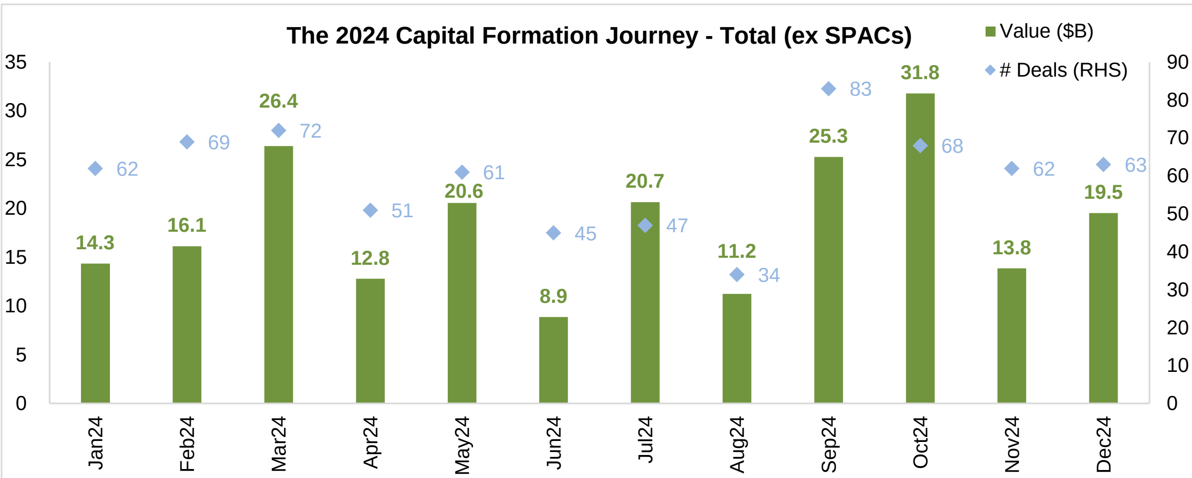


Source: Dealogic

Note: Total, secondaries, IPOs, and preferreds include rank eligible deals and exclude BDCs, SPACs, ETFs, CLEFs and rights offers. SPAC value not included in the total value

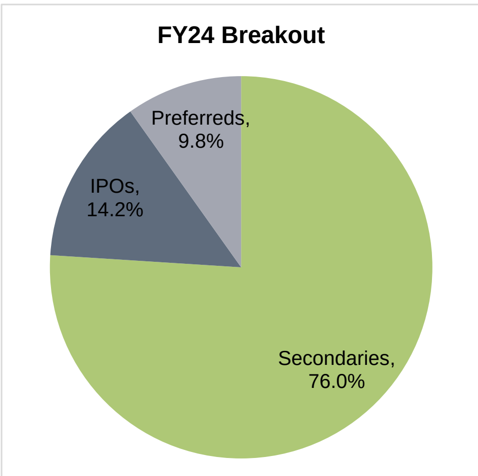
Total Issuance

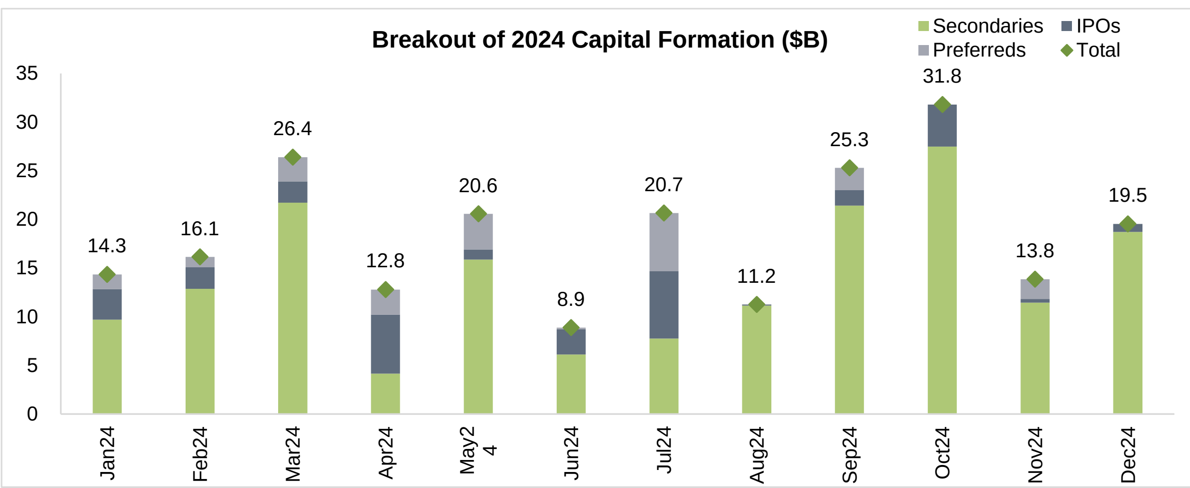
- Total annual deal value $221.4 billion, +59.3% Y/Y
  - Peak monthly level $31.8 billion
  - Lowest monthly level $8.9 billion
- Total annual number of deals 717, +6.2% Y/Y



Source: Dealogic
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers

- Breakout of total capital formation (% of total issuance)
  - Secondaries 76.0%, -1.1 pps Y/Y
  - IPOs 14.2%, -0.3 pps Y/Y
  - Preferreds 9.8%, -1.4 pps Y/Y

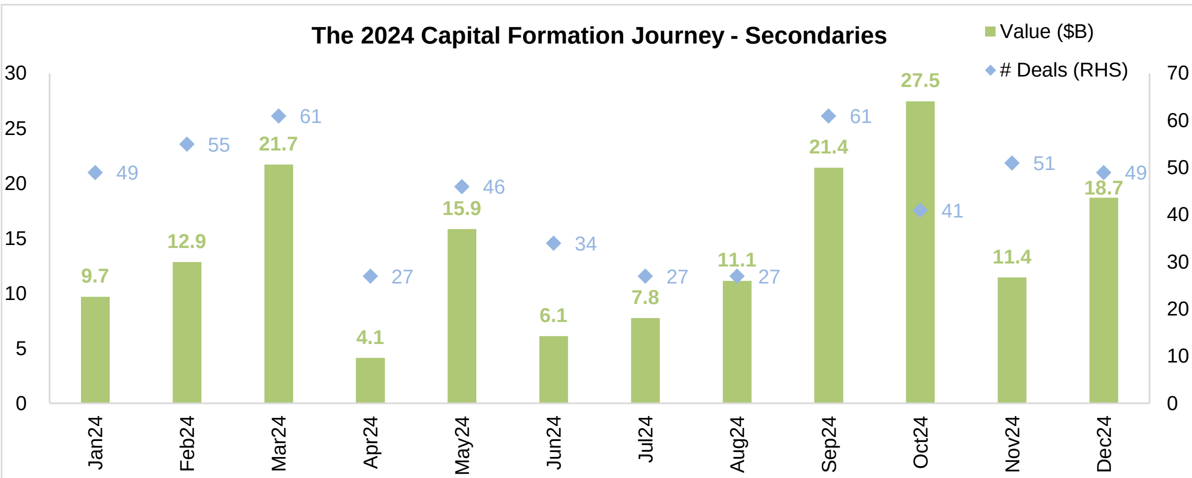




Source: Dealogic
Note: Total, secondaries, IPOs, and preferreds include rank eligible deals and exclude BDCs, SPACs, ETFs, CLEFs and rights offers

Secondary Issuance (Secondaries)

- Total annual deal value $168.3 billion, +57.1% Y/Y
  - Peak monthly level $27.5 billion
  - Lowest monthly level $4.1 billion
- Total annual number of deals 528, -2.8% Y/Y

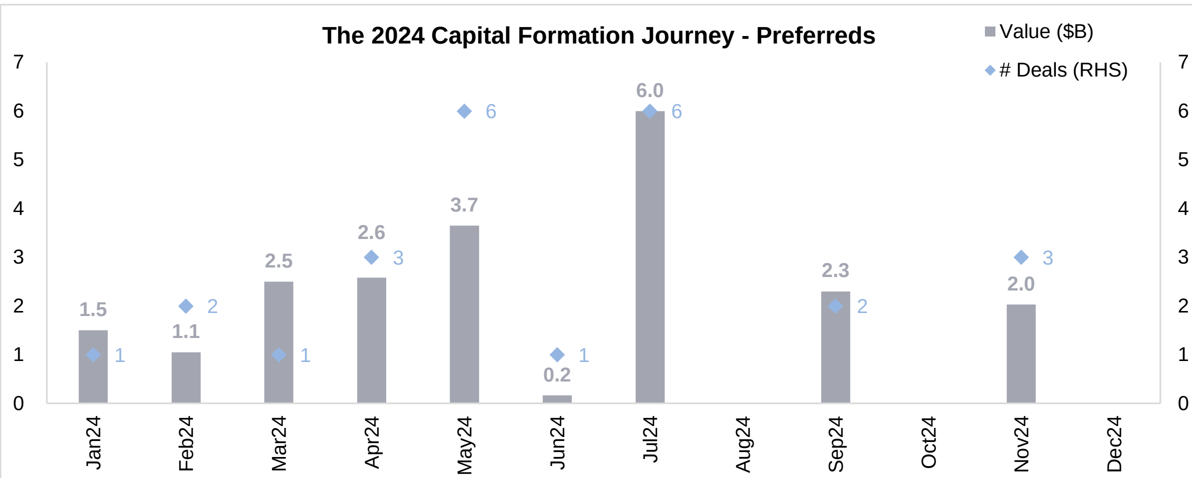


Source: Dealogic

Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers

Preferreds Issuance

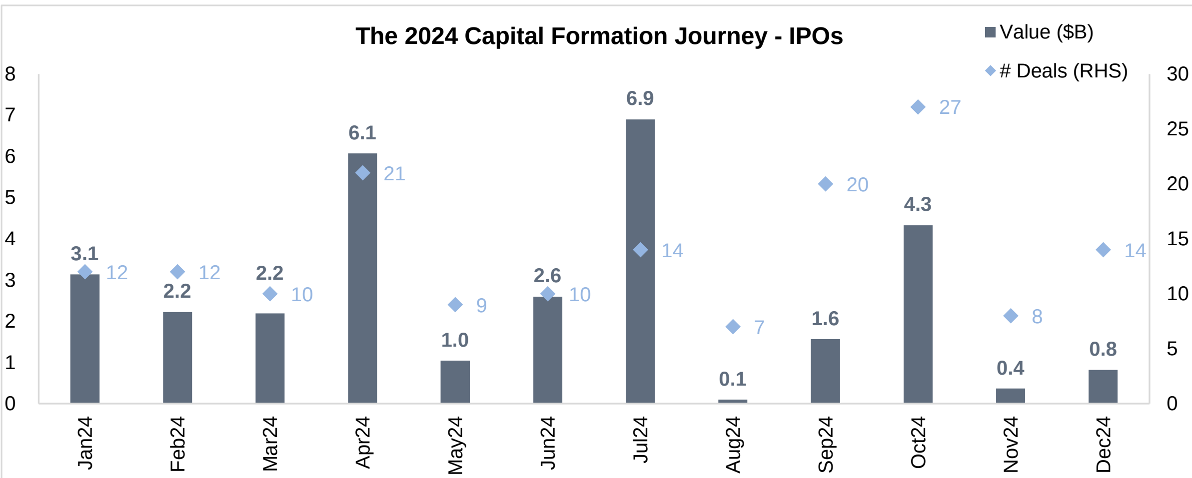
- Total annual deal value $21.8 billion, +85.1% Y/Y
  - Peak monthly level $6.0 billion
  - Lowest monthly level $0.0 billion
- Total annual number of deals 25, +66.7% Y/Y



Source: Dealogic
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers

IPO Issuance

- Total annual deal value $31.3 billion, +55.8% Y/Y
  - Peak monthly level $6.9 billion
  - Lowest monthly level $0.1 billion
- Total annual number of deals 164, +40.2% Y/Y



Source: Dealogic, SIFMA estimates
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers

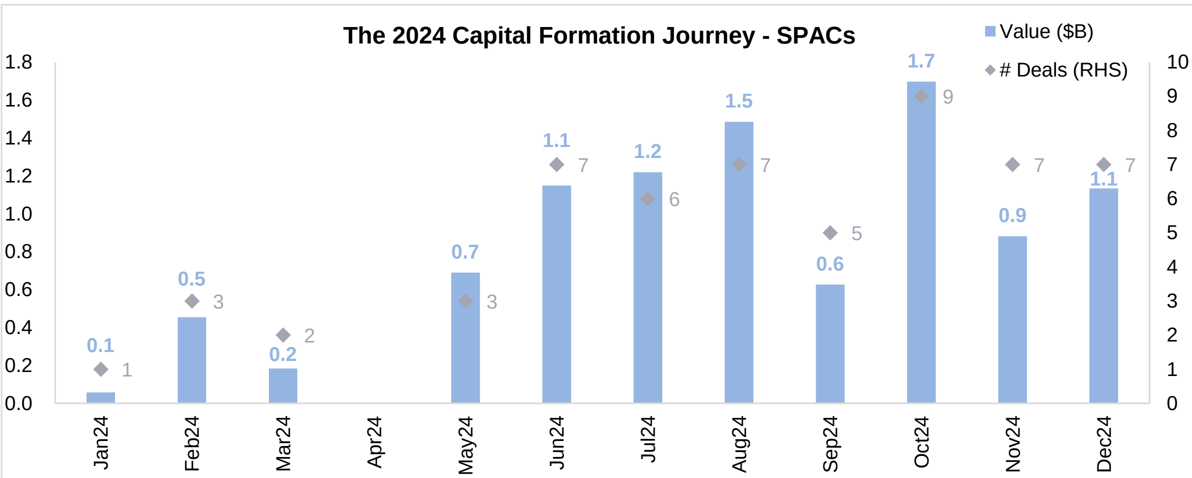
Looking at the breakout of IPO issuance by sector, we highlight:

- Computers & electronics ranked first at 22.5%
- Followed by consumer products at 20.6%
- Then came real estate/property at 19.6%

Source: Dealogic, SIFMA estimates
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers. Comp/Elec = computers & electronics; cons prod = consumer products; prof serv = professional services; din/lodg = dining & lodging; food/bev = food & beverage

SPAC Issuance

- Total annual deal value $9.6 billion, +148.9% Y/Y
  - Peak monthly level $1.7 billion
  - Lowest monthly level $0.0 billion
- Total annual number of deals 57, +83.9% Y/Y



Source: Dealogic

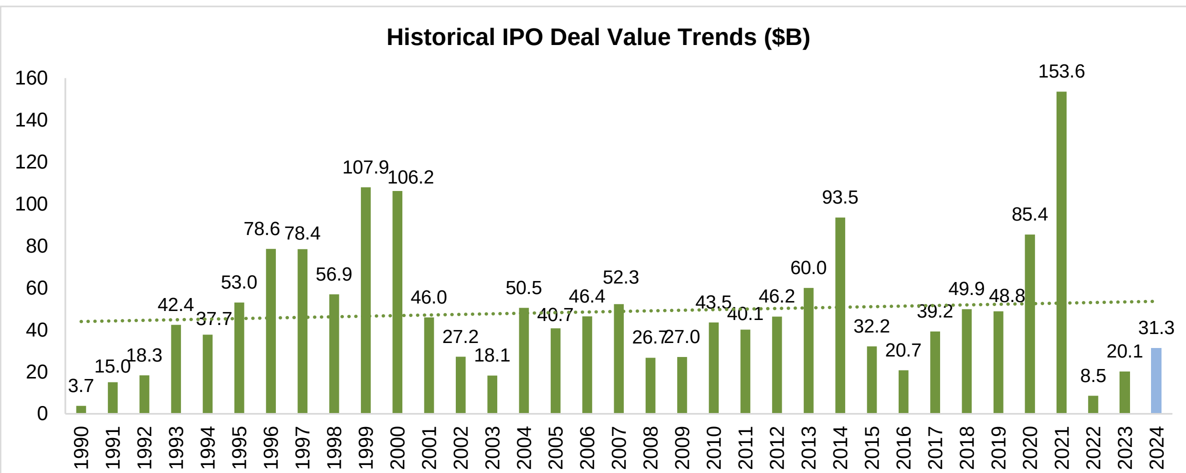
Note: Includes rank eligible BCC/SPAC deals; SPAC totals are separate from the IPO/secondaries/total capital formation figures discussed above

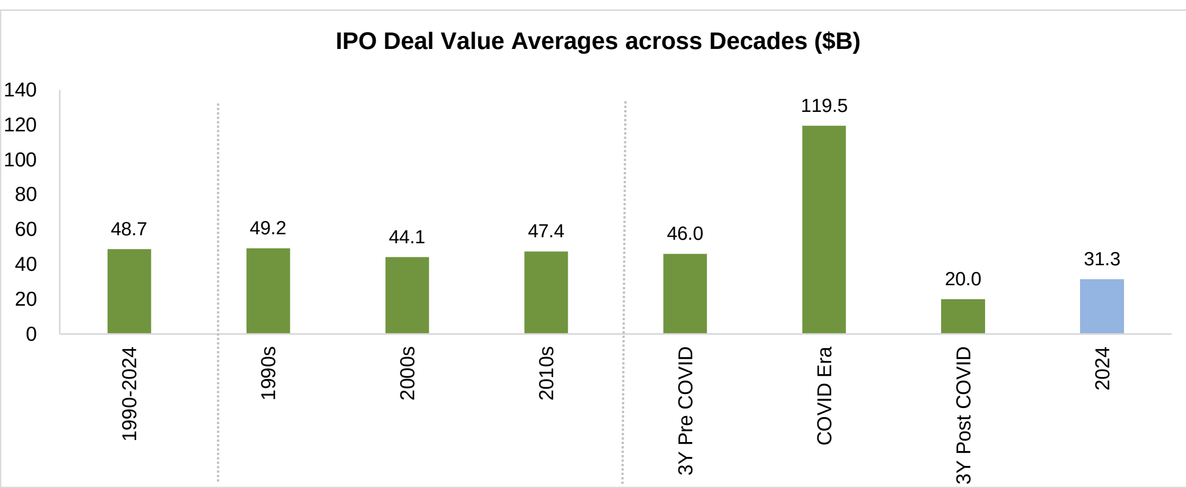
Capital Formation: Themes

Historical IPO Trends

As we said earlier, the $31.3 billion IPO deal value grew significantly in 2024, +55.8% Y/Y, and moved closer in line with the historical average of $48.7 billion (going back to 1990), -35.7%. The overall trend line remains slightly upward sloping as we climb back to the full time series historical level.

Looking at average IPO deal value across decades, excluding the COVID era – defined as years 2020 and 2021 – the 2024 level ranged from -29.0% to -36.3% versus the decade averages for the 2000s and the 1990s respectively. Now that we have three years of data in the post-COVID era, we analyzed this trend as well. 2024 deal value was +56.7% to this $20.0 billion average.





Source: Dealogic, SIFMA estimates

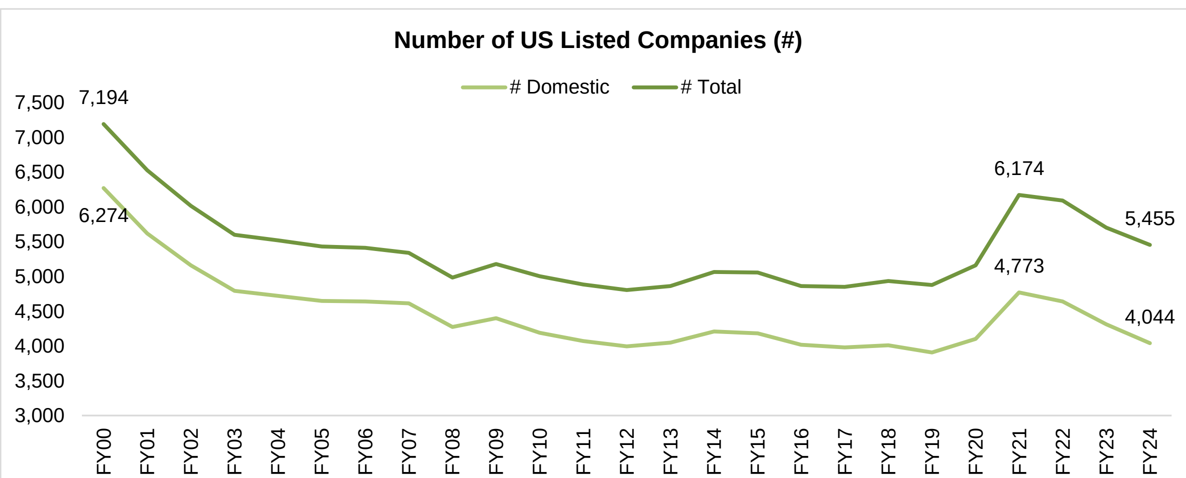
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers. COVID era defined as 2020 and 2021.

A Look at the Number of Listed Companies

After returning to the 6,000 level in 2021 with 6,174 listed operating companies, the number declined last year to 5,455, -4.4% Y/Y. This marked the third year of Y/Y declines in a row, albeit last year's decline was less than that of the prior year. We ended the year 9.1% below 6,000, the threshold we were so happy to return to just a few years ago.

We highlight the following trends:

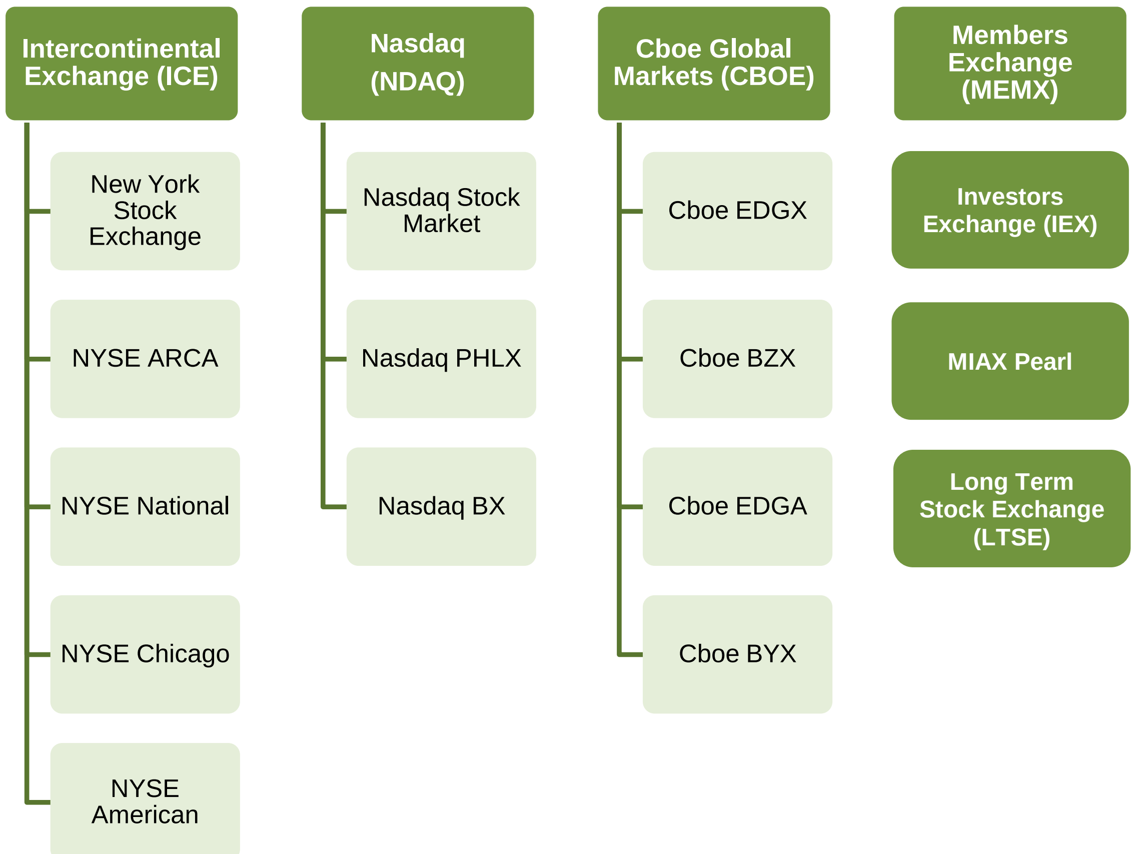
- Total listed operating companies 5,455
    - Y/Y -4.4%
    - Down 24.2% from the 2000 peak
    - Up 11.9% from the 2019 trough
- Total domestic listed operating companies 4,044
    - Y/Y -6.3%
    - Down 35.5% from the 2000 peak
    - Up 3.5% from the 2019 trough



Source: World Federation of Exchanges
Note: FY24 is preliminary

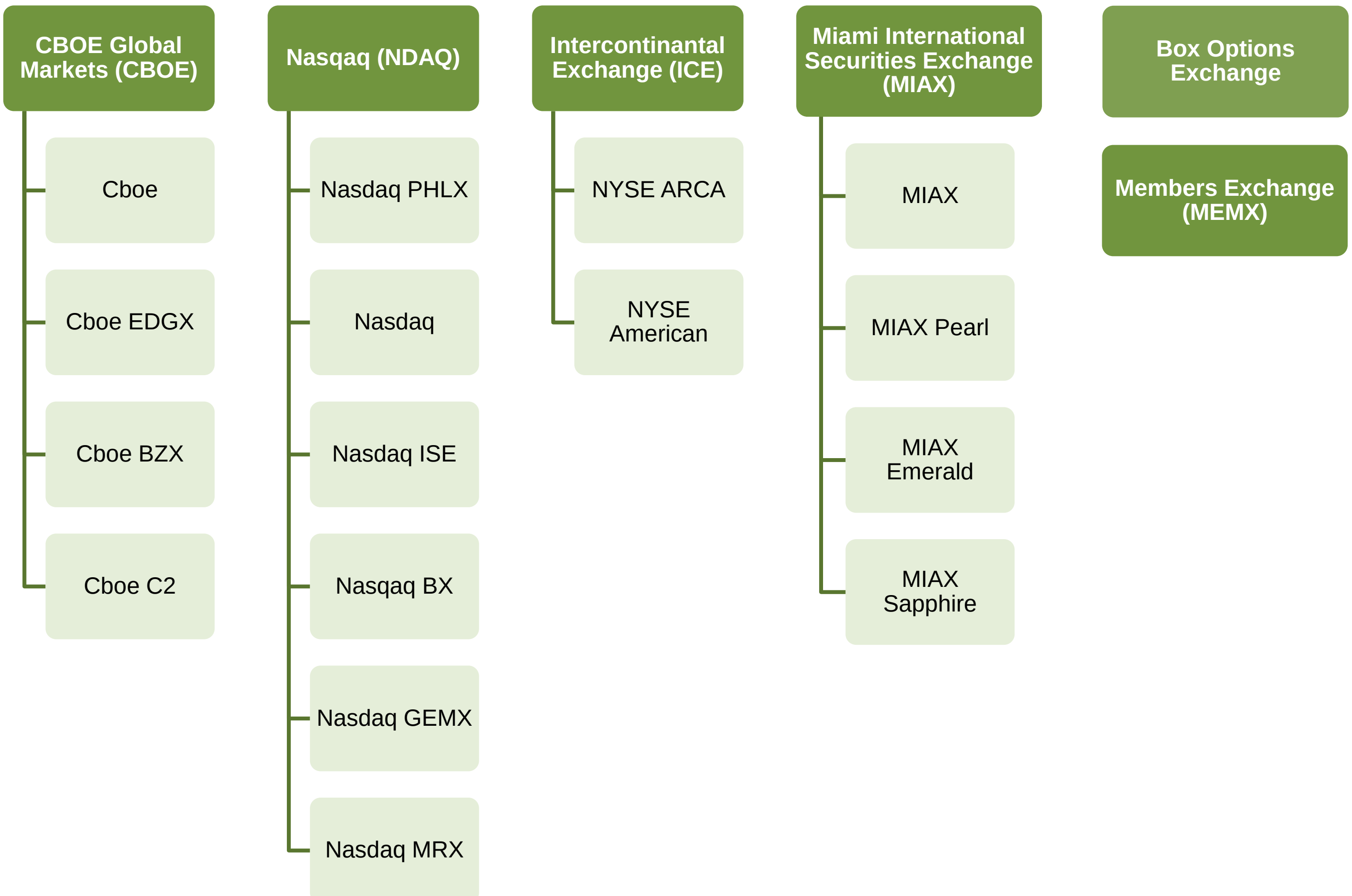
Appendix: US Exchange Landscape

Equities



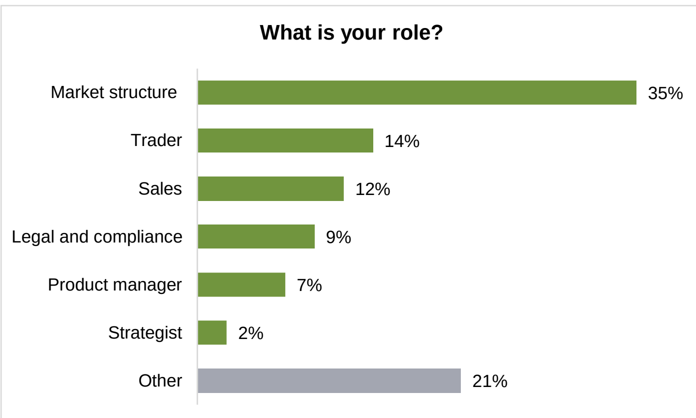
Note: NYSE announced in 2025 that NYSE Chicago will reincorporate in Texas and be renamed NYSE Texas.

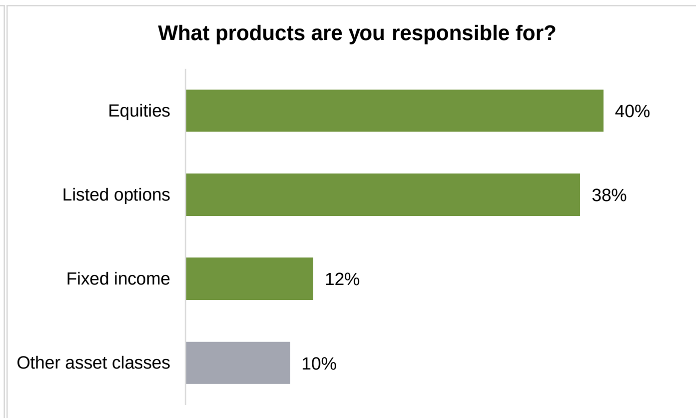
Options

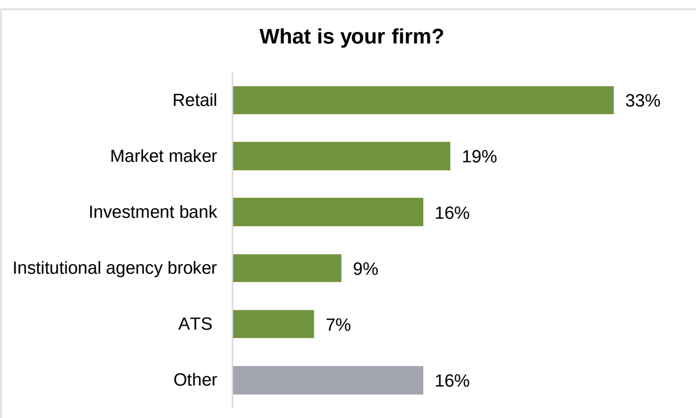

CBOE Global Markets (CBOE)
Cboe
Cboe EDGX
Cboe BZX
Cboe C2
Nasqaq (NDAQ)
Nasdaq PHLX
Nasdaq
Nasdaq ISE
Nasqaq BX
Nasdaq GEMX
Nasdaq MRX
Intercontinantal Exchange (ICE)
NYSE ARCA
NYSE American
Miami International Securities Exchange (MIAX)
MIAX
MIAX Pearl
MIAX Emerald
MIAX Sapphire
Box Options Exchange
Members Exchange (MEMX)

Appendix: Market Structure Survey Structure

This survey was populated between January 2 to January 17. Respondents depict key market participants in equities and options: investment banks, market makers, retail trading firms, exchanges, etc.







Source: SIFMA market structure survey

Appendix: Definitions & Purpose

- **Markets**
  - Dow Jones Industrial Average (DJIA): A price weighted index that tracks 30 large, publicly owned companies trading on U.S. exchanges. It had historically been a widely watched benchmark index for U.S. blue-chip stocks.
  - S&P 500: A market capitalization weighted index of the 500+ largest U.S. publicly traded companies. The index is regarded as the best gauge of large-cap U.S. equities.
  - Nasdaq Composite (Nasdaq): A market capitalization weighted index made up of over 3,000 equities listed on the Nasdaq stock exchange. Its composition remains over 50% technology stocks (this percentage has come down over the years).
  - Russell 2000: A market capitalization weighted index representing 10% (the bottom two-thirds aggregate market cap) of the Russell 3000 index, a larger index of 3,000 publicly traded companies that represents 97% of the investable U.S. stock market. The index is regarded as a gauge of small cap, U.S. centric companies.

- **Volatility**
  - CBOE Volatility Index (VIX): A real-time market index that represents the market's expectation of 30-day forward looking volatility, as derived from the price inputs of S&P 500 index options. It measures market risk and investor sentiment (fear, stress) and is often called the fear index.

- **Volumes**
  - ADV = average daily volume = sum of volumes over the time period divided by the number of days in the time period.
  - The U.S. equity markets are the largest and among the deepest, most liquid, and most efficient in the world. Investors enjoy narrow spreads, low transaction costs and fast execution speeds, with plenty of opportunity for price improvement, especially for retail investors.
  - Exchange-traded funds (ETFs), or pooled investment vehicles holding an underlying basket of securities (equities, bonds, commodities, currencies), provide investors a multitude of choices to meet different investment objectives.
  - Options, or a contract granting the right to buy or sell an underlying security (stocks, ETFs) at a specified price on or before a given date, are frequently used as risk management tools by investors to hedge positions and limit portfolio losses. They also provide flexibility, enabling an investor to tailor their portfolio to investment objectives and market environment.

- **Capital Formation**: Companies may need capital for various business purposes. Earlier stage companies may need additional capital to grow to the next stage in the business life cycle. Companies also may need capital to expand organically or via acquisition, for example product or regional diversification. Companies utilize capital markets to acquire capital in many ways. Some of the equity issuance vehicles include:
  - Initial public offering (IPO): A private company raises capital by offering its common stock (equity) to the public in the primary markets for the first time. Securities are issued at an established price, and the process is facilitated by investment banks acting as financial intermediaries. Shares then continue to trade in the secondary market on exchanges or other trading venues.
  - Secondary offering (secondaries, or follow-ons): Sale of shares by a company that has already IPOd. A non-dilutive offering is when one or more major shareholders sell all or a large portion of their holdings; proceeds from this sale are paid to the selling shareholders. A dilutive offering involves creating new shares and offering them for sale to the public; proceeds go to the company.
  - Preferred stock (preferreds): Give owners a priority claim to dividends, providing investors a more stable cash flow relative to common stock. While cash flows present more bond-like traits – without the commitment to repay principal – shares behave more like common stock.
  - Special purpose acquisition companies (SPAC): Have no commercial operations – often called blank check companies – and are established solely to raise capital through an IPO for the purpose of acquiring unspecified existing companies.

Appendix: Capital Markets Terms to Know

Statistics	
Y/Y	Year over Year
Q/Q	Quarter over Quarter
M/M	Month over Month
W/W	Week over Week
D/D	Day over day
YTD	Year to Date
QTD	Quarter to Date
MTD	Month to Date
WTD	Week to Date
BPS	Basis Points
PPS	Percentage Points
CAGR	Compound Annual Growth Rate
RHS	Right hand side (for charts)

Other	
AUM	Assets Under Management
DCM	Debt Capital Markets
ECM	Equity Capital Markets

Regulators	
North America	
FINRA	Financial Industry Regulatory Authority (United States)
SEC	Securities and Exchange Commission (United States)
OCC	Options Clearing Corporation
CSC	Canadian Securities Administrators
European Union	
ESMA	European Securities and Markets Authority
AMF	Autorité des marchés financiers (France)
BaFin	Federal Financial Supervisory Authority (Germany)
FINMA	Swiss Financial Market Supervisory Authority (Switzerland)
United Kingdom	
FCA	Financial Conduct Authority
AsiaPac	
ASIC	Australian Securities and Investments Commission
CSRC	China Securities Regulatory Commission
SFC	Securities and Futures Commission (Hong Kong)
SEBI	Securities and Exchange Board of India
FSA	Financial Services Agency (Japan)
MAS	Monetary Authority of Singapore

Trading	
ADV	Average Daily Trading Volume
Algo	Algorithm (algorithmic trading)
ATS	Alternative Trading System
Best Ex	Best Execution
BPS	Basis Points
CLOB	Central Limit Order Book
D2C	Dealer-to-Client
D2D	Dealer-to-Dealer
ECN	Electronic Communication Network
ETP	Electronic Trading Platforms
HFT	High-Frequency Trading
IDB	Inter-Dealer Broker
IOI	Indication of Interest
MM	Market Maker
OTC	Over-the-Counter
SDP	Single-dealer platform
Bid	An offer made to buy a security
Ask, Offer	The price a seller is willing to accept for a security
Spread	The difference between the bid and ask price prices for a security, an indicator of supply (ask) and demand (bid)
NBBO	National Best Bid and Offer
Locked Market	A market is locked if the bid price equals the ask price
Crossed Market	A bid is entered higher than the offer or an offer is entered lower than the bid
Opening Cross	To determine the opening price of a stock, accumulating all buy and sell interest prior to the market open
Closing Cross	To determine the closing price of a stock, accumulating all buy and sell interest prior the market close

Order Types	
AON	All or none; an order to buy or sell a stock that must be executed in its entirety, or not executed at all
Block	Trades with at least 10,000 shares in the order
Day	Order is good only for that trading day, else cancelled
FOK	Fill or kill; must be filled immediately and in its entirety or not at all
Limit	An order to buy or sell a security at a specific price or better
Market	An order to buy or sell a security immediately; guarantees execution but not the execution price
Stop	(or stop-loss) An order to buy or sell a stock once the price of the stock reaches the specified price, known as the stop price

Post Trade	
DTCC	The Depository Trust and Clearing Corporation
CSD	Central Securities Depository
CCP	Central Counterparty Clearing House
CP	Counterparty
IM	Initial Margin
VM	Variation Margin
MPR	Margin Period at Risk
T	Trade Date
T+1	Settlement Date

Investors	
Institutional	Asset managers, endowments, pension plans, foundations, mutual funds, hedge funds, family offices, insurance companies, banks, etc.; fewer protective regulations as assumed to be more knowledgeable and better able to protect themselves
Individual	Self-directed or advised investing

Equities	
EMS	Equity Market Structure
NMS	National Market System
Reg NMS	Regulation National Market System
SIP	Security Information Processor; aggregates all exchange's best quotes, sent back out to the market in one data stream
PFOF	Payment For Order Flow
Tick Size	Minimum quote increment of a trading instrument
CAT	Consolidated Audit Trail
SRO	Self Regulatory Organization

ETFs/Funds	
AP	Authorized Participant
PCF	Portfolio Composition File
NAV	Net Asset Value
IIV	Intraday Indicative Value
ETF	Exchange-Traded Fund
ETP	Exchange-Traded Product
MF	Mutual Fund
OEF	Open-End Fund
CEF	Closed-End Fund
UIT	Unit Investment Trust

Options	
Call	The right to buy the underlying security, on or before expiration
Put	The right to sell the underlying security, on or before expiration
Holder	The buyer of the contract
Writer	The seller of the contract
American	Option may be exercised on any trading day on or before expiration
European	Option may only be exercised on expiration
Exercise	To put into effect the right specified in a contract
Underlying	The instrument on which the options contract is based; the asset/security being bought or sold upon exercise notification
Expiration	The set date at which the options contract ends, or ceases to exist, or the last day it can be traded
Stock Price	The price at which the underlying stock is trading, fluctuates continuously
Strike Price	The set price at which the options contract is exercised, or acted upon
Premium	The price the option contract trades at, or the purchase price, which fluctuates constantly
Time Decay	The time value portion of an option's premium decreases as time passes; the longer the option's life, the greater the probability the option will move in the money
Intrinsic Value	The in-the-money portion of an option's premium
Time Value	(Extrinsic value) The option premium (price) of the option minus intrinsic value; assigned by external factors (passage of time, volatility, interest rates, dividends, etc.)
In-the-Money	For a call option, when the stock price is greater than the strike price; reversed for put options
At-the Money	Stock price is identical to the strike price; the option has no intrinsic value
Out-of-the-Money	For a call option, when the stock price is less than the strike price; reversed for put options
Settlement	Index options settle in dollars versus shares for single stock and ETF options

Equity Capital Formation	
IPO	Initial Public Offering; private company raises capital buy offering its common stock to the public for the first time in the primary markets
SPAC	Special Purpose Acquisition Company; blank check shell corporation designed to take companies public without going through the traditional IPO process
Bought Deal	Underwriter purchases a company's entire IPO issue and resells it to the investing public; underwriter bears the entire risk of selling the stock issue
Best Effort Deal	Underwriter only guarantees the issuer it will make a best effort attempt to sell the shares to investors at the best price possible; issuer can be stuck with unsold shares
Secondary	(Follow-on) Issuance of shares to investors by a public company already listed on an exchange
Direct Listing	(Direct placement, direct public offering) Existing private company shareholders sell their shares directly to the public without underwriters. Often used by startups or smaller companies as a lower cost alternative to a traditional IPO. Risks include, among others, no support for the share sale and no stock price stabilization from the underwriter after the share listing.

Underwriting	
Underwriting	Guarantee payment in case of damage or financial loss and accept the financial risk for liability arising from such guarantee in a financial transaction or deal
Underwriter	Investment bank administering the public issuance of securities; determines the initial offering price of the security, buys them from the issuer and sells them to investors.
Bookrunner	The main underwriter or lead manager in the deal, responsible for tracking interest in purchasing the IPO in order to help determine demand and price (can have a joint bookrunner)
Lead Left Bookrunner	Investment bank chosen by the issuer to lead the deal (identified on the offering document cover as the upper left hand bank listed)
Syndicate	Investment banks underwriting and selling all or part of an IPO
Arranger	The lead bank in the syndicate for a debt issuance deal
Greenshoe	Allows underwriters to sell more shares than originally planned by the company and then buy them back at the original IPO price if the demand for the deal is higher than expected, i.e. an over-allotment option

Documentation	
Pitch	Sales presentation by an investment bank to the issuer, marketing the firm's services and products to win the mandate
Mandate	The issuing company selects the investment banks to underwrite its offering
Engagement Letter	Agreement between issuer & underwriters clarifying: terms, fees, responsibilities, expense reimbursement, confidentiality, indemnity, etc.
Letter of Intent	Investment banks' commitment to the issuer to underwrite the IPO
Underwriting Agreement	Issued after the securities are priced, underwriters become contractually bound to purchase the issue from the issuer at a specific price
Registration Statement	Split into the prospectus and private filings, or information for the SEC to review but not distributed to the public, it provides investors adequate information to perform their own due diligence prior to investing
The Prospectus	Public document issued to all investors listing: financial statements, management backgrounds, insider holdings, ongoing legal issues, IPO information and the ticker to be used once listed
Red Herring Document	An initial prospectus with company details, but not inclusive of the effective date of offering price, filed with the SEC
Tombstone	An announcement that securities are available for sale. (Also a plaque awarded to celebrate the completion of a transaction or deal)

Process	
Roadshow	Investment bankers take issuing companies to meet institutional investors to interest them in buying the security they are bringing to market
Non-Deal Roadshow	Research analysts and sales personnel take public companies to meet institutional investors to interest them in buying a stock or update existing investors on the status of the business and current trends
Pricing	Underwriters and the issuer will determine the offer price, the price the shares will be sold to the public and the number of shares to be sold, based on demand gauged during the road show and market factors
Stabilization	Occurs for a short period of time after the IPO if order imbalances exist, i.e. the buy and sell orders do not match; underwriters will purchase shares at the offering price or below to move the stock price and rectify the imbalance
Quiet Period	(Cooling off period) The SEC mandates a quiet period on research recommendations, lasting 10 days (formerly 25 days) after the IPO

SEC Filings	
Reg S-K	Regulation which prescribes reporting requirements for SEC filings for public companies
Reg S-X	Regulation which lays out the specific form and content of financial reports, specifically the financial statements of public companies
Form S-1	Registration statement for U.S. companies (described above)
Form F-1	Registration statement for foreign issuers of certain securities, for which no other specialized form exists or is authorized
Form 10-Q	Quarterly report on the financial condition and state of the business (discussion of risks, legal proceedings, etc.), mandated by the SEC
Form 10-K	More detailed annual version of the 10Q, mandated by the SEC
Form 8-K	Current report to announce major events shareholders should know about (changes to business & operations, financial statements, etc.), mandated by the SEC
EGC	Emerging Growth Company; qualified companies may choose to follow disclosure requirements that are scaled for newly public

Fixed Income	
CUSIP	Committee on Uniform Securities Identification Procedures; a nine character security identifier
FICC	Fixed Income, Currencies and Commodities
FI	Fixed Income
TRS	Total Return Swap

Rates Markets	
UST	U.S. Treasury Securities
FRN	Floating Rate Note
T-Bill	U.S. Treasury Bill
T-Note	U.S. Treasury Note
T-Bond	U.S. Treasury Bond
TIPS	Treasury Inflation Protected Securities
Repo	Repurchase Agreement; also have reverse repos
Agency	Federal Agency Securities
FAMC	Farmer Mac/Federal Agricultural Mortgage Corporation
FCS	Farm Credit System
FHLB	Federal Home Loan Banks
FHLMC	Freddie Mac/Federal Home Loan Mortgage Corporation
FNMA	Fannie Mae/Federal National Mortgage Association
GNMA	Ginnie Mae/Government National Mortgage Association
TVA	Tennessee Valley Authority

Credit Markets	
Corporates	Corporate Bonds
HY	High Yield Bond
IG	Investment Grade Bond
Munis	Municipal Securities
GO	General Obligation Bond
Revenue	Revenue Bond

Securitized Products	
MBS	Mortgage-Backed Security
CMO	Collateralized Mortgage Obligation
CMBS	Commercial MBS
RMBS	Residential MBS
ABS	Asset-Backed Securities (auto, credit card, home equity, student loans, etc.)
CDO	Collateralized Debt Obligation

Money Markets (MM)	
CP	Commercial Paper
ABCP	Asset-Backed Commercial Paper
MMF	Money Market Funds

SIFMA Insights Research Reports

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- Ad hoc reports on timely market themes
- Annual Market Structure Compendiums: Equity and Fixed Income
- COVID Related Market Turmoil Recaps: Equities; Fixed Income and Structured Products

Monthly Market Metrics and Trends: www.sifma.org/insights-market-metrics-and-trends

- Highlights an interesting market trend
- Statistics on volatility and equity and options volumes

Market Structure Primers: www.sifma.org/primers

- Capital Markets: An Overview of Capital Markets and the Role of Financial Institutions
- Global Equity Market Comparison
- Capital Formation & Listings Exchanges
- Equities
- Options
- ETFs
- Fixed Income & Electronic Trading

Conference Debriefs

- Insights from market participants into top-of-mind topics
- Conference Survey Comparison, compares survey results across various conferences

Equity Market Structure Analysis

- The ABCs of Equity Market Structure: How US Equity Markets Work and Why
- Analyzing the Meaning Behind the Level of Off-Exchange Trading, Part II
- Analyzing the Meaning Behind the Level of Off-Exchange Trading
- Why Market Structure and Liquidity Matter

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