SIFMA Insights

The 2022 Market Structure Week Debrief

Perspectives & Key Themes from Market Participants

November 2022

Recently, SIFMA hosted our annual Listed Options Symposium and Equity Market Structure Conference. Across the two days, we gained insights into top-of-mind topics for market participants. Inside this note, we recap just some of what was seen and heard, including:

- The Industry Outlook – industry & macro themes with pre-conference survey results, expect volatility to remain the same but markets to decrease; equities – discussing potential reform, retail auctions & interconnectedness of the six topics; options – growth in index (40%) & ETF (48%) products vs. single stock (-16%)
- The Regulatory View – SEC agenda, market participants concerned over pace and amount of rulemaking; equity market structure reform, a look at how SEC economists analyze proposals; pre-conference survey & audience polling results, 93% of attendees do not believe the SEC should require retail auctions in equities
- More on Market Themes – pre-conference survey results on ESG and crypto investing, no change in interesting in ESG/sustainable or crypto investing since the start of the year

To see details from topics SIFMA has covered throughout the year, please see SIFMA Insights at (list of Insights reports in the Appendix of this note): www.sifma.org/insights

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

SIFMA is the leading trade association for broker-dealers, investment banks and asset managers operating in the U.S. and global capital markets. On behalf of our industry's nearly 1 million employees, we advocate on legislation, regulation and business policy, affecting retail and institutional investors, equity and fixed income markets and related products and services. We serve as an industry coordinating body to promote fair and orderly markets, informed regulatory compliance, and efficient market operations and resiliency. We also provide a forum for industry policy and professional development. SIFMA, with offices in New York and Washington, D.C., is the U.S. regional member of the Global Financial Markets Association (GFMA). For more information, visit http://www.sifma.org.

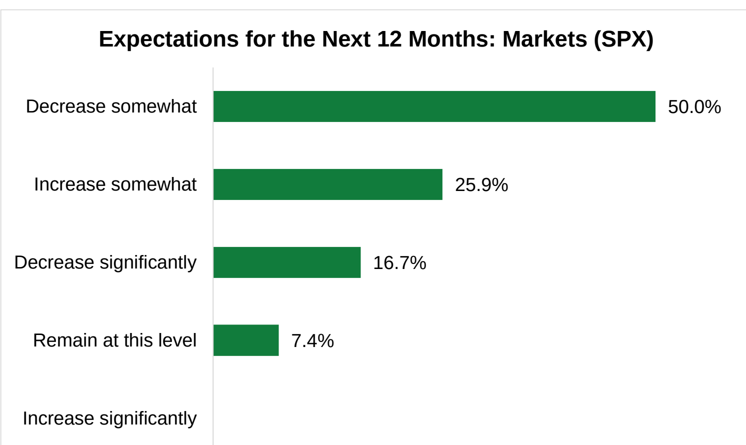
The Industry Outlook

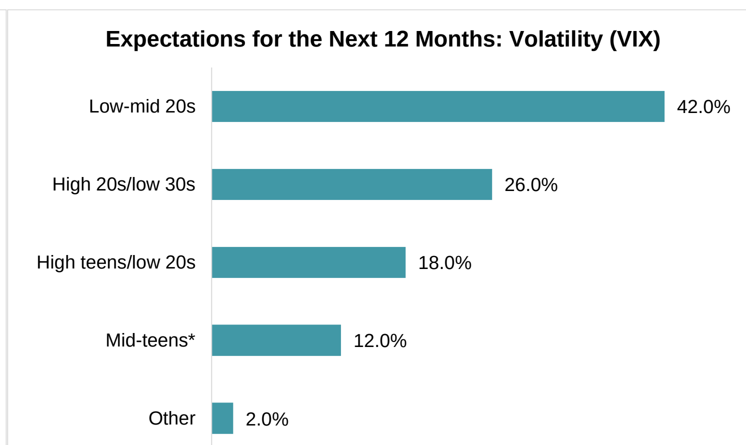
Market Touchpoint: Markets & Volatility

Our pre-conference survey sought to gauge respondents' thoughts around market performance (price of the S&P 500 index) and volatility (the VIX). We highlight the following in respondents' perspectives for the next 12 months:

- Markets (S&P 500, SPX Index)
  - 50.0% expect markets to decrease somewhat
  - 25.9% expect markets to increase somewhat
- Volatility (VIX Index)
  - 42.0% expect volatility to be in the low to mid 20s range
  - 26.0% expect volatility to be in the high 20s/low 30s range
- In short, expectations are for volatility to remain about the same (26.24 YTD through October) but markets to decrease

Survey Questions: Over the next 12 months, do you expect markets – in terms of the price of the S&P 500 index – to? Over the next 12 months, what do you expect to be the new normal for the VIX?





Source: SIFMA Insights pre-conference survey[1]
Note: * denotes the historical level

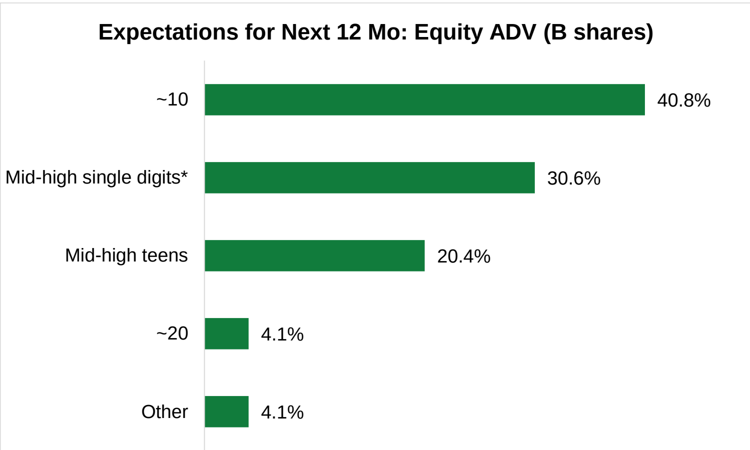
[1] The pre-conference survey was in the field from October 31 to November 8, with 54 respondents in total

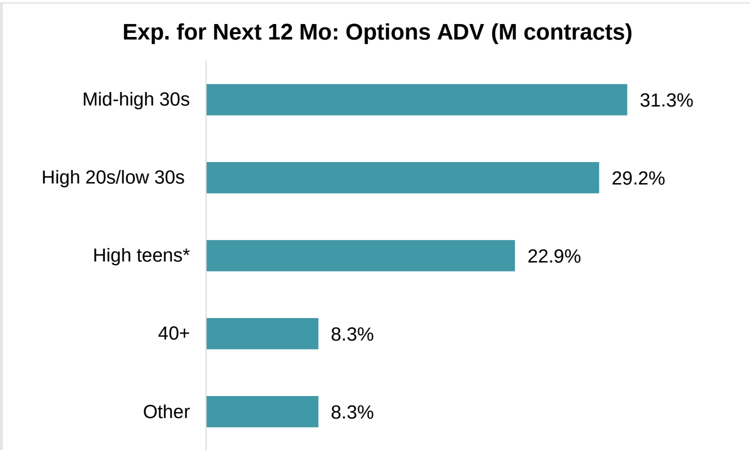
Market Touchpoint: Trading Volumes

Our pre-conference survey sought to gauge respondents' thoughts around average daily trading volumes (ADV) for both the equities and the multi-listed options markets. We highlight the following in respondents' perspectives for the next 12 months:

- Equity ADV (12.0 billion shares YTD through October)
  - 40.8% estimate around 10 billion shares
  - 30.6% estimate mid to high single digits range (historical range)
- Multi-Listed Options ADV (40.3 million contracts YTD through October)
  - 31.3% estimate mid to high 30s range
  - 29.2% estimate high 20s/low 30s range

Survey Questions: Over the next 12 months, what do you expect to be the new normal for equity ADV? Over the next 12 months, what do you expect to be the new normal for multi-listed options ADV?





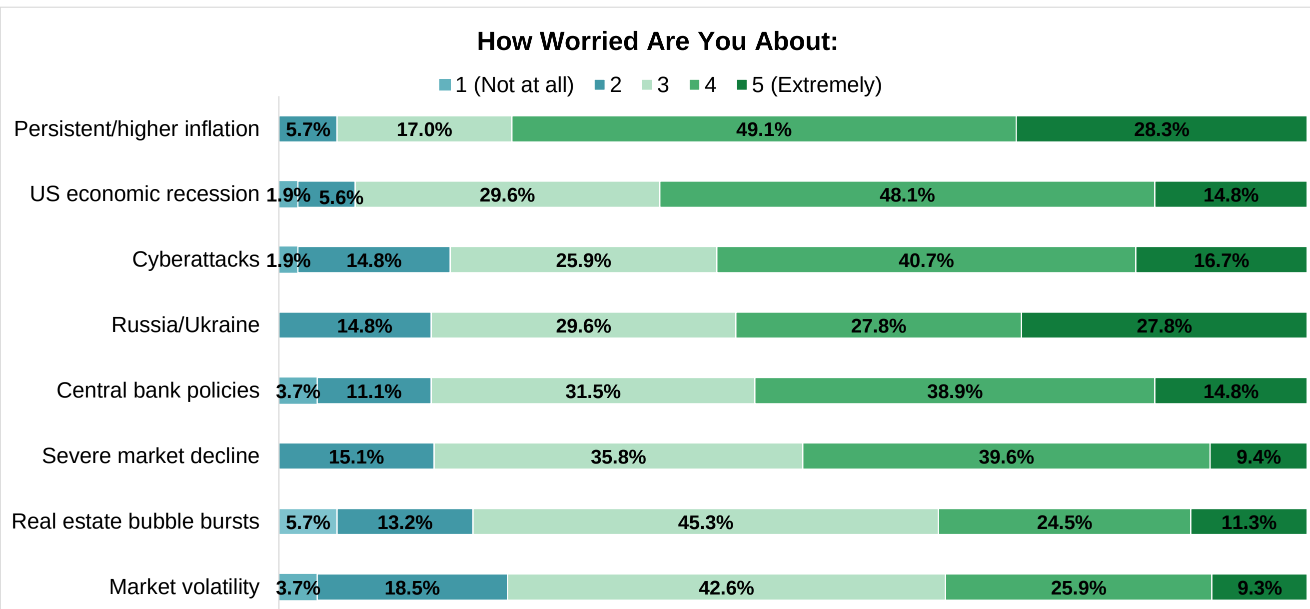
Source: SIFMA Insights pre-conference survey
Note: * denotes the historical level. Other, equities = 10-12 billion shares. Other, options = 45-50 million contracts

Market Touchpoint: Macro Themes

Our pre-conference survey sought to gauge respondents' concerns around current geopolitical, economic and market events and trends. We highlight the following in respondents' perspectives on key concerns, ranking responses by the aggregate level for #5, extremely worried, and #4, worried, responses:

- Persistent/higher inflation, with 28.3% of respondents extremely worried and 49.1% worried
- U.S. economic recession, with 14.8% of respondents extremely worried and 48.1% worried
- Cyberattacks 16.7% extremely worried and 40.7% worried

Survey Question: How would you rate your level of concern about? (on a scale of 1-5 where 1 = not at all, 5 = extremely worried)



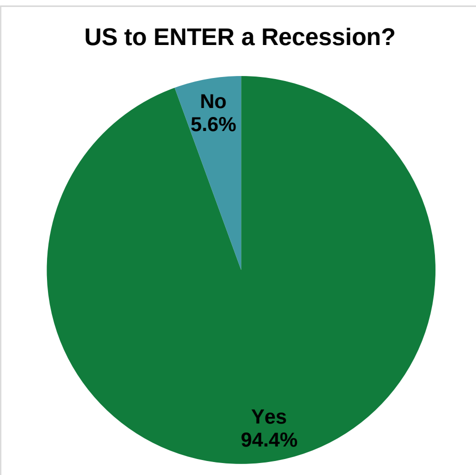
Source: SIFMA Insights pre-conference survey

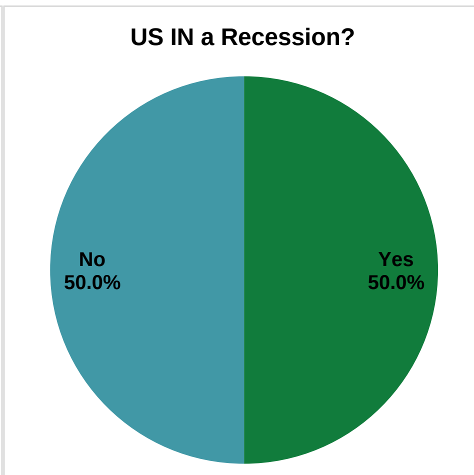
Market Touchpoint: Economic Themes

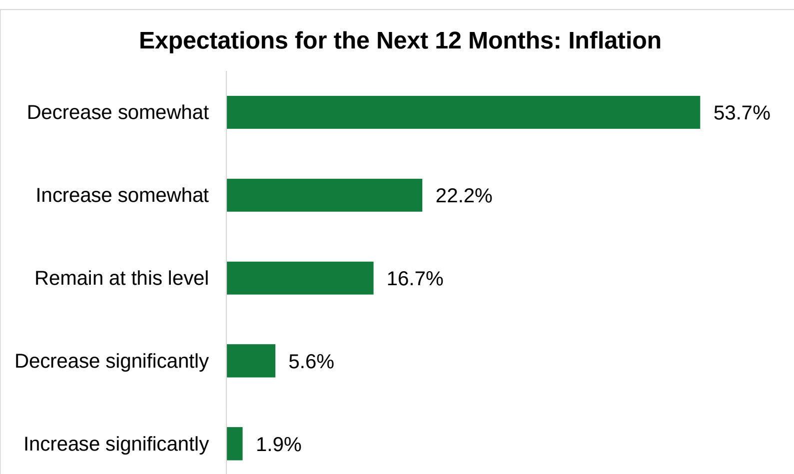
Our pre-conference survey sought to gauge respondents' thoughts around macroeconomic events and trends. We highlight the following in respondents' perspectives on key concerns:

- 94.4% of respondents expect the U.S. to enter a recession
- Responses were evenly split as to whether or not the U.S. was already in a recession
- As to inflation expectations for the next 12 months, 53.7% of respondents expect it to decrease somewhat, followed by 22.2% expecting inflation to increase somewhat

Survey Questions: Do you expect the U.S. to enter a recession? Do you believe the U.S. is already in a recession? What are your inflation expectations for the next 12 months?







Source: SIFMA Insights pre-conference survey

Equity Markets

Equity volumes remain elevated at:

- YTD (through October) 12.0 billion shares
- October 11.5 billion shares

Equity markets continue to work well. We have seen two years of elevated volumes, yet markets continue to work for both retail and institutional investors. As such, all eyes in equities are on what the proposal from the SEC could look like for equity market structure reform. Before digging further into details, we point out an interesting idea from panelists. They are concerned that the language from the SEC could signal to investors that markets are not efficient. In his June speech, Chair Gensler said, "Right now, there isn't a level playing field among different parts of the market…further, the markets have become increasingly hidden from view…it's not clear, with such market segmentation and concentration, and with an uneven playing field, that our current national market system is as fair and competitive as possible for investors."

Panelists are concerned that this signals to investors that markets are not fair, which we do not agree with. U.S. equity markets are the largest and among the deepest and most liquid in the world. Retail investors are getting over $3 billion in price improvement each year. Markets work efficiently and have continued to work during periods of elevated volumes and any spikes in volatility.

Moving onto specific areas of what market participants assume is on the table to potentially be proposed, we begin by noting that we have not yet seen a proposal from the SEC on equity market structure reform. Market participants are basing their analysis and expressing their concerns on the June speech. Looking at order by order competition for retail orders, the auctions, panelists expressed many concerns. The first is…what problem are we trying to solve for? There appears to be a focus on midpoint pricing for retail orders, but panelists point out that we are already getting midpoint or better on 50-60% of total shares traded across markets. Retail investors are benefiting from the current market structure.

The next area of concern is that retail auctions could slow down executions for retail orders, while the remainder of the market continues to trade, unencumbered by new regulations for retail investors. The lack of a guarantee could result in orders that do not execute in the auction, increasing the opportunity for information leakage, which can have negative impacts on market efficiencies. There is also a concern that liquidity will decrease, particularly widening spreads for lower volume stocks.

Finally, what would the construction of the auction look like? Panelists noted that the proposed structure could look like something exchanges could not get passed by the SEC today. Who will guarantee the trades? There appear to be more questions than answers here. Will competition actually appear? Panelists indicated it is a relatively small number of participants who can interact with retail flow given technologies and costs needed to do so. Market participants are not sure auctions would deliver the SEC's intended improvements, particular if you end up with competing auctions (if anyone can set up an auction, the marketplace could end up with several concurrent auctions running in the same name). The conclusion here by market participants is, if the goal is increasing competition, to not focus on just letting exchanges compete, rather let the whole market compete.

Next, the discussion tackled the interconnectedness of the six proposed topics of reform. Panelists indicated that the points are all tied together. Are we presenting six solutions when maybe one will work? Panelists suggested stepping back and first asking what problem we are solving for and what the objective is. Then identifying the least disruptive means to achieve that objective.

There is competition in today's current market structure. Retail brokers are very conscious of execution quality they receive on behalf of investors. Wholesalers then compete for this flow based on their performance on various metrics. The proposed changes could actually decrease competition. The increased complexity of the changes could make the business even more uneconomical and force firms to exit the business. This would decrease competition. Also, on a stock basis, currently wholesalers have to perform across all names. With auctions, they can choose stocks or order sizes that are economically advantageous to their firm and not participate in less economical names. This could decrease liquidity in those names. The toxicity of some retail flow could negatively impact investor executions if they are no longer guaranteed. Members discuss the following concerns – how would a retail firm know which auction to use to achieve best ex, are auctions guaranteed, and if an order goes unfilled what happens?

Next, a more prescriptive best ex rule would be a major departure from how all markets are regulated today. Firms like the principles based FINRA rule, since best ex allows firms to utilize rigorous measurement standards. What if a firm is told to send to an auction but has data that implies an auction will not provide a better price? Is that not a conflict with best ex? Again, there seem to be more questions than answers and less reliance on analytics.

As to timing of when we might see an actual proposal, some panelists indicated they are expecting a Christmas "gift" from the SEC this year, i.e. the rule proposal will drop right before the holiday.

Multi-Listed Options Markets

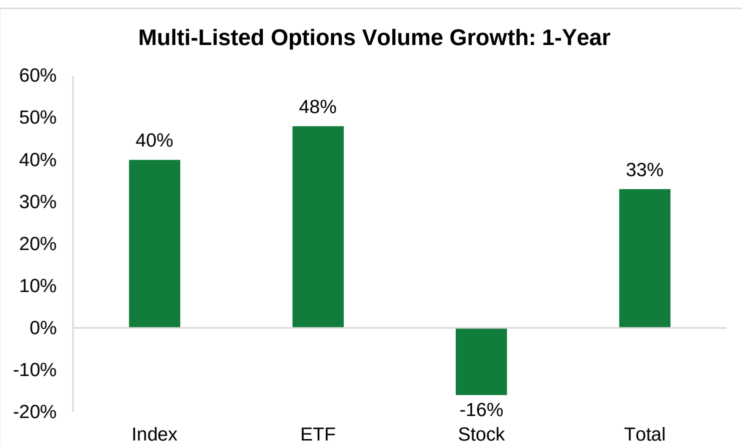
Multi-listed options volumes remain elevated at:

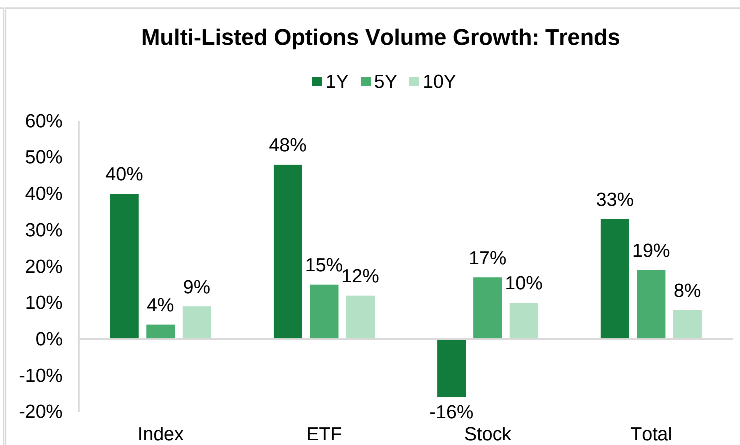
- YTD (through October) 40.3 million contracts; equity 37.5, index 2.8
- October 42.5 million contracts; equity 38.9, index 3.6

What is interesting in multi-listed options markets is the shift in interest to different options products, from single stock to index and ETF options. Looking at the charts below, in terms of one year growth rates, while index and ETFs are up 40% and 48% respectively, single stock options are actually down 16%. It is now the index and ETF products driving total options growth, +33%. This is a shift from the single stock option growth we have seen since COVID and the meme stock period.

We highlight the following trends:

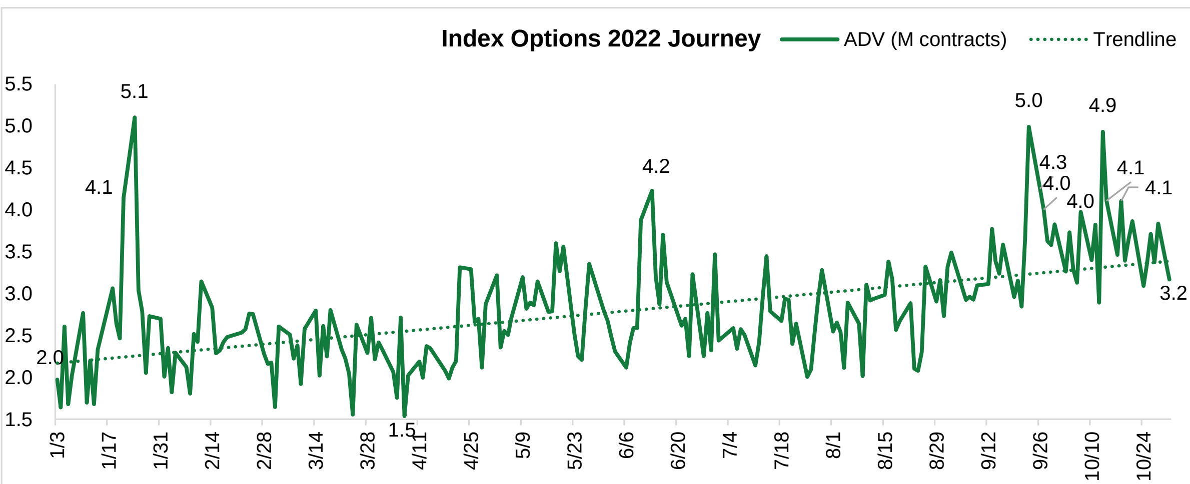
- **Index**: 1-year growth rate 40%; 10.0x the 5-year growth rate and 4.4x the 10-year growth rate
- **ETF**: 1-year growth rate 48%; 3.2x the 5-year growth rate and 4.0x the 10-year growth rate
- **Stock**: 1-year growth rate -16%; a reversal from the +17% and +10% 5-year and 10-year growth rates
- **Total**: 1-year growth rate 33%; 1.7x the 5-year growth rate and 4.1x the 10-year growth rate





Source: Henry Schwartz, Vice President, Global Client Engagement Cboe Global Markets, “Options Industry Update”

Looking further at index product volume growth, you see the slope of the line is sharply upward sloping. After starting the year at 2.0 million contracts, index options closed October at 3.2 million contracts, +60.5%. We saw two days where volumes reached 5.0 million contracts or above and eight days at 4.0 million contracts or above. Another signal of the index movement is in the volume to open interest ratio. While the market wide average trend is essentially flat, popular single stock symbol AAPL has come down. Conversely, the SPX has increased significantly. Panelists indicated that this shift in flow to index from single stock is in lockstep with the macro environment. As investors look to trade geopolitical and macro themes, they use index products. Also, as markets go down, correlations go up and index options are more efficient. Panelists expect this trend and therefore index options volumes to carry into 2023. A signal for when this trend could reverse is when we see the IPO market return. This in turn peaks investors' interest in single stock options.



Source: Cboe Global Markets, SIFMA estimates

While total options volumes continue to grow, average trade size continues to decline, from 25.4 in April 2010 to 7.8 at the end of October, -69.4%. While the trend had been in place for years, you saw a significant turn starting after the industry went to $0 commissions in the fall of 2019 and continuing through the COVID and meme periods. This is an indication of the growing number of retail investors in the options markets. Further evidence of the growth in retail is shown in volumes breakouts by trade size. The volume has shifted to smaller trade sizes with the 1 to 10 lots increasing, albeit this has come off some as retail trading is correlated with market direction.

The entrance of retail investors has been a main contributor to options volumes growth. Another contributor is the growth in trading of zero days to expiration (0 DTE) options. Volumes are now averaging around 1.5 million contracts per day for these products. Panelists indicated that this is currently driven by retail, but institutions are starting to incorporate these strategies of short dated options.

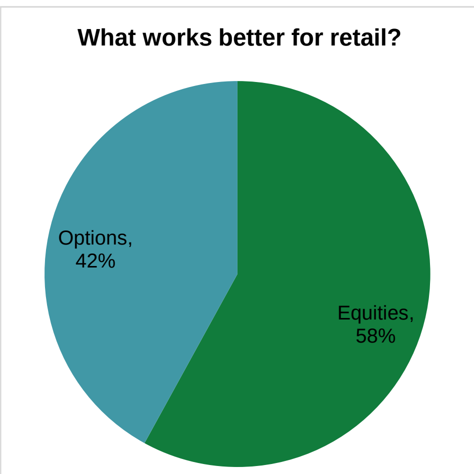
Finally, it would not be an options conference if we did not discuss the number of products in the market. We are now at 6,001 listed products and 1.6 million available contracts. Product volumes are highly concentrated, with the top five tickers representing 44% of total volumes: 21% in the SPY, 7% in the QQQ, 7% in the SPX, 5% in TSLA, and 4% in AAPL. The top 25 listings now represent 72% of total volumes.

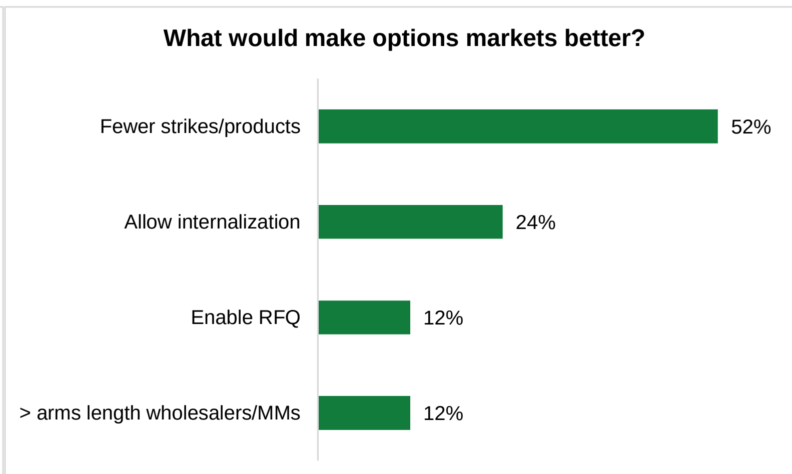
Conference Touchpoint: Options Markets

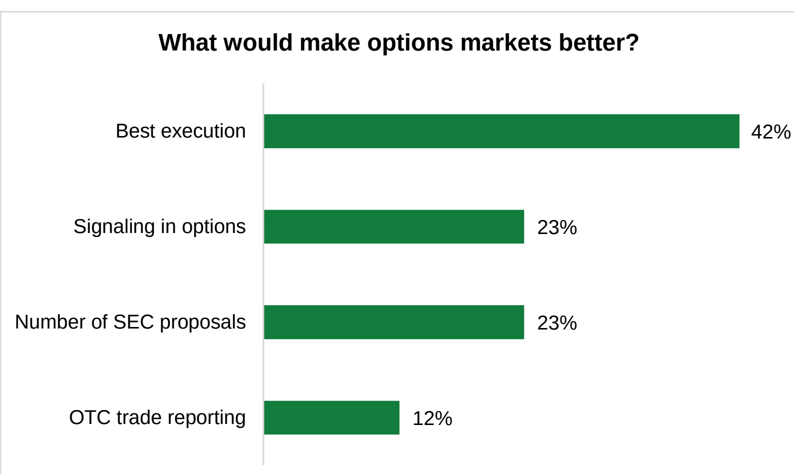
There were several polls taken of the audience during the Listed Options Symposium. We highlight the following in respondents' perspectives on key concerns:

- 58% of respondents replied equities over options
- 52% of respondents noted fewer strikes/products
- 42% responded best execution

Survey Questions: What works better for retail investors? What would make options markets better? What topic are you most interested in?







Source: Conference audience polling

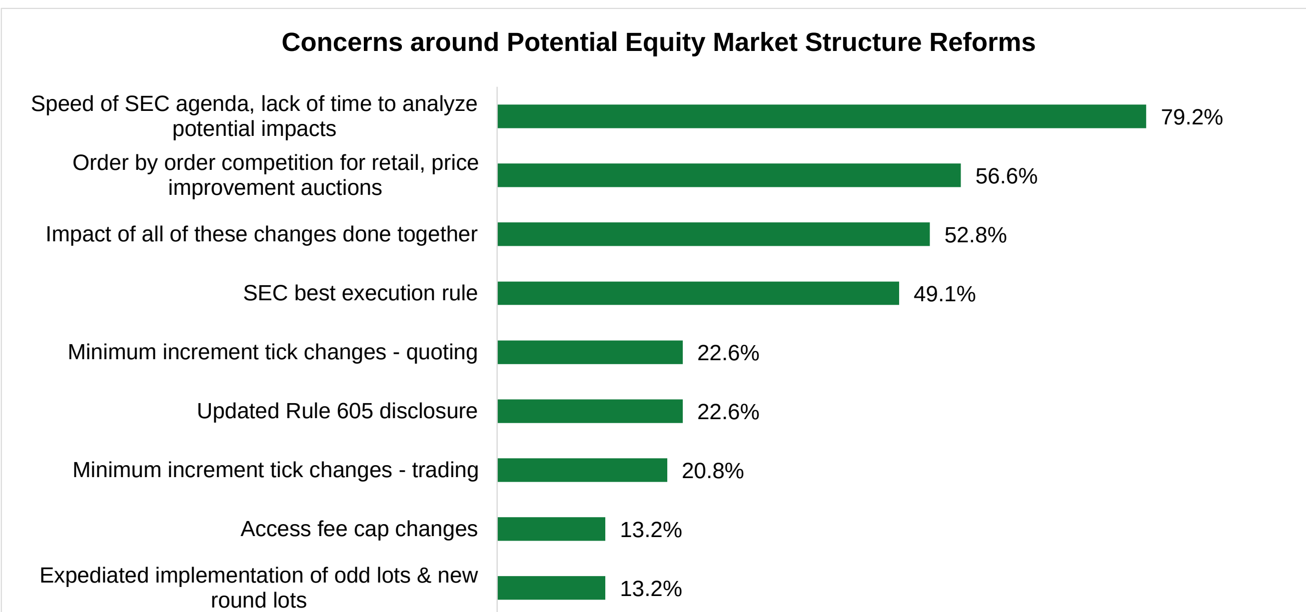
The Regulatory View

Market Touchpoint: Equity Market Structure Reform

Our pre-conference survey sought to gauge respondents' thoughts around potential equity market structure reforms, albeit we have not yet seen a proposal. We highlight the following in respondents' perspectives on key concerns:

- 79.2% responded the speed of the SEC agenda and the lack of time to analyze potential impacts
- 56.6% responded order by order competition for retail orders and price improvement auctions
- 52.8% responded the impact of all of these changes done together

Survey Questions: While we have not yet seen a proposal, what concerns you most regarding potential equity market structure reforms? (Please check all that apply)



Source: SIFMA Insights pre-conference survey

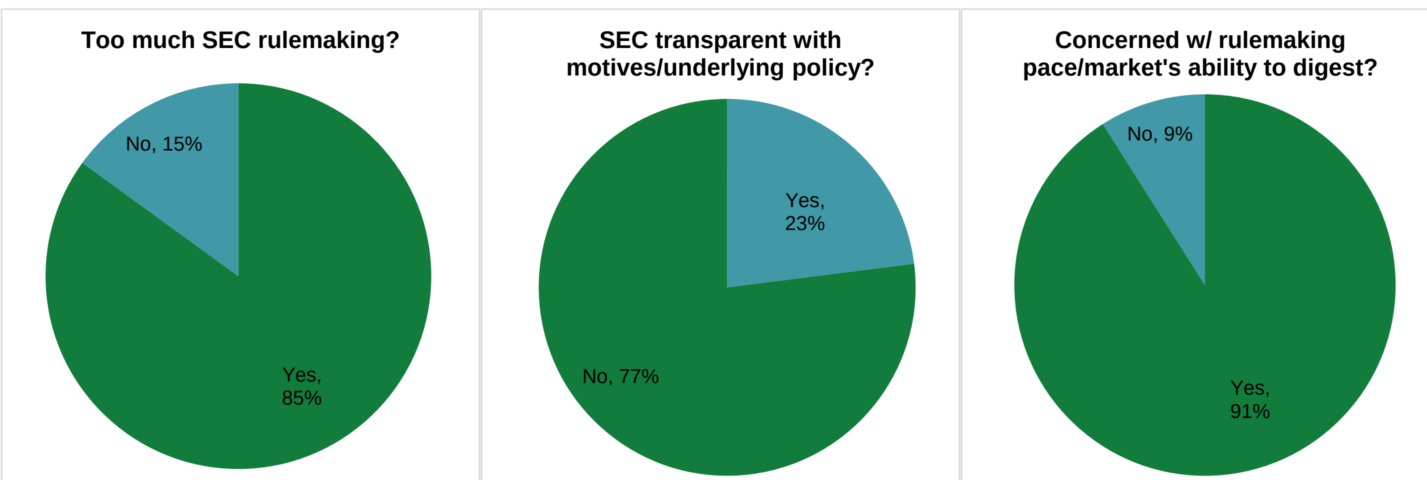
Conference Touchpoint: SEC Rulemaking

Over the two days, there were several polls taken of the audience around SEC rulemaking. We highlight the following in respondents' perspectives on key concerns:

- 85% of respondents believe the SEC is engaged in too much rulemaking
- 77% of respondents do <u>not</u> believe the SEC is being transparent with its motives and underlying policy of recent rulemaking
- 91% of respondents are concerned with the pace of the SEC's rulemaking and the market's ability to digest the rules

Survey Questions:

Do you think the SEC is engaged in too much rule making?
Do you think the SEC is being transparent with its motives & the underlying policy of recent rulemaking?
As of August 2022, the SEC has introduced 26 rule proposals, and Chair Gensler has indicated that there are more to come. Are you concerned with the pace of these proposals and the ability of the marketplace to reasonably comment?



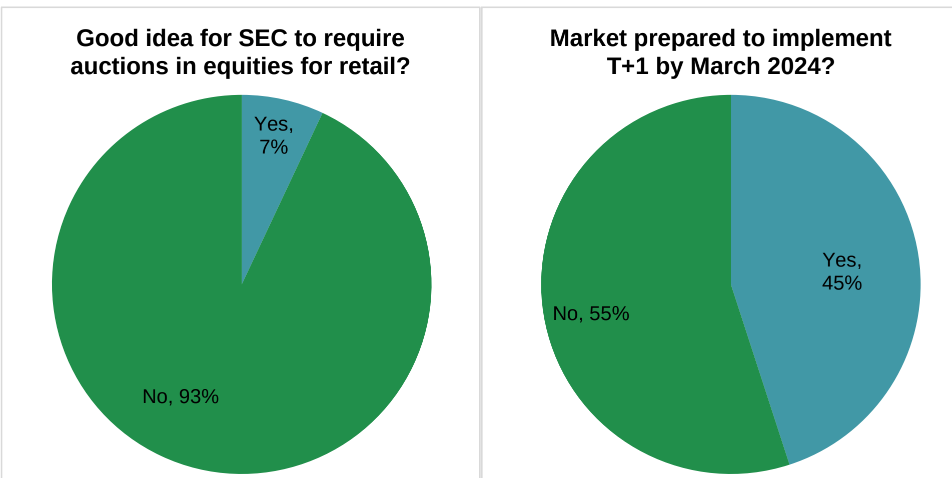
Source: Conference audience polling

Additionally, conference attendees weighed in on two specific SEC rules (albeit we do not yet have a proposal for equity market structure reform and therefore any details on auctions or if they will be included in the proposal). We highlight the following in respondents' perspectives on key concerns:

- 93% of respondents do not believe it is a good idea for the SEC to require auctions in equities markets for retail orders
- 55% of respondents do not believe markets are prepared to implement the transition to T+1 settlement by the SEC's March 2024 timeline

Survey Questions:

Do you think it's a good idea for the SEC to require auctions in equities for retail?
Is the market prepared to implement T+1 by March 2024?



Source: Conference audience polling

The SEC Agenda

As we have written in prior notes, the SEC has an aggressive agenda. As a panelist indicated, as of August, the agency had 26 rule proposals, and Chair Gensler has indicated that there is more to come. As shown in both the pre-conference survey and audience polling results, market participants continue to remain concerned. Many in the room at the conference believe there are too many proposals (85% said too much rulemaking). Almost all in attendance believe the pace of rulemaking is concerning (91%), not allowing enough time for markets to digest the rules. The bottom line, market participants think too many potential changes could be proposed without enough time to analyze the impact of each rule and how they all could work together to impact markets.

When it comes specifically to equity market structure reform – we reiterate that we do not yet have a proposal in this area and therefore do not know what will be included in the proposal – market participants expressed several concerns. Heading into the conference, we asked respondents what concerned them most about the potential equity market structure reform proposals. Over half replied order by order competition for retail orders and price improvement auctions (56.6%) and the impact of the list of nine changes we posed in the question done together (52.8%). Taking the temperature in the room at the conference, it was almost unanimous (93% of respondents) that it is <u>not</u> a good idea for the SEC to require auctions in equities markets for retail orders.

Finally, we sat down with Jessica Wachter, SEC Chief Economist and Director of the Division of Economic & Risk Analysis (DERA). She explained the history of the analysis on the six Gensler areas of work:

- Minimum Pricing Increment
- National Best Bid and Offer
- Disclosure of Order Execution Quality
- Best Execution
- Order-by-Order Competition
- Payment for Order Flow, Exchange Rebates, and Related Access Fees

While the sentiment to do something in this space was there prior to her group's analysis did, Wachter noted that her group began by taking the topics that were brought to them and narrowing them into buckets. The economic analysis started with statistics as the baseline – this is how the world is today. Then they attempted to assess how markets would change. In addition to reading academic literature on markets – and we presume similar rule changes in other regions – she noted that they made inferences on how markets perform now and did statistical analysis around that, with simulations done implicitly in the data.

She went on to indicate that DERA analyzes each of the rules in isolation. This peaked the interest of this author and the audience. According to Wachter, the 2012 guidance of how the SEC writes economic analysis prescribes the methodology as:

- Start with the baseline of the world as it is
- Analyze each rule within that baseline in isolation

Wachter indicated that DERA does think about all of the rules combined, but the analysis methodology is to work on each rule in isolation.

This adds another level of complexity in addition to the pace of rulemaking and the amount of proposals. It is interesting to think that the agency might not be – we are not in the room with them, simply basing this on how the SEC's guidance of writing economic analysis were described – performing a multifactor analysis on the six broad areas and how they impact each other and markets as a whole once all implemented.

Think about it this way. Analysis begins on proposal number one of six, with the current state of markets as the baseline. Now the analysis moves on to point number two, again using today's state of markets as the baseline. However, today's state does not account for how the change in point number impacted markets. The analysis for point number two is therefore using a baseline which most likely moved after point one was changed, i.e. a stale assumption for the baseline.

Conference attendees were discussing concern over this isolation analysis methodology.

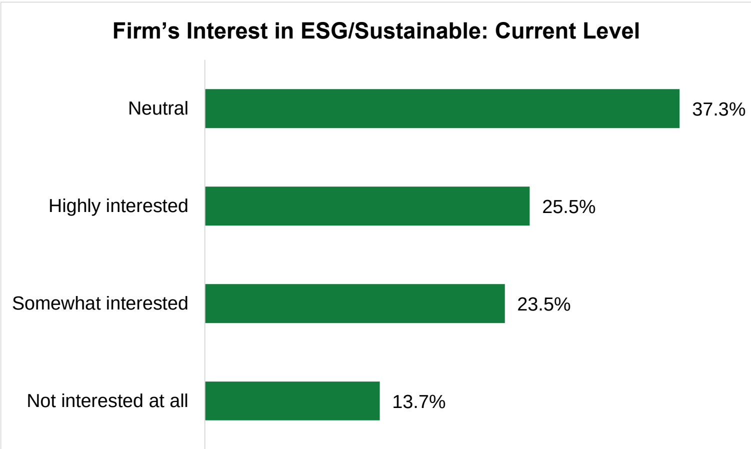
More on Market Themes

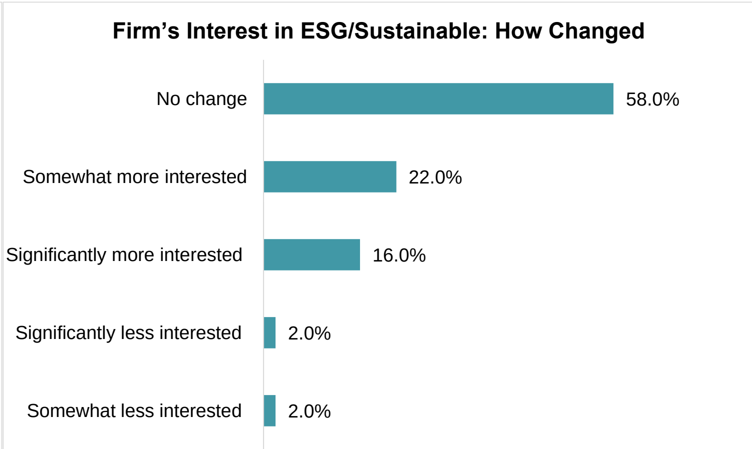
Market Touchpoint: ESG

We used our pre-conference survey to gauge survey respondents' interest in ESG and sustainability services and product offerings. We highlight the following:

- Current level of interest
  - 37.3% of respondents were neutral
  - 25.5% of respondents were highly interested
- How interest has changed
  - 58.0% of respondents indicated there was no change
  - 22.0% of respondents noted they have become somewhat more interested

Survey Questions: How do you rate your firm's current interest in providing ESG/sustainable products/underwriting? How has your firm's interest in providing ESG/sustainable products/underwriting changed since the start of the year?





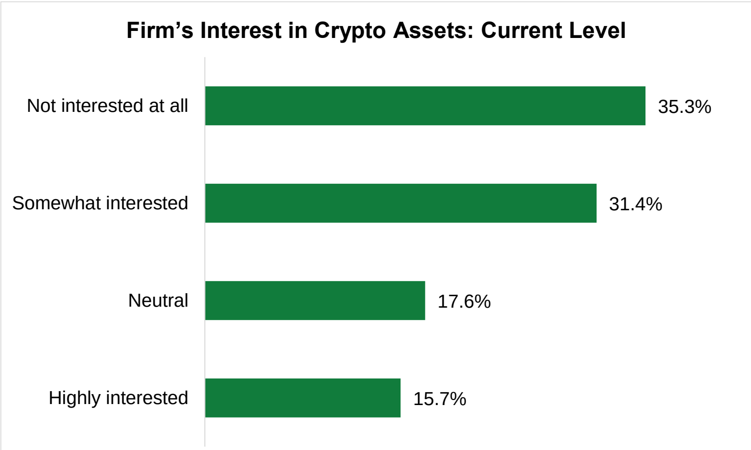
Source: SIFMA Insights pre-conference survey

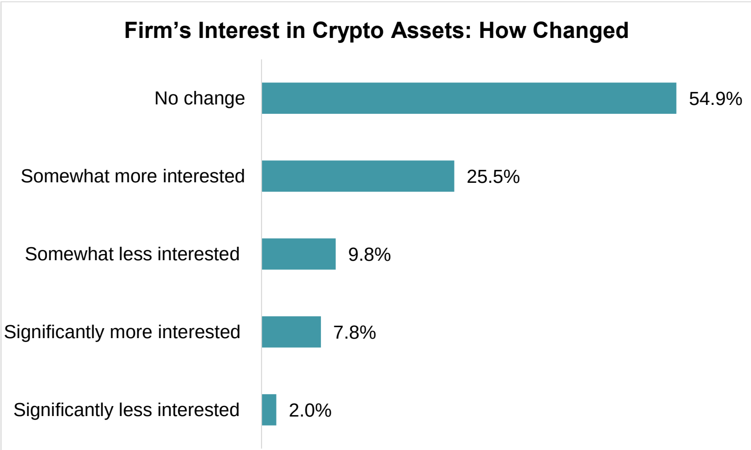
Market Touchpoint: Crypto

We used our pre-conference survey to gauge survey respondents' interest in crypto asset investing, highlighting the following:

- Current level of interest
    - 35.3% of respondents were not interested at all
    - 31.4% were somewhat interested
- Change in level of interest
    - 54.9% of respondents expressed no change
    - 25.5% noted they were somewhat more interested

Survey Questions: How do you rate your firm's current interest in crypto asset investing? How has your firm's interest in crypto asset investing changed since the start of the year?





Source: SIFMA Insights pre-conference survey

Appendix: SIFMA Insights Research Reports

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

- Statistics on volatility and equity and listed options volumes
- Also 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
- Electronic Trading
- US Capital Formation & Listings Exchanges
- US Equity
- US Multi-Listed Options
- US ETF
- US Fixed Income
- SOFR: The Transition from LIBOR
- The Evolution of the Fintech Narrative

Equity Market Structure Analysis Series

- 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

Conference Debriefs

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

SIFMA Insights: www.sifma.org/insights

- Pre-Conference Survey Comparison, Spring 2022
- Market Structure Thoughts
- Market Structure Compendium
- Inflation 101
- Market Structure Survey: Volatility, Volumes, Market Levels & Retail Investor Participation
- SPACs versus IPOs
- A Look Back at 2020 Market Structure Themes
- US Capital Formation's 2020 Journey
- Market Structure Download: Post-Election Update
- Market Performance Around US Presidential Elections

- Market Volatility Around US Presidential Elections
- Market Structure Download
- A Deeper Look at US Listed Options Volumes
- The Cboe Trading Floor Reopened – Revisiting Volume Data
- NYSE Goes All Electronic – What Does It Mean?
- The NYSE Trading Floor Reopened – Revisiting Market Share Data
- COVID-19 Related Market Turmoil Recap: Part I (Equities, ETFs, Listed Options & Capital Formation)
- COVID-19 Related Market Turmoil Recap: Part II (Fixed Income and Structured Products)
- 2020, the Year of the SPAC
- The 2020 Market Madness
- The VIX's Wild Ride
- The 10th Anniversary of the Flash Crash
- DTCC's Important Role in US Capital Markets
- Building Resilience with a Culture of Cyber Awareness

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