The Evolution of Options and Futures Strategies on the Buy-side Trading Desk

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Agenda

- Introduction
- Trends and drivers
- Regulatory influences
- Trends in US derivatives trading
- Final thoughts
- Panel discussion

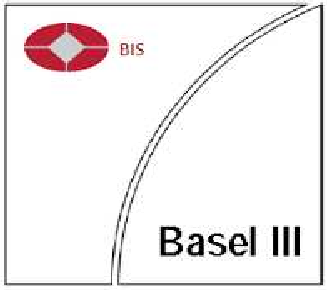
Macro trends and drivers

- Global regulatory pressures to reduce systemic risk is shifting demand towards exchange traded products
  - Capital efficiency (Basel III) will drive future adoption as brokers tier risk exposures based on client type
  - Aggressive trading strategies are being forced to use listed products as brokers restrain credit extension
- Equity-based index derivatives are becoming a bigger part of investment strategies
  - Institutions are using more index derivatives in strategies as investment mandates expand
  - Increased volatility will reinforce demand for risk management activities
- Market participants continue to gravitate to instruments providing efficient exposure and lower costs
  - Cost to trade is becoming a bigger consideration, especially the cost to enter and exit position
  - Liquidity remains paramount, especially when volatility surges and its time to exit a trade

Regulation

Regulatory focus on bank capital and reducing risk is changing the derivatives trading landscape

- Basel III forcing re-pricing of risk
  - Banks need to Increase Tier I capital from 2% to 6%; 2.5% surcharge for larger organizations
  - Some countries are layering on higher capital buffers
  - Banks are shuttering down risk-taking business



- Volcker Rule on Proprietary Trading
  - Proprietary trading by banks is gone
  - Reduced liquidity in most risk markets

- Completely changes the listed derivatives trading landscape
  - Capital is expensive; relationships determine availability
  - Liquidity being provided by prop trading firms
  - Less bank capital is forcing investors to absorb more risk

Reduced capital is forcing banks to cut leverage and take less risk in their customer activities

- Banks have less capital to deploy
  - To take positions
  - To take on client risks
  - To provide capital to investors

- Risk is shifting to liquidity providers, end users and investors
  - You see this with increased volatility
    - Flash crashes (not per se, but increased use of circuit breakers)
    - ETF problems in August 2015
  - Greater air pockets – bids/offer gaps

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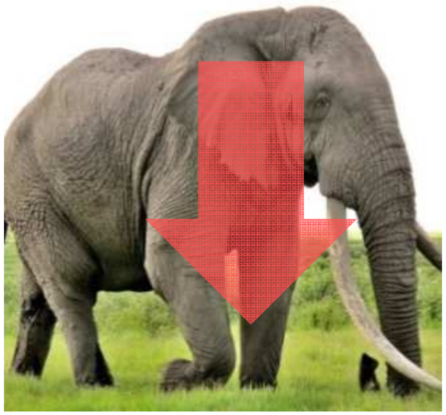
Risk provision is no longer simply a function of size, instead it is transitioning to a service based on technology capabilities

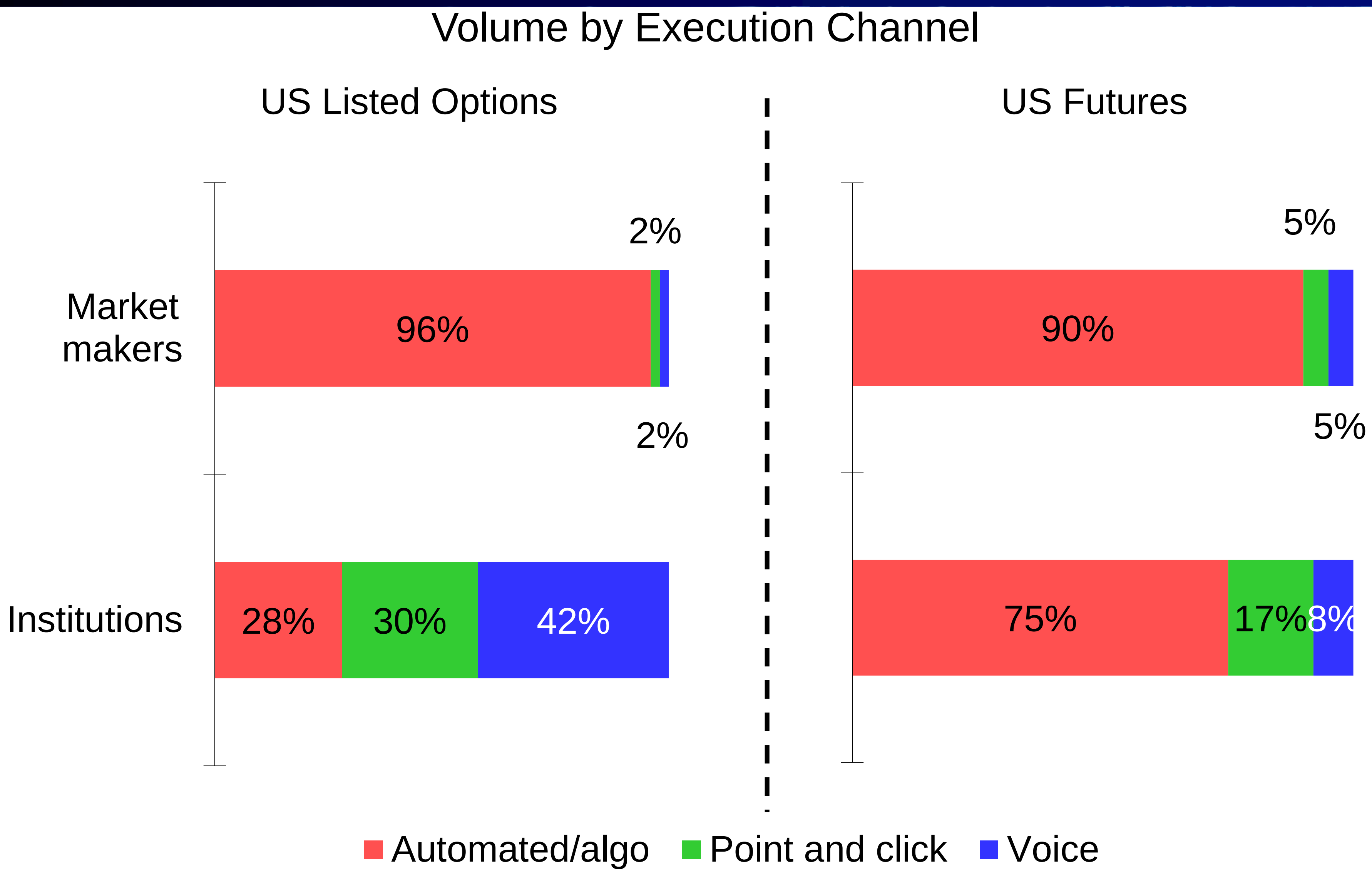
- With technology comes more efficiency
  - More efficiency = fewer traders
  - Fewer eyeballs = fewer traders managing risk
  - Fewer traders managing risk = smaller risk



- More technology = more speed
  - Need to pay closer attention to markets

- Instead of dealers putting up size, they amp up speed
  - Instead of putting up 500 contracts which they hold for 5 min, they put up 5 contracts which they turn over in 10 seconds
  - More easily manage risk exposure, change directions or pull markets

Structural shifts are driving the use of technology, with speed and efficiency becoming increasingly critical to the industry



Source: TABB Group

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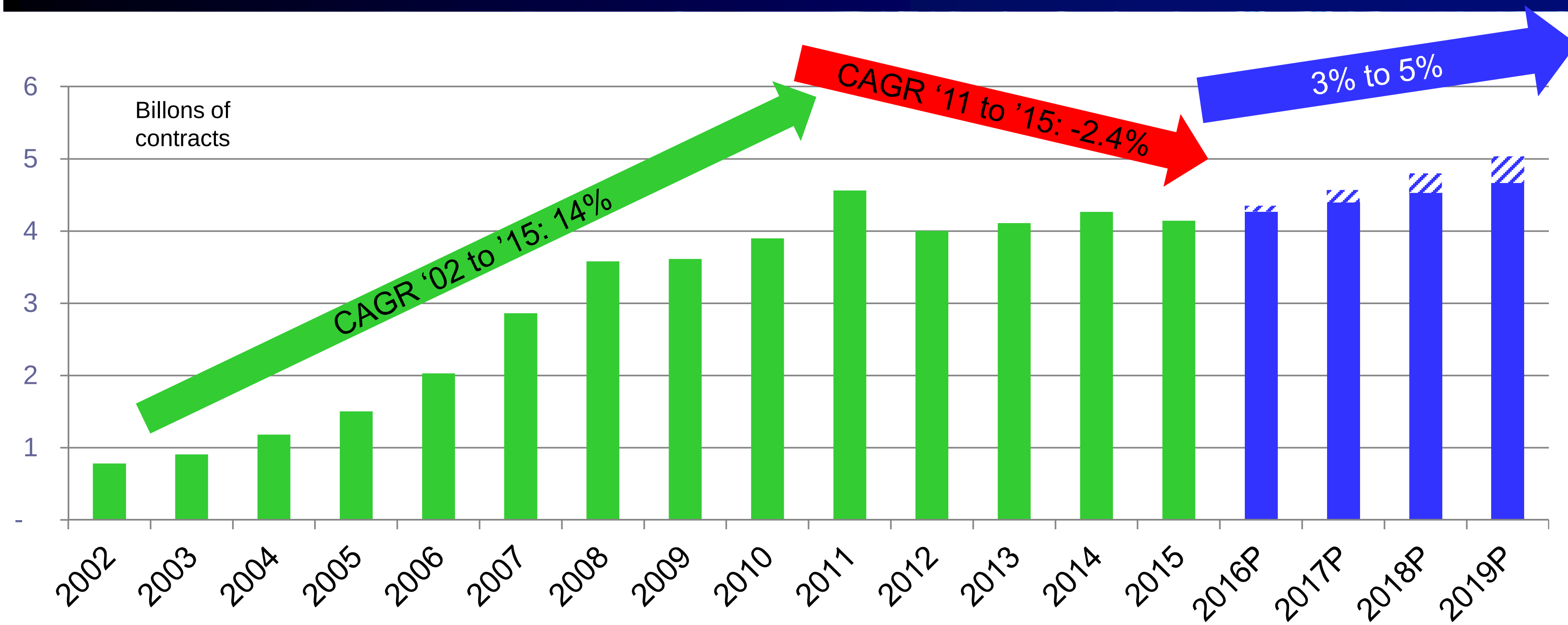
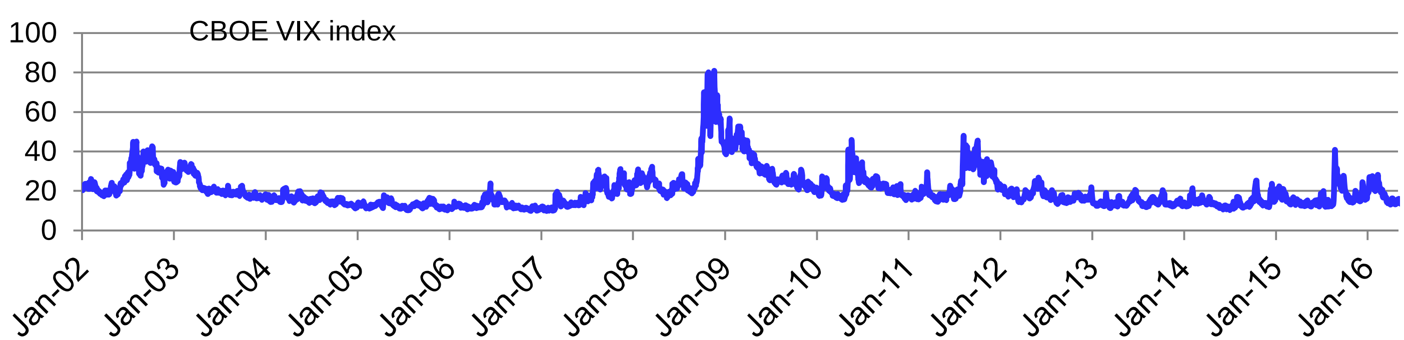
Impact on US derivatives markets

US options volume saw strong growth until ‘11; low volatility, less demand and regulatory reform has caused volumes to stagnate





Jan-02 to Sep-16
Average VIX: 19.95

Source: OCC, CBOE, TABB Group estimates

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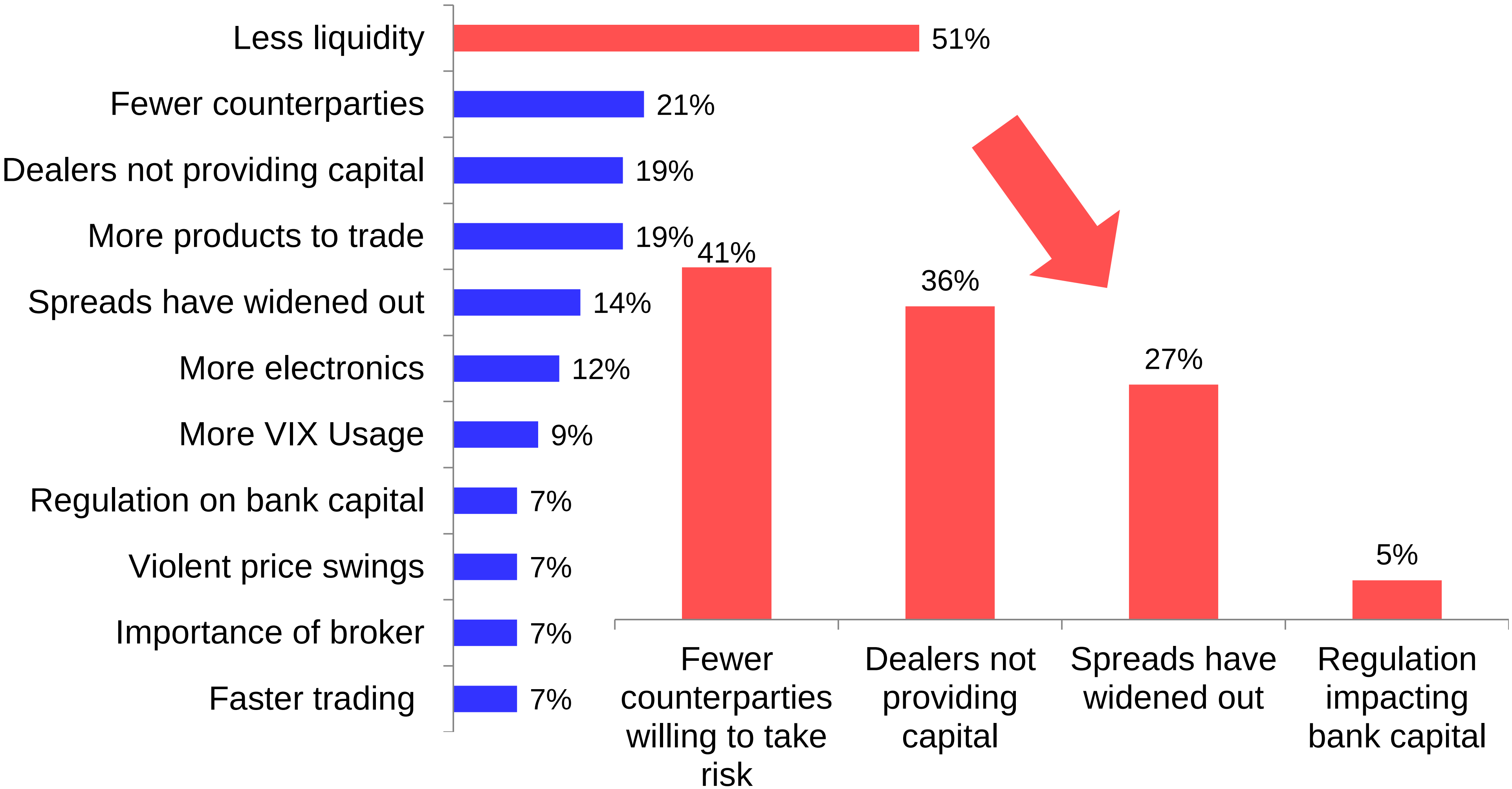
Options traders are seeing the consequences of more regulation: less liquidity and lower market quality

What has changed the most in options trading over the past year?



Source: TABB Group

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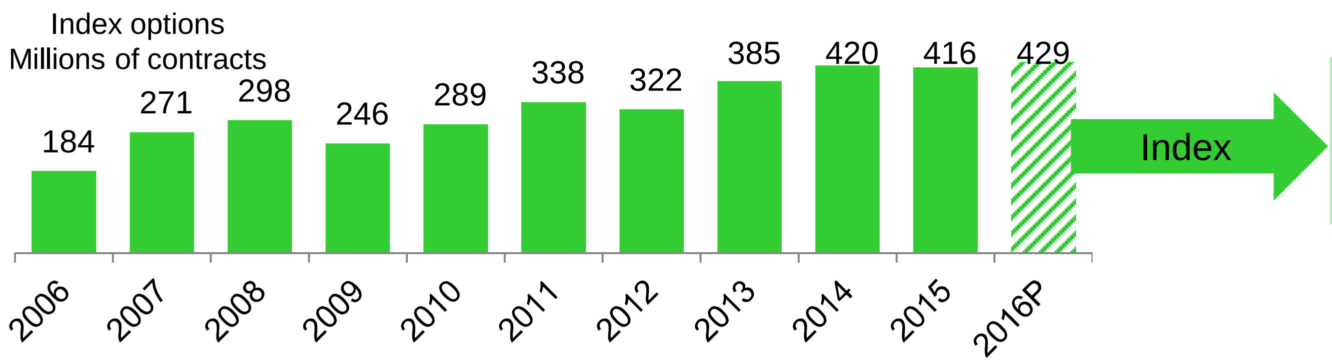
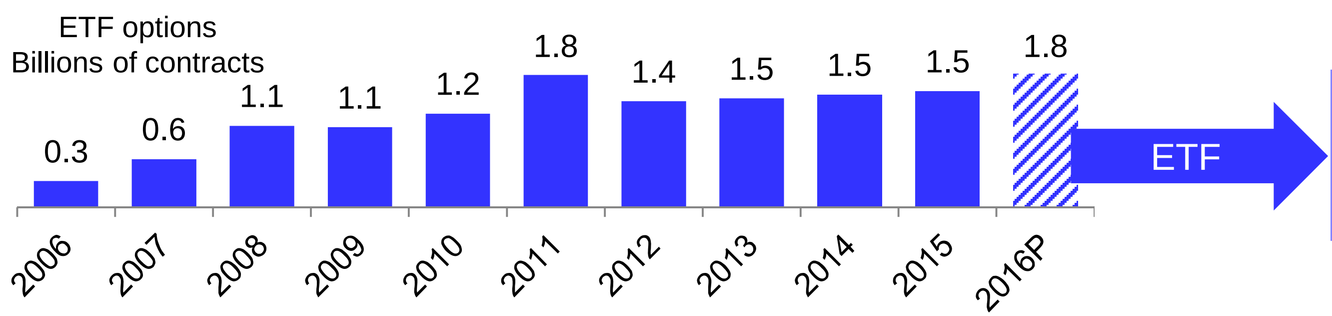
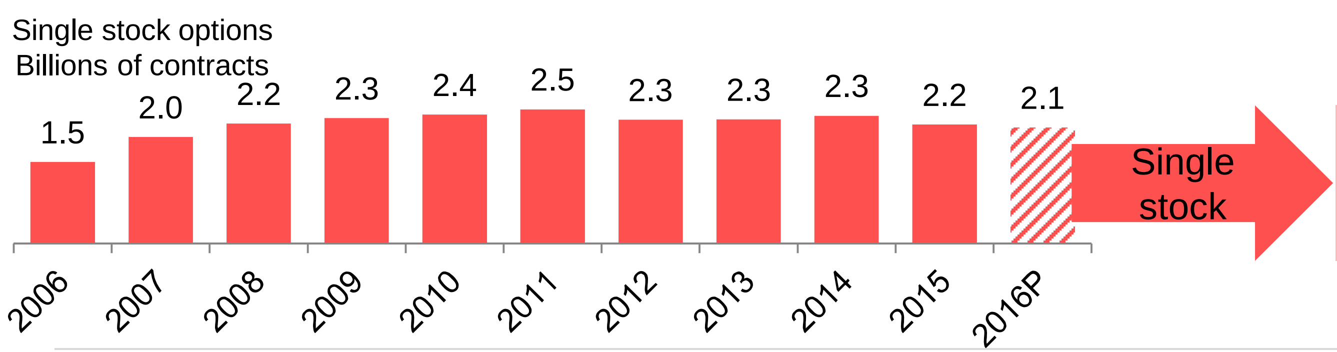
ETF and index volume continue to see momentum, SSO volumes have plateaued as active management strategies migrate to ETFs



CAGR 2006 to 2015: 9.5%
Total volume in 2015: 416MM
Market proportion in 2015: 10%



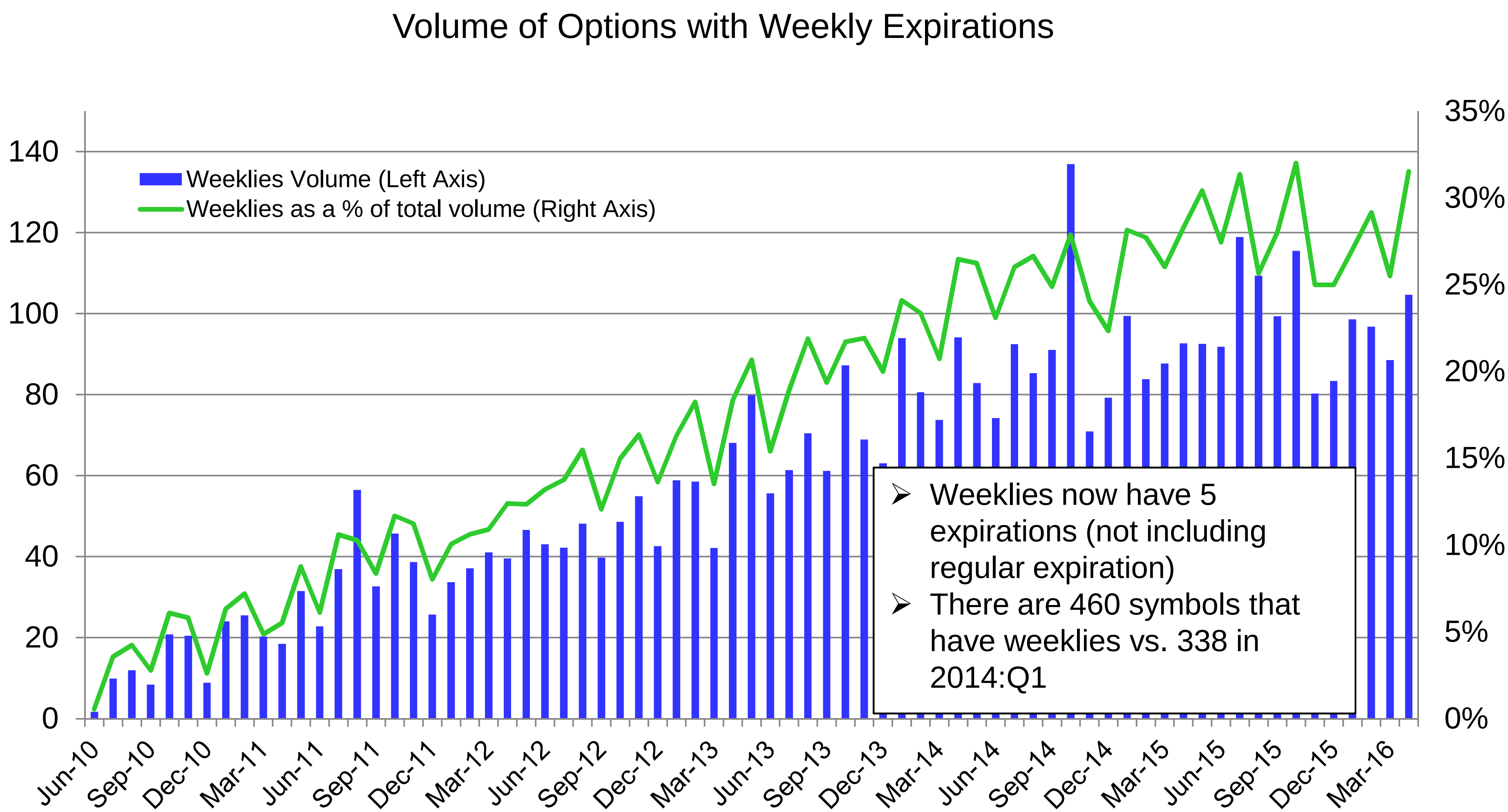
CAGR 2006 to 2015: 18.0%
Total volume in 2015: 1.5B
Market proportion in 2015: 37%



CAGR 2006 to 2015: 4.3%
Total volume in 2015: 2.2B
Market proportion in 2015: 53%

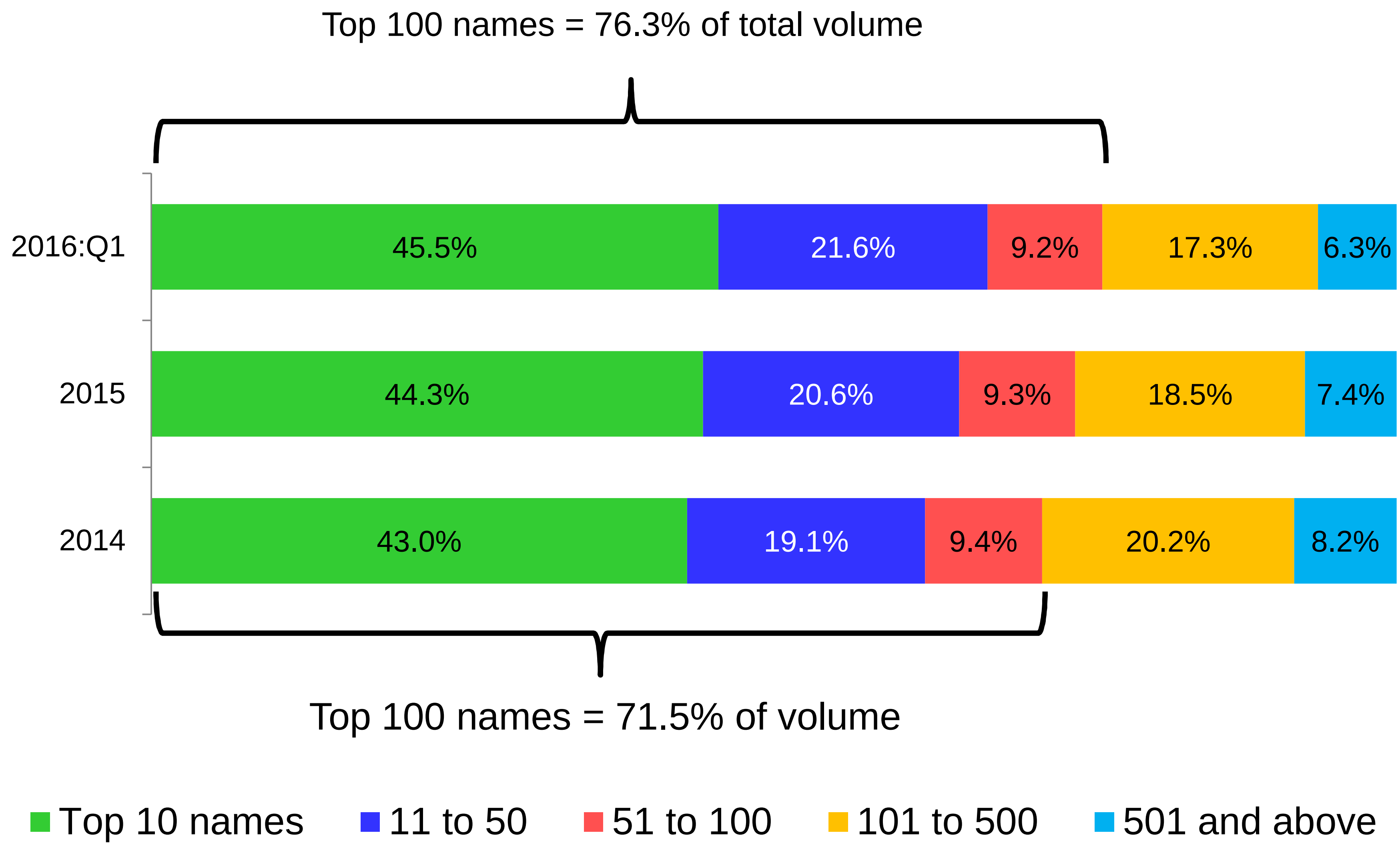
Source: TABB Group

Short term expiries have seen strong growth; trading velocity & structural characteristics require faster analytics & technology



Source: OCC, Hanweck Associates, TABB Group estimates

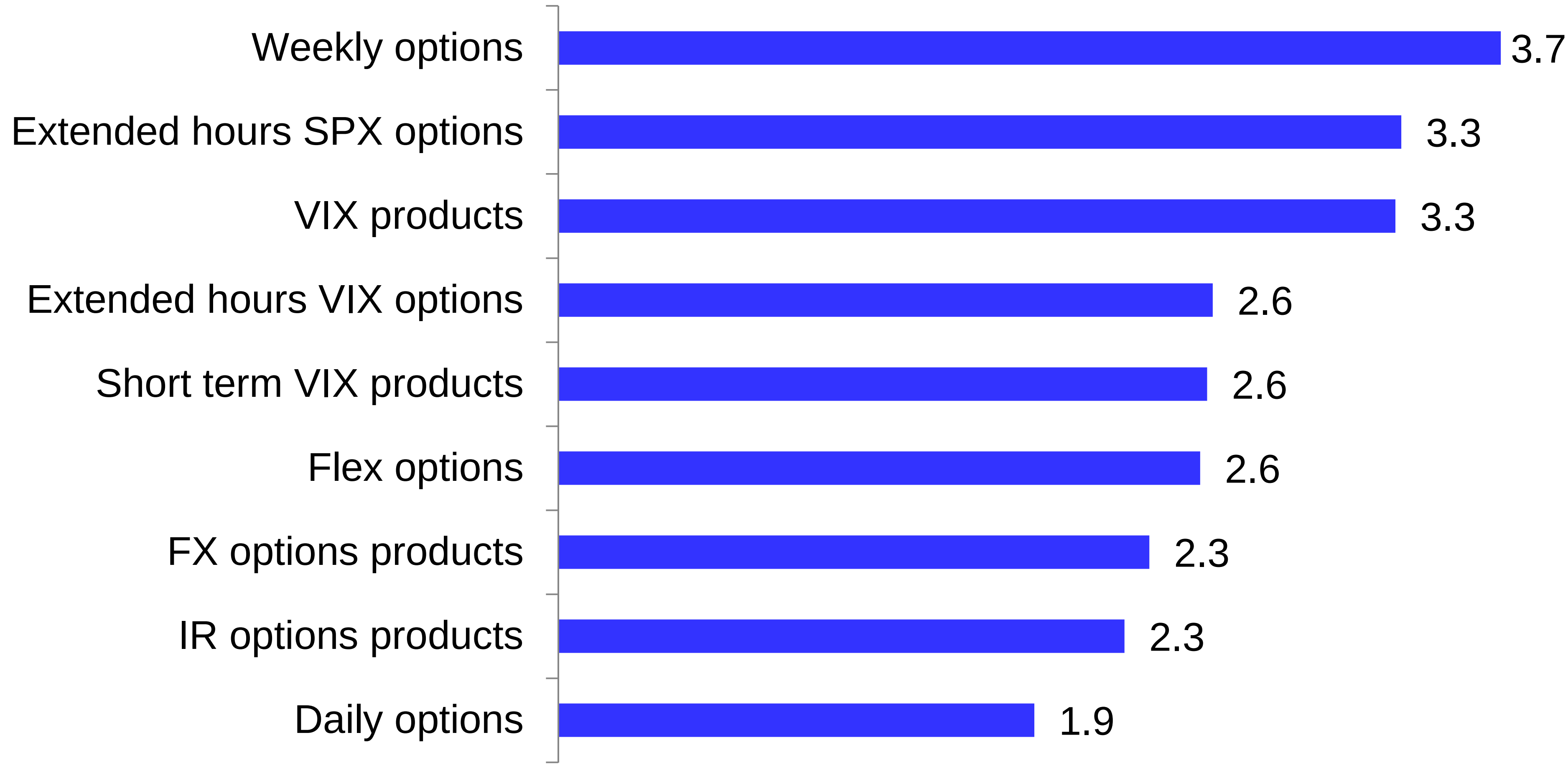
Liquidity has become concentrated in the top 100 names as trading velocity accelerates & traders look for liquidity



Source: OCC, TABB Group estimates

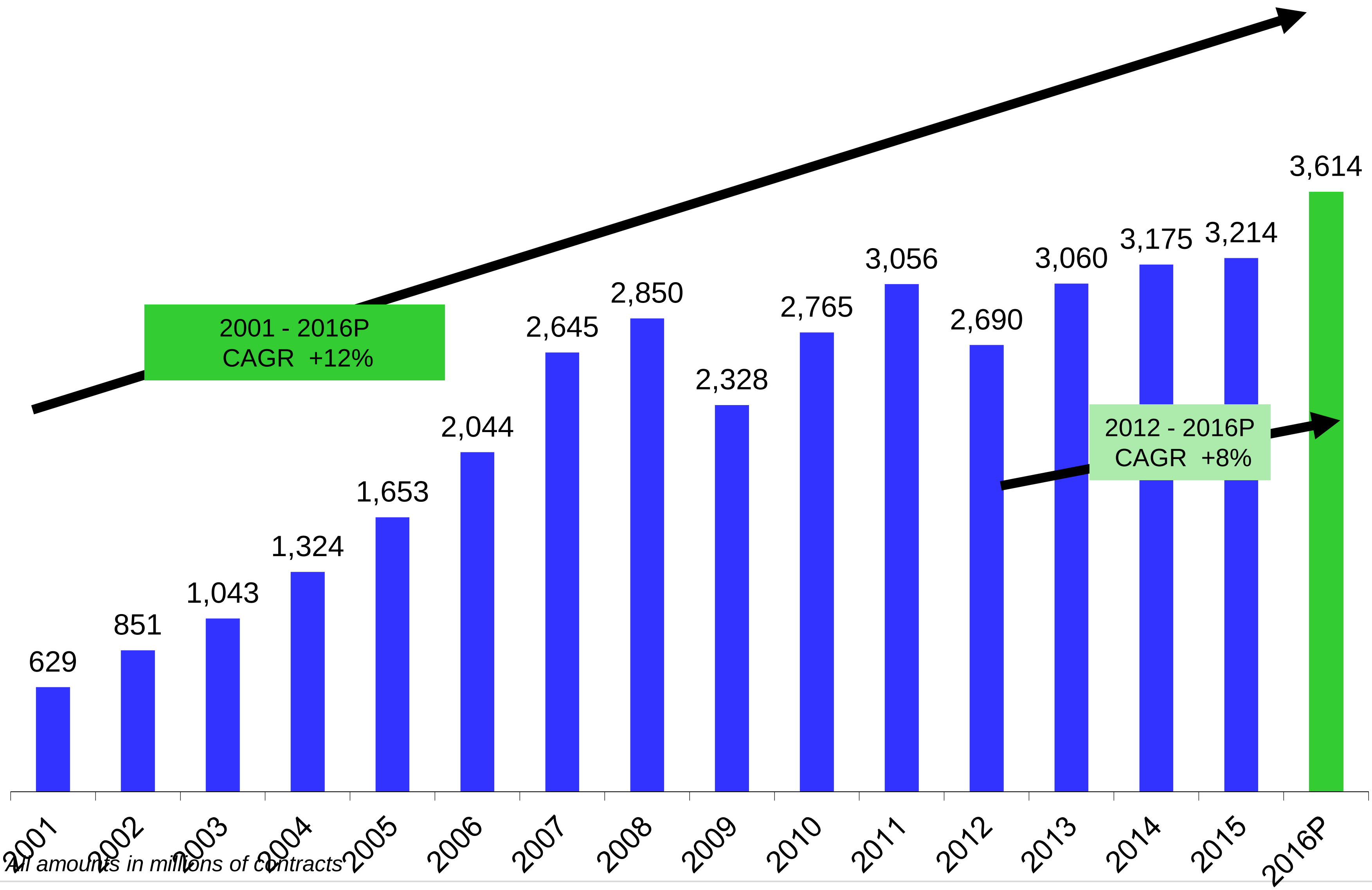
Products offering liquidity, flexibility and improved risk management characteristics are seeing higher demand

What products offer the greatest potential for your activities?
(Ranked 1 to 5, 5 Highest)



Source: TABB Group

Futures volumes are subject to many of the same drivers, with global demand for liquidity contributing to market growth



Note: All amounts in millions of contracts

Source: FIA/TABB Group

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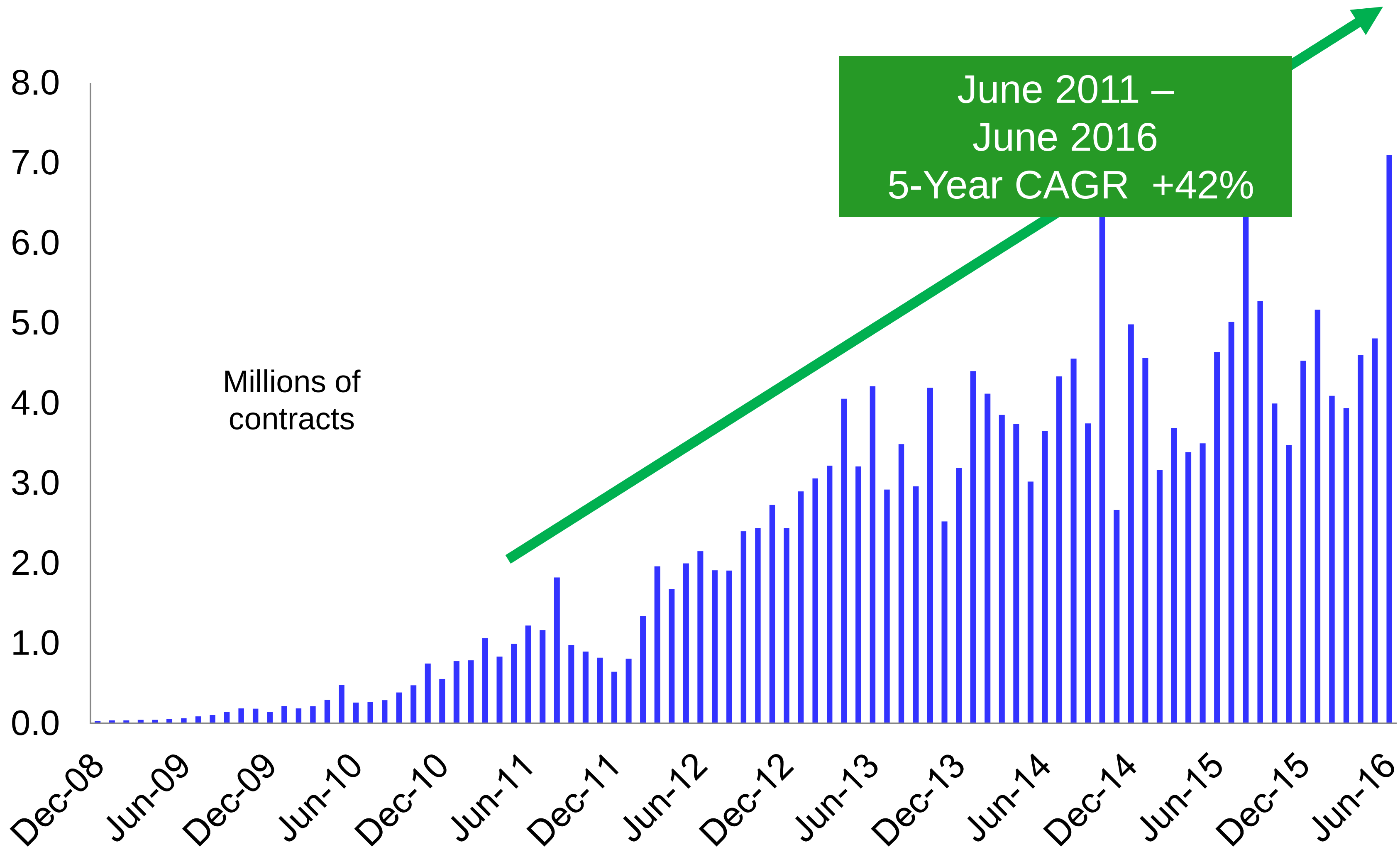
VIX futures have seen substantial growth, especially after the extreme volatility of 2011



Source: CBOE, TABB Group

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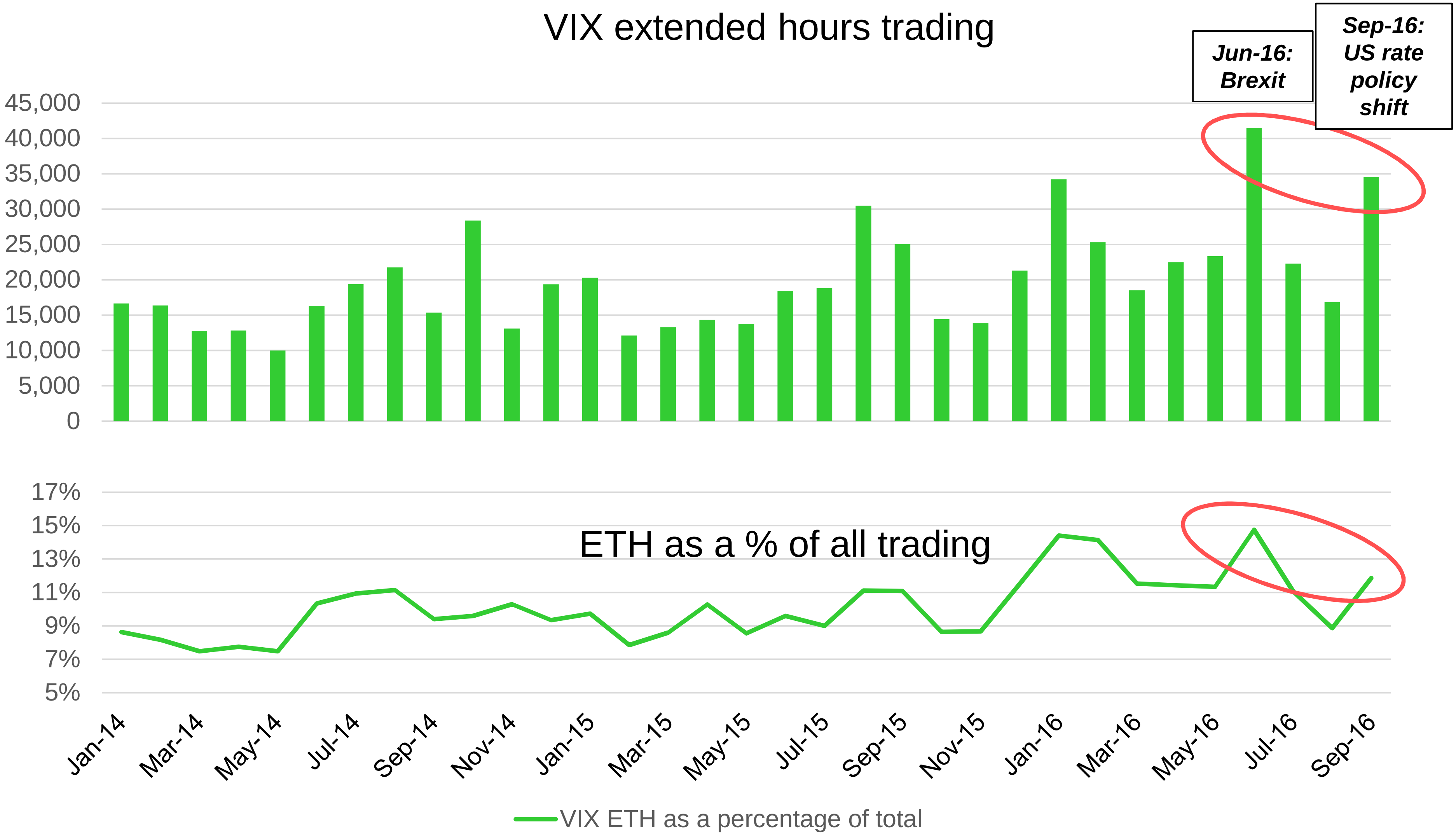
Not only are VIX futures volumes increasing but extended hours trading (ETH) is gaining traction as hedging needs evolve

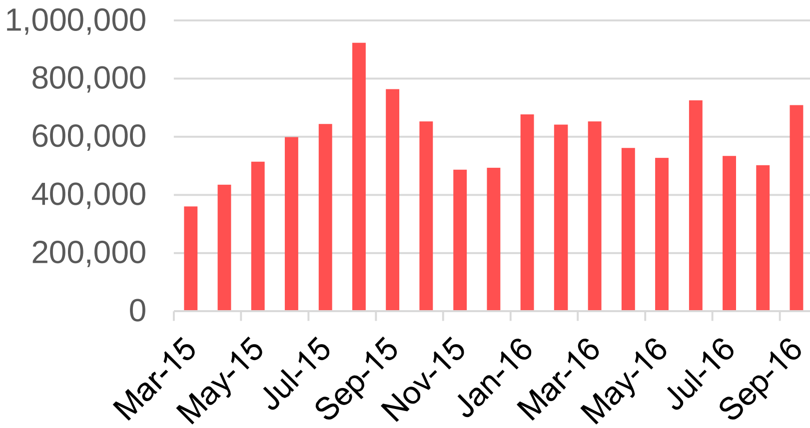


Note: All amounts represent average daily contract volumes. September averages as of 9/16/16

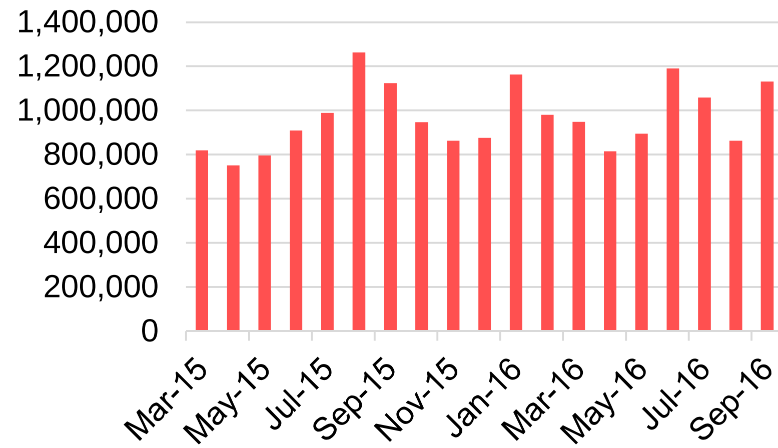
Source: CBOE, TABB Group

Demand for liquid hedging tools is also driving demand in SPX and VIX options, both in regular and extended hours

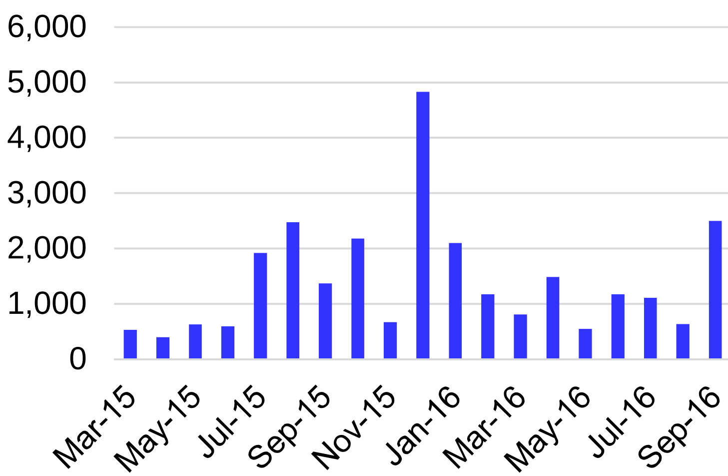
VIX options



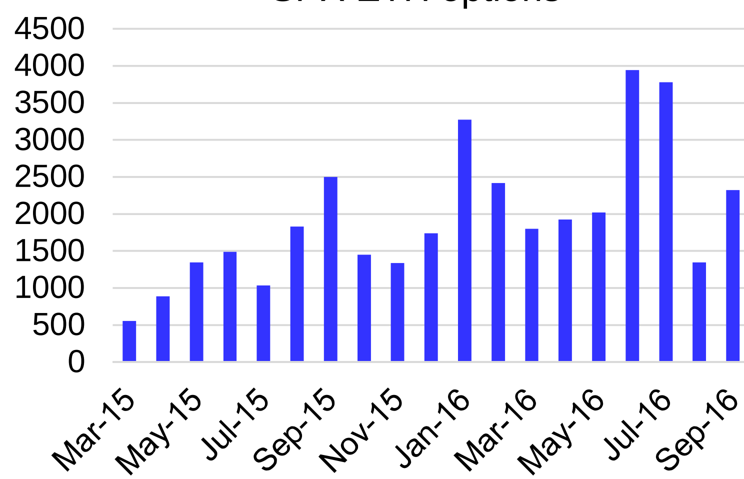
SPX options



VIX ETH options



SPX ETH options



Note: All amounts represent average daily contract volumes. September averages as of 9/16/16

Source: CBOE, TABB Group

App Polling Questions

Question #1 for Andy Nybo Session:

- How desirable do you believe it is for customers to have access to **VIX FUTURES** during Extended Trading Hours (ETH)?

A) Very
Customers highly value the ability to trade VIX futures outside of US market hours.

B) Moderate
For certain irregular, highly volatile events, ETH is beneficial.

C) Low
Except in extreme circumstances, Customers prefer to wait for the opening of the regular US trading day to trade VIX Futures.

App Polling Questions

Question #2 for Andy Nybo Session:

- How desirable is it for customers to have access to **SPX and/or VIX OPTIONS** during Extended Trading Hours (ETH)?

A) Very
Customers highly value the ability to trade SPX and VIX options outside of US market hours.

B) Moderate
For certain irregular, highly volatile events, ETH is beneficial

C) Low
Except in extreme circumstances, Customers prefer to wait for the opening of the regular US trading day to trade SPX or VIX Options.

Final thoughts

Derivative markets will benefit from more regulation (mostly), rate shifts, volatility, technology, and rising demand from end users

- Global regulation is shifting demand towards exchange traded derivatives
  - Capital efficiency is forcing firms to evaluate all costs to trade
  - Brokers are proactively tiering clients to minimize risk
- Market volatility expected to increase as economic growth accelerates and monetary policy shifts
  - Anticipation around monetary policy changes will sustain volatility
  - Sustained volatility will entice new market participants into derivatives
- Institutional investor demand for liquidity continues to grow as more funds use derivative strategies
  - Risk management policies encourage the use of derivatives for hedging
  - More sophisticated strategies are driving volumes
- Technology is a critical factor supporting growth
  - Strong technology foundation is crucial to support industry growth
  - Structural complexity is forcing firms to automate activities

Panel discussion

- Jared Dubin, Head of Systematic Strategy Research, LMR Partners
- John Fennell, Executive Vice President, Financial Risk Management, OCC
- Patrick A. Luongo, Head of AES Options Sales, Credit Suisse
- Alex Orus, Founder and Partner, Principalium Capital AG

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