
# Equity Market Structure Compendium

## 2023 Market Metrics & Looking to 2024 with Our Market Structure Survey

**March 2024**

### Market Metrics (2023 average, Y/Y change)

- Markets: S&P 500 4,283.73, +4.5%; DJIA 34,121.54, +3.7%; Nasdaq 12,970.28, +6.0%; Russell 2000 1,838.22, -2.5%
- Volatility: VIX 16.85, -34.3%
- Volumes: Equity ADV 11.0B shares, -7.1%; ETF ADV 2.3B shares, -13.8%; options ADV 43.4M contracts, +7.1%
- Capital Formation: total (ex-SPACs) $139.1B, +39.9%; secondaries $107.2B, +36.5%; preferreds $11.8B, -4.7%; IPOs $20.1B, +135.5%; SPACs $3.8B, -70.8%

### Market Structure Survey

- Volatility & Volumes estimates: VIX 15-20 (49.0% of responses); Equity ADV 10-15B shares (87.8% of responses); options ADV 40-50M contracts (61.7% of responses)
- Markets estimates: Grow at a moderate pace (51.1% of responses); upside risks = monetary policy, U.S. election, inflation; downside risks = geopolitical, U.S. election, monetary policy
- Retail Investor participation estimates: Equities 20-30% (75.0% of responses); options 20-30% (58.1% of responses)

# Contents

# Executive Summary

Equity markets in 2023 can be summed up by the Fed and then the 10-year Treasury rate. Inflation, rising rates, recession, regional bank turmoil, debt ceiling debate, and a U.S. sovereign debt downgrade by a ratings agency. Markets started the year wondering when the Fed would be finished raising rates, celebrating the first pause back at the June FOMC meeting. Then markets shifted to estimating the timing and number of rate cuts. After digesting all of these factors, markets finished the year up 24.7%, from the start of January to the end of December.

While that increase may sound impressive, seven stocks drove the performance of the S&P 500 in 2023. These stocks – Apple, Microsoft, Nvidia, Amazon, Tesla, Alphabet, and Meta – represented almost 30% of the index and have traded as technology plays, despite being classified differently. Technology stocks in general have benefitted from the artificial intelligence (AI) enthusiasm, and many technology companies have undergone cost cutting and other efforts to drive efficiencies. If you look at the equal-weighted version of the index, the SPW, markets were flat for most of the year, even turning negative with the peaking 10-year Treasury rate.

Later in the summer and fall is when the 10-year Treasury rate came into play. In early August, the 10-year moved above 4% and continued to climb. By October, the 10-year reached almost 5%. As the rate spiked, the S&P 500 troughed, dropping to 4,117.37 in October. Then the 10-year settled back down – ending the year at 3.866%, +22.5% from the trough (now around 4.153%). The S&P 500 turned around and climbed back up, ending the year up around 15.8% from the October trough.

On the issuance side, we continued to experience uncertainty – wars, the economy, etc. – and the environment kept changing. Capital markets weathered through, with ebbs and flows across asset classes – corporate debt may go down while equity capital markets go up, with trading activity occurring regardless of the environment. Markets remained active – deals and trading – even as some capital markets businesses remained off of the 2021 highs. Traditional security valuations remained high, based on future trends like artificial intelligence (AI). However, we passed the peak of unexplainable intrinsic valuations in areas like NFTs and crypto.

Like traders and investors, corporations continue to attempt to estimate the end state for rates, both terminal level and number and timing of rate cuts. And let us not forget that we are still trying to assess whether next year will bring a soft or no landing for the US economy. As such, in 2023, equity issuance rebounded from the prior year but remained subdued to historical levels: total equity issuance $139.1 billion (+39.9% Y/Y) and IPOs $20.1 billion (+135.5% Y/Y).

Markets continued to soldier through the Fed, the 10-year, and the other macroeconomic factors. As we move into 2024, we should get more clarity on the go forward state of the economy, the cost of credit, and the discount rate for stock valuations. This should give corporations and investors the data to push forward, with the S&P 500 already breaking 5,000.

## Recapping 2023: Market Metrics

Before we can look to the future, we must assess the past. Inside this note, we analyze 2023 trends for stock market performance, volatility, volumes (cash equities, ETFs, options), and capital formation.

We highlight the following metrics and themes for the year:
(Annual averages, Y/Y change is annual average/annual average)

- Market Performance (average index price, Y/Y change)
  - S&P 500 4,283.73, +4.5%
  - DJIA 34,121.54, +3.7%
  - Nasdaq 12,970.28, +6.0%
  - Russell 2000 1,838.22, -2.5%

- Volatility (VIX)
  - Average 16.85, -34.3% Y/Y
  - Peak 26.52
  - Trough 12.07

- Volumes (ADV)
  - Equities: average 11.0B shares (-7.1% Y/Y); peak 20.2B shares, trough 5.0B shares
  - ETFs: average 2.3B shares (-13.8% Y/Y); peak 4.6B shares, trough 0.9B shares
  - Options: average 43.4M contracts (+7.1% Y/Y); peak 68.9M contracts, trough 20.7M contracts

- Capital Formation
  - Total (ex-SPACs) $139.1 billion, +39.9% Y/Y
  - Secondaries $107.2 billion, +36.6% Y/Y
  - Preferreds $11.8 billion, -4.7% Y/Y
  - IPOs $20.1 billion, +135.5% Y/Y

## Looking to 2024: Market Structure Survey Results

We surveyed market participants – members of the SIFMA equity markets and listed options trading committees, representatives of U.S. equity and options exchanges – about where they saw 2024 market metrics heading, as well as their views on retail investor participation. We highlight the following survey trends:

- Market Performance (S&P 500)
  - Majority says? Grow at a moderate pace at 51.1% of responses
  - Upside risks? Monetary policy, U.S. presidential election, and inflation
  - Downside risks? Geopolitical events, U.S. presidential election, and monetary policy
- Volatility (VIX)
  - Majority says? 15-20 range, 49.0% of responses
  - Return to historical levels (15-20 range)? We are already there
- Equity Volumes (ADV)
  - Majority says? 10-15 billion shares range, 87.8% of responses
  - Return to historical levels (<10B shares)? 6.1% of responses
- Options Volumes (ADV)
  - Majority says? 40-50 million contracts range, 61.7% of responses
  - Return to historical levels (<20M contracts)? No responses
- Market Themes
  - Market Drivers: 72.3% of respondents responded the economy, i.e. achieving a soft landing. This was followed by the Fed Funds rate, estimating the timing of rate cuts with 55.3% of respondents, and inflation, achieving and maintaining the 2% level, at 53.2% of responses.
- Retail Investor Participation
  - Top response for equities?
    - Last year volumes 20-30%, 75.0% of respondents
    - Going forward expectations to remain about the same, 44.4% of respondents
  - Top response for options?
    - Last year volumes 20-30%, 58.1% of respondents
    - Going forward expectations to increase somewhat, 44.2% of respondents

# Recapping 2023: Market Metrics

## Comparing 2023 to 2022

Before going into more detail in each section, we first compare 2023 to 2022 market metrics: (Annual averages, Y/Y change is annual average/annual average)

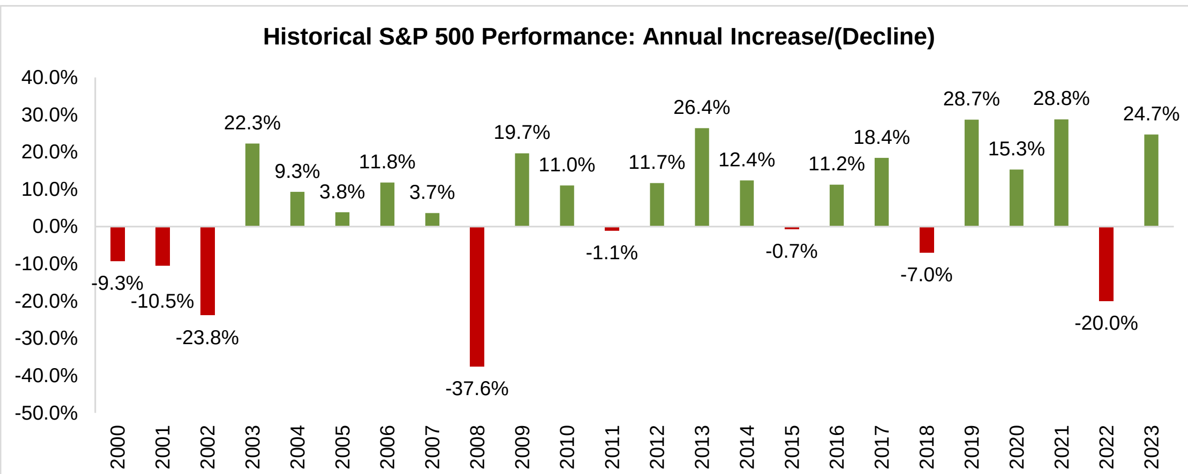
| Market Metrics | 2023 | 2022 | Y/Y % Change |
|---|---|---|---|
| **Market Performance** (average price) | | | |
| --S&P 500 Index | 4,283.73 | 4,098.41 | +4.5% |
| --DJIA Index | 34,121.54 | 32,902.27 | +3.7% |
| --Nasdaq Index | 12,970.28 | 12,228.20 | +6.0% |
| --Russell 2000 Index | 1,838.22 | 1,884.23 | -2.5% |
| | | | |
| **Volatility & Volumes** (averages) | | | |
| --VIX (price) | 16.85 | 25.63 | -34.3% |
| --Equity ADV (B shares) | 11.0 | 11.9 | -7.1% |
| --ETF ADV (B shares) | 2.3 | 2.6 | -13.8% |
| --Options ADV (M contracts) | 43.4 | 40.5 | +7.1% |
| | | | |
| **Capital Formation** ($B, aggregate**)** | | | |
| --Total (ex-SPACs) | 139.1 | 99.4 | +39.9% |
| --Secondaries | 107.2 | 78.5 | +36.5% |
| --Preferreds | 11.8 | 12.4 | -4.7% |
| --IPOs | 20.1 | 8.5 | +135.5% |
| --SPACs | 3.8 | 13.1 | -70.8% |

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

## Market Performance Metrics

Equity markets in 2023 can be summed up by the Fed and then the 10-year U.S. Treasury rate. Inflation, rising rates, recession, regional bank turmoil, debt ceiling debate, and a U.S. sovereign debt downgrade by a ratings agency. Despite all these factors, the S&P 500 finished the year strong, +24.7% (from the start of January to end of December).

This is a strong rebound from 2022, which finished down -20.0%. It also added to the S&P 500's winning total – the index has been positive 16 times since 2000, or 66.7%.

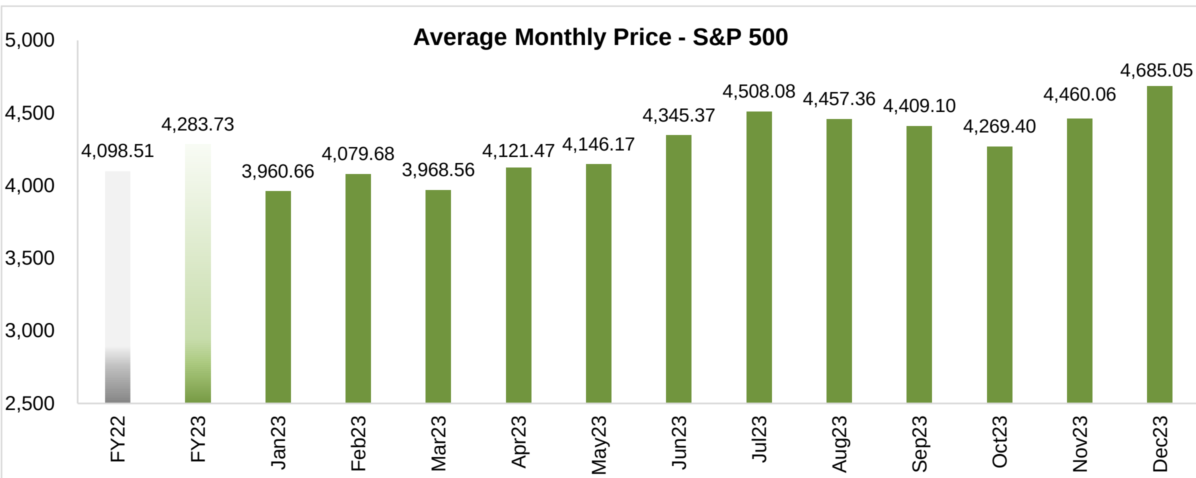


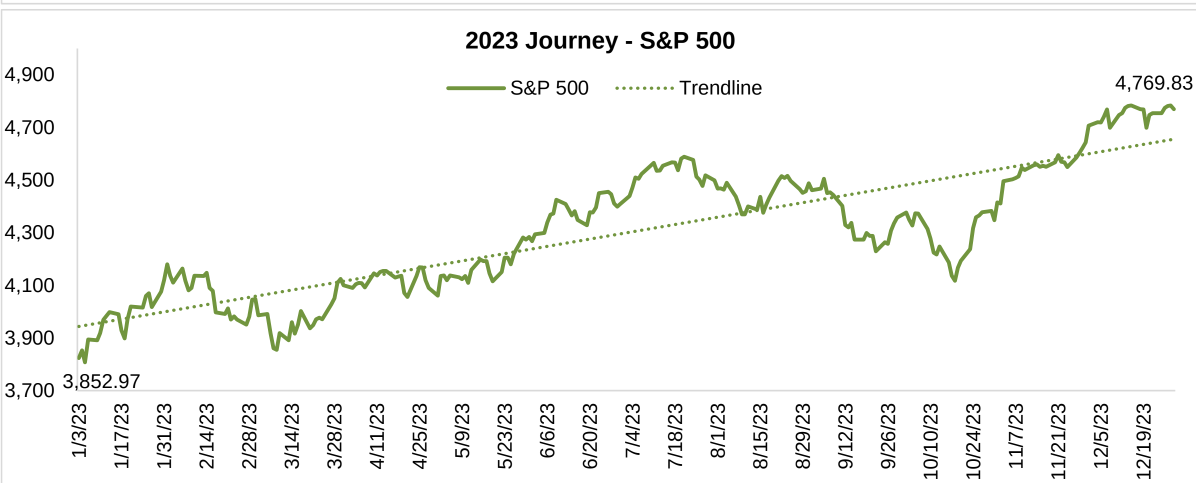

Source: Bloomberg, SIFMA estimates

On the following pages, we highlight keys trends for 2023 across the different stock market indices.

## S&P 500

- 2023 average 4,283.73
    - +4.5% Y/Y (annual average)
    - Peak 4,783.35 on December 15
    - Trough 3,808.10 on January 5
- 5-Year CAGR +9.3%
- 10-Year CAGR +10.1%

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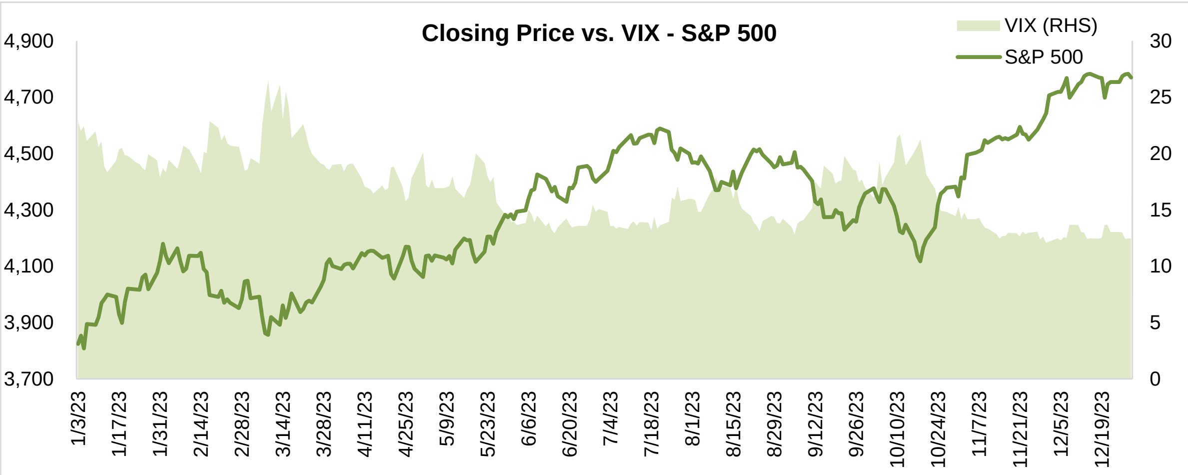
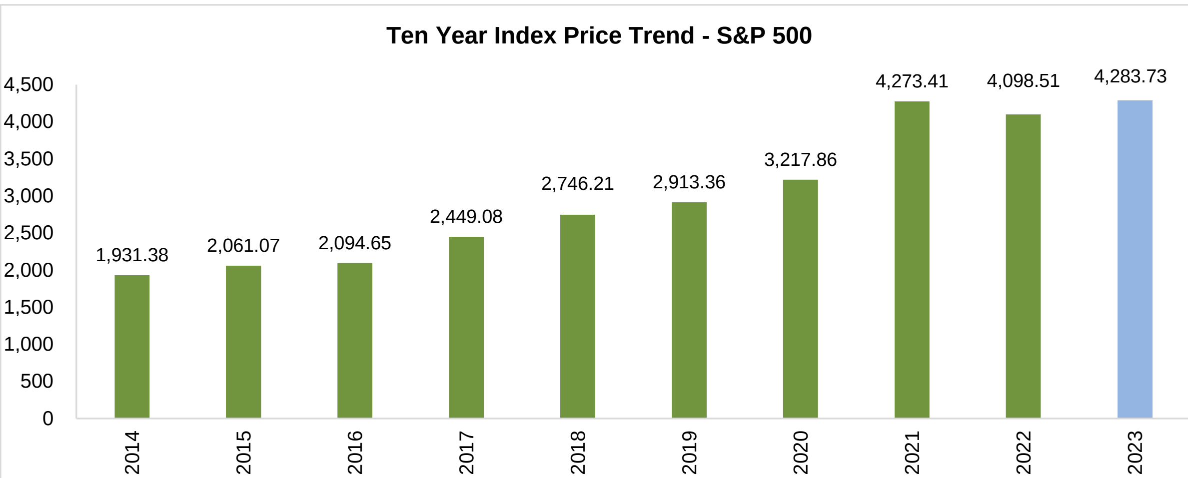
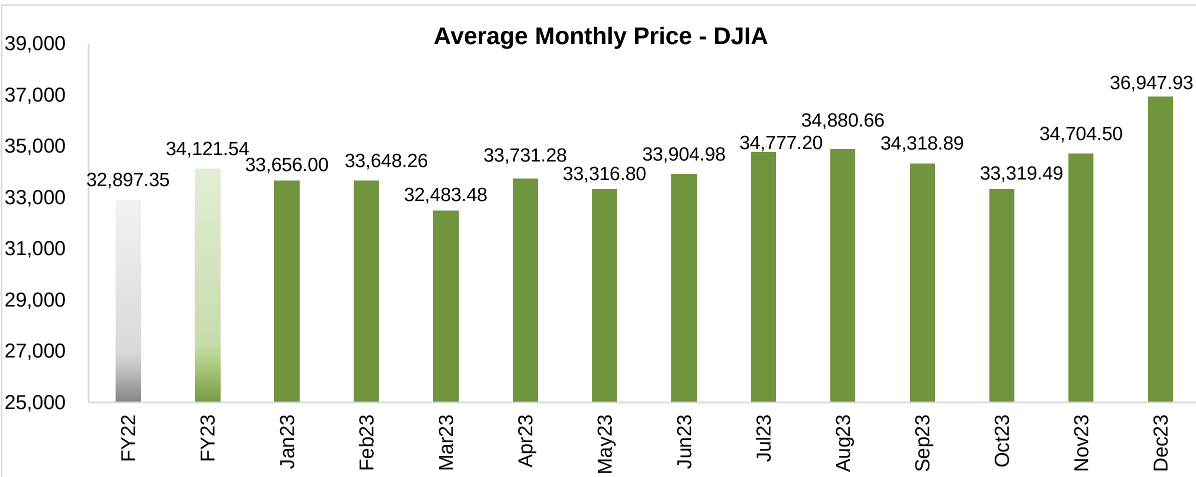


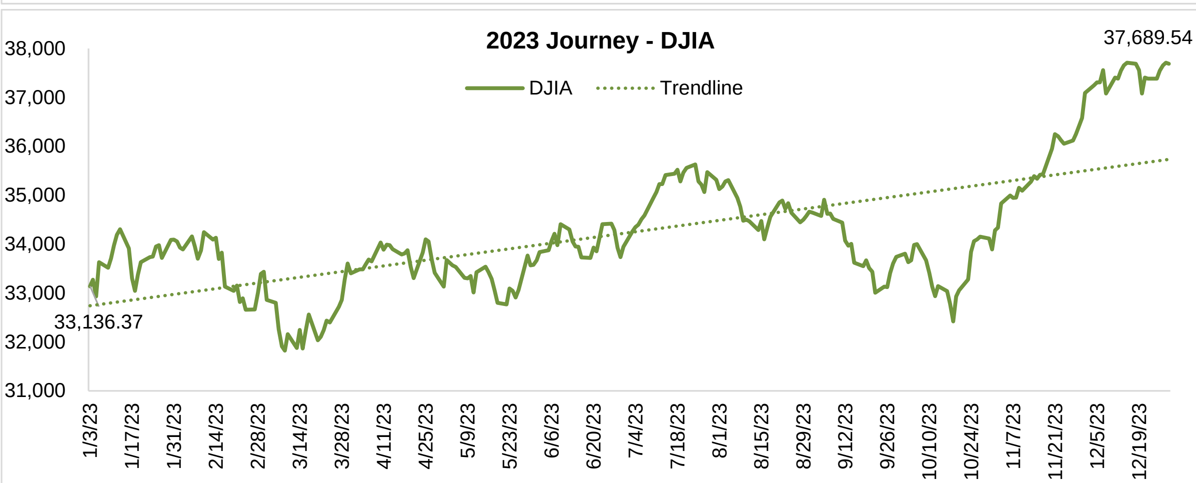




Source: Bloomberg, SIFMA estimates

## Dow Jones Industrial Average (DJIA)

- 2023 average 34,121.54
    - +3.7% Y/Y
    - Peak 37,710.10 on December 15
    - Trough 31,819.14 on March 9
- 5-Year CAGR +6.4%
- 10-Year CAGR +8.6%

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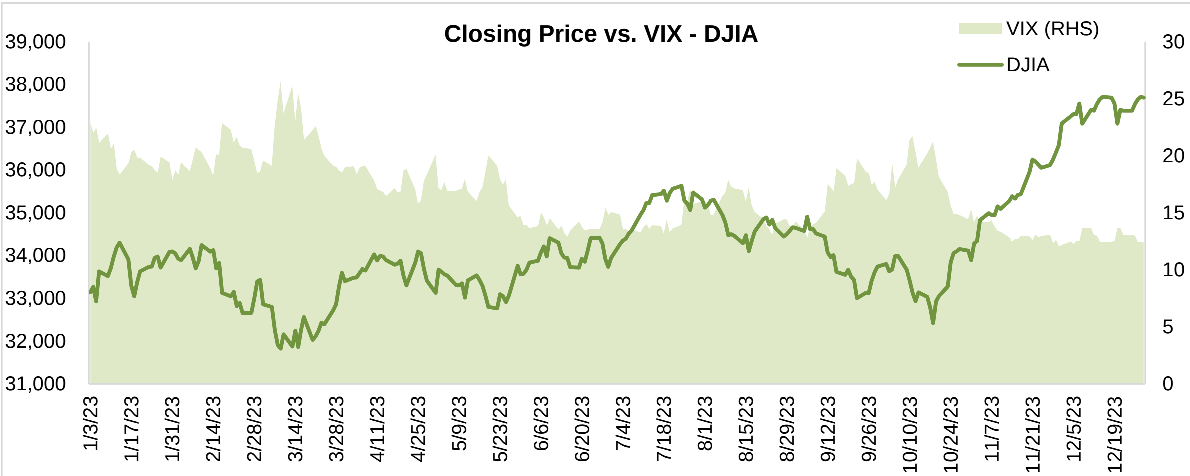
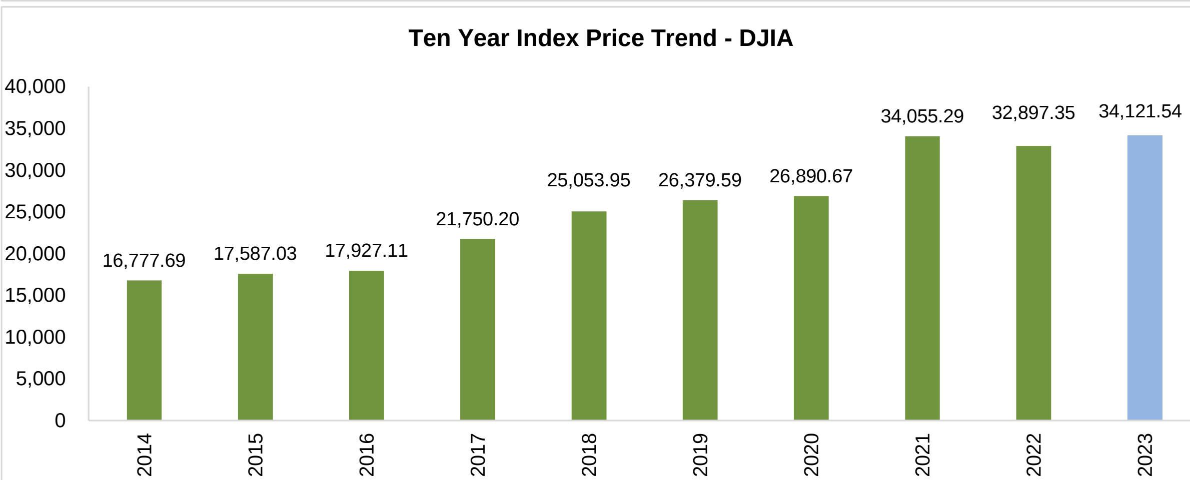
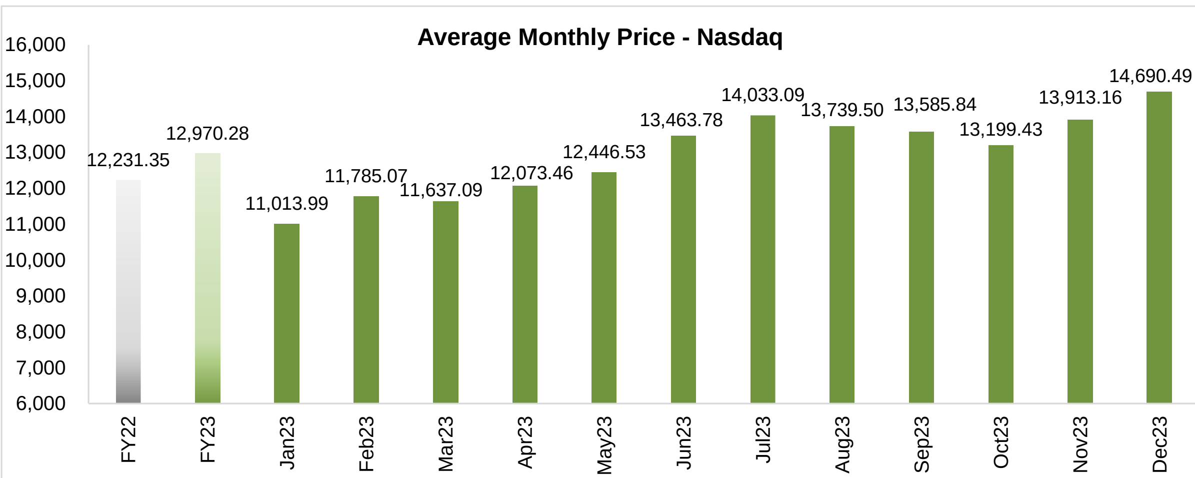


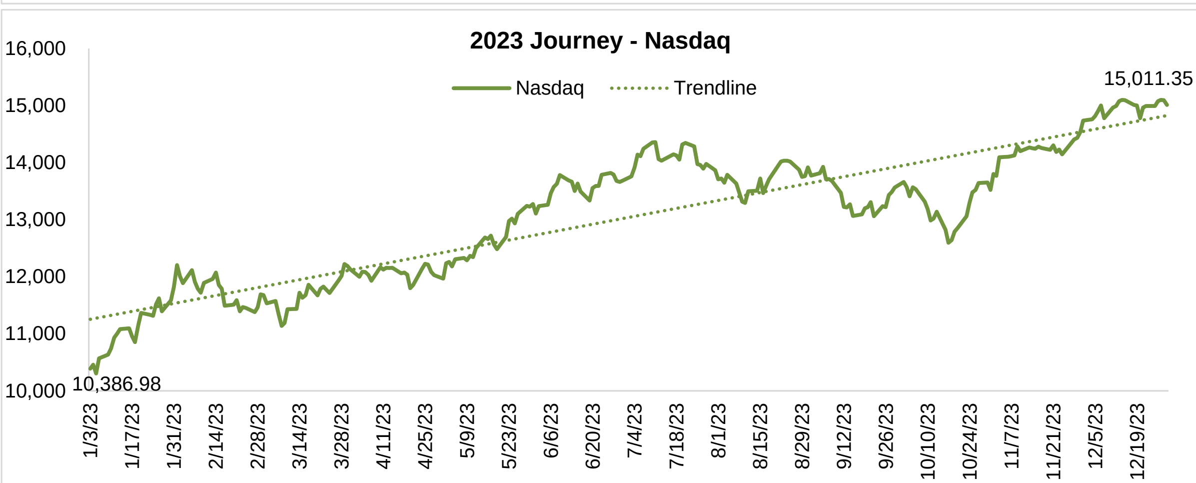




Source: Bloomberg, SIFMA estimates

## Nasdaq Composite

- 2023 average 12,970.28
  - +6.0% Y/Y
  - Peak 15,099.18 on December 14
  - Trough 10,305.24 on January 5
- 5-Year CAGR +11.8%
- 10-Year CAGR +13.9%

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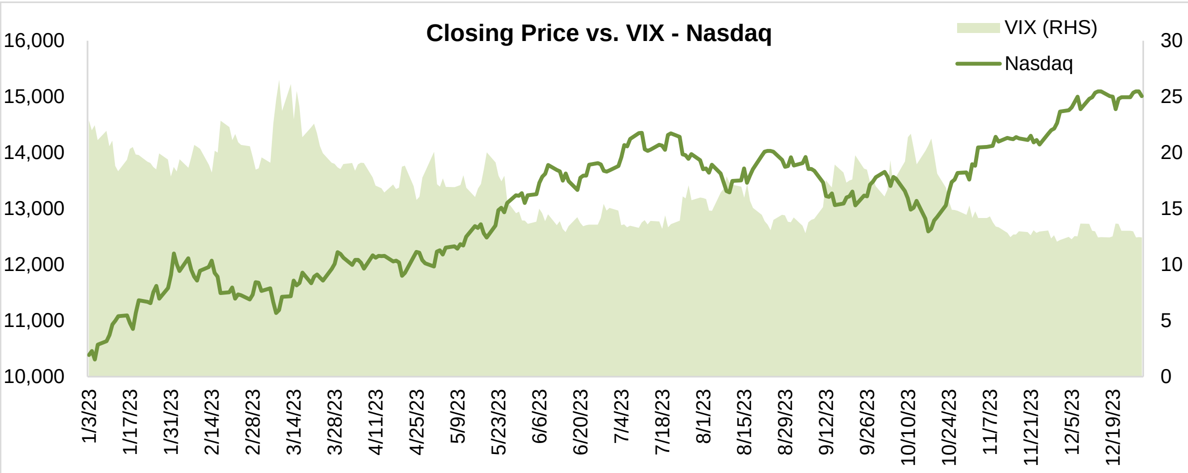
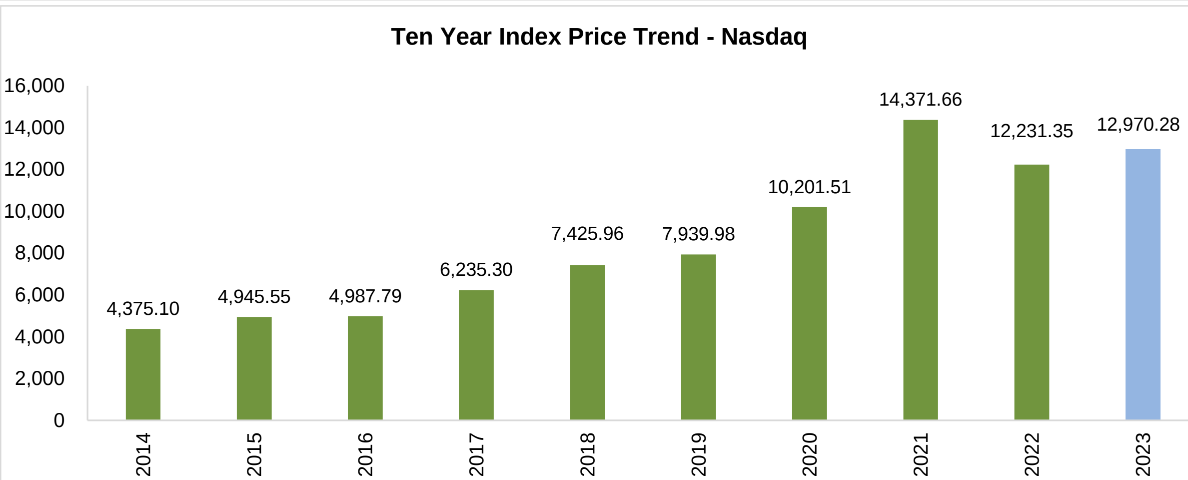
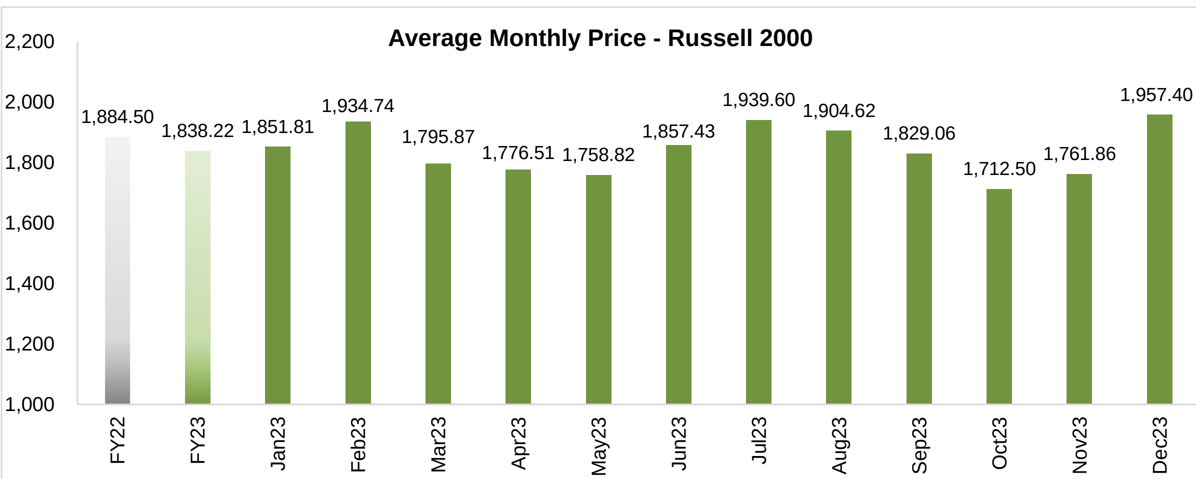


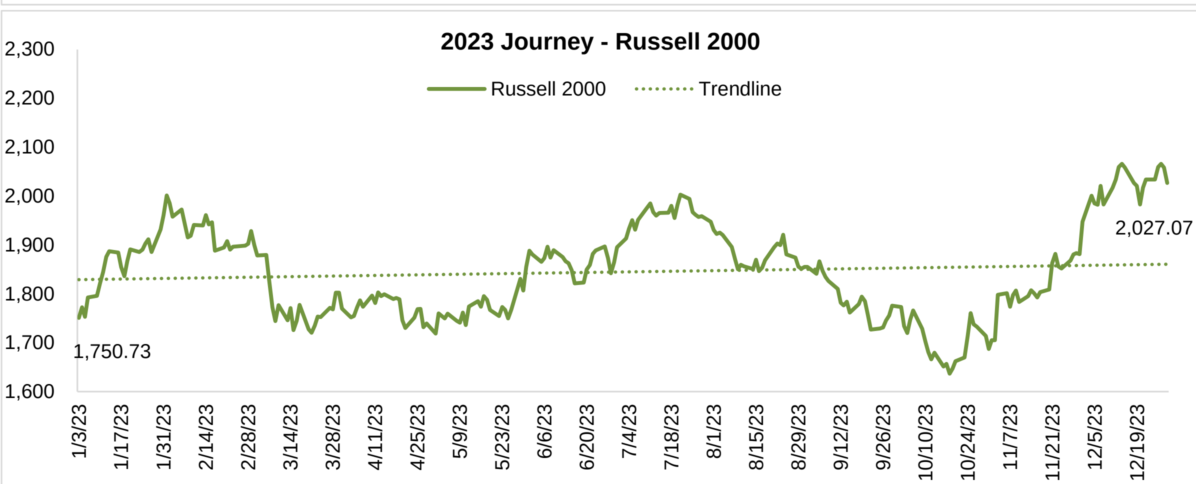




Source: Bloomberg, SIFMA estimates

## Russell 2000

- 2023 average 1,838.22
  - -2.5% Y/Y
  - Peak 2,066.21 on December 14
  - Trough 1,636.94 on October 18
- 5-Year CAGR +2.9%
- 10-Year CAGR +6.2%

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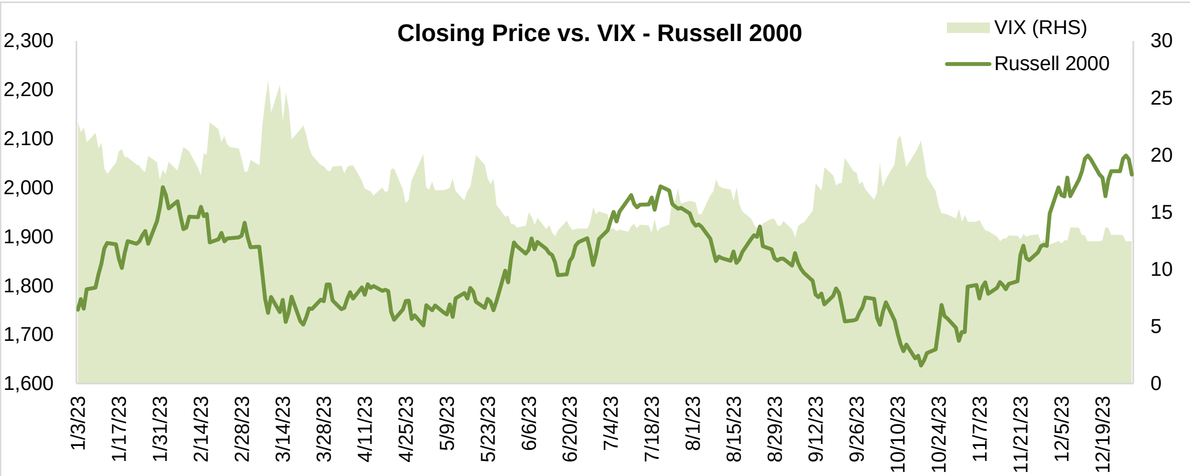
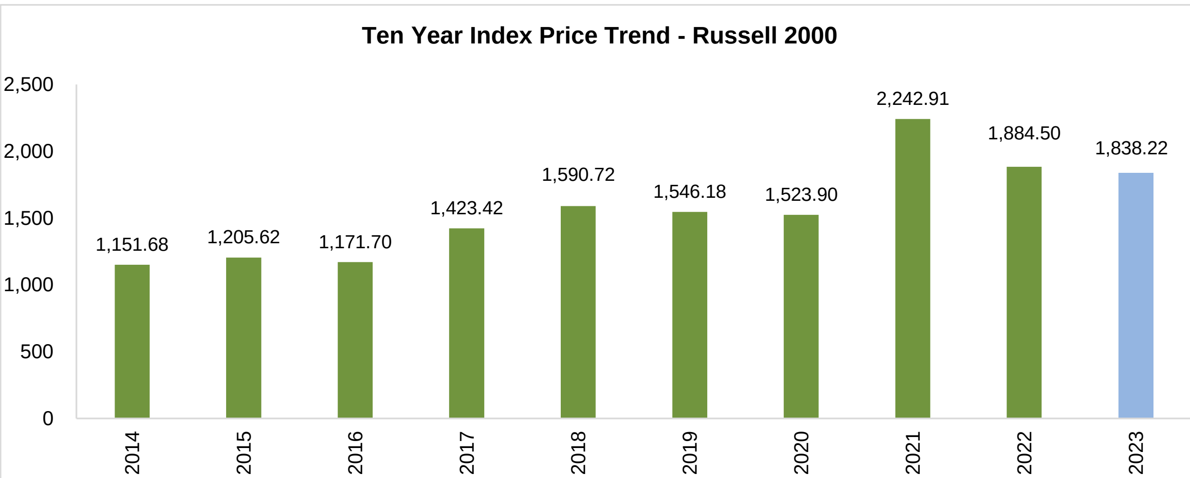



Source: Bloomberg, SIFMA estimates

## Market Performance Themes

### Trends Across Time Periods and Categories

As discussed above, the S&P 500 (SPX index) gained +24.7% from the start to the end of 2023. However, the performance was not the same throughout the year, i.e. first versus second half or fourth quarter versus December performance. Performance was also not the same across different categories, including:

- Weighting – market cap weighted versus equal weighted, SPX versus SPW
- Style – value (stocks that appear to be undervalued in the market) versus growth (stocks with earnings growth potential), SGX versus SVX
- Market cap – large (>$10 billion), mid ($2-$10 billion), and small (<$2 billion); SPX, MID, and SML

The following table analyzes trends across these time periods and categories, and we go into more detail for each grouping in this section. The daily index price charts appear later, but it is interesting to note that only the SML had a negative sloping trendline for its chart. Yes, the start to end date posted a price increase for all groupings, but overall the trend for the SML – as shown by the slope intercept – was negative for the annual chart. The SPX posted the sharpest upward sloping trendline, beating all other groupings by 1.2x to 27.9x.

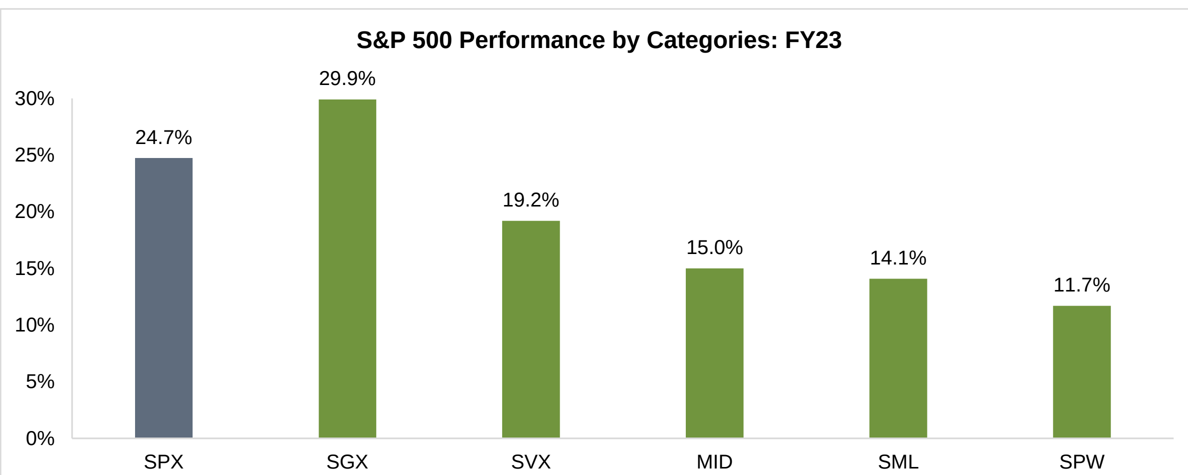
| | Weighting | | Style | | Market Cap | | |
|---|---|---|---|---|---|---|---|
| | SPX | SPW | SGX | SVX | SPX | MID | SML |
| **Index Price** | | | | | | | |
| Average | 4,283.7 | 5,935.8 | 2,713.8 | 1,548.0 | 4,283.7 | 2,553.5 | 1,193.4 |
| Peak | 4,783.4 | 6,427.7 | 3,041.9 | 1,721.9 | 4,783.4 | 2,809.2 | 1,339.6 |
| Trough | 3,808.1 | 5,426.2 | 2,310.4 | 1,421.9 | 3,808.1 | 2,326.8 | 1,068.8 |
| Range | 975.3 | 1,001.5 | 731.4 | 300.0 | 975.3 | 482.4 | 270.8 |
| **Performance** | | | | | | | |
| **FY23** | **24.7%** | **11.7%** | **29.9%** | **19.2%** | **24.7%** | **15.0%** | **14.1%** |
| 1H23 | 16.4% | 6.1% | 21.9% | 10.5% | 16.4% | 8.4% | 5.3% |
| 2H23 | 7.1% | 5.0% | 6.6% | 7.6% | 7.1% | 5.7% | 7.7% |
| 2H/1H | -9.3% | -1.1% | -15.3% | -2.8% | -9.3% | -2.7% | 2.4% |
| 4Q23 | 11.2% | 12.5% | 9.2% | 13.7% | 11.2% | 12.7% | 16.0% |
| Dec23 | 3.8% | 5.1% | 3.3% | 4.4% | 3.8% | 5.9% | 9.4% |
| Dec/4Q | -7.4% | -7.4% | -5.9% | -9.2% | -7.4% | -6.7% | -6.6% |
| 4Q/2H | 4.2% | 7.5% | 2.7% | 6.0% | 4.2% | 6.9% | 8.3% |
| Slope | 1.8437 | 0.1114 | 1.5606 | 0.4064 | 1.8437 | 0.1308 | (0.0662) |
| SPX/Index | | 16.6x | 1.2x | 4.5x | | 14.1x | 27.9x |

Source: Bloomberg, SIFMA estimates

Despite all groupings finishing the year up double digits (from start to end date), performance deteriorated across the year. This is a result of the increasing 10-year Treasury rate beginning in August, when it crossed 4% and did not go back below this level until December. The interest rate spiked in mid October to around 5% (crossing this level on an intraday basis) and then settled back down. The S&P 500 also dipped in October and then climbed back up in line with the 10-year moves.

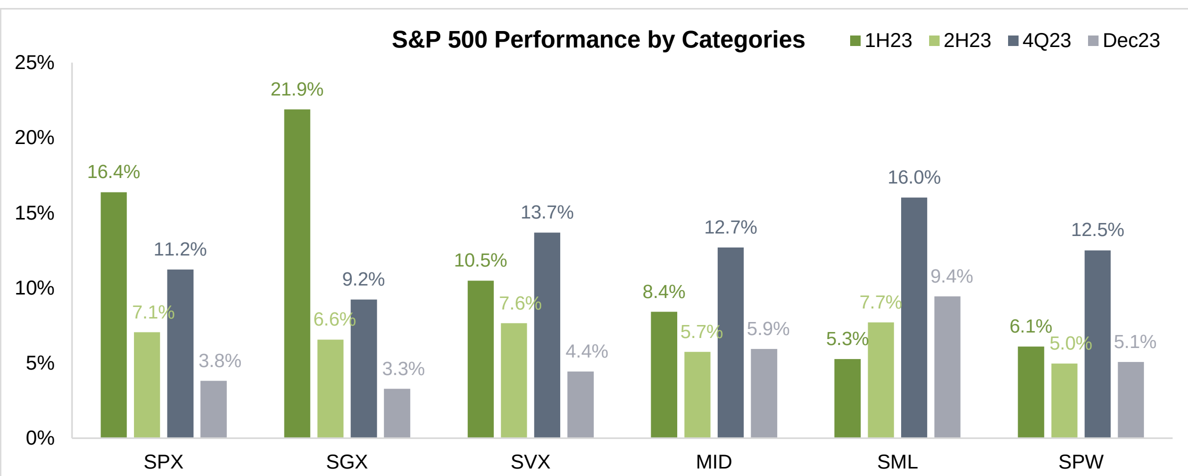
Following this narrative, we have identified a few common themes across time periods and categories.

- Only the growth index, SGX, outperformed the total market, SPX, +29.9% for 2023 versus +24.7% (+5.2 pps). The SPX outperformed all other groupings by:
    - 5.5 pps for the SVX
    - 9.7 pps for the MID
    - 10.6 pps for the SML
    - 13.0 pps for the SPW
- Growth outperformed value by 10.7 pps
- Mid cap out outperformed small cap by 0.9 pps




Source: Bloomberg, SIFMA estimates

- With the exception of the SML, all groupings saw a worse second half performance than in the first half, as shown in the light versus dark green columns in the chart below.
  - Largest gap (2H minus 1H) = SGX, -15.3 pps
  - Smallest gap = SPW, -1.1 pps
  - SML was +2.4 pps
- All groupings saw a worse December performance than in the fourth quarter, as shown in the light versus dark purple columns in the chart below.
  - Largest gap (December minus 4Q) = SVX, -9.2 pps
  - Smallest gap = SGX, -5.9 pps
- All groupings saw a better fourth quarter performance than in the second half, as shown in the dark purple versus light green columns in the chart below.
  - Largest gap = SML, +8.3 pps
  - Smallest gap = SGX, +2.7 pps




Source: Bloomberg, SIFMA estimates

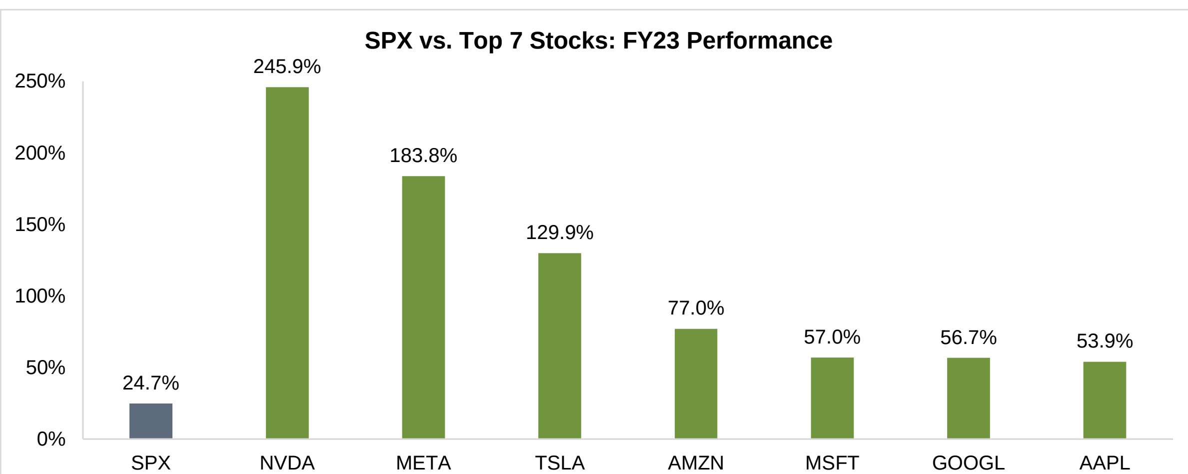
## Concentration in the Top 7 Stocks

Last year, stocks weathered inflation, rising interest rates, recession, regional bank turmoil, a debt ceiling debate/potential U.S. Government default, and a U.S. sovereign debt downgrade by a ratings agency. Recapping that list of hurdles, it seemed surprising that markets remained in positive territory. Looking closer at the numbers, we identify another key theme in the market last year. The S&P 500 (SPX) performance was driven by seven stocks, classified as the following (weightings as of December 31, 2023):

- Technology (total sector represents 29.5% of total SPX market cap): Apple (AAPL), Microsoft (MSFT), and Nvidia (NVDA)
- Consumer discretionary (total sector represents 10.3% of total SPX market cap): Amazon (AMZN) and Tesla (TSLA)
- Communications (total sector represents 8.9% of total SPX market cap): Alphabet (GOOGL, GOOG[1]) and Meta (META).

While these seven stocks may be classified differently, they all traded as a technology play. Technology stocks in general benefitted from the artificial intelligence (AI) enthusiasm, and many technology companies underwent cost cutting and other efforts to drive efficiencies. This group represented around 30% of total SPX market cap last year. While the SPX +24.7% performance for the year looks good on paper, it pales in comparison to the individual performances of these seven stocks, which ranged from +53.9% (AAPL) to +245.9% (NVDA). These stocks outperformed the total market, the SPX, by:

- Highest outperformers – NVDA 9.9x, META 7.4x
- Mid range – TSLA 5.3x, AMZN 3.1x
- Lower range – MSFT 2.3x, GOOGL 2.3x, AAPL 2.2x

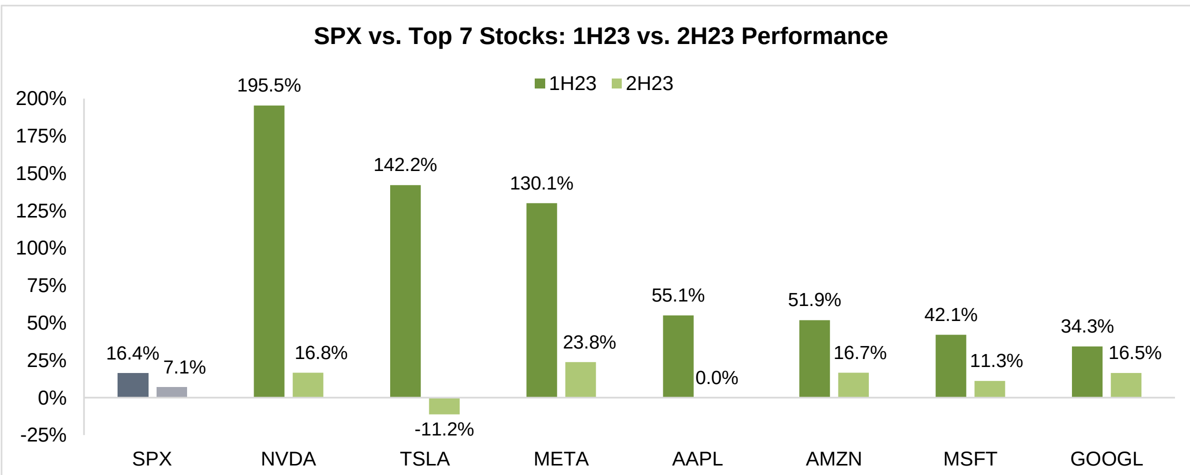


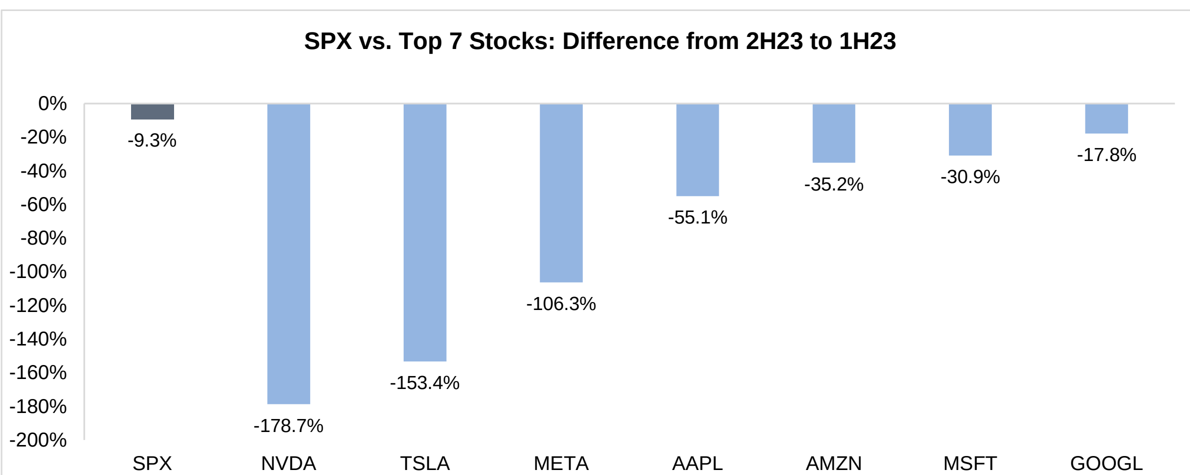

Source: Bloomberg, SIFMA estimates

[1] GOOGL are class A shares or common stock which have the standard one-share/one-vote structure; GOOG class C shares with no voting rights.

Similar to the aggregate market, despite all stocks finishing the year up double digits (from start to end date), performance deteriorated across the year. This group of stocks is more sensitive to interest rate increases, as happened in the second half of last year as discussed above. We note the following tends:

- The difference from 2H23 versus 1H23 ranged from -17.8% to -178.7%, versus the SPX -9.3%
- Since it climbed the highest, NVDA fell the furthest, -178.7%
- AAPL was flat in 2H23, 2H/1H difference was -55.1%
- TSLA was negative in 2H23 (-11.2%), 2H/1H difference was -153.4%




Source: Bloomberg, SIFMA estimates

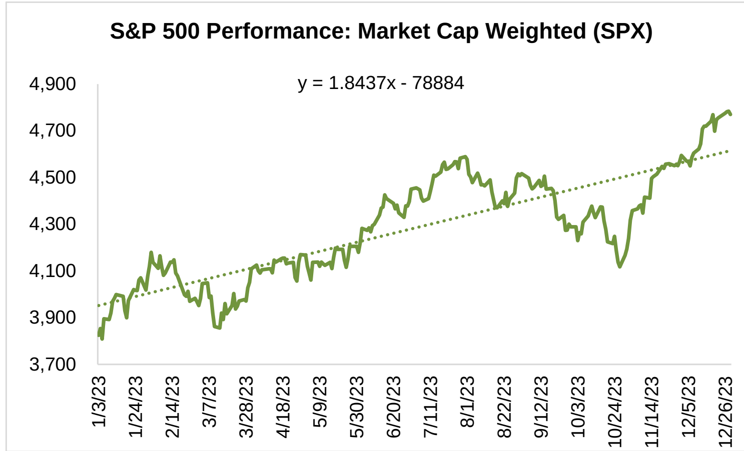
## Market Cap versus Equal Weight

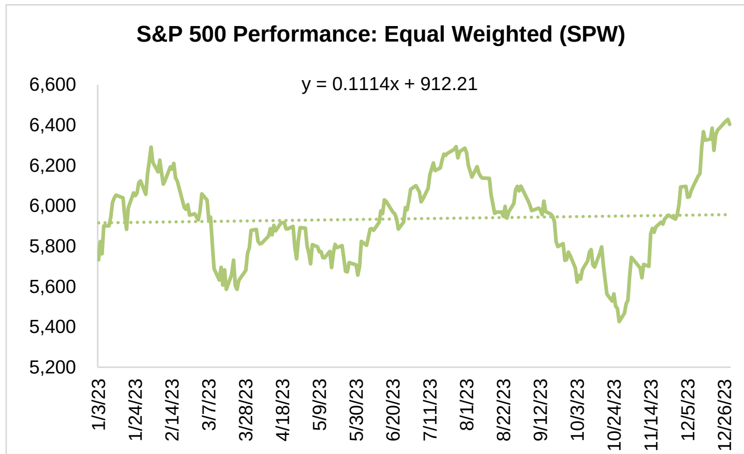
*In a market cap weighted index, each stock is weighed by the size of its market cap – the higher the market cap the higher the influence on the total index performance. In an equal weighted index, each stock is given the same weight regardless of market cap or other financial metrics.*

In general, both the market cap weighted (SPX) and equal weighted (SPW) indices were upward sloping for 2023, or at least slightly upward sloping for the SPW. The SPX far outpaced the SPW, with a slope 16.6x that of the SPW.

For 2023, the SPX was up 24.7% versus +11.7% for the SPW. Looking at the half year splits, the SPX first half outpaced the second half by 9.3 pps, +16.4% versus +7.1%. The SPW followed a similar pattern, albeit to a lesser extent, at +6.1% and +5.0% respectively, a 1.1 pps decline. The SPW outperformed in this context.

Both indices showed a decline from their fourth quarter to December performances: SPX +11.2% and +3.8%, -7.4 pps; SPW +12.5% and +5.1%, -7.4 pps. The indices performed the same in this context (technically, if you expand a decimal point, the SPX edged out the SPW by declining 7.41 pps versus 7.44 pps).




Source: Bloomberg, SIFMA estimates

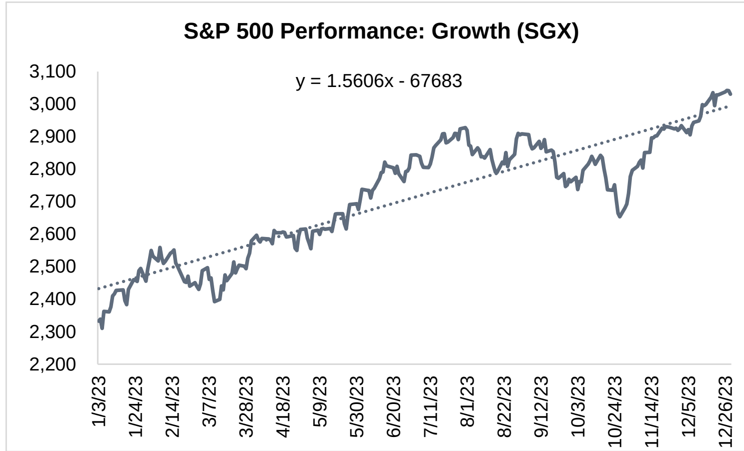
## Growth versus Value

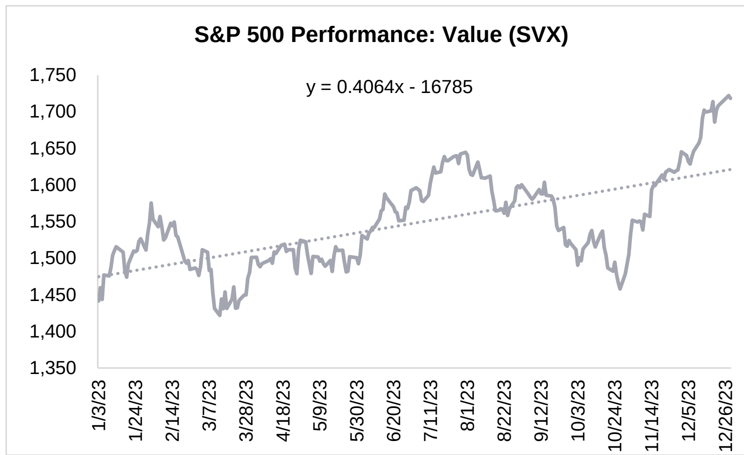
*Investors can look to diversify portfolios by style, growth versus value. Growth investing looks for companies growing revenue, earnings, or cash flow at a faster than market or sector average pace. These companies tend to be more interest rate sensitive[2]. Value investing seeks out companies priced 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 2023. The SGX far outpaced the SVX, with a slope 16.6x that of the SVX.

For 2023, the SGX was up 29.9% – outpacing the SPX at +24.7% – versus +19.2% for the SVX. Looking at the half year splits, the SGX first half outpaced the second by 15.3 pps, +21.9% versus +6.6%. The SVX followed a similar pattern, at +10.5% and +7.6% respectively, a 2.8 pps decline. The SVX outperformed in this context.

Both indices showed a decline from their fourth quarter to December performances: SGX +9.2% and +3.3%, -5.9 pps; SVX +13.7% and +4.4%, -9.2 pps. The SGX outperformed in this context.




Source: Bloomberg, SIFMA estimates
Note: Value = undervalued, growth = earnings growth potential

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

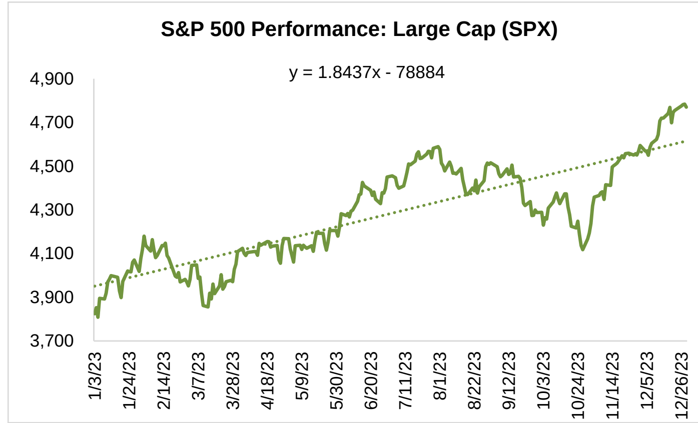
## Small, Mid, and Large Cap Differences

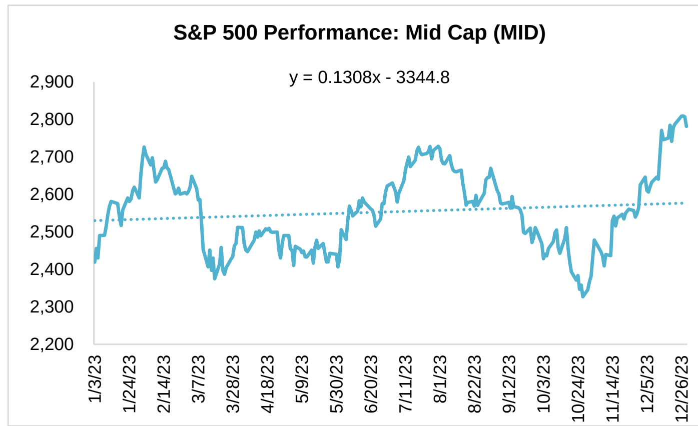
*Market capitalization (market cap) is the total dollar value of a company's shares outstanding, or stock price times number of shares[3]. In investing, large cap companies are typically considered safer as they are usually well established companies with longer histories and good positioning in their industries. They also tend to be more international – and therefore more regionally diversified to macroeconomic trends – than smaller firms. Mid cap companies are typically in the expansion phase of their business cycle and offer growth potential for investors. Small 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.*

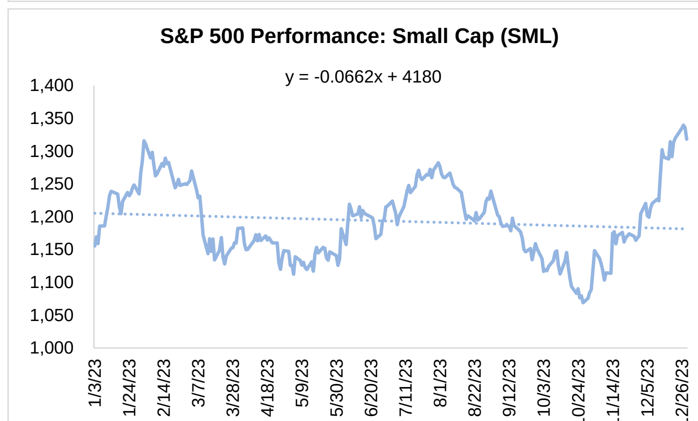
In general, the large (SPX) and mid cap (MID) indices were both upward sloping while the small cap (SML) index was downward sloping for 2023. The SPX far outpaced the MID, with a slope 14.1x that of the MID (and 27.9x the SML). The slope of the MID was 2.0x that of the SML.

For 2023, the SPX was up 24.7%, versus +15.0% for the MID and +14.1% for the SML. Looking at the half year splits, the SPX first half outpaced the second by 9.3 pps, +16.4% versus +7.1%. The MID followed a similar pattern, at +8.4% and +5.7% respectively, a 2.7 pps decline. The SML showed a reverse pattern – essentially outperformed in this context – posting a +5.3% first half but +7.7% second half, a 2.4 pps increase.

All indices showed a decline from their fourth quarter to December performances: SPX +11.2% and +3.8%, -7.4 pps; MID +12.7% and +5.9%, -6.7 pps; SML +16.0% and +9.4%, -6.6 pps. The SML again outperformed in this context, or barely outperformed the MID.




Source: Bloomberg, SIFMA estimates
Note: Large > $10B, mid = $2-$10B, small <$2B

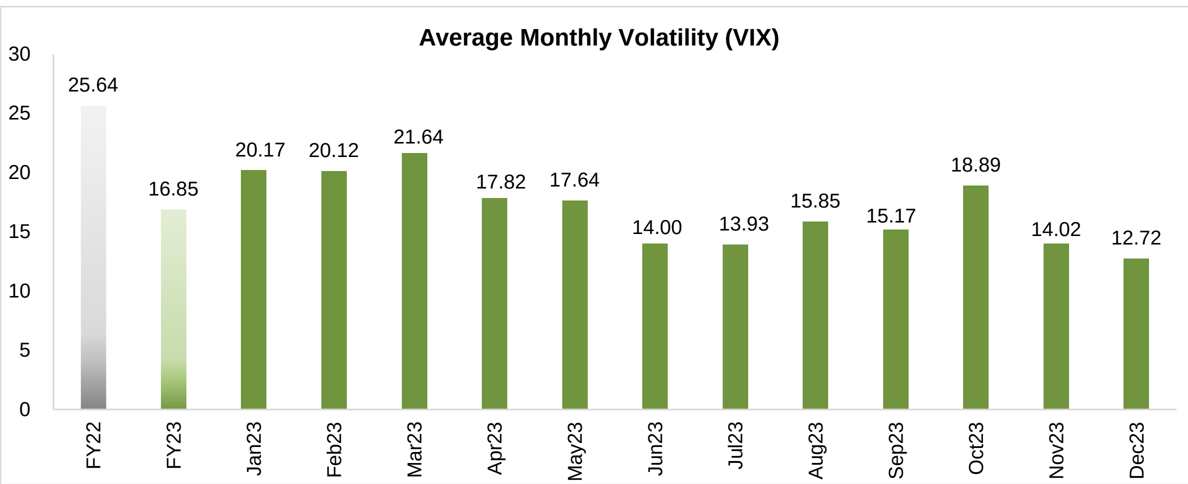
[3] While market cap accounts just for the company's share value, enterprise value includes debt and cash reserves, or market cap plus debt minus cash.

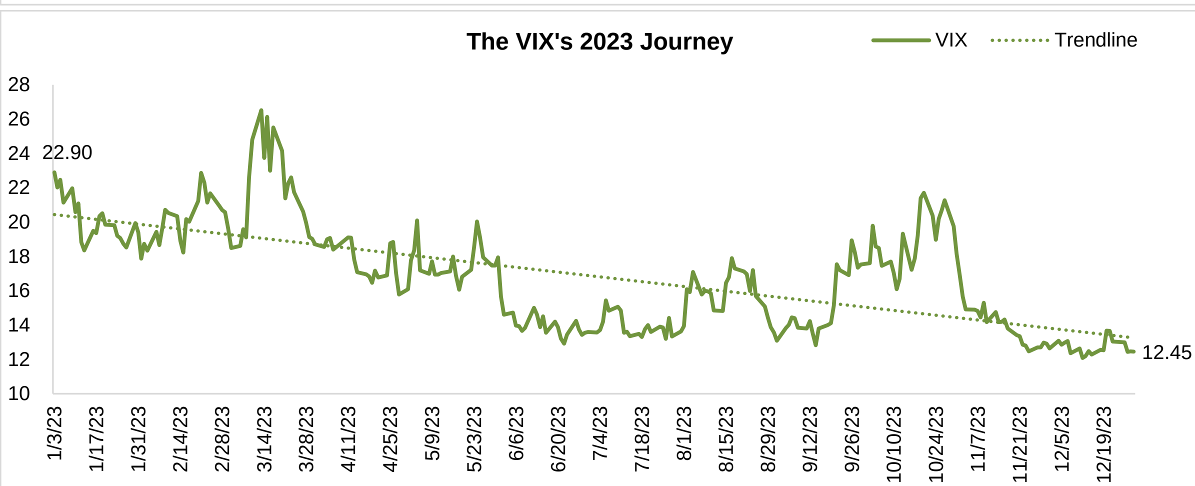
## Volatility Metrics

Volatility settled back down in 2023, closer to historical levels (15.39 in 2019), at 16.85 on average, -34.3% Y/Y. The overall trendline for the VIX in 2023 was sharply downward sloping. This down trend continued throughout the year, with December representing the lowest month at 12.72.

We highlight the following trends for 2023:

- Average 16.85
  - -34.3% Y/Y
  - Peak 26.52 on March 13
  - Trough 12.07 on December 12
- 5-Year CAGR +0.3%
- 10-Year CAGR +1.7%

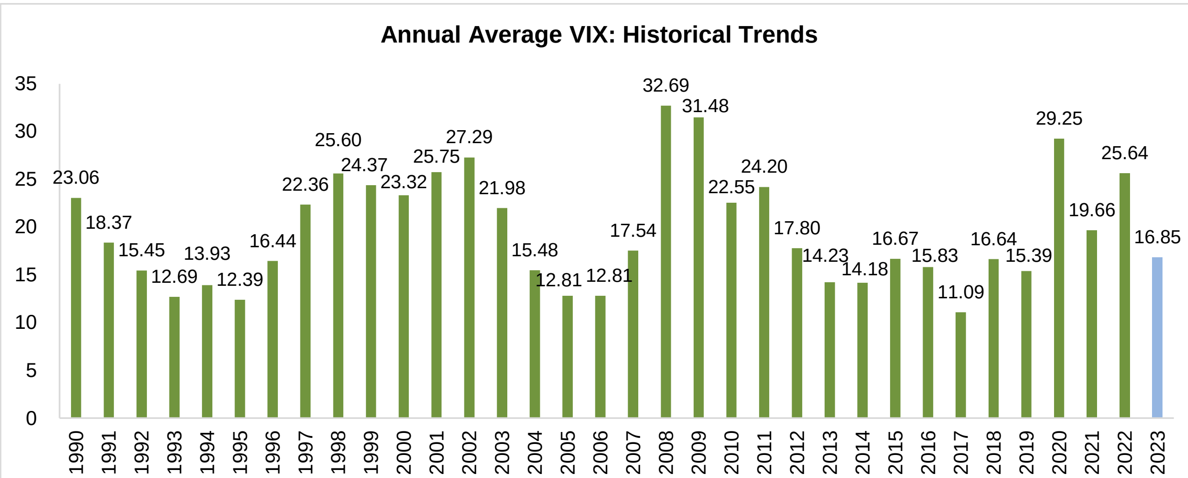



Source: Bloomberg, SIFMA estimates

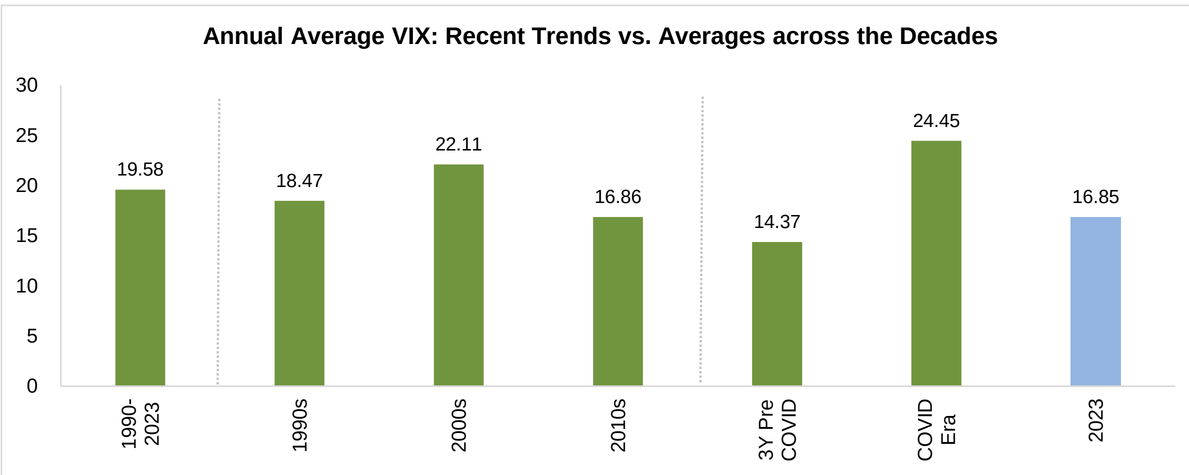
### Average VIX Trends

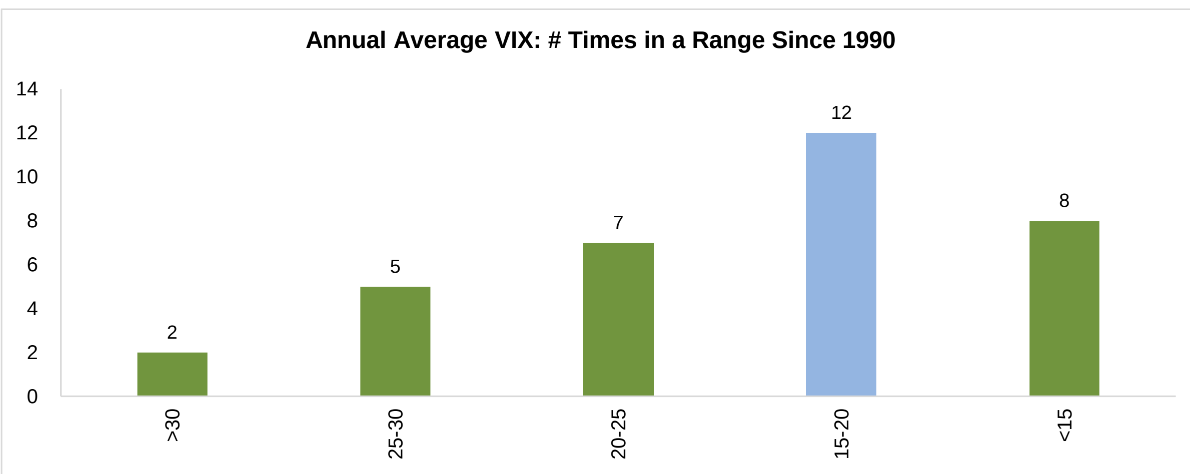
Next, we analyze the VIX time series back to 1990. 2023 fell to #19 out of the 34 years at 16.85, a significant drop from last year which ranked #6. This is lower than the full time series average (from 1990-2023) of 19.58, -14.0%.



Source: Bloomberg, SIFMA estimates

Looking across decades, 2023 average VIX is in line with the 2010s decade of volatility. 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. The VIX has been in this 15-20 range 12 times over the decades.

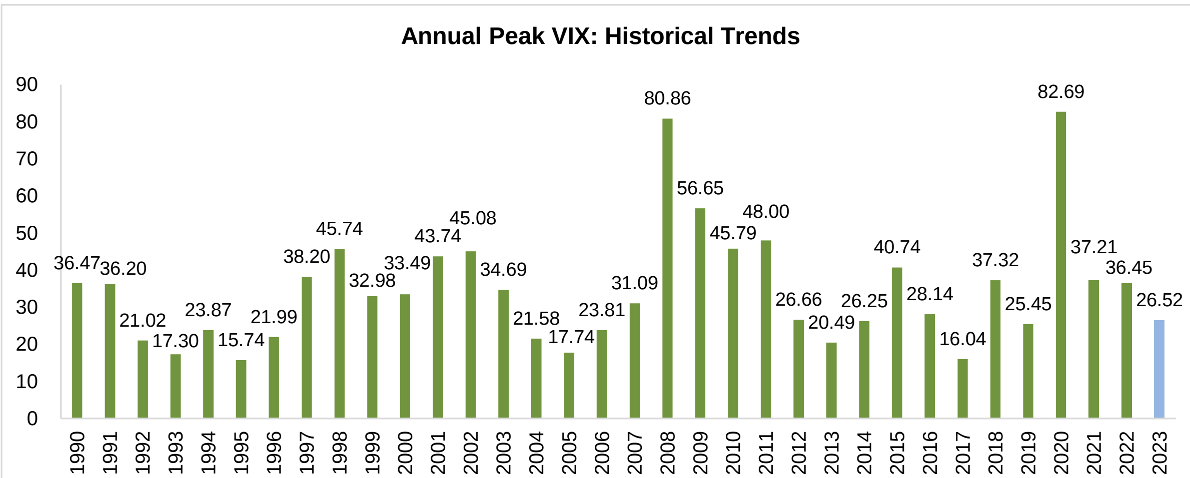



Source: Bloomberg, SIFMA estimates

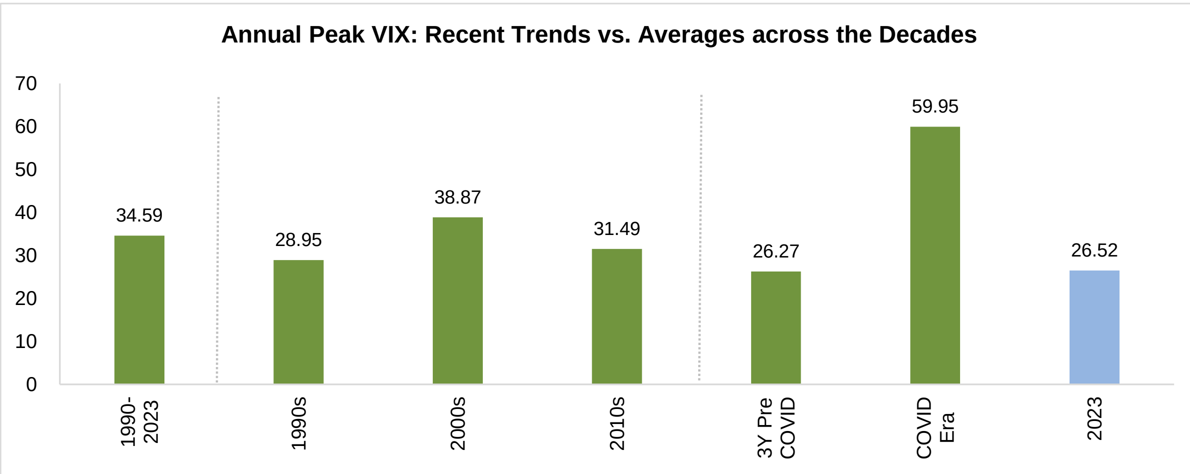
## Peak VIX Trends

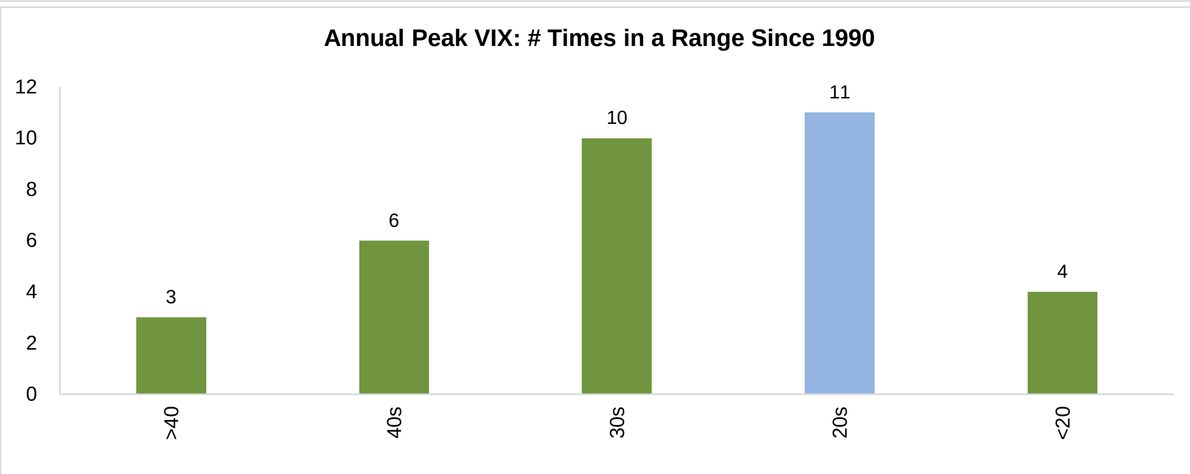
We also analyze peaks for the VIX since 1990. 2023 ranked #22 out of the 34 years at 26.52, a decline from 2022's rank of #14. This is lower than the full time series average (from 1990-2023) of 34.59, -23.3%.




Source: Bloomberg, SIFMA estimates

Looking across decades, 2023 peak VIX is more in line with the 1990s decade of volatility. The 2023 level has also returned to the three years prior to COVID average of 26.27. The peak VIX has been in the 20s range 11 times over the decades.




Source: Bloomberg, SIFMA estimates

## Volatility Themes

### Normalizing VIX Level

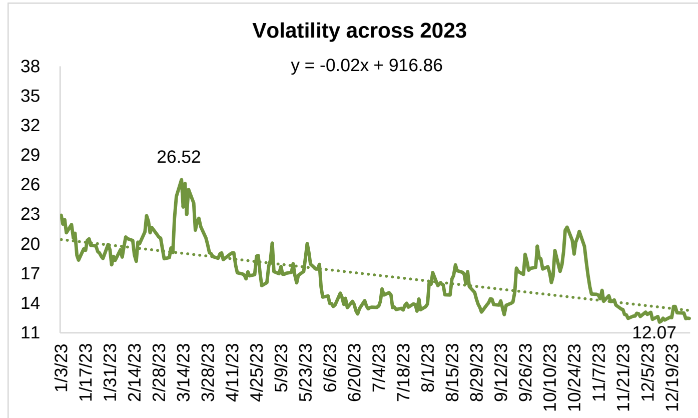
We saw the VIX normalizing in 2023, returning more in line with historical levels. As noted above, the average VIX in 2023 was 16.85, -34.3% Y/Y.

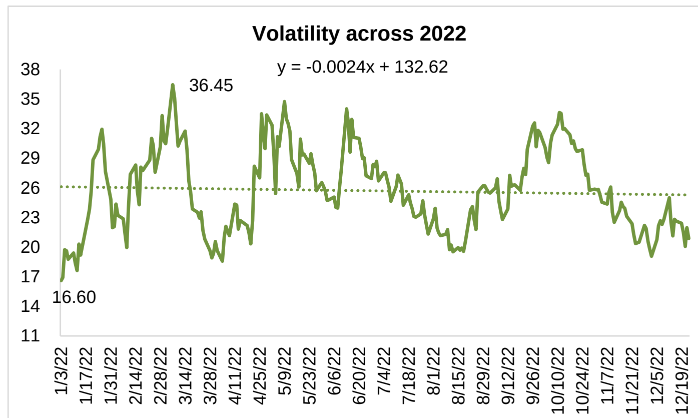
This lower average in 2023 was coupled with a lower peak (26.52, -27.2% Y/Y) and lower trough (12.07, -27.3% Y/Y) than the two prior years. This marks a tighter volatility range with less spikes – up or down – or a settling of volatility.

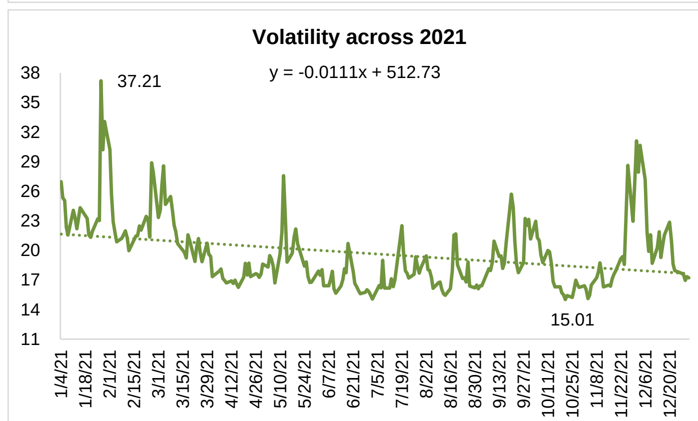
| | 2021 | 2022 | Y/Y Chg | 2023 | Y/Y Chg |
|---|---|---|---|---|---|
| Average | 19.66 | 25.64 | 30.4% | 16.85 | -34.3% |
| Peak | 37.21 | 36.45 | -2.0% | 26.52 | -27.2% |
| Trough | 15.01 | 16.60 | 10.6% | 12.07 | -27.3% |
| Range | 22.20 | 19.85 | -10.6% | 14.45 | -27.2% |
| Slope | (0.0111) | (0.0024) | | (0.0200) | |

The charts on the right show this tightening of the volatility range. We kept the scale on the left axis the same for all three years. Both 2022 and 2021 reached toward the top of the scale, while 2023 was substantially off from the top.

Further, while all three charts were downward sloping – or at least slightly downward sloping in the case of 2022 – the slope is sharpest in 2023, 8.3x the 2022 slope and 1.8x that in 2021.




Source: Bloomberg, SIFMA estimates

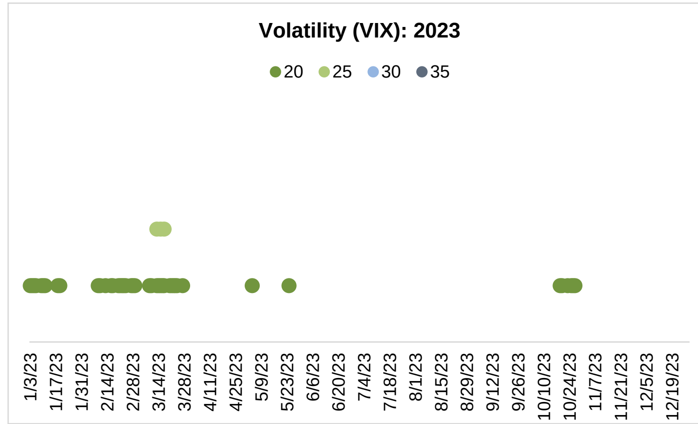
### Less Days at Higher Levels

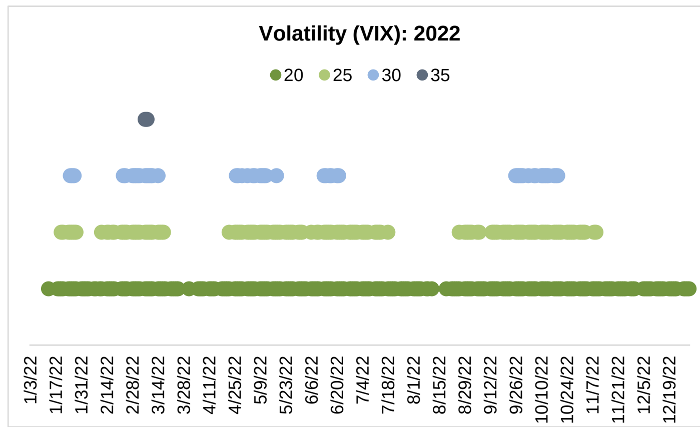
Further proof that volatility is settling down to a normalized level is shown in the following analysis. For the last three years, we marked each day that was above a certain threshold, including above: 20, 25, 30, and 35.

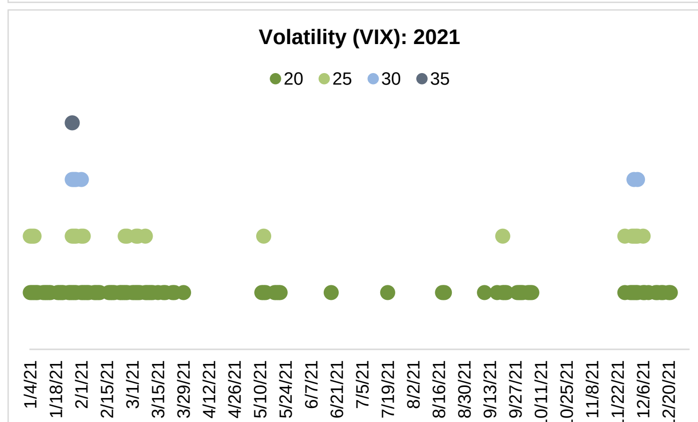
2023 demonstrated lower volatility levels, as marked by fewer days at higher VIX levels. In fact, 2023 saw no days above either 30 or 35. Last year saw only three days above the 25 level and forty-three days above the 20 level, or 17.2% of the year above a 20 level VIX. As shown in the charts to the right, this represents much lower volatility than seen in prior years.

Looking at 2022, the year posted two days above the 35 level and forty-nine days above a 30 level. 2022 spent 53.4% of the year over the 25 level and 92.8% over the 20 level VIX. This created a much more volatile year – and a busier chart – than in 2023.

2021 was not as dramatic, but it was still a year of higher volatility than last year. It posted one day above 35 and six days above the 30 level. The year spent 36.1% of the time above the 20 level VIX.



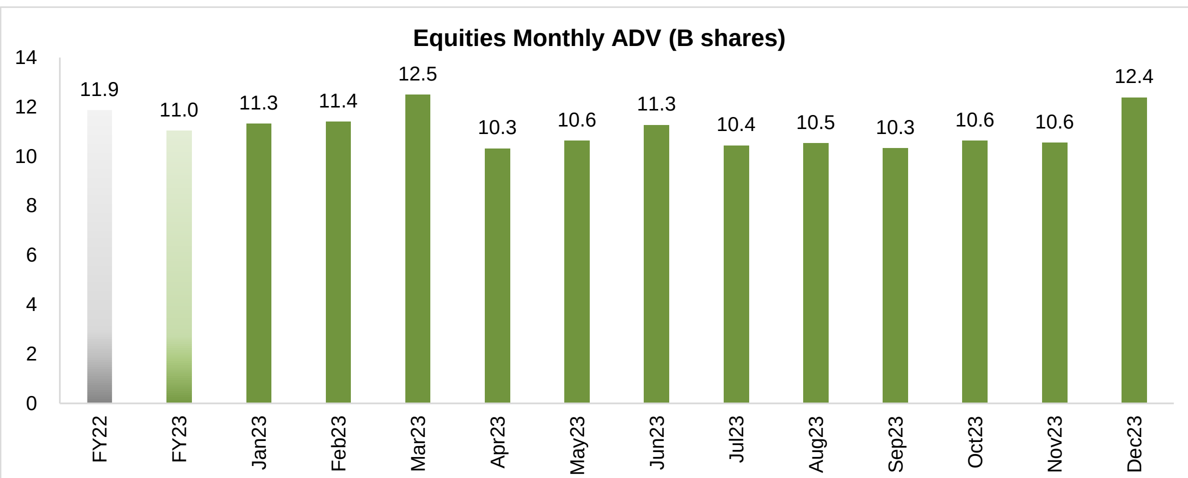

Source: Bloomberg, SIFMA estimates

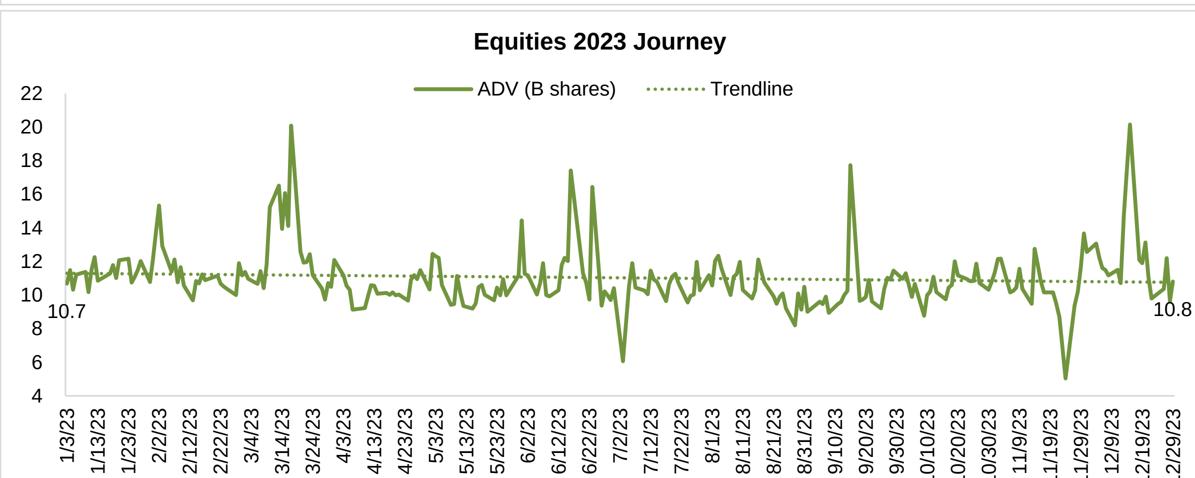
## Equity Volumes Metrics

Equity volumes remain elevated to historical levels at 11.0 billion shares on average in 2023, but down to the prior year by 7.1%. The overall trendline for equity volumes was essentially flat. Like last year, we saw some spikes throughout the year, but with very few sharp downward points.

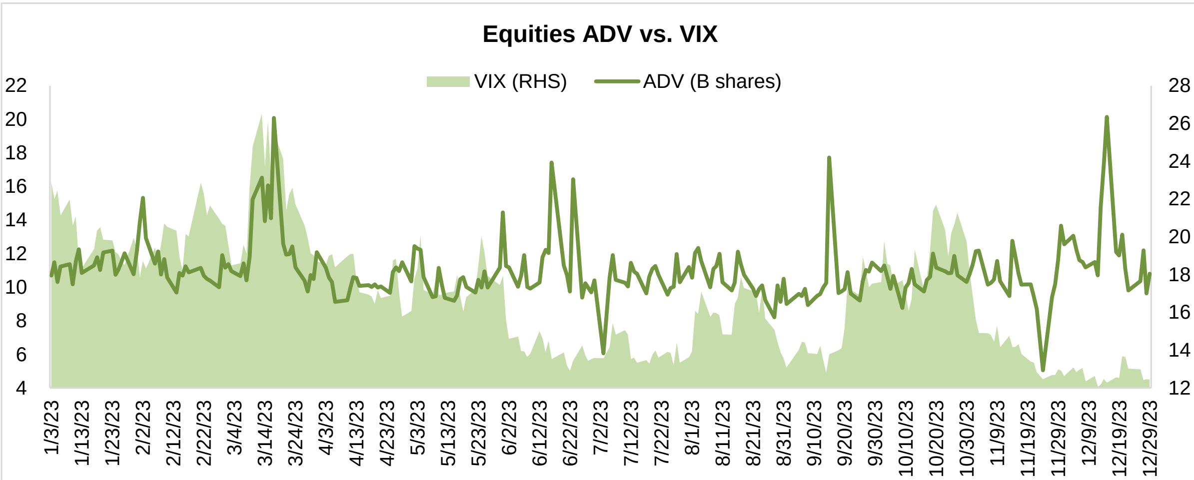
We highlight the following trends for 2023:

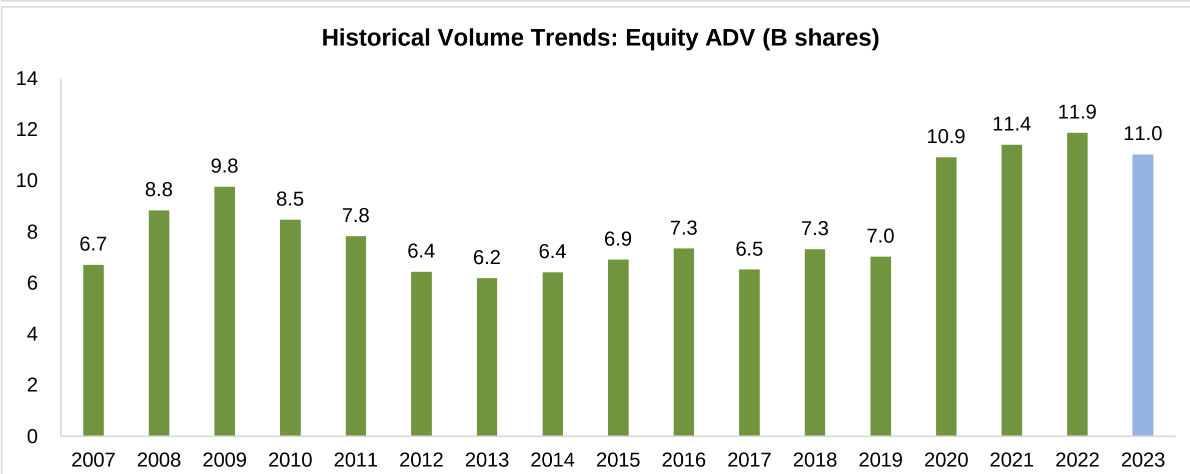
- Average 11.0 billion shares
  - -7.1% Y/Y
  - Peak 20.2 billion shares on December 15
  - Trough 5.0 billion shares on November 24 (the day after Thanksgiving)
- 5-year CAGR +8.6%
- 10-year CAGR +6.0%




Source: Cboe Global Markets, SIFMA estimates




Source: Cboe Global Markets, Bloomberg, SIFMA estimates

## Equity Volumes Themes

### Normalizing Equity ADV

As the VIX settled, so did equity ADV. However, equity volumes have not – and do not appear to be headed in that direction – returned to historical levels (~7 billion shares). As noted above, the average equity ADV in 2023 was 11.0 billion shares, -7.1% Y/Y.

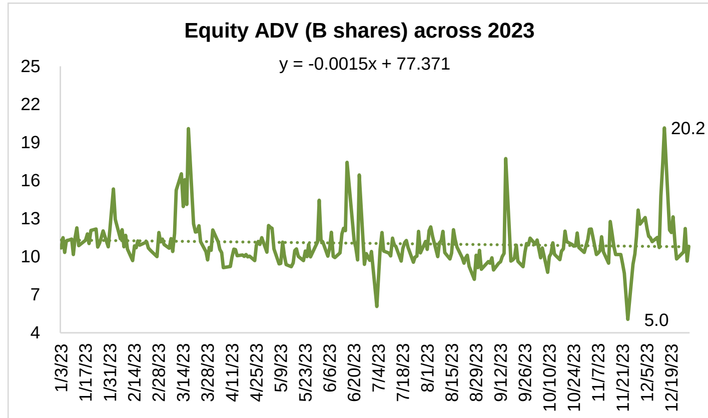
The spikes in the chart are lessening, marking a tighter volume range.

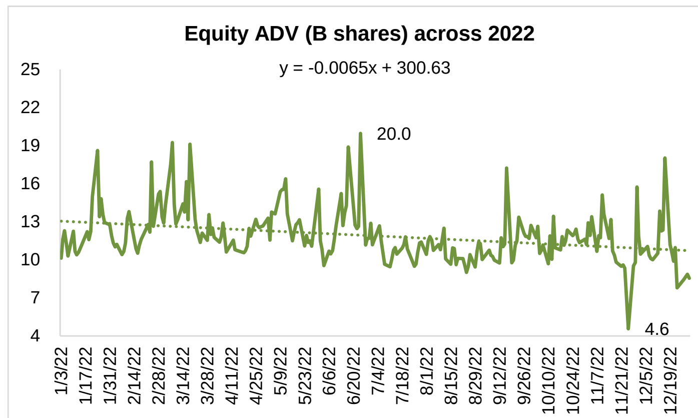
| | 2021 | 2022 | Y/Y Chg | 2023 | Y/Y Chg |
|---|---|---|---|---|---|
| Average | 11.4 | 11.9 | 4.1% | 11.0 | -7.1% |
| Peak | 24.5 | 20.0 | -18.5% | 20.2 | 0.9% |
| Trough | 7.4 | 4.6 | -38.2% | 5.0 | 10.5% |
| Range | 17.1 | 15.4 | -9.9% | 15.1 | -1.9% |
| Slope | (0.0125) | (0.0065) | | (0.0015) | |

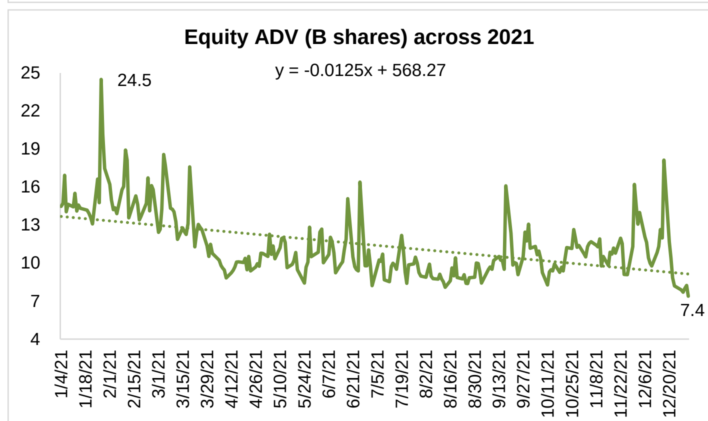
Note: Lower volume days listed, such as the troughs, most likely occurred on a shortened or post-holiday and therefore low volume trading day (ex: the day after Thanksgiving).

Again, we kept the scale on the left axis the same for all three years. 2023 does not reach the top of the scale. The same can be said for 2022, while 2021 had reached the top of the scale.

Further, while all three charts were downward sloping, the slope has been lessening as we move through the years. What appears to be happening in equities over the last two years is that volumes are settling at a higher than historical level.




Source: Cboe Global Markets, SIFMA estimates

## Less Days at Higher Levels

Further proof that equity volumes are settling down to a normalized, albeit higher, level is shown in the following analysis. For the last three years, we marked each day that was above a certain threshold, including above: 10, 12, 14, and 16 billion shares.

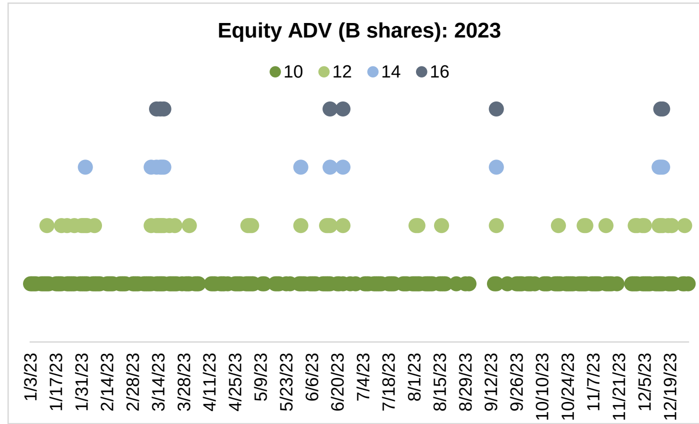
Tracking the decline in days above these thresholds, we calculated the percent change from 2023 to 2021:

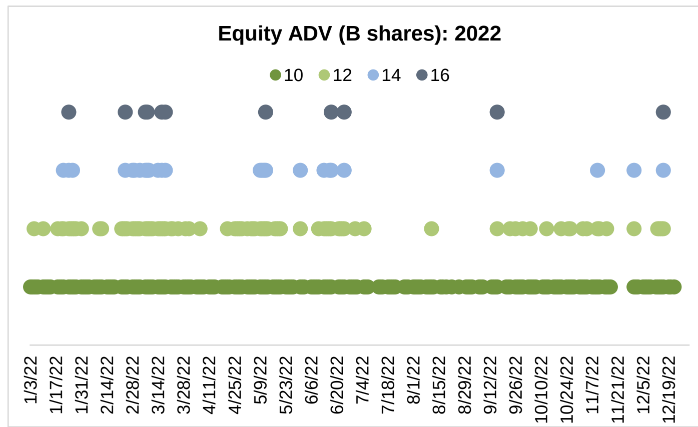
- 16 billion shares = -55.6%
- 14 billion shares = -70.5%
- 12 billion shares = -42.9%
- 10 billion shares = +22.0%

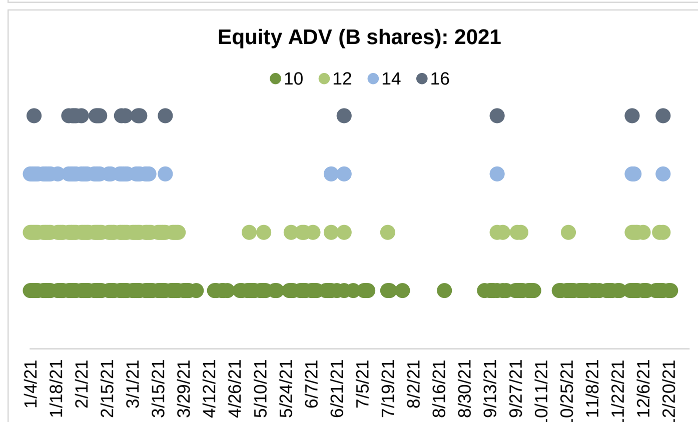
What does this mean? The declines in the days above higher levels yet an increase at the lower end demonstrate the settling of volumes at higher than historical levels.

2023 saw only eight days above the highest threshold and thirteen above the next highest level. This is down from eighteen days and forty-four days respectively in 2021.

However, equity ADV spent 77.6% of the year above the lowest threshold. Elevated, but stabilizing.



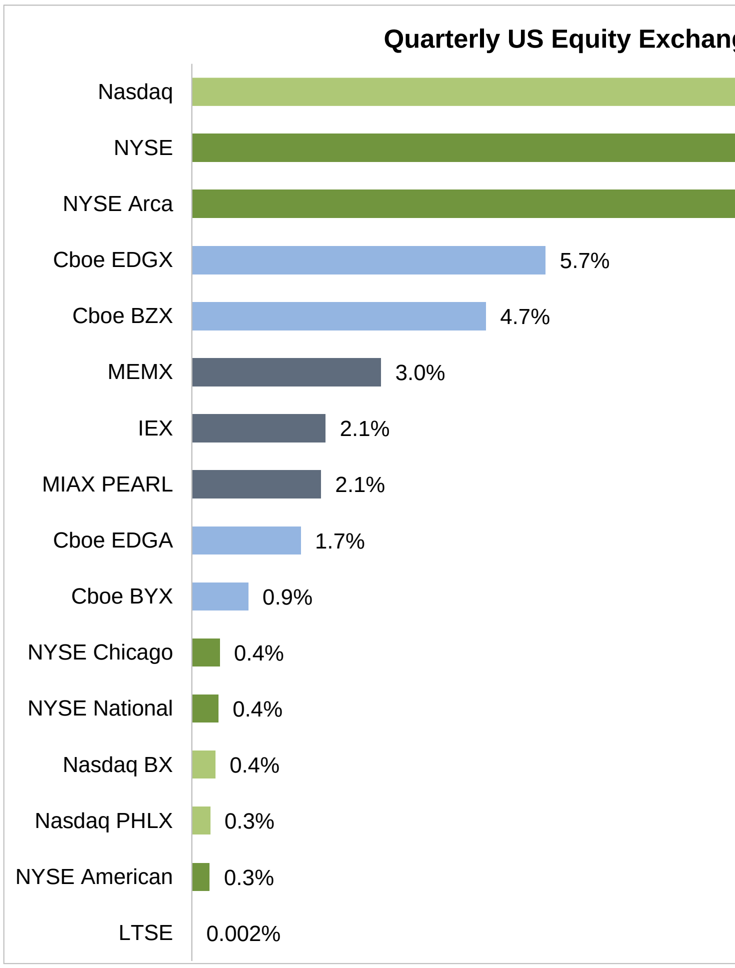



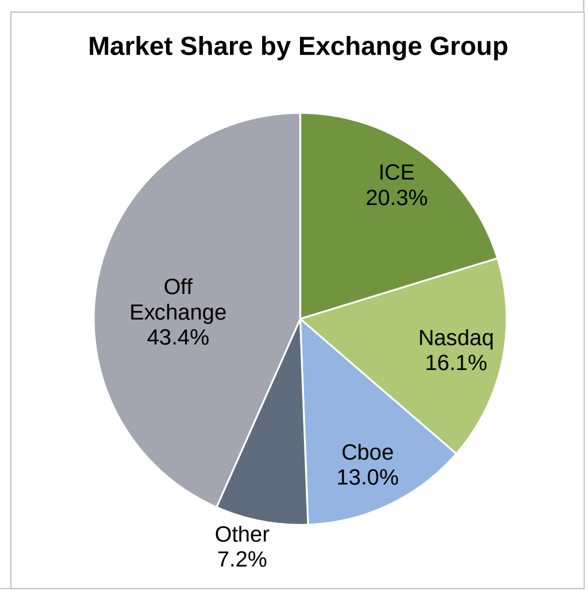




Source: Cboe Global Markets, SIFMA estimates

## Exchange and Parent Group Market Share

Currently, there are sixteen U.S. equities exchanges, operating under seven parent companies. The Nasdaq stock exchange holds the top spot among individual exchanges, with a 15.4% market share. However, NYSE holds the top spot on aggregate, i.e. by total exchange group, with a cumulative 20.3% share across its five exchanges.



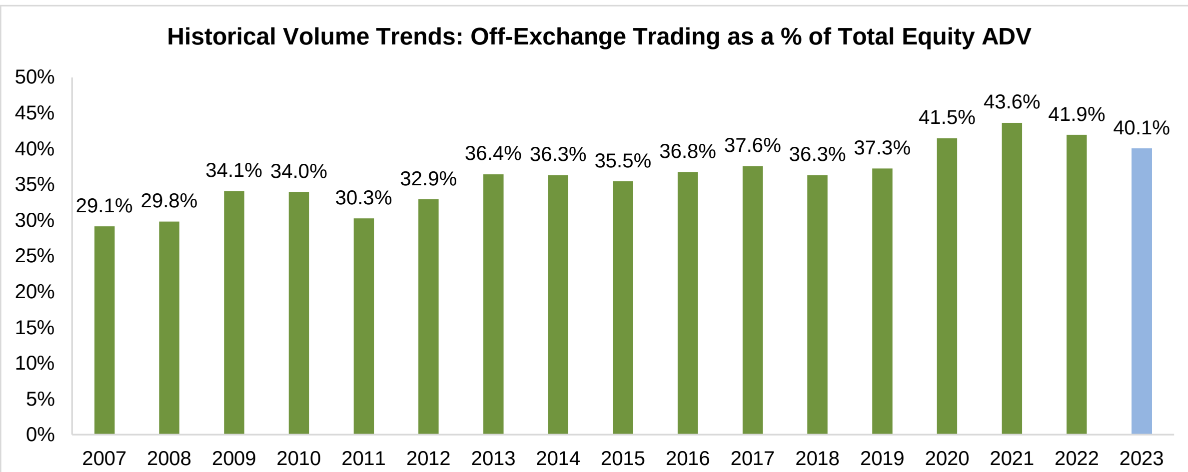




Source: Cboe Global Markets, SIFMA estimates
Note: As of 4Q23. Other = MEMX, IEX, MIAX Pearl, and LTSE.

## Off-Exchange Trading

The percentage of off-exchange trading in any given time period is a function of market fundamentals at that time, such as retail participation, volatility levels (volumes typically move back on exchange during volatile times), and other factors. Orders executed off exchange are immediately reported to the Trade Reporting Facilities (TRF), i.e. to the tape, to help facilitate price discovery. The growth in off-exchange trading over the past few years has been attributed to the growth in retail investing. 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.

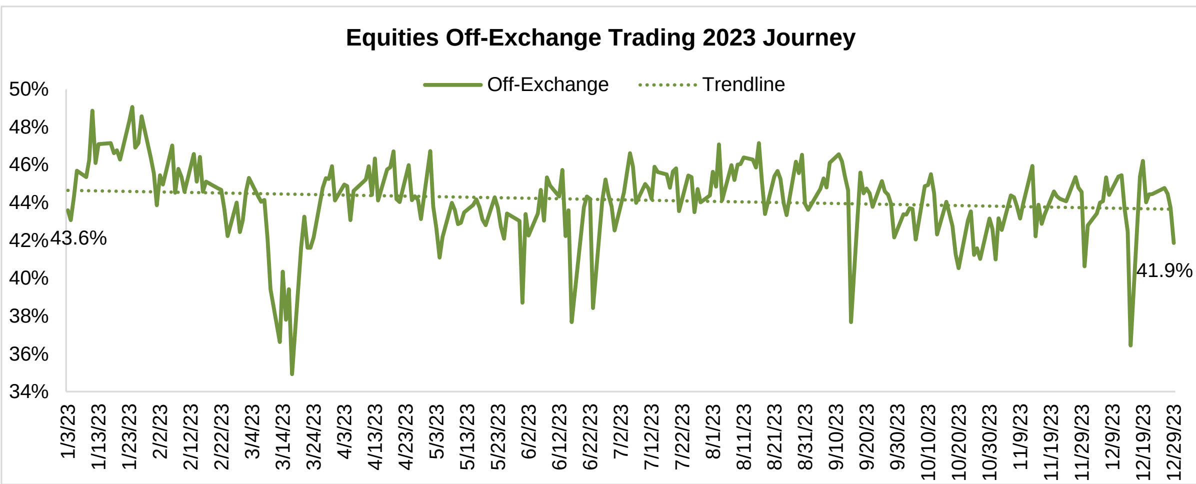
As retail investor trading has grown as a percentage of overall volume, it is logical that off-exchange volume grew as well. You see the increase in off-exchange trading begin in 2019, when retail brokerages reduced commissions to $0. The level peaked in 2021, settling in the low 40s last year, versus the mid to high 30s seen prior to this growth period.




Source: Cboe Global Markets, SIFMA estimates

However, not all off-exchange trading is retail. Looking at the latest data from FINRA[4], total volumes were broken out across exchange 59.5% and off exchange 40.5%, which includes alternative trading systems at 11.0% and non-alternative trading systems at 29.5%. Next, our market structure survey estimates retail as a percent of total equity volumes at 20%-30%. Additionally, block trades are executed off exchange, finishing out the roughly 40%. In other words, off-exchange flow is more diverse than only wholesalers executing retail trades.

Further, as noted above, the level of off-exchange trading is influenced by multiple factors. As such, the level fluctuates on a daily basis, as shown in the chart below. Overall, the trendline for off-exchange volumes in 2023 was slightly downward sloping.




Source: Cboe Global Markets, SIFMA estimates

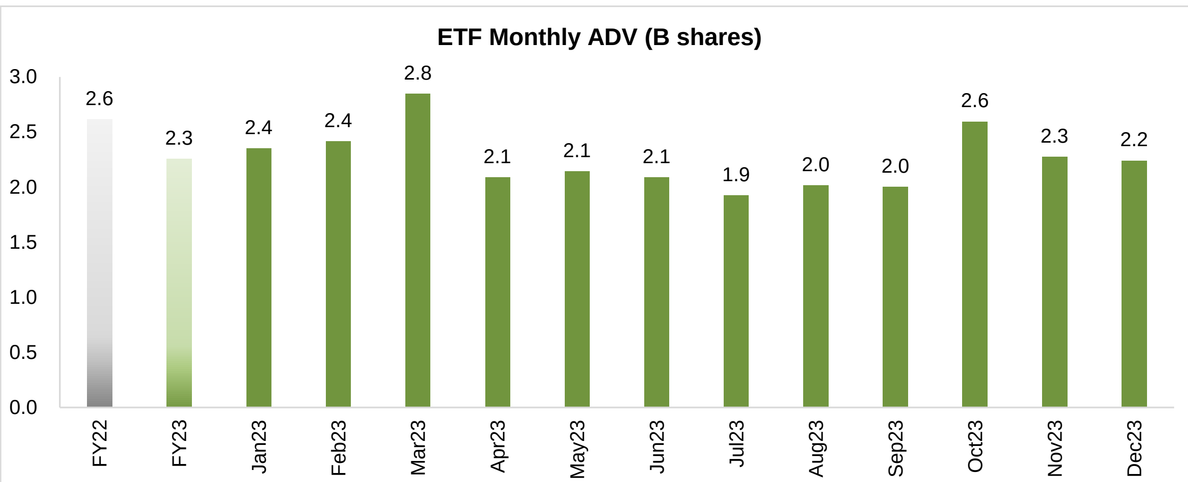
[4] (as of 2022, 2023 was not available at the writing of this report),

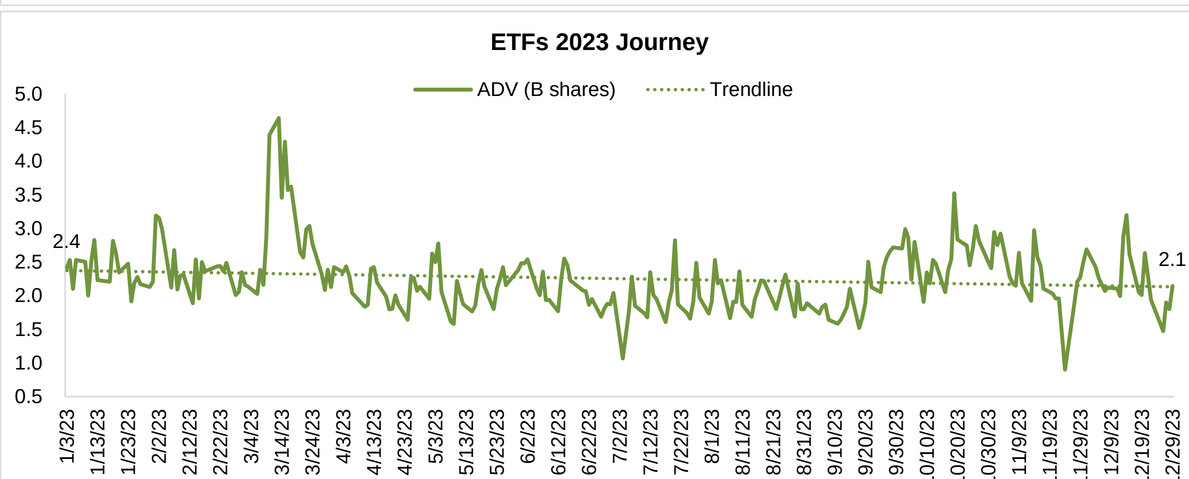
## ETF Volumes Metrics

ETF volumes remain elevated to historical levels – 2.3 billion shares on average, -13.8% Y/Y – but came down from last year. The overall trendline for ETF volumes in 2023 was essentially flat, with its spike – and peak level – in the first half of the year and a few more spikes later in the year. ETF volumes as a percent of total equity market volumes were 20.4%.

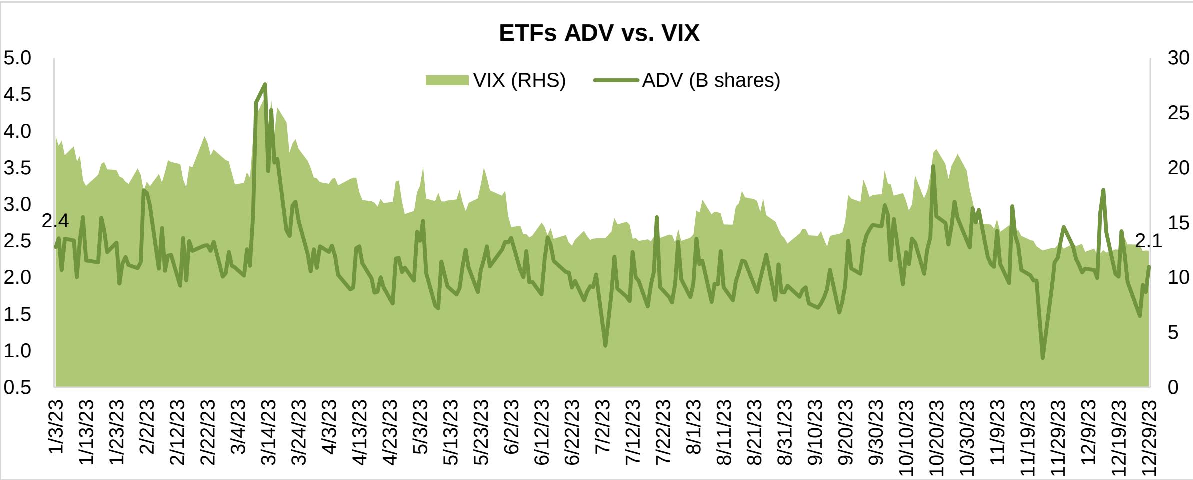
We highlight the following trends:

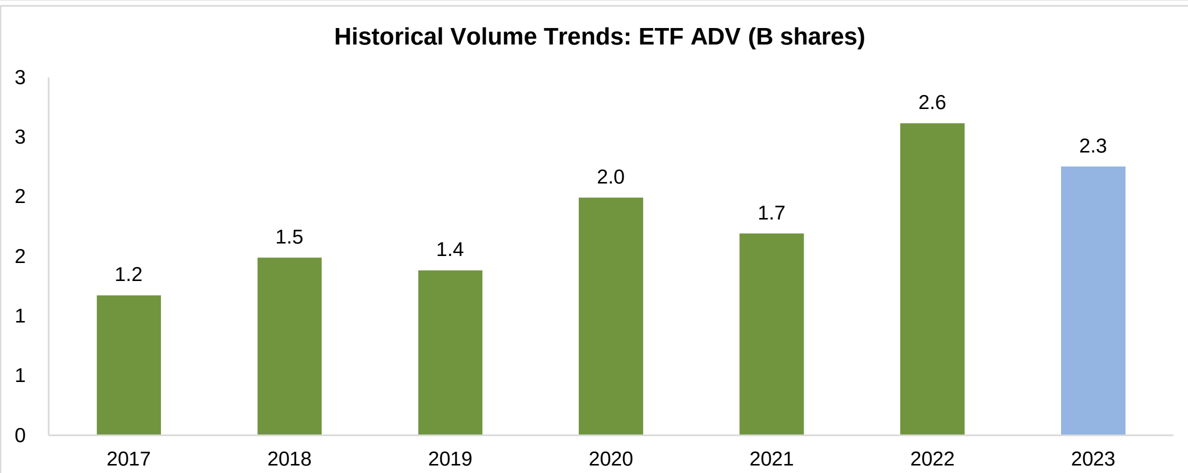
- 2023 average 2.3 billion shares
    - -13.8% Y/Y
    - Peak 4.6 billion shares on March 13
    - Trough 0.9 billion shares on November 24 (the day after Thanksgiving)
- 5-Year CAGR +8.6%




Source: Cboe Global Markets, SIFMA estimates




Source: Cboe Global Markets, Bloomberg, SIFMA estimates

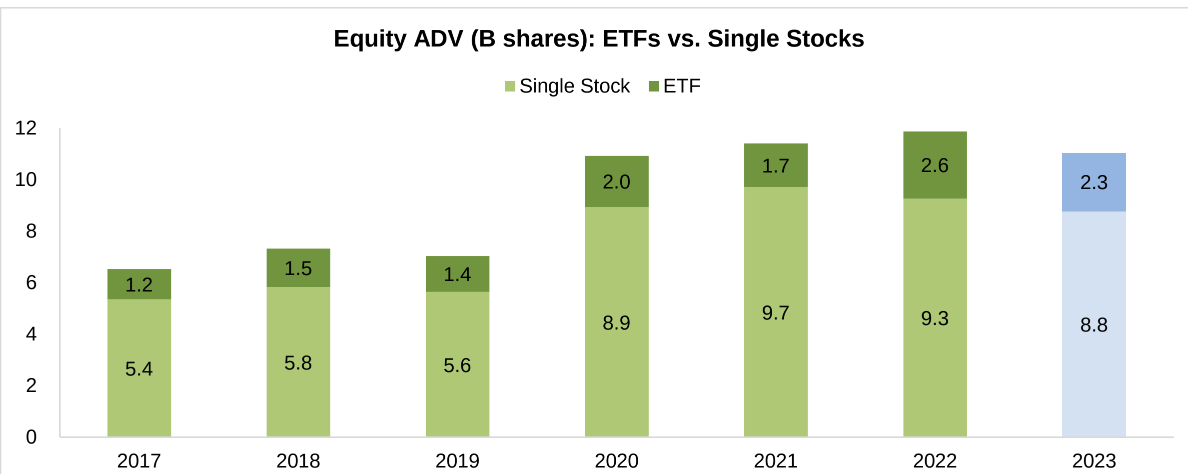
## ETF Volumes Themes

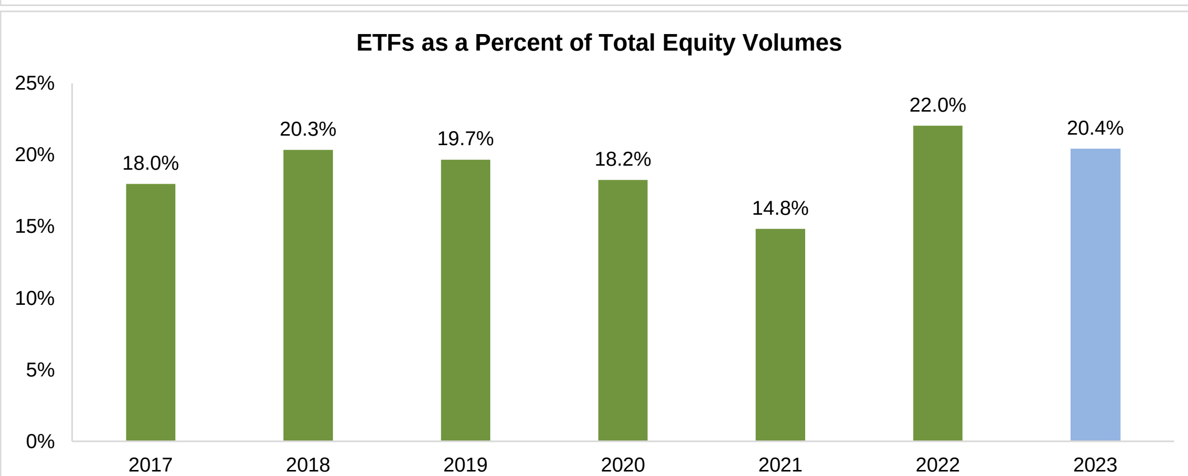
### ETFs as a Percent of Total Equities

ETF shares trade on the U.S. equity markets in the secondary market, as do the underlying stocks used to create equity ETFs. On average in 2023, ETF volume was 2.3 billion shares versus 8.8 billion shares for single stock equites.

We highlight the following ETF trends:

- ETF volumes -13.8% Y/Y, versus
    - Single stock -5.1%
    - Total equities -7.1%
- 20.4% of total equities volume in 2023, -1.6 pps Y/Y



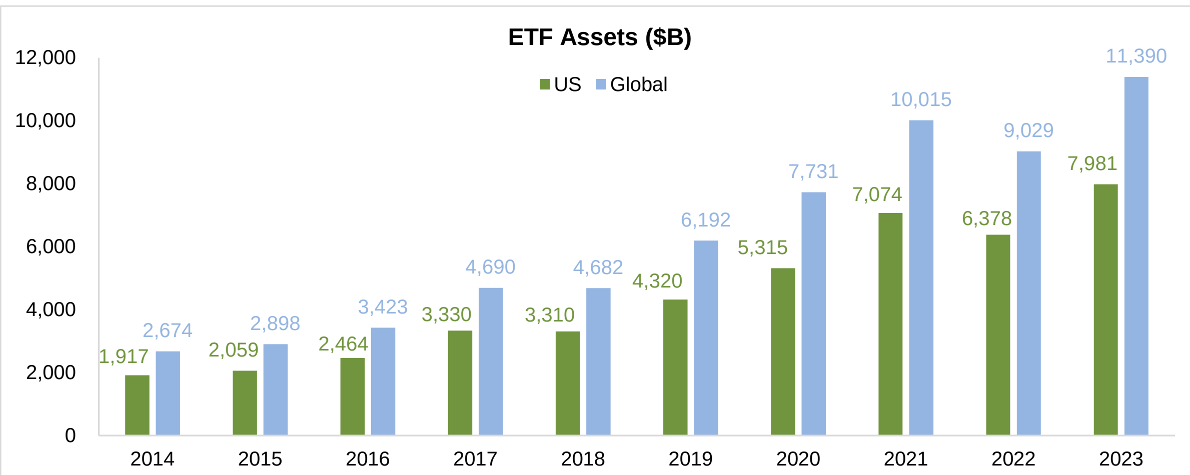

Source: Cboe Global Markets, SIFMA estimates

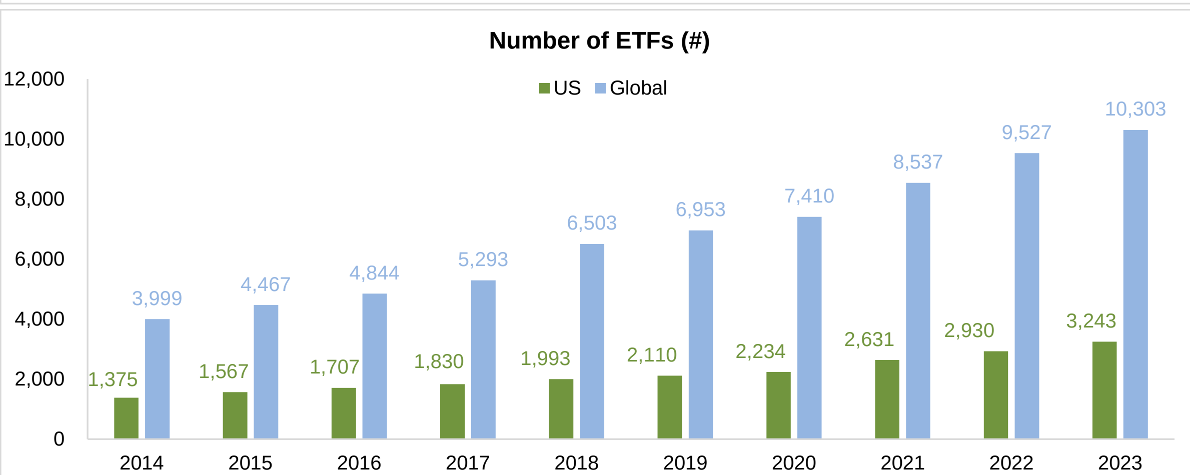
## ETF Landscape

According to ETFGI research, the global ETF industry gathered $974.9 billion in net inflows in 2023, the second highest level of annual net inflows behind the $1.3 trillion in 2021 (+13.9 Y/Y). December marked the 55th month of consecutive net inflows. The U.S. ETF industry saw net inflows of $604.0 billion in 2023, the third highest on record after $919.8 billion in 2021 (-0.5% Y/Y). December marked the 20th month of consecutive net inflows.

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

- US ETF assets $8.0 trillion; +25.1% Y/Y, +19.2% 5-year CAGR, +17.3% 10-year CAGR (US 70.1% of total global)
- US # ETFs 3,243; +10.7% Y/Y, +10.2% 5-year CAGR, +9.9% 10-year CAGR (US 31.5% of total global)
- Global ETF assets $11.4 trillion; +26.1% Y/Y, +19.5% 5-year CAGR, +17.6% 10-year CAGR
- Global # ETFs 10,303; +8.1% Y/Y, +9.6% 5-year CAGR, +11.1% 10-year CAGR




Source: ETFGI
Note: 2023 as of December

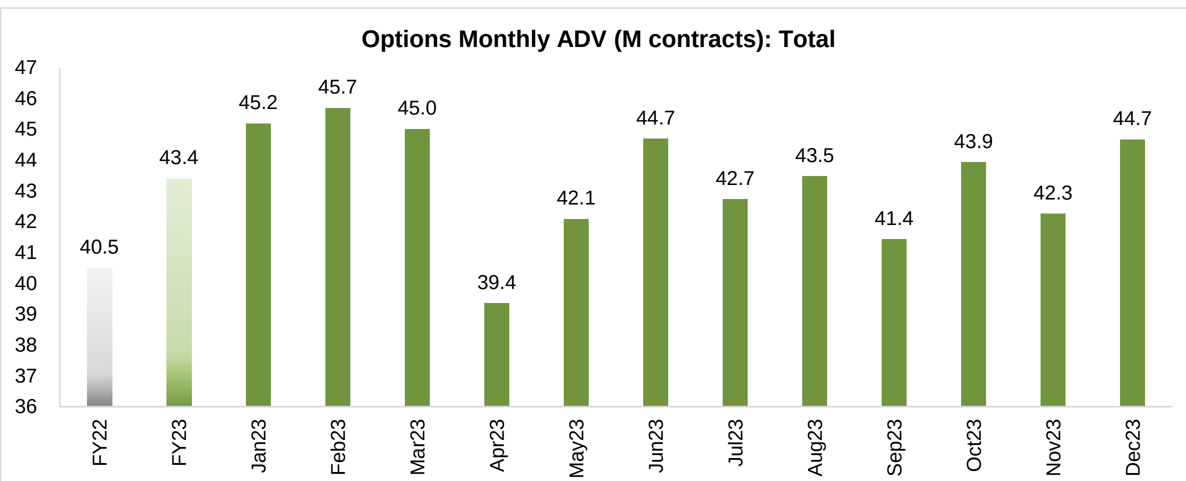
## Options Volumes Metrics

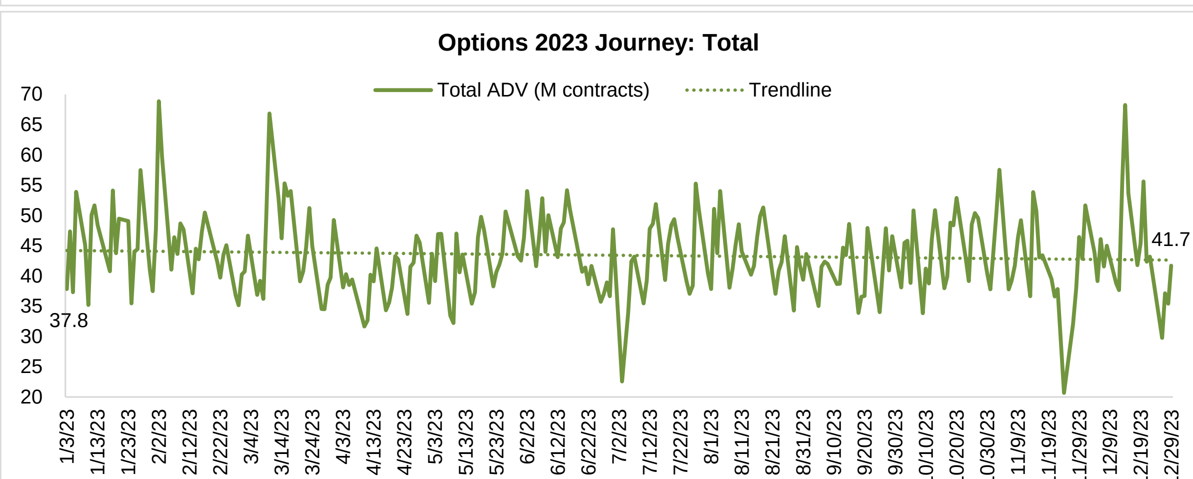
2023 represented a continuation of the growth in options volumes, ending the year at 43.4 million contracts on average, +7.1% Y/Y. The overall trendline for options volumes in 2021 was essentially flat. Markets saw nineteen days last year where volumes were greater than 50 million contracts and three days where volumes topped 60 million contracts.

We highlight the following trends:

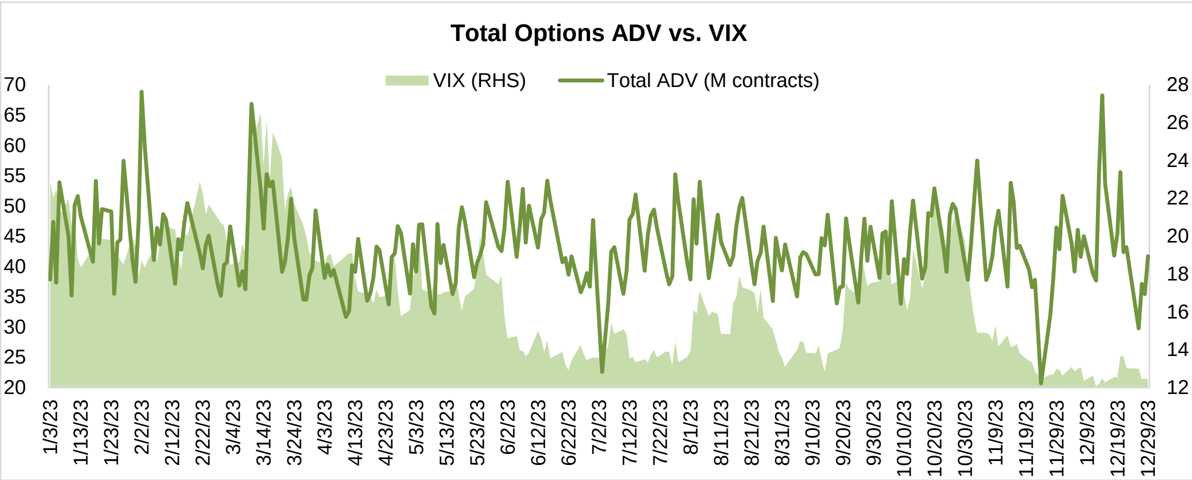
**Total Options**

- 2023 average 43.4 million contracts
  - +7.1% Y/Y
  - Peak 68.9 million contracts on February 2
  - Trough 20.7 million contracts on November 24 (the day after Thanksgiving)
- 5-Year CAGR +16.2%
- 10-Year CAGR +10.3%

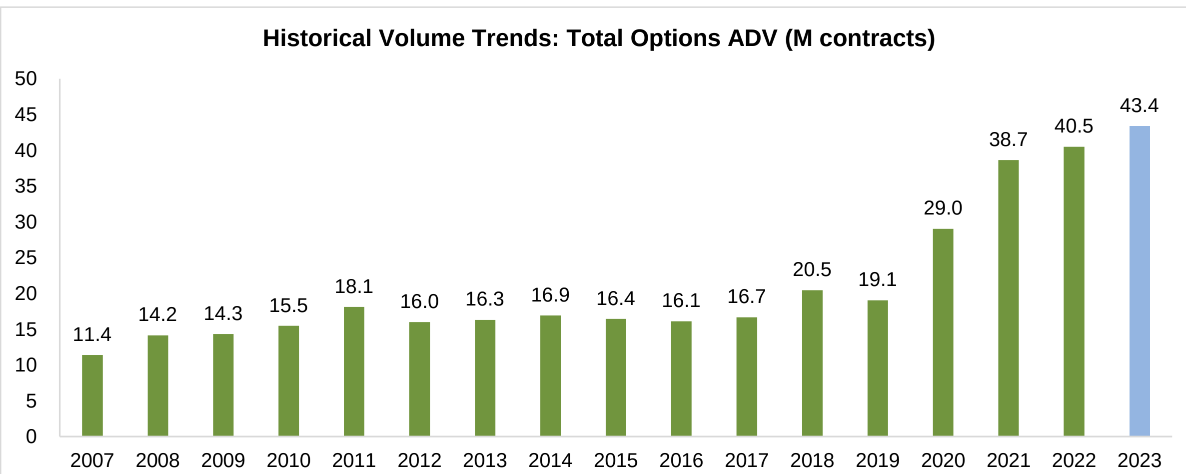



Source: Cboe Global Markets, SIFMA estimates




Source: Cboe Global Markets, Bloomberg, SIFMA estimates

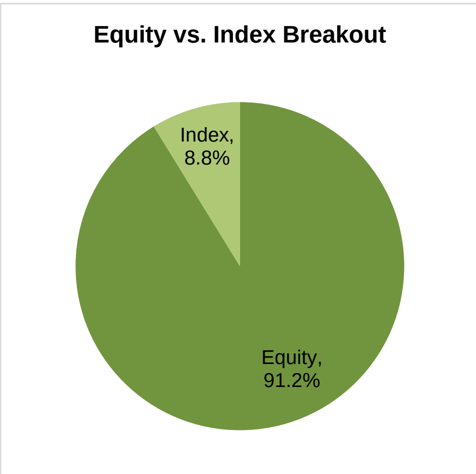


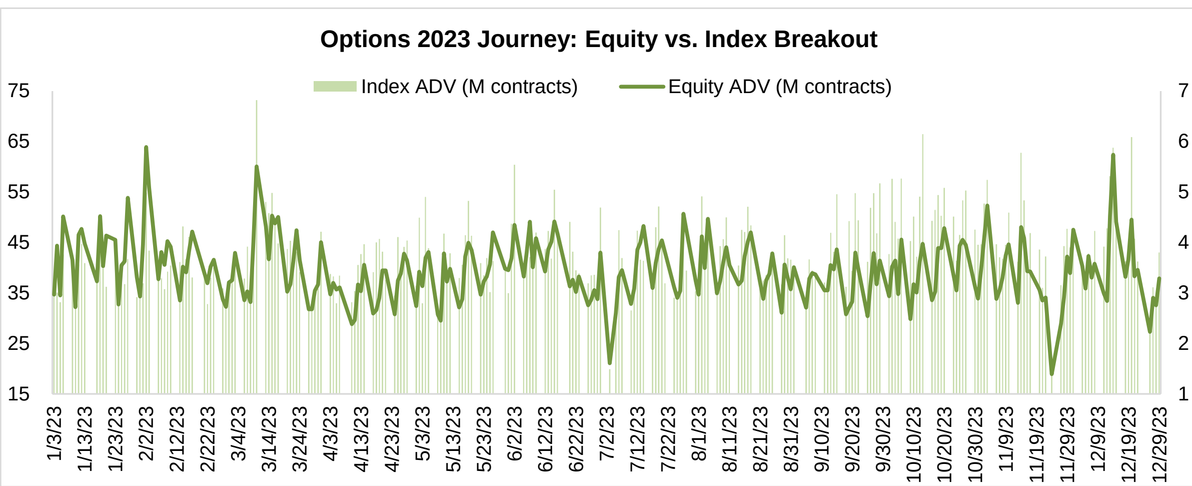

Source: Options Clearing Corporation, SIFMA estimates

Note: Data varies slightly from previous charts given different sources

## Options Breakout

On average for 2023, the total options trading volumes breakout was: equity 91.2% and index 8.8%. Equity options ADV peaked at 93.7% and troughed at 87.9%. For index options volumes, the peak was 12.1% and trough 6.3%.

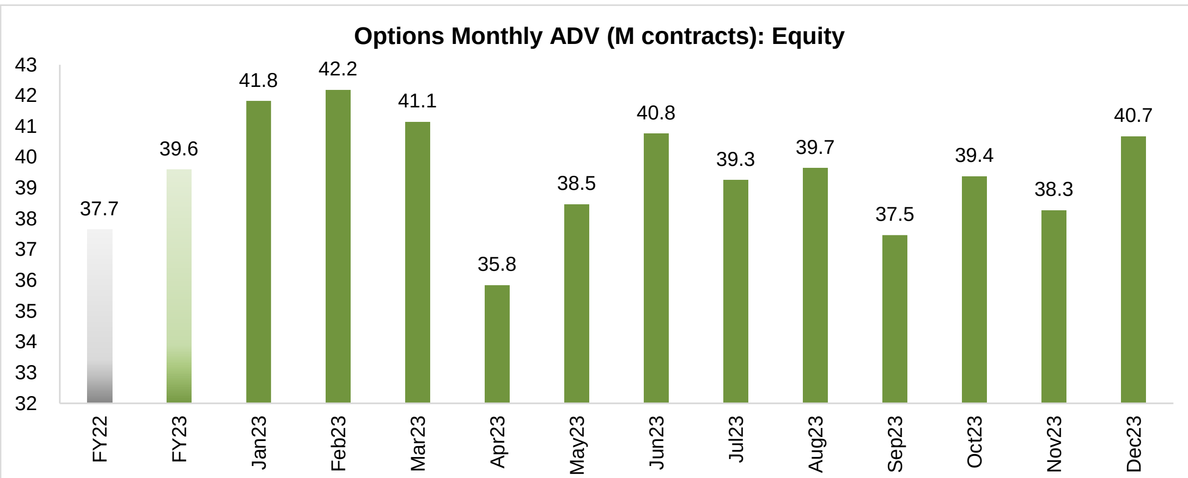


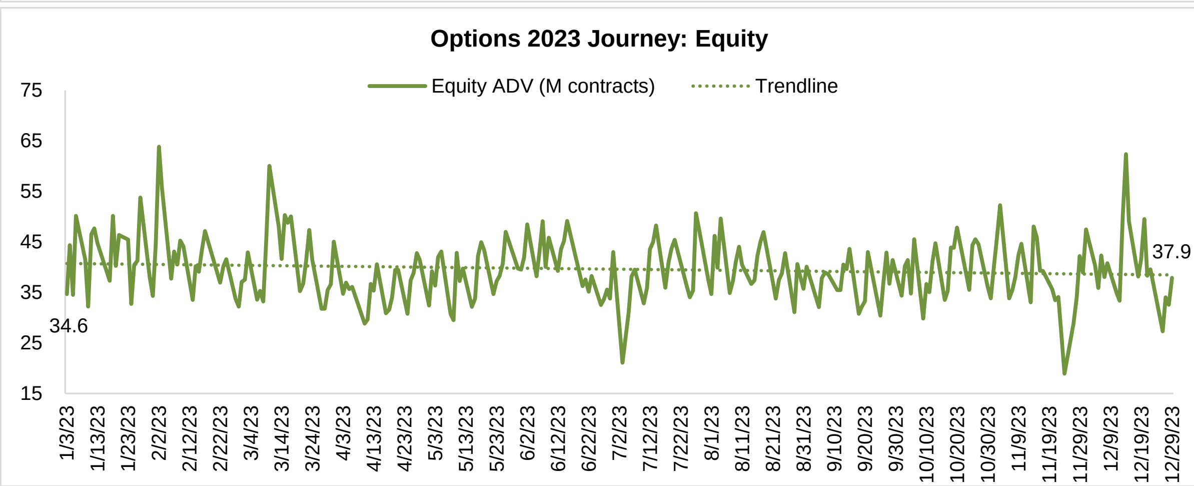




Source: Cboe Global Markets, SIFMA estimates

## Equity Options

- 2023 average 39.6 million contracts
  - +5.2% Y/Y
  - Peak 63.9 million contracts on February 2
  - Trough 18.9 million contracts on November 24
- 5-Year CAGR +16.8%
- 10-Year CAGR +10.4%

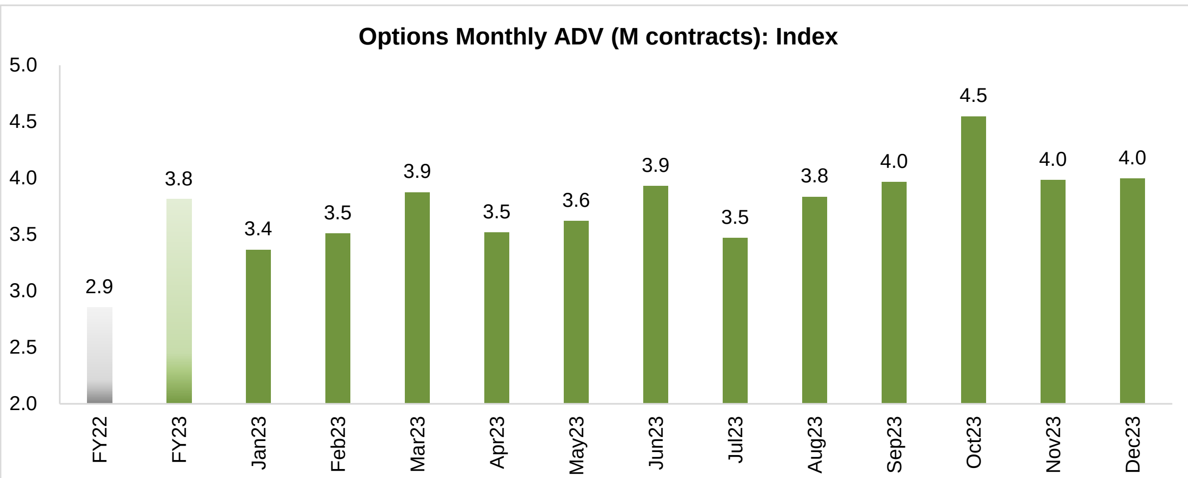


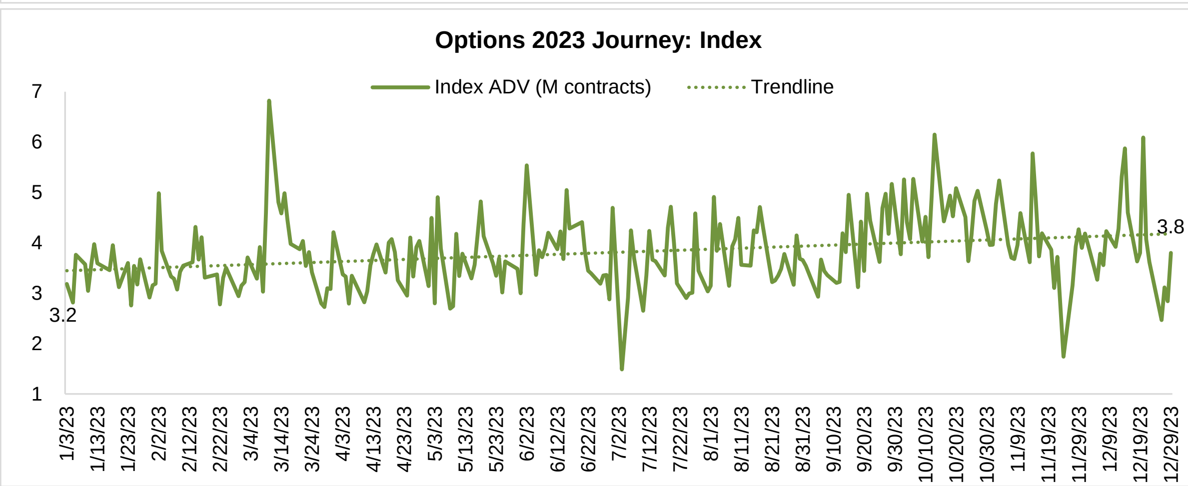




Source: Cboe Global Markets, SIFMA estimates

## Index Options

- 2023 ADV 3.8 million contracts
  - +33.5% Y/Y
  - Peak 6.8 million contracts on March 10
  - Trough 1.5 million contracts on July 3
- 5-Year CAGR +11.1%
- 10-Year CAGR +9.6%




Source: Cboe Global Markets, SIFMA estimates

## Options Volumes Themes

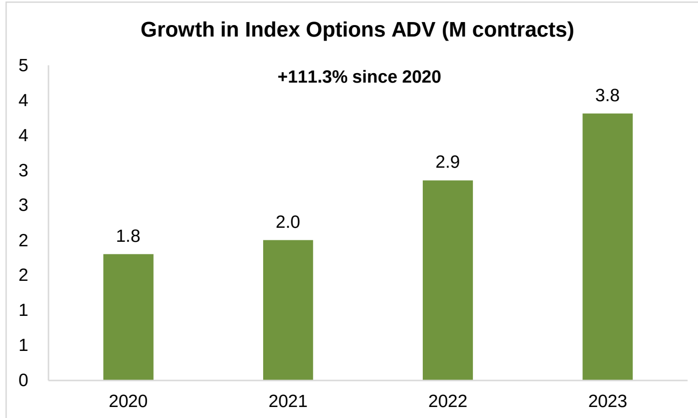
### The Growth in Index Options

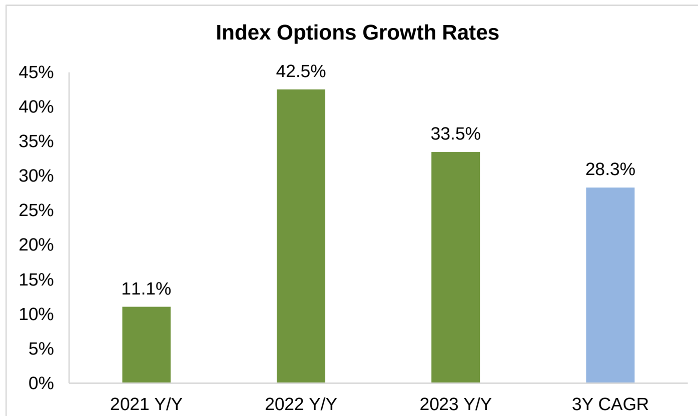
The growth in index options continued in 2023. Index options ADV averaged 3.8 million contracts in 2023, +33.5% Y/Y. Index options ADV has grown 111.3% since 2020.

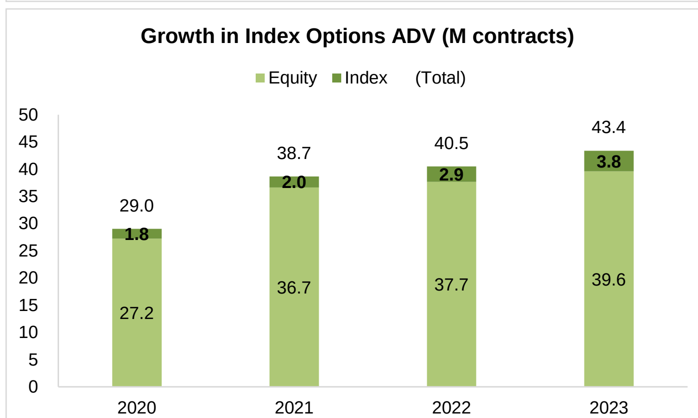
This segment of the options market has shown solid growth every year since 2020, as shown in the charts to the right. Index options posted a 28.3% three-year CAGR over this time.

Looking at total options growth, index options have far outpaced total growth rates and that of equities, or single stock options. (We note that this is off of a smaller volume base.) The 111.3% index options growth rate is 2.5x that of equities growth and 2.3x total options growth over the time period.

| | Equity | Index | Total |
|---|---|---|---|
| 2021 Y/Y | 34.6% | 11.1% | 33.1% |
| 2022 Y/Y | 2.7% | 42.5% | 4.8% |
| 2023 Y/Y | 5.2% | 33.5% | 7.1% |
| 3Y CAGR | 13.3% | 28.3% | 14.3% |
| Start to End | 45.4% | 111.3% | 49.4% |



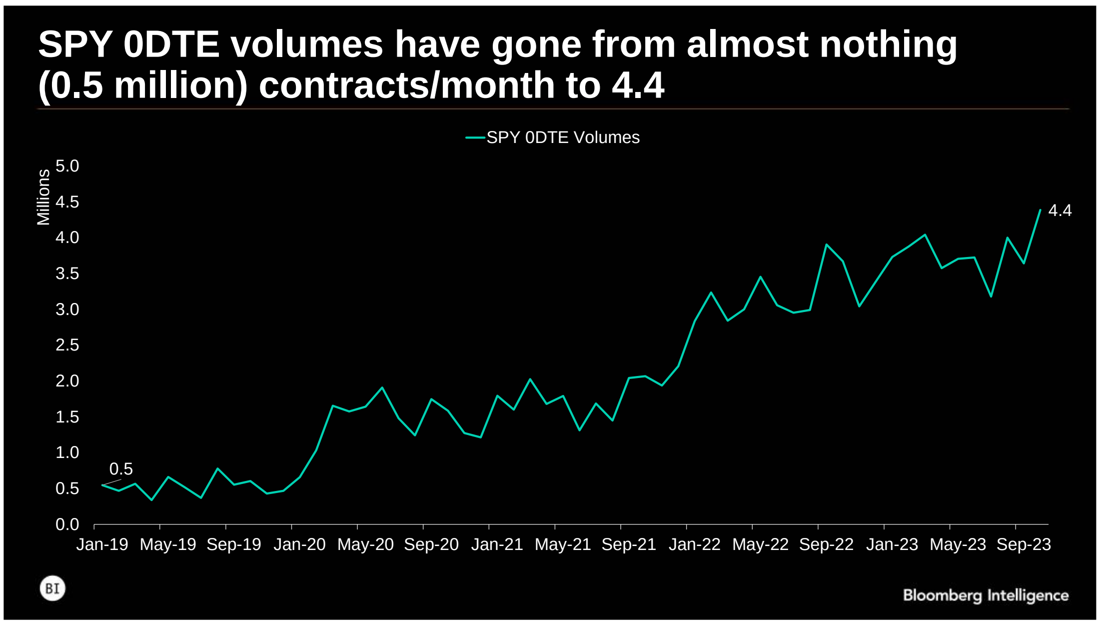




Source: Cboe Global Markets, SIFMA estimates

### Growth in Short-Dated Options

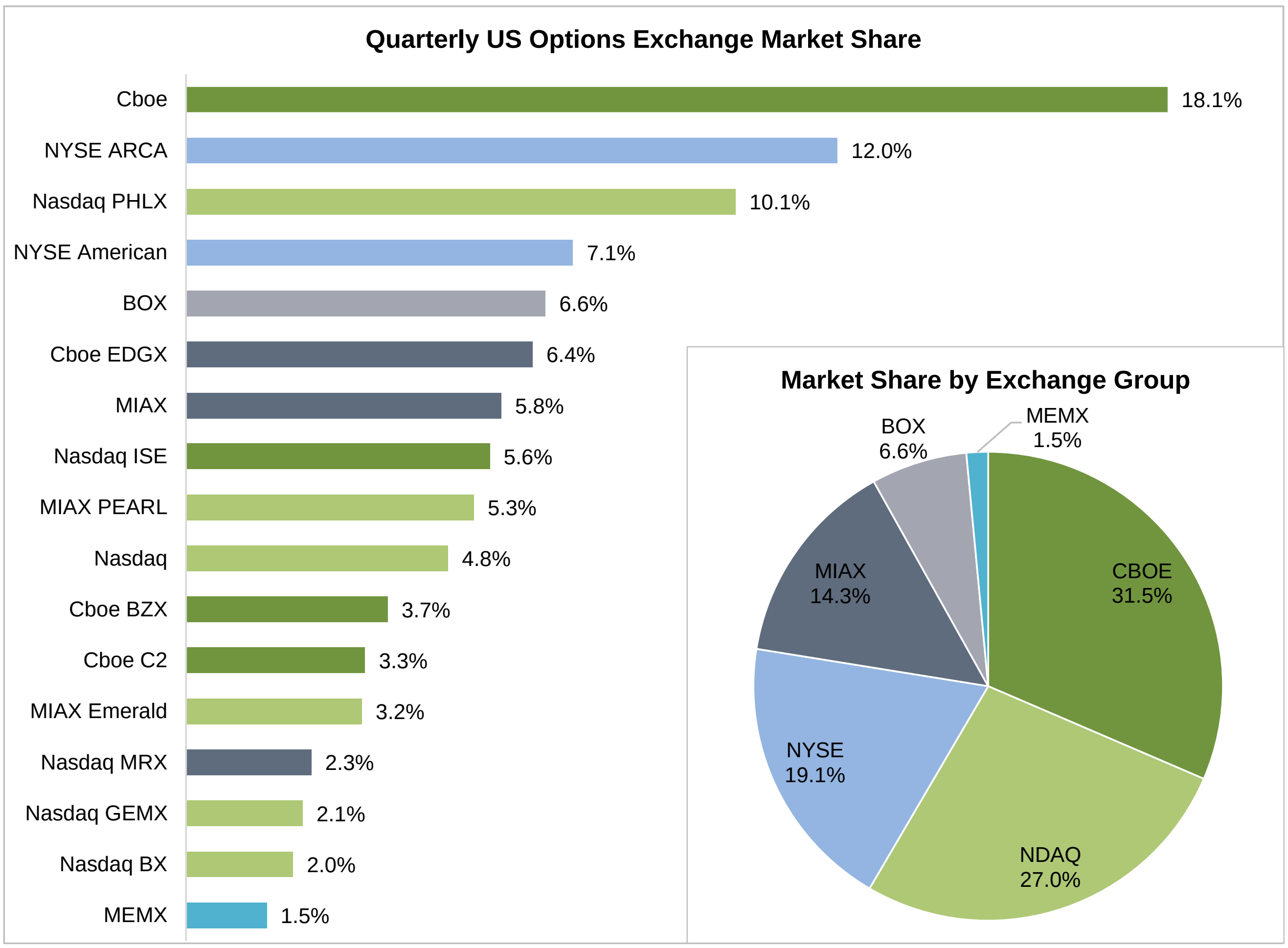
Short-dated options contracts expire at the end of the current trading day but are generally listed one to two weeks prior to expiration. One of the drivers of growth is that there are now S&P 500 options contracts expiring every day of the week versus only Friday expirations back in 2019. (We note that single name equity options only expire on Friday, CBOE indices and a few larger ETFs also have midweek expirations.) 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) meeting or a corporate earnings release.

Bloomberg Intelligence research indicates that zero-days-to-expiration (0DTE) options contracts have grown significantly, +780% since 2019 for SPY 0DTE options.



### Exchange and Parent Group Market Share

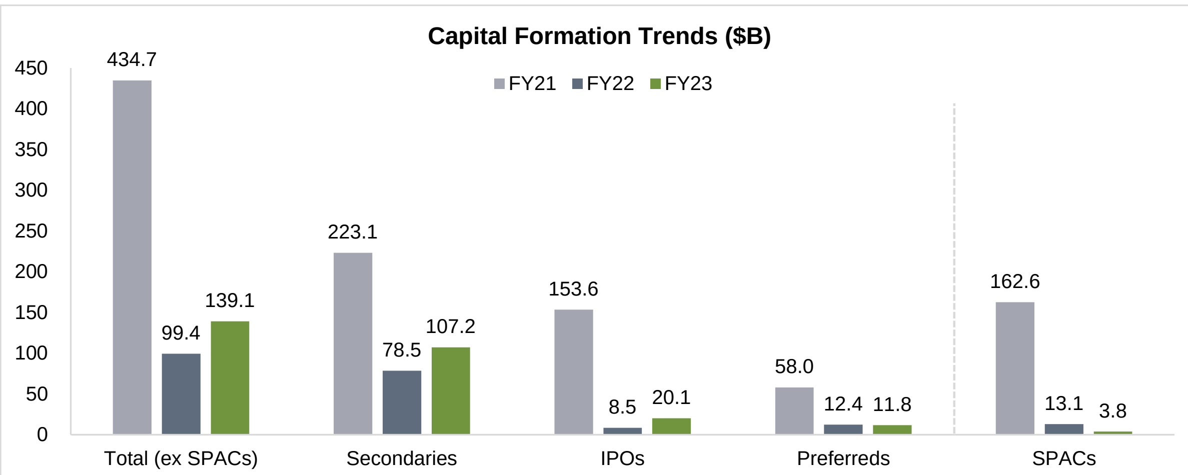
Currently, there are seventeen U.S. exchanges, operating under six parent companies. The Cboe exchange holds the top spot among individual exchanges, with a 18.1% market share. Cboe also holds the top spot on aggregate, i.e. total by exchange group, with a cumulative 31.5% share across its four exchanges.




Source: Cboe Global Markets, SIFMA estimates (as of 4Q23)

## Capital Formation Metrics

Capital markets recovered somewhat in 2023 versus the prior year but remain subdued to historical ranges. Total equity issuance (excluding SPACs) finished last year at $139.1 billion, +39.9% Y/Y. IPO deal value was $20.1 billion last year, +135.5%. The following pages highlight equity issuance trends seen across the year.

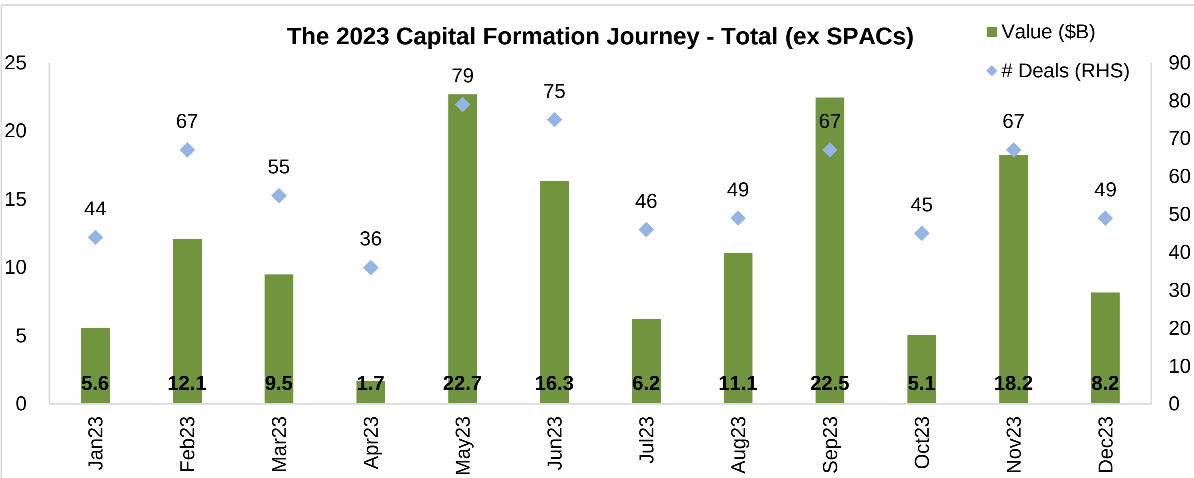



Source: Dealogic

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

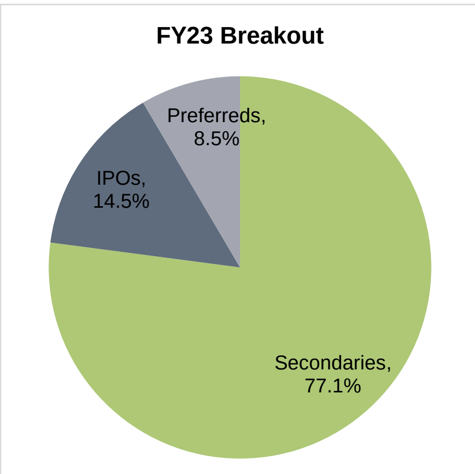
## Total Issuance

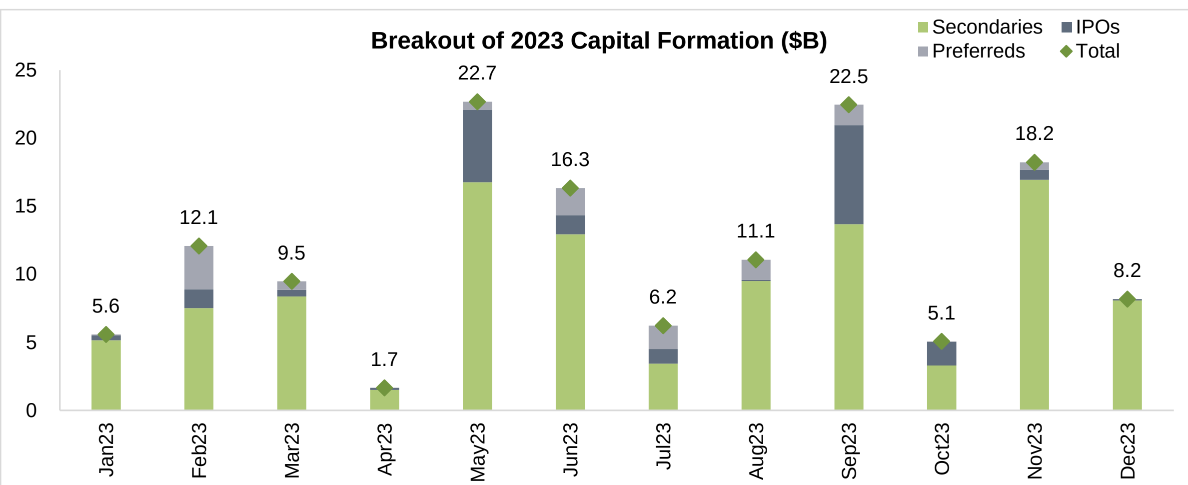
- Total annual deal value $139.1 billion, +39.9% Y/Y
  - Peak monthly level $22.7 billion
  - Lowest monthly level $1.7 billion
- Total annual number of deals 679, +36.6% Y/Y




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

- Breakout of total capital formation (% of total issuance)
  - Secondaries 77.1%, -1.9 pps Y/Y
  - IPOs 14.5%, +5.9 pps Y/Y
  - Preferreds 8.5%, -4.0 pps Y/Y

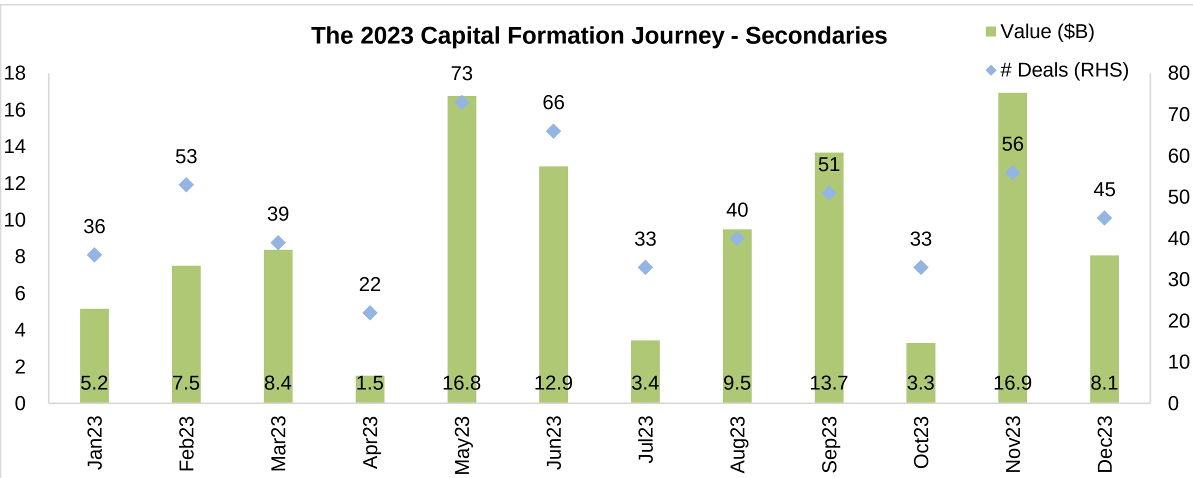



Source: Dealogic
Note: Total, secondaries, IPOs, and preferreds include rank eligible deals and exclude BDCs, SPACs, ETFs, CLEFs and rights offers

## Secondary Issuance (Secondaries)

- Total annual deal value $107.2 billion, +36.5% Y/Y
  - Peak monthly level $16.9 billion
  - Lowest monthly level $1.5 billion
- Total annual number of deals 547, +41.0% Y/Y

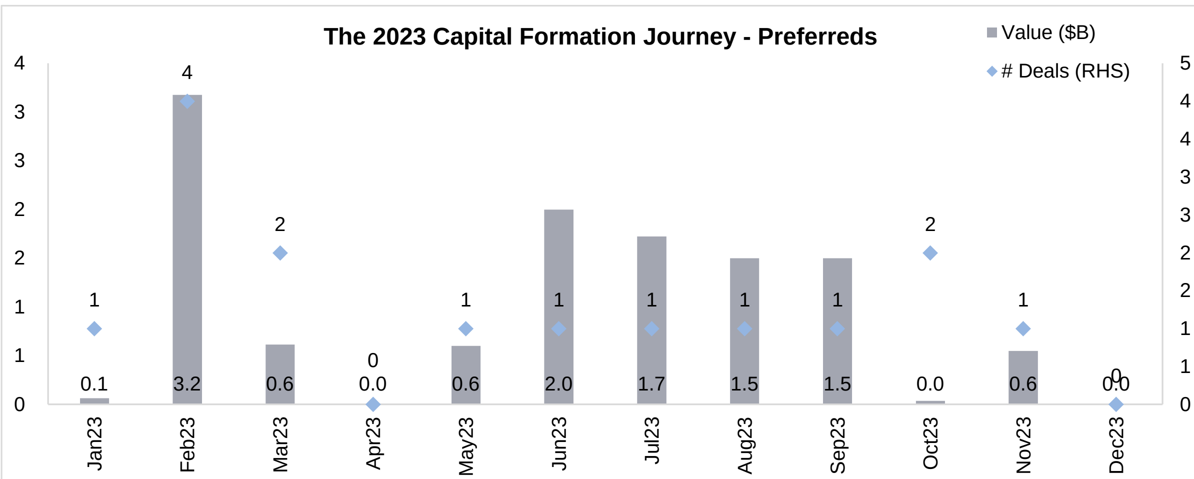



Source: Dealogic

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

## Preferreds Issuance

- Total annual deal value $11.8 billion, -4.7% Y/Y
  - Peak monthly level $3.2 billion
  - Lowest monthly level $0.0 billion
- Total annual number of deals 15, -34.8% Y/Y

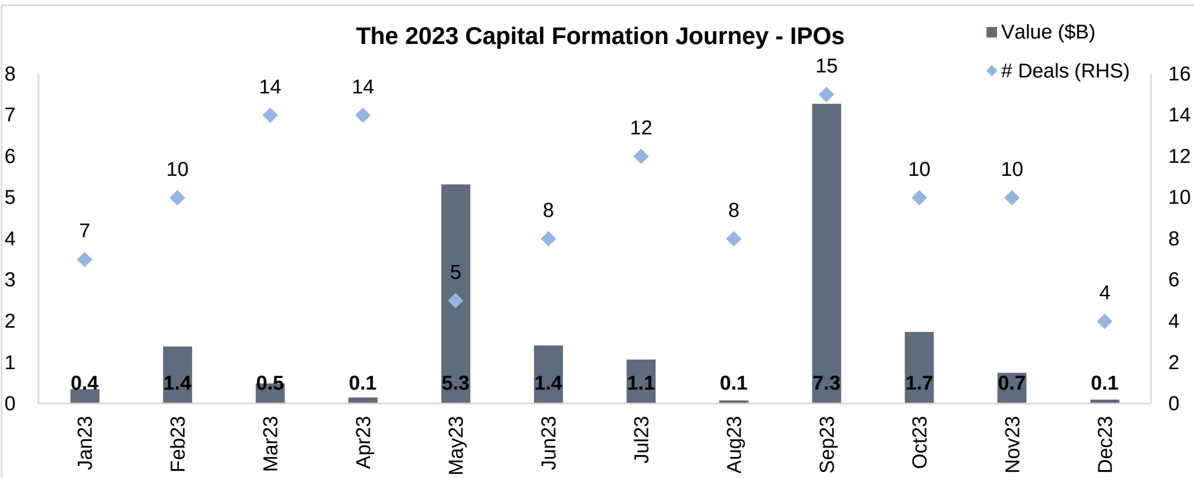



Source: Dealogic

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

## IPO Issuance

- Total annual deal value $20.1 billion, +135.5% Y/Y
  - Peak monthly level $7.3 billion
  - Lowest monthly level $0.1 billion
- Total annual number of deals 117, +36.0% Y/Y




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

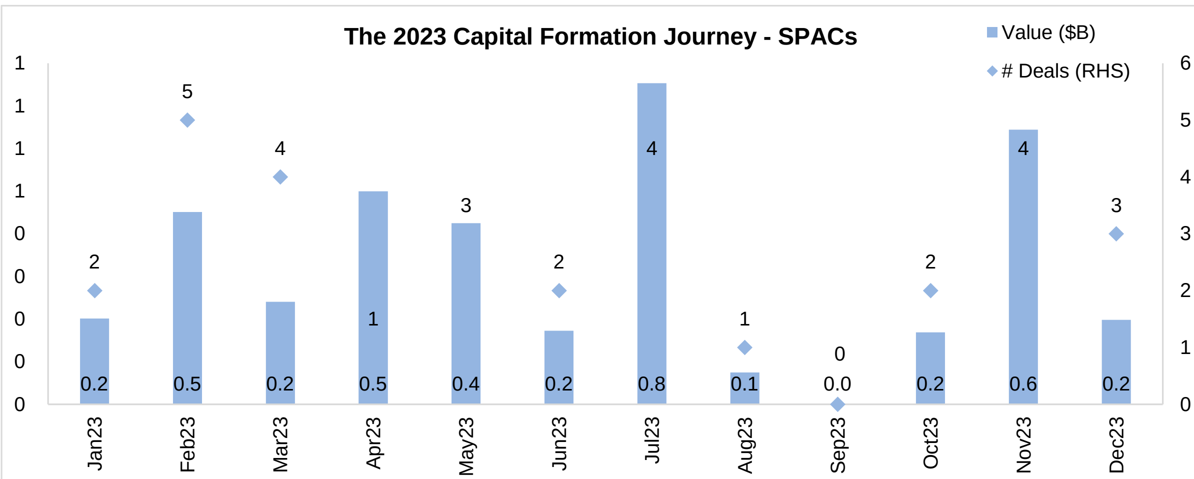
Looking at the breakout of issuance by sector, we highlight:

- Computers & electronics on top at 41.0%
- Followed by consumer products at 29.3%
- Then came healthcare at 13.8%


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 $3.8 billion, -70.8% Y/Y
    - Peak monthly level $0.8 billion
    - Lowest monthly level $0.0 billion
- Total annual number of deals 31, -63.5% Y/Y

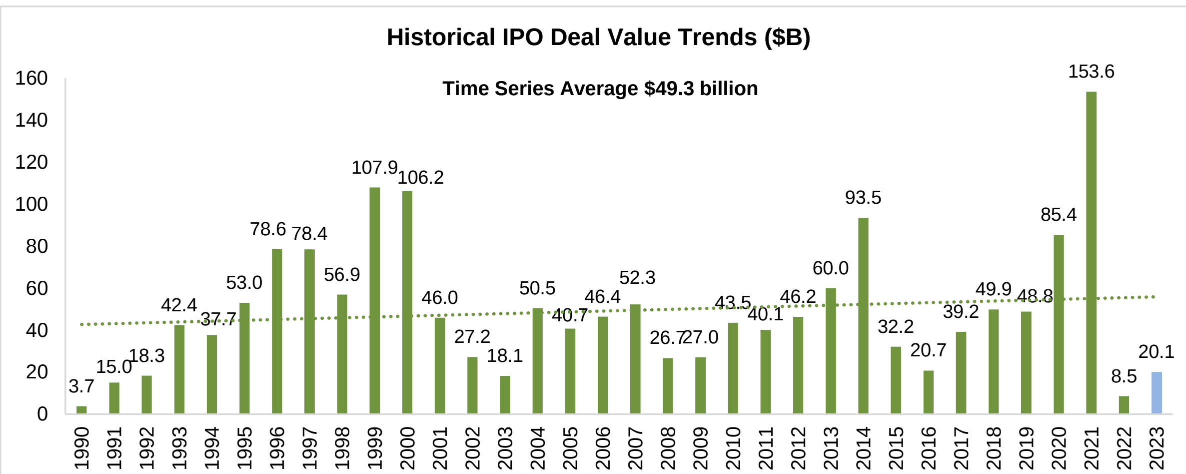


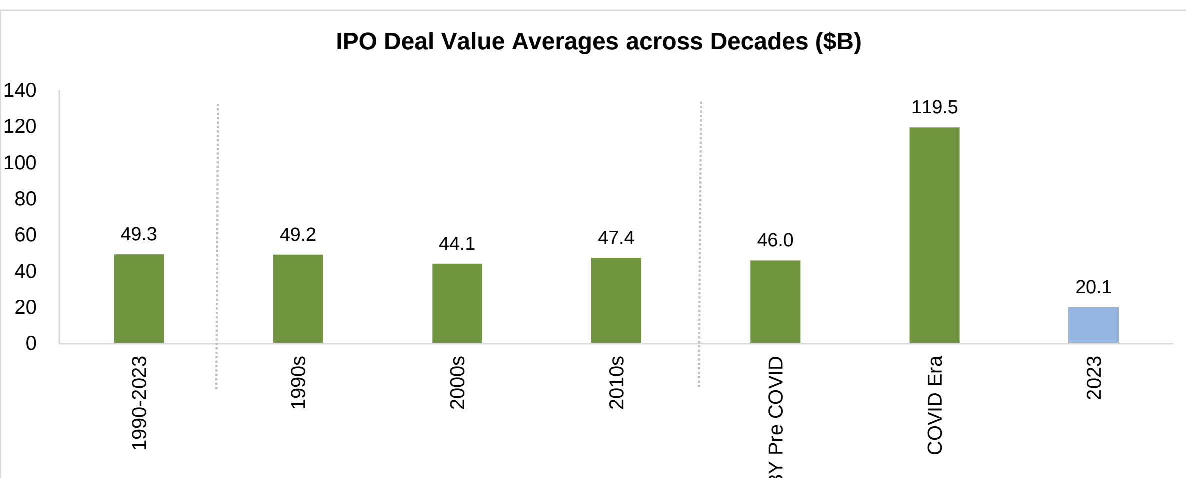

Source: Dealogic
Note: Includes rank eligible BCC/SPAC deals; SPAC totals are separate from the IPO/secondaries/total capital formation figures discussed above

## Capital Formation Themes

### Historical IPO Trends

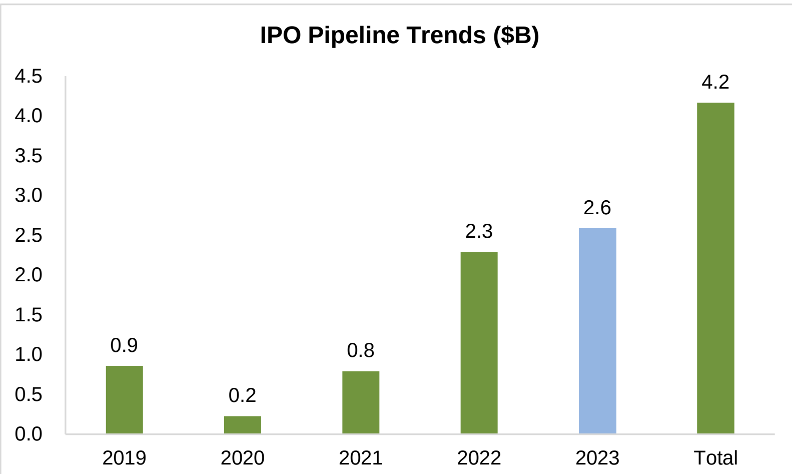
As we said earlier, IPO deal value in 2023 rebounded from the prior year but remains subdued to historical levels. The average annual IPO deal value going back to 1990 was $49.3 billion. While the $20.1 billion deal value in 2023 was +135.5% Y/Y, it was -59.2% to the full time series average. The overall trend line is slightly upward sloping, yet issuance has much room to grow to return to historical levels. Looking at IPO deal value averages across decades, excluding the COVID era, the 2023 level ranged from -54.4% to -59.1% to the decade averages for the 2000s and the 1990s respectively.




Source: Dealogic, SIFMA estimates
Note: Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers. COVID era = 2020, 2021

Going forward, the IPO pipeline – deals announced but not yet closed – for 2023 was $2.6 billion, +12.8% Y/Y. Summing all of the deals announced but not closed since 2019, there is $4.2 billion sitting in the IPO pipeline, at least on paper.

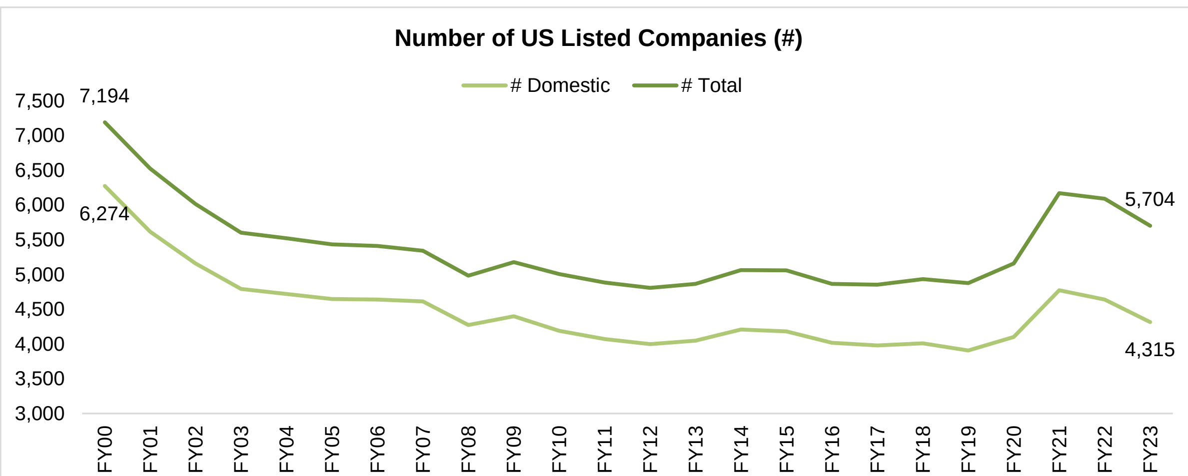



Source: Dealogic, SIFMA estimates
Note: Pipeline calculated as those deals listed as “expected date to be announced” in Dealogic. Includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFs and rights offers

### A Look at the Number of Listed Companies

Despite the increase in IPOs in 2023, the number of listed companies declined slightly last year, -6.4%, dropping below 6,000 once again:

- Total listed operating companies 5,704
  - Y/Y -6.4%
  - Down 20.7% from the 2000 peak
  - Up 17.0% from the 2019 trough
- Total domestic listed operating companies 4,315
  - Y/Y -7.0%
  - Down 31.2% from the 2000 peak
  - Up 10.4% from the 2019 trough




Source: World Federation of Exchanges
Note: FY23 is preliminary

# Looking to 2024: Market Structure Survey

In order to gauge the forward path for markets, we surveyed our equity markets and listed options trading committees, as well as representatives of U.S. equity and multi-listed options exchanges. We questioned survey respondents about where they saw 2024 market metrics heading, as well as their views on retail investor participation. This section analyzes those results.

## Comparing Current and Prior Survey Results

Before we dive into the results from this year's survey, we compare survey results from the current and prior years. Below we recap survey respondents' estimates for various market metrics and retail participation:

This year, we expanded our questions around the SEC agenda. 98.0% of respondents are concerned about the agenda, with 62.0% extremely concerned. In general, the top concern around the SEC's proposals is the potential market impacts of all of the proposals done together (89.8% of respondents), followed by the speed of the proposals and lack of time to analyze potential market impacts (85.7% of respondents). When it comes to proposals specific to equity market structure, the top concern is the timelines for implementation of the multiple proposals and the need for a lookback process to assess impacts/costs (83.3% of respondents). This was followed by order by order competition for retail orders and price improvement auctions (75.0% of respondents).

As to our repeated question on what is driving market performance, 72.3% responded the economy, achieving a soft landing. This was followed by 55.3% responding the Fed Funds rate, estimating the timing of rate cuts.

| Industry & Market Themes | 2024 Survey (current) | 2023 Survey |
|---|---|---|
| In general, are you concerned about the SEC's agenda? | Yes, extremely concerned (62.0% of responses) | n/a |
| In general, what concerns you about the SEC's agenda? | Potential market impacts of all of the proposals done together (89.8% of responses) | n/a |
| Specific to equity market structure, what concerns you about the SEC's proposals? | Timelines for implementation of the multiple proposals and the need for a lookback process to assess impacts/costs (83.8% of responses) | n/a |
| Which factors do you believe are driving the performance of equity markets (price S&P 500)? | Economy, Fed Funds rate, inflation | Fed actions, inflation, potentially pending economic recession |

Source: SIFMA market structure survey

Turning to markets, survey respondents expect the VIX to remain in the 15-20 range (49.0% of responses), which represents historical levels. This is a decrease in level from last year's survey, where respondents expected a 20-25 range for volatility. Equity ADV is expected to continue in the 10-15 billion shares range (87.8% of responses), and only 6.1% of respondents expect volumes to return to historical levels below 10 billion shares. This represents no change to last year's survey. Multi-listed options ADV is expected to stay in the 40-50 million contract range (61.7% of responses), with no respondents expecting a return to historical level of below 20 million contracts. This is an increase in level from last year's survey, where respondents expected ADV of 30-40 million contracts.

| Volatility & Volumes | 2024 Survey (current) | 2023 Survey | Change |
|---|---|---|---|
| **What do you expect to be the new normal for:** | | | |
| --VIX (price) | 15-20 (49.0% of responses) | 20-25 range (53.7% of responses) | Decrease |
| --Equity ADV (billion shares) | 10-15 (87.8% of responses) | 10-15 range (63.4% of responses) | No change |
| --Listed options ADV (million contracts) | 40-50 (61.7% of responses) | 30-40 range (51.2% of responses) | Increase |
| **Do you expect a return to historical levels for:** | | | |
| --VIX (15-20) | 49.0% of responses | 7.3% of responses | Increase |
| --Equity ADV (<10B shares) | 6.1% of responses | 31.7% of responses | Decrease |
| -- Listed Options ADV (<20M contracts) | No responses | 7.3% of responses | Decrease |

Source: SIFMA market structure survey
Note: Historical levels (2019 averages) were 15.39 for the VIX, 7.0 billion shares for equity ADV, and 19.1 million contracts for multi-listed options ADV.

The majority of survey respondents expect markets to grow at a moderate pace, with 51.1% of responses. Respondents identified the top risks to markets to the upside as: monetary policy, the U.S. presidential election, and inflation. Looking to the downside, the top risks were: geopolitical, the U.S. election, and monetary policy.

| Market Performance | 2024 Survey (current) | 2023 Survey |
|---|---|---|
| Do you expect markets (S&P 500) to? | Grow at a moderate pace (51.1% of responses) | Decline somewhat further (51.2% of responses) |
| Top risks to markets on the upside? | Monetary policy, U.S. election, and inflation | Inflation, monetary policy, geopolitical |
| Top risks to markets on the downside? | Geopolitical, U.S. election, and monetary policy | Inflation, monetary policy, geopolitical |

Source: SIFMA market structure survey

Finally, our survey sought to gauge retail investor participation in markets. In equities, respondents estimate the level of retail participation to be 20-30%, which represented no change to last year. For options, respondents estimate the level of retail participation to be 20-30%, again, no change to last year.

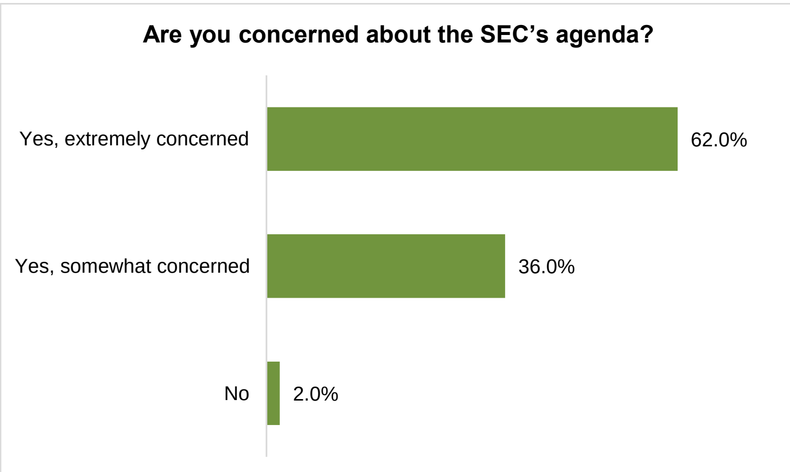
| Retail Investor Participation | 2024 Survey (current) | 2023 Survey | Change |
|---|---|---|---|
| **For equities:** | | | |
| Last year, what percent of volumes were retail trades? | 20-30% (75.0% of responses) | 20-30% (61.5% of responses) | No change |
| Looking forward, how do you expect this to change? | Remain about the same (44.4 of responses) | Decrease somewhat (50.0% of responses) | |
| **For listed options:** | | | |
| Last year, what percent of volumes were retail trades? | 20-30% (58.1% of responses) | 20-30% (48.6% of responses) | No change |
| Looking forward, how do you expect this to change? | Increase somewhat (44.2% of responses) | Remain about the same (35.9% of responses) | |

Source: SIFMA market structure survey

## Market Themes Survey Results

Survey Question: In general, are you concerned about the SEC's agenda?

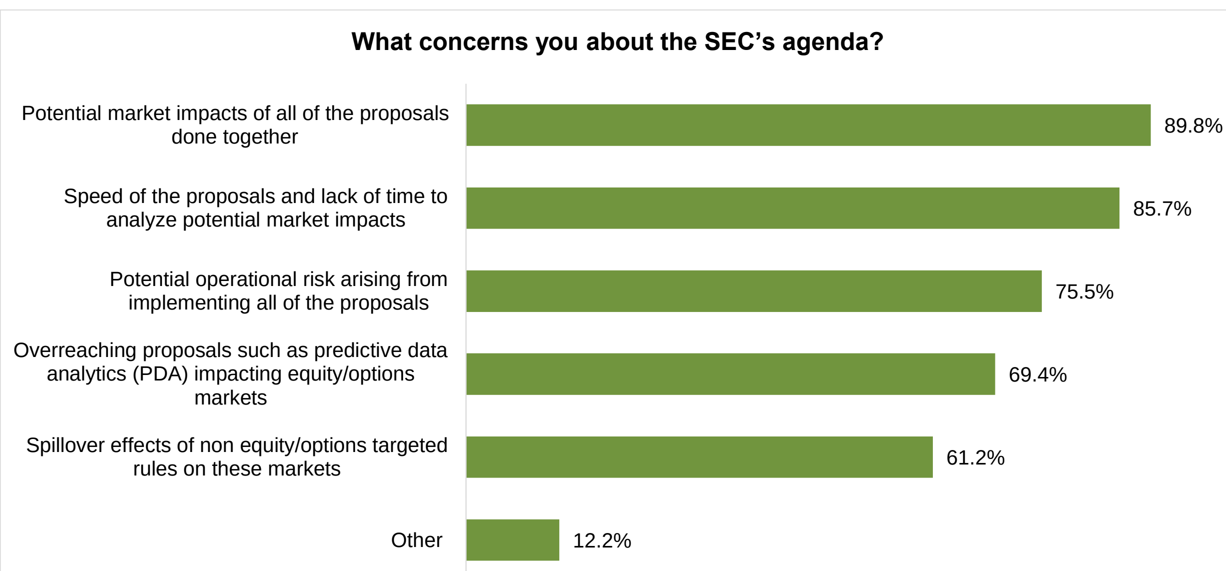
Majority Says? 62.0% responded that they are extremely concerned.




Source: SIFMA market structure survey

Survey Question: In general, what concerns you about the SEC's agenda? (check all that apply)

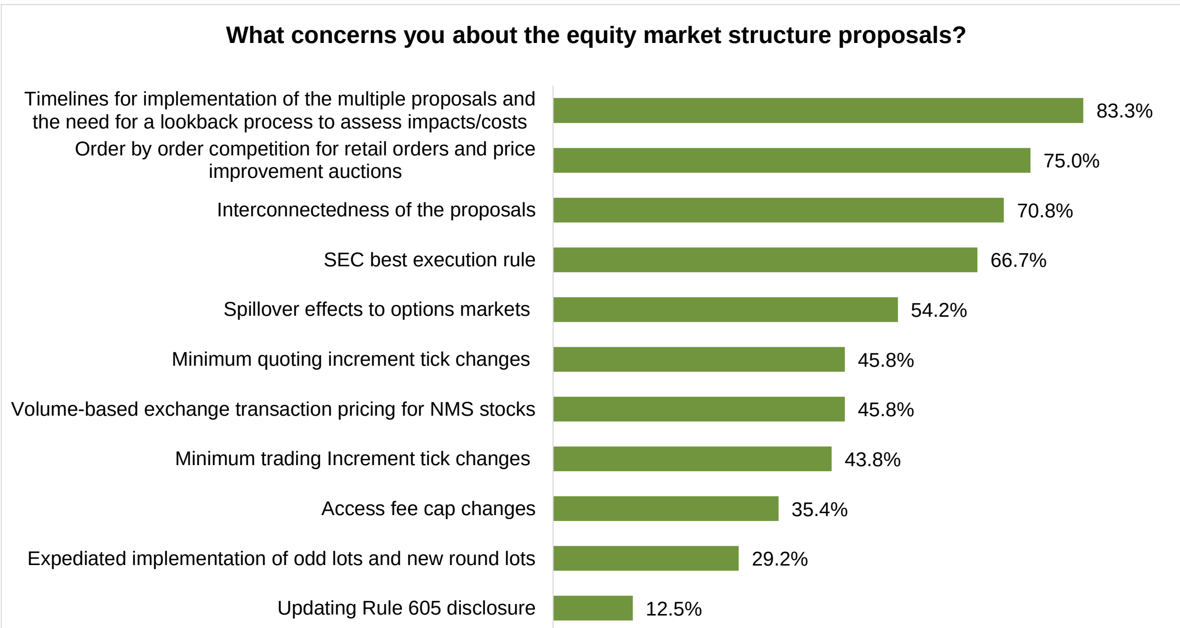
Majority Says? 89.8% responded the potential market impacts of all of the proposals done together.




Source: SIFMA market structure survey

Survey Question: Specific to equity market structure, what concerns you about the SEC's proposals? (check all that apply)

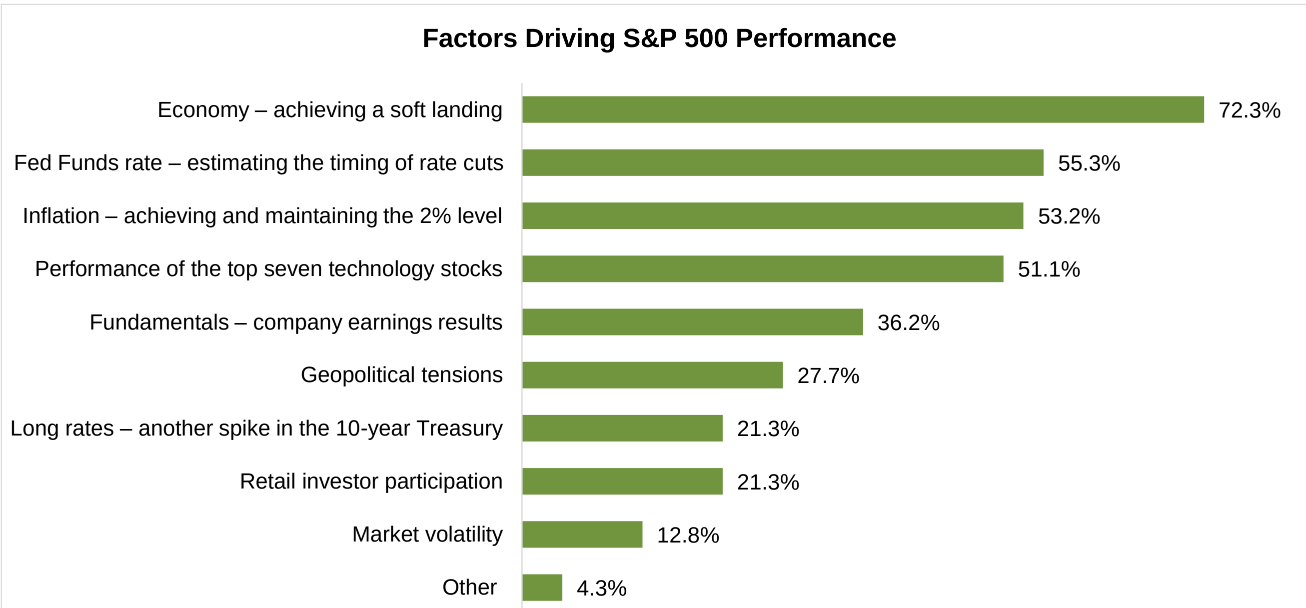
Majority Says? 83.3% responded the timelines for implementation of the multiple proposals and the need for a lookback process to assess impacts/costs.




Source: SIFMA market structure survey

Survey Question: Which factors do you believe are driving the performance of equity markets, in terms of the price of the S&P 500? (check all that apply)

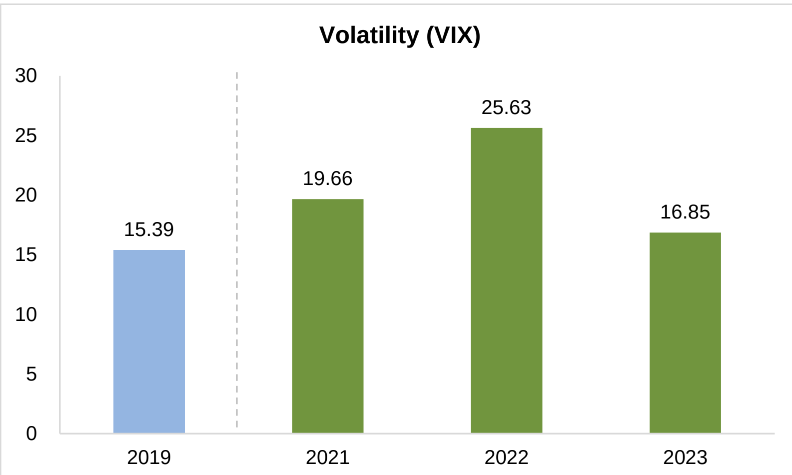
Majority Says? 72.3% responded the economy, achieving a soft landing. (Last year: inflation at 61.0%.)




Source: SIFMA market structure survey

## Volatility Survey Results

A Historical Comparison:

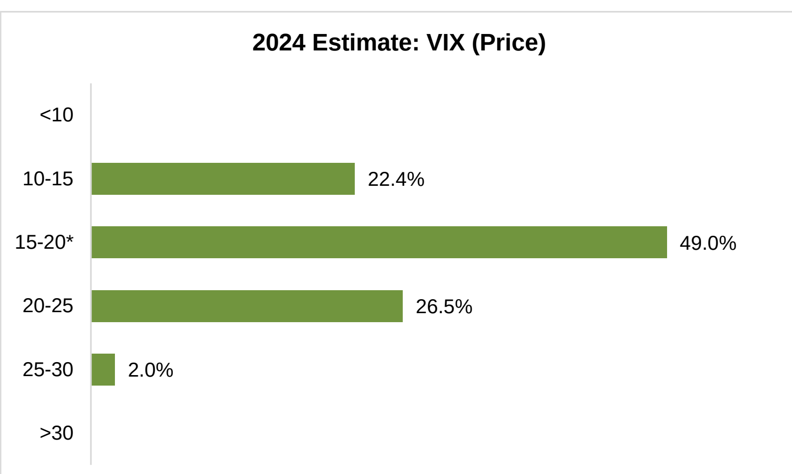



Source: Bloomberg, SIFMA estimates

Survey Question: Last year, the average VIX was 16.85, -34.3% Y/Y. What do you expect to be the new normal in the coming year for the VIX?

Majority Says? 49.0% of respondents expect the VIX to be in the 15-20 range. (Last year: 20-25 range, 53.7% of respondents.)

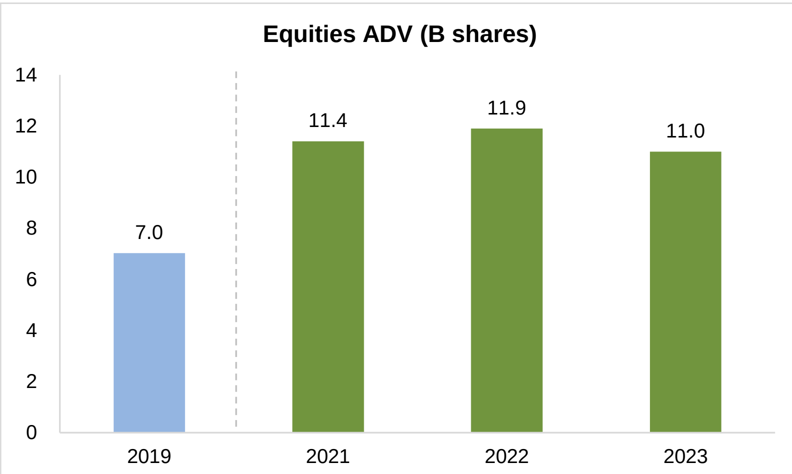
Return to Historical Levels? We have already returned to historical levels.




Source: SIFMA market structure survey (* = historical average)

## Equity Volumes (ADV) Survey Results

A Historical Comparison:

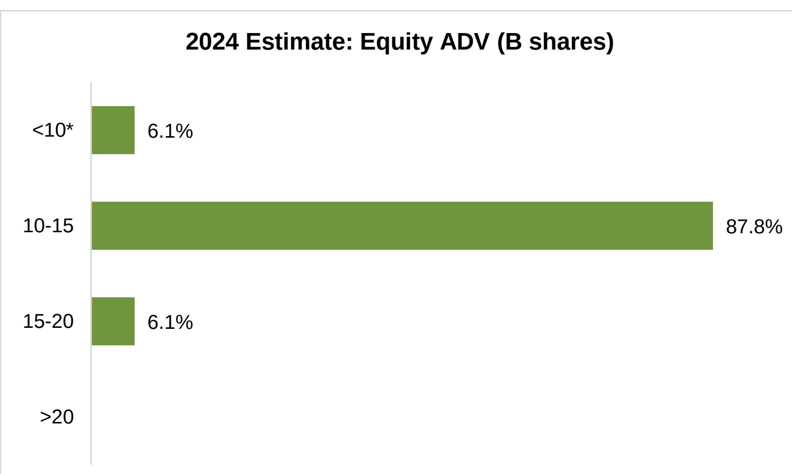



Source: Bloomberg, SIFMA estimates

Survey Question: Last year, equity ADV was 11.0 billion shares, -7.1% Y/Y. What do you expect to be the new normal in the coming year for equity ADV?

Majority Says? The majority of respondents expect equities ADV to remain in the 10-15 billion shares level (87.8% of respondents). (Last year: 10-15 billion shares range, 63.4% of respondents.)

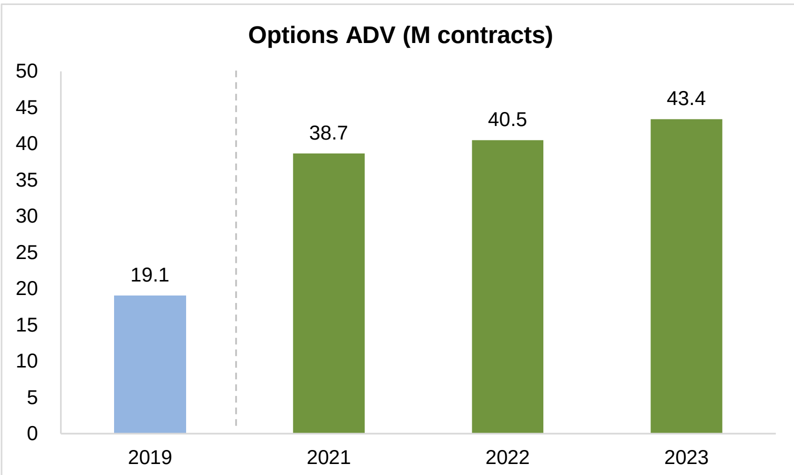
Return to Historical Levels? 6.1% of respondents expect a return to historical levels.




Source: SIFMA market structure survey (* = 2019 average)

## Options Volumes (ADV) Survey Results

A Historical Comparison:

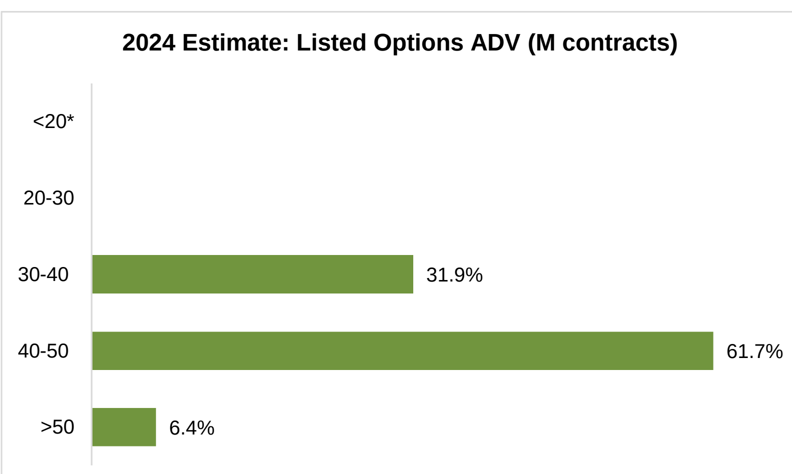



Source: Bloomberg, SIFMA estimates

Survey Question: Last year, options ADV was 43.4 million contracts, +7.1% Y/Y. What do you expect to be the new normal in the coming year for options ADV?

Majority Says? 61.7% of respondents expect options ADV to be in the 40-50 million range going forward. (Last year: 30-40 range, 51.2% of respondents.)

Return to Historical Levels? No respondents expect a return to historical levels.

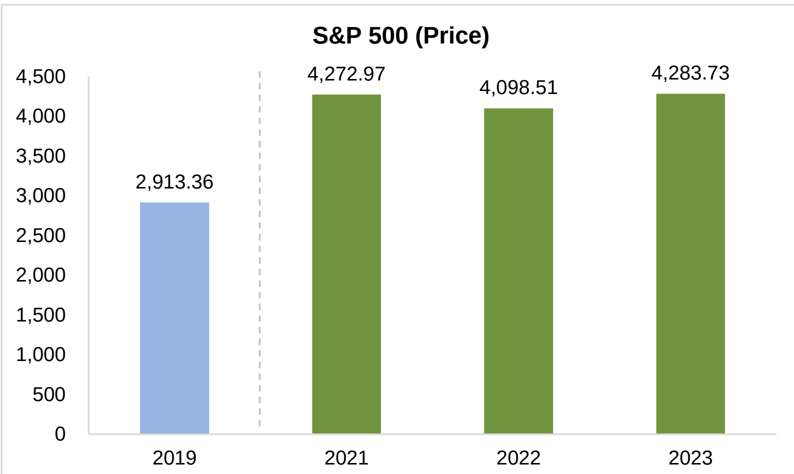



Source: SIFMA market structure survey (* = 2019 average)

## Market Performance Survey Results

This section used the S&P 500 as the proxy for equity markets. For simplicity's sake, we asked respondents about markets as a whole, not by specific index. This means the responses include all sectors (technology, consumer discretionary, etc.), all company sizes (small, mid and large cap), and all regions of company operations (domestic versus international exposure).

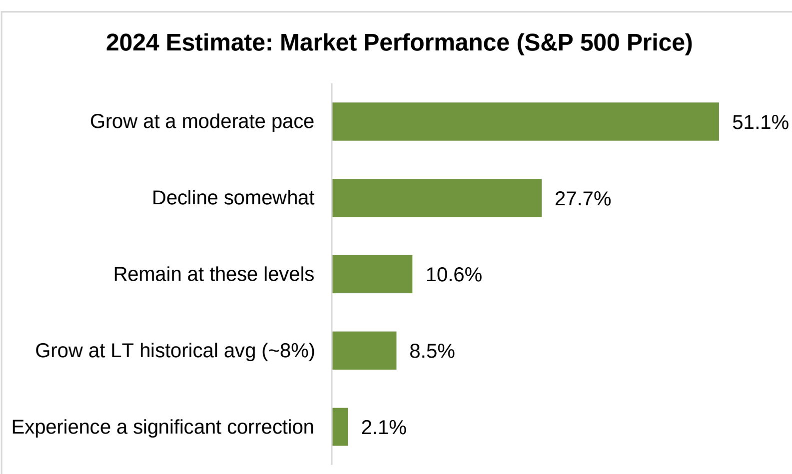
A Historical Comparison:




Source: Bloomberg, SIFMA estimates

Survey Question: Last year, the average price of the S&P 500 index was 4,283.73, +4.5% Y/Y. What do you expect markets to do in the coming year?

Majority Says? The majority of respondents expect markets to grow at a moderate pace, at 51.1%. (Last year: 51.2% decline somewhat further)



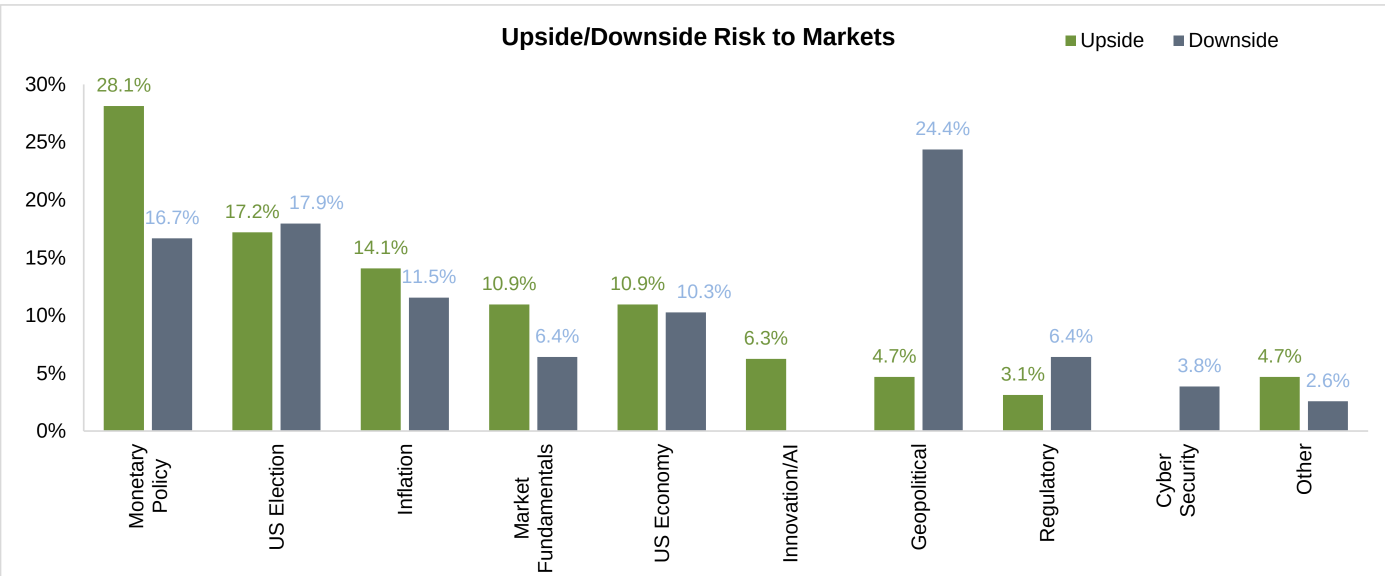

Source: SIFMA market structure survey

Survey Question: What do you see as the top three risks to markets in 2023 on the: (A) Upside? (B) Downside?

Majority Says?

**Upside**: The top response for the upside was monetary policy at 28.1% of responses. The U.S. presidential election came in second at 17.2% of responses, followed by inflation at 14.1%.

**Downside**: The top response for the downside was geopolitical at 24.4% of responses. The U.S. presidential election came in second at 17.9% of responses, followed by monetary policy 16.7%.




Source: SIFMA market structure survey

| | Upside | | Downside | |
|---|---|---|---|---|
| | Rank | Comments | Rank | Comments |
| **Monetary Policy** | #1 | General Fed policy, timing of rate cuts | #3 | General Fed policy, timing of rate cuts, rate increase |
| **US Election** | #2 | General results, Republican president, general state of U.S. politics | #2 | General results, Democrat president, general state of U.S. politics |
| **Inflation** | #3 | Subsides/lowers, housing prices, commodity prices, wage growth | #5 | Persistent inflation, non goods inflation reaccelerates, supply chains |
| **Market Fundamentals** | #4 | Earnings, concentration in top seven stocks | #6 | Earnings, concentration in top seven stocks, over valuation |
| **US Economy** | #5 | General data points, soft landing | #4 | Non soft landing, trade wars, debt, commercial real estate correction |
| **Innovation/AI** | #6 | Technological innovation, AI advances in all sectors of the economy | n/a | n/a |
| **Geopolitical** | #7 | Resolution of Middle East tension, global tensions easing | #1 | Tensions increase/expand, Middle East, prolonged Russia/Ukraine conflict, China invades Taiwan |
| **Regulatory** | #8 | General rules, SEC agenda gets “watered down” | #6 | General rules, SEC “overreach” affects volumes, SEC pushes through PDA/etc. |
| **Cyber Security** | n/a | n/a | #8 | Major cyber event, cyber disruption, large scale cyber-attack from state sponsor (Russia, Iran, China) |
| **Other** | | EU economic growth, China recovery, deglobalization | | |

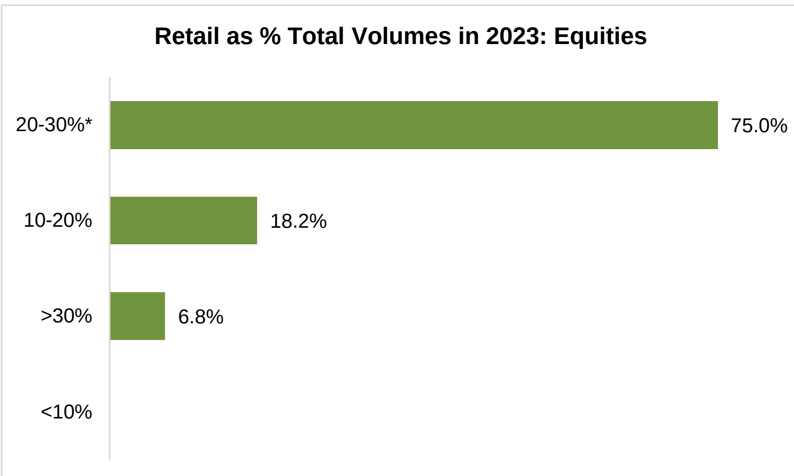
Source: SIFMA market structure survey

## Retail Investor Participation Survey Results

### Equities

Survey Question: What percentage of total 2023 equities volumes do you estimate were retail trades?

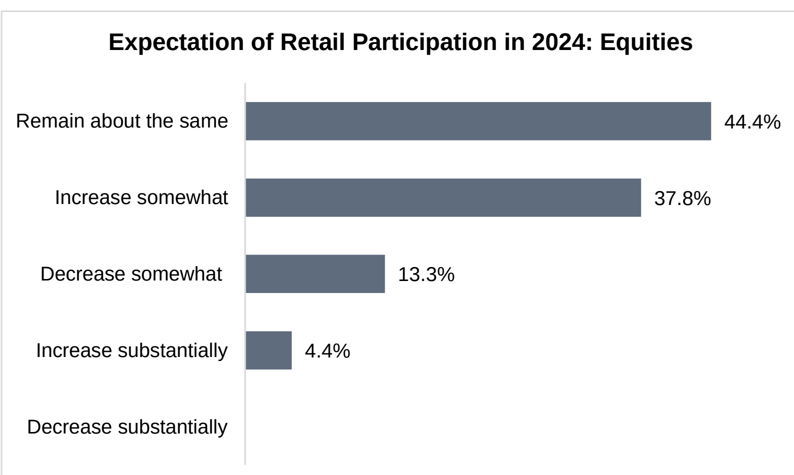
Majority Says? Respondents estimated retail investors represented 20-30% of total equity volumes last year (75.0%). (Last year: 20-30% level with 61.5% of respondents).




Source: SIFMA market structure survey

Survey Question: In 2024, how do you expect the percentage of retail participation in equities to change?

Majority Says? 44.4% of respondents expect the level of retail participation in equities to remain about the same in 2024. (Last year: decrease somewhat at 50.0% of respondents)

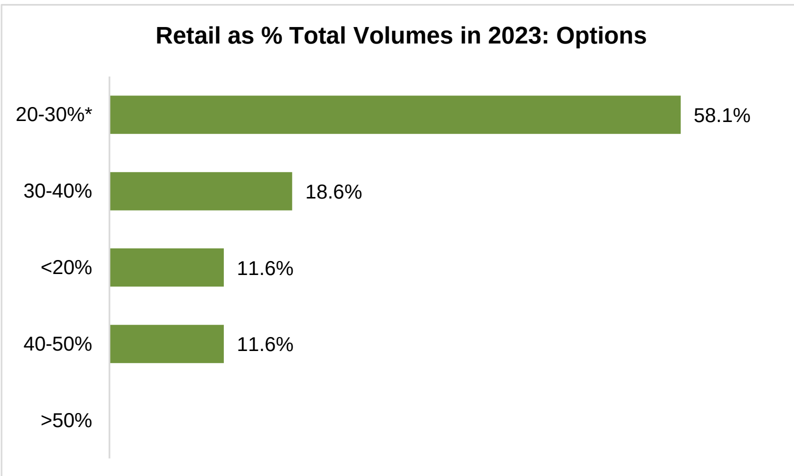



Source: SIFMA market structure survey

## Options

Survey Question: What percentage of total 2023 options volumes do you estimate were retail trades?

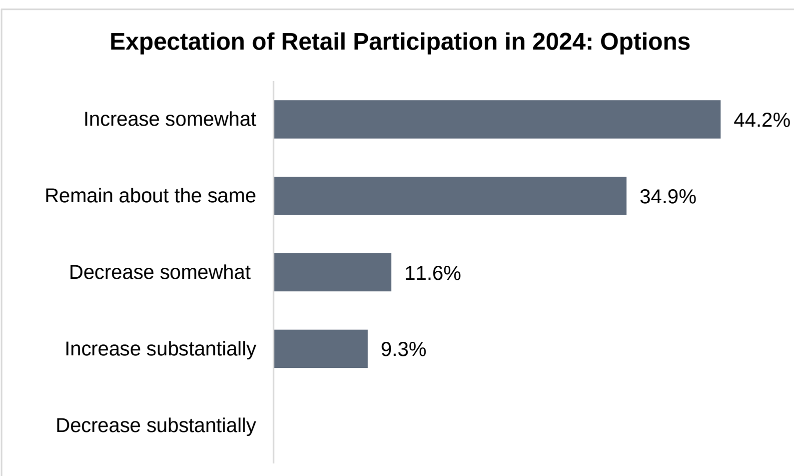
Majority Says? 58.1% of respondents estimated the level of retail participation in options at 20-30%. (Last year: 20-30% level with 48.6% of respondents)




Source: SIFMA market structure survey

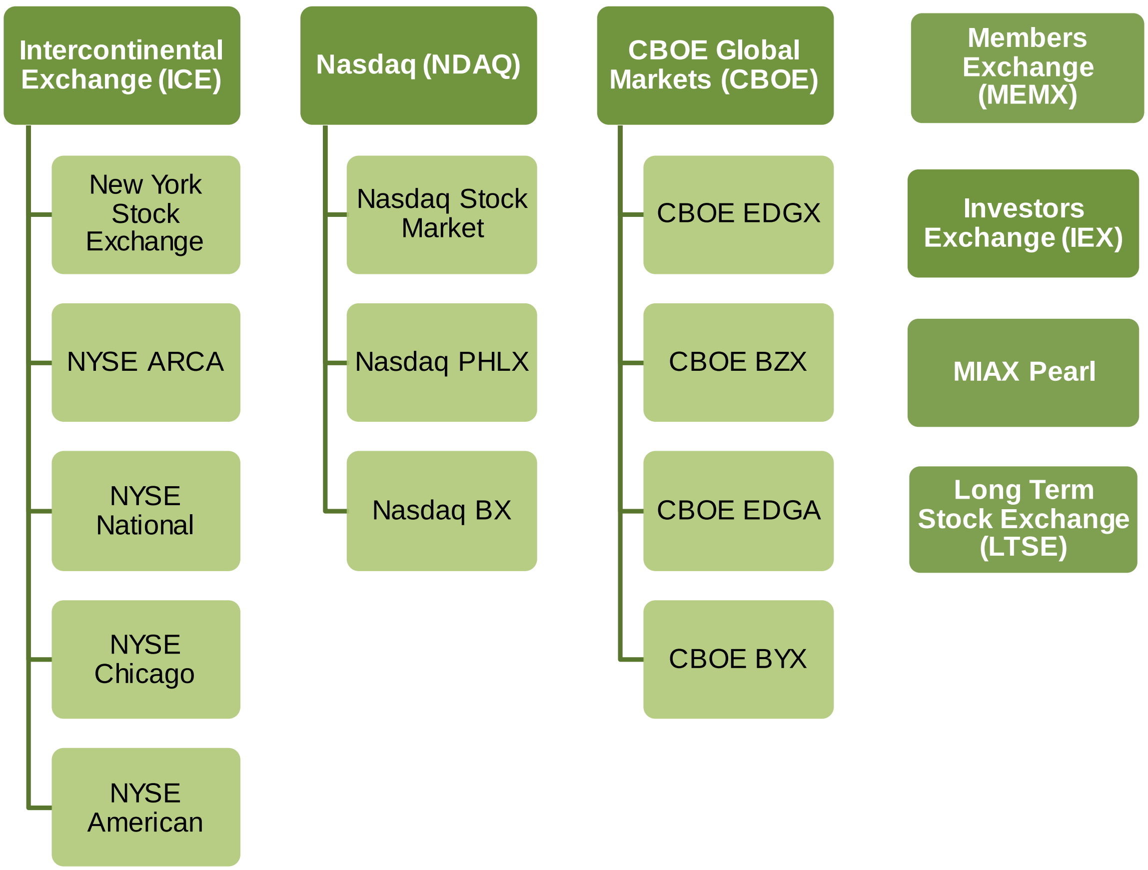
Survey Question: In 2024, how do you expect the percentage of retail participation in options to change?

Majority Says? The top response was that the level of retail participation would increase somewhat at 44.2%. (Last year: remain about the same with 35.9% of respondents)

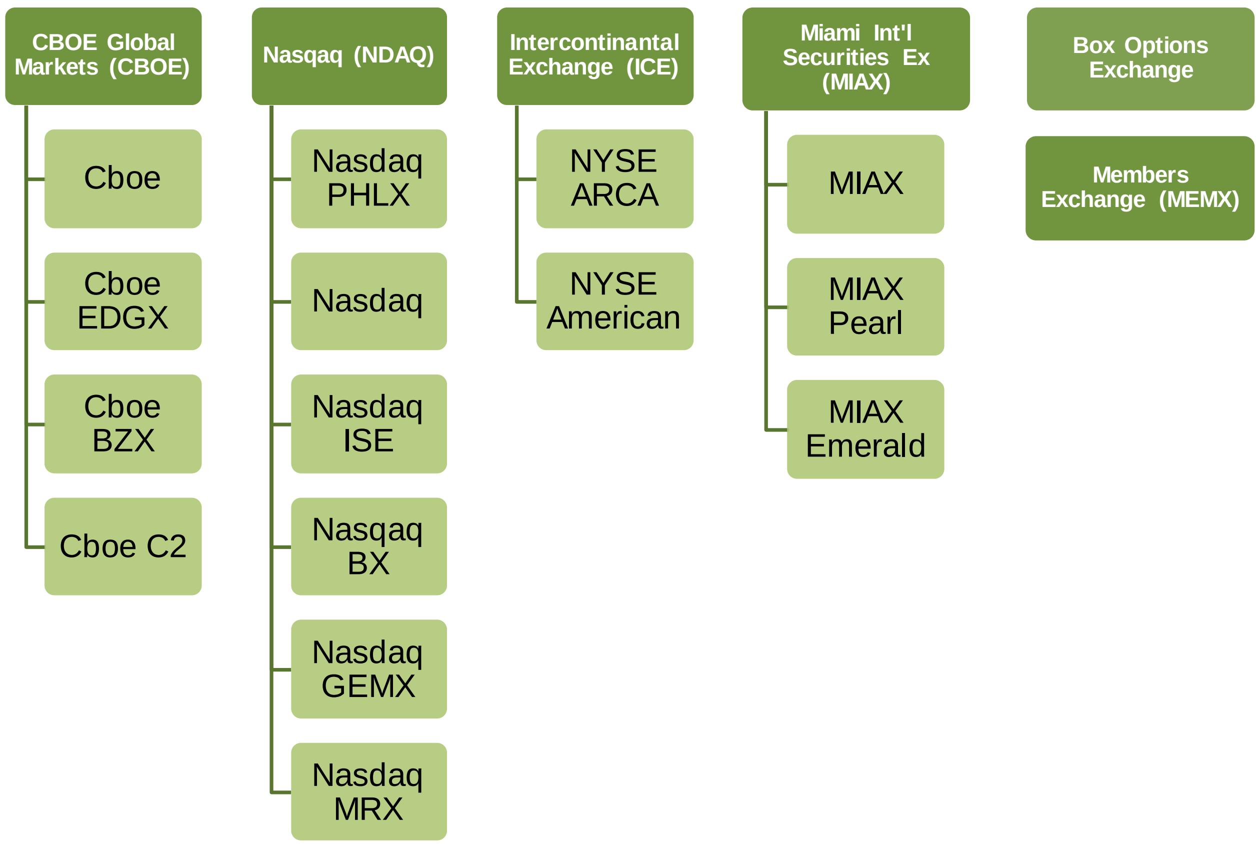



Source: SIFMA market structure survey

## Appendix: US Equity Exchange Landscape



## Appendix: US Options Exchange Landscape



# Appendix: Definitions & Purpose

- **Capital Formation**: Companies need capital for various business purposes – invest in growth, fund mergers and acquisitions, etc. – and have several ways to generate this capital, including:
    - Secondaries, or follow-on offerings, are the issuance of shares to investors by a public company already listed on an exchange.
    - Preferreds have characteristics of both bonds and common stock and represent a class of stock with different rights from common stock (ex: higher claim to assets in the event of liquidation).
    - Initial public offerings (IPOs) are when a private company raises capital by offering its common stock to the public for the first time in the primary markets.
    - Special purpose acquisition companies (SPAC) have no commercial operations (blank check companies) and are established solely to raise capital through an IPO for the purpose of acquiring unspecified existing companies.

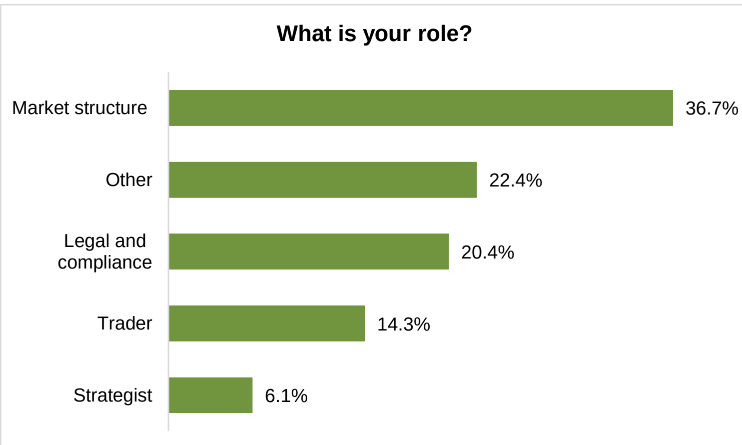
- **Market Performance**
    - Dow Jones Industrial Average (DJIA): A price weighted index that tracks 30 large, publicly owned companies trading on U.S. exchanges. It had historically been a widely watched benchmark index for U.S. blue-chip stocks.
    - S&P 500: A market capitalization weighted index 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 is over 50% technology (this percentage has come down over the years), followed by consumer discretionary and health care.
    - 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.

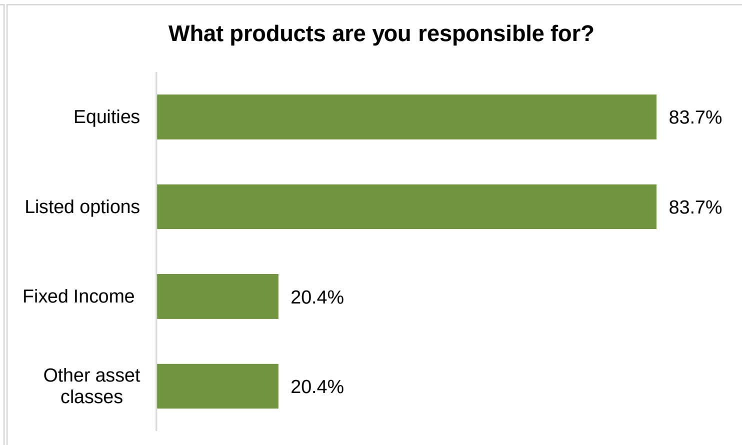
- **Volatility**
    - CBOE Volatility Index (VIX): A real-time market index that represents the market's expectation of 30-day forward looking volatility, as derived from the price inputs of S&P 500 index options. It measures market risk and investor sentiment (fear, stress) and is often called the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

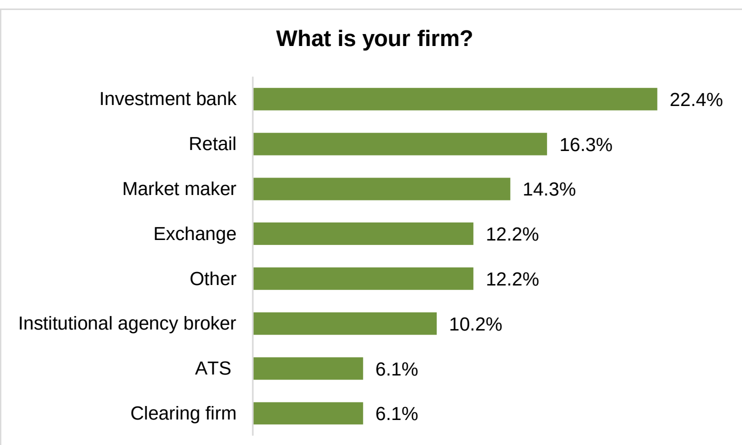
- **Volumes**
  - The U.S. equity markets are the largest and among the deepest, most liquid and most efficient in the world. Investors enjoy narrow spreads, low transaction costs and fast execution speeds, with plenty of opportunity for price improvement, especially for retail investors.
  - Exchange-traded 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 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.

# Appendix: Market Structure Survey Structure

This survey was populated between January 16 to February 2. Respondents depict key market participants in equities and options: investment banks, market makers, retail trading firms, exchanges, etc.




Source: SIFMA market structure survey

# Appendix: Terms to Know

| Statistics | |
|---|---|
| Y/Y | Year-over-Year |
| Q/Q | Quarter-over-Quarter |
| M/M | Month-over-Month |
| W/W | Week/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) |

| Regulators | |
|---|---|
| FINRA | Financial Industry Regulatory Authority |
| OCC | Options Clearing Corporation |
| SEC | Securities and Exchange Commission |

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

| | |
|---|---|
| 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 |
| Dark Pool | Private trading venues, not accessible by the public |
| 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 |
| SI | Systematic Internaliser |

| | |
|---|---|
| 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 a few minutes before the market open |
| Closing Cross | To determine the closing price of a stock, accumulating all buy and sell interest a few minutes before 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 |

| | |
|---|---|
| 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+2 | 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 |

| | |
|---|---|
| EMS | Equity Market Structure |
| EMSAC | Equity Market Structure Advisory Committee |
| 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 price movement of a trading instrument |
| CAT | Consolidated Audit Trail |
| SRO | Self Regulatory Organization |

| | |
|---|---|
| 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 |

| | |
|---|---|
| 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 |

| | |
|---|---|
| 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 does not necessarily purchase IPO shares and 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/guarantee for the share sale and no stock price stabilization after the share listing. |

| | |
|---|---|
| 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 |

| | |
|---|---|
| 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 the issuer and 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 |

| | |
|---|---|
| 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 |

| | |
|---|---|
| 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.) |
| 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 |
| Tombstone | An announcement that securities are available for sale. (Also a plaque awarded to celebrate the completion of a transaction or deal) |
| EGC | Emerging Growth Company |

## Appendix: SIFMA Insights Research Reports

SIFMA Insights: www.sifma.org/insights

- Ad hoc reports on timely market themes
- Market Structure Compendium (annual report)
- COVID Related Market Turmoil Recaps: Equities; Fixed Income and Structured Products

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

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

Market Structure Primers: www.sifma.org/primers

- Capital Markets Primer Part I: Global Markets & Financial Institutions
- Capital Markets Primer Part II: Primary, Secondary & Post-Trade Markets
- Global Equity Markets
- Electronic Trading
- US Capital Formation & Listings Exchanges
- US Equity
- US Multi-Listed Options
- US ETF
- US Fixed Income

Conference Debriefs

- Insights from market participants into top-of-mind topics
- Pre-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

Top of Mind with SIFMA Insights

- Podcasts with market participants on key market and economic themes, including reference guides defining terms and providing charts on the topics discussed on the podcast

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SIFMA Insights can be found at: https://www.sifma.org/insights

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