Key Takeaways from the Quarter

- **Capital Formation:**
  - Total (ex-SPACs) $39.7B, +67.4% Y/Y
  - Secondarys $26.6B, +50.8% Y/Y
  - Preferreds $4.7B, +29.6% Y/Y
  - IPOs $8.3B, +246.0% Y/Y
  - SPACs $0.8B, +25.0% Y/Y

- **Market Performance:**
  - S&P 500 4,458.14, +12.0% Y/Y
  - Nasdaq 13,783.92, +15.9% Y/Y
  - DJIA 34,669.48, +9.1% Y/Y
  - Russell 2000 1,891.74, +3.1% Y/Y

- **Volatility:** VIX 15.01, -39.5% Y/Y

- **Volumes (ADV):**
  - Equity 10.4B shares, -4.2% Y/Y
  - ETFs 2.0B shares, -13.6% Y/Y
  - Multi-Listed Options 43.4M contracts, +8.7% Y/Y
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Executive Summary

US Equity Markets Are the Largest in the World

The U.S. equity markets are the largest in the world and continue to be among the deepest, most liquid and most efficient, representing 42.9% of the $106.0 trillion global equity market cap in 2023, or $45.5 trillion. This is 4.1x the next largest market, China. U.S. market share has averaged 38.9% over the last 10 years, troughing at 36.6% in 2015 and peaking at 42.9% in 3Q23.

US Equity Market Share – Current

Source: World Federation of Exchanges, SIFMA estimates
Note: YTD as of September 2023. EM = emerging markets, DM = developed markets

US Equity Market Share – Historical Trends

Source: World Federation of Exchanges, SIFMA estimates
Note: YTD as of September 2023. EM = emerging markets, DM = developed markets
Quarter & Annual Highlights

In this report, we recap statistics for U.S. primary and secondary markets, including equity capital formation (IPOs, total issuance, M&A, etc.); market performance (index prices); volatility (VIX); and equity, ETF, and multi-listed options volumes. We highlight the following for quarterly and annual metrics:

<table>
<thead>
<tr>
<th>Primary Markets</th>
<th>3Q23</th>
<th>2Q23</th>
<th>3Q22</th>
<th>Q/Q</th>
<th>Y/Y</th>
<th>YTD 23</th>
<th>YTD 22</th>
<th>Y/Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuance (SB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Equity (ex-SPACs)</td>
<td>39.7</td>
<td>40.7</td>
<td>23.7</td>
<td>-2.5%</td>
<td>67.4%</td>
<td>107.4</td>
<td>77.0</td>
<td>39.5%</td>
</tr>
<tr>
<td>Secondary</td>
<td>26.6</td>
<td>31.2</td>
<td>17.6</td>
<td>-14.7%</td>
<td>50.8%</td>
<td>78.8</td>
<td>58.6</td>
<td>34.5%</td>
</tr>
<tr>
<td>Preferedds</td>
<td>4.7</td>
<td>2.6</td>
<td>3.6</td>
<td>81.7%</td>
<td>29.6%</td>
<td>11.2</td>
<td>11.4</td>
<td>-1.5%</td>
</tr>
<tr>
<td>IPOs</td>
<td>8.3</td>
<td>6.9</td>
<td>2.4</td>
<td>21.3%</td>
<td>246.0%</td>
<td>17.4</td>
<td>7.1</td>
<td>145.8%</td>
</tr>
<tr>
<td>SPACs</td>
<td>0.8</td>
<td>1.1</td>
<td>0.7</td>
<td>-24.5%</td>
<td>25.0%</td>
<td>3</td>
<td>12</td>
<td>-77.4%</td>
</tr>
<tr>
<td>Other Investment Banking (SB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Equity</td>
<td>172.7</td>
<td>210.8</td>
<td>218.5</td>
<td>-18.1%</td>
<td>-21.0%</td>
<td>611.6</td>
<td>595.1</td>
<td>2.8%</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>337.1</td>
<td>222.7</td>
<td>336.6</td>
<td>51.4%</td>
<td>0.1%</td>
<td>866.5</td>
<td>107.4</td>
<td>706.5%</td>
</tr>
</tbody>
</table>

| Secondary Markets |       |       |       |      |      |        |        |      |
| Market Performance (Price) |       |       |       |      |      |        |        |      |
| S&P 500           | 4,458.14 | 4,206.07 | 3,980.35 | 6.0%| 12.0%| 4,222.69 | 4,181.13 | 1.0%  |
| Nasdaq            | 13,783.92 | 12,676.76 | 11,891.07 | 8.7%| 15.9%| 12,653.45 | 12,687.08 | -0.3%  |
| DJIA              | 34,669.48 | 33,643.04 | 31,774.49 | 3.1%| 9.1%| 33,848.14 | 33,033.75 | 2.5%  |
| Russell 2000      | 1,891.74 | 1,797.64 | 1,835.30 | 5.2%| 3.1%| 1,848.85 | 1,915.13 | -3.5%  |

| Volatility & Volumes |       |       |       |      |      |        |        |      |
| VIX (Price)           | 15.01 | 16.44 | 24.79 | -8.7%| -39.5%| 17.37 | 25.85 | -32.8%|
| Equity ADV (B shares) | 10.4 | 10.8 | 10.9 | -2.9%| -4.2%| 11.0  | 12.1  | -9.2% |
| ETF ADV (B shares)   | 2.0   | 2.1   | 2.3   | -6.0%| -13.6%| 2.2   | 2.6   | -16.1%|
| Options ADV (M contracts) | 43.4 | 43.0 | 39.9 | 1.0%| 8.7%| 44.1  | 40.6  | 8.7% |

Source: Bloomberg, Cboe Global Markets, Dealogic, Options Clearing Corporation, Pitchbook, World Federation of Exchanges, SIFMA estimates
Note: IPO data includes rank eligible deals; excludes BDCs, SPACs, ETFs, CLEFIs & rights offers
US Equity Capital Formation: Review of Quarterly Issuance

- Total equities (excluding SPACs): $39.7B; -2.5% Q/Q, +67.4% Y/Y
- Secondaries: $26.6B; -14.7% Q/Q, +50.8% Y/Y
- Preferreds: $4.7B; +81.7% Q/Q, +29.6% Y/Y
- IPOs: $8.3B; +21.3% Q/Q, +246.0% Y/Y
- SPACs: $0.8B; -24.5% Q/Q, +25.0% Y/Y

Source: Dealogic, SIFMA estimates

Note: Equity data includes rank eligible deals, excludes, BDCs, SPACs, ETFs, CLEFs and rights offers
### IPOs by Industry

- Computers & Electronics: 84.4%
- Healthcare: 14.8%
- Retail: 0.2%
- Leisure & Recreation: 0.2%
- Insurance: 0.1%
- Real Estate/Property: 0.1%
- Forestry & Paper: 0.1%
- Consumer Products: 0.1%
- Finance: 0.1%
- Auto/Truck: 0.1%
- Construction/Building: 0.1%

### IPOs vs Stock Market Performance

- **SPX Index**
- **IPOs**

### SPAC Deals

- Volume ($B)
- # Deals (RHS)

### SPAC vs IPO Deals ($B)

- **IPOs**
- **SPACs**

Source: Dealogic, SIFMA estimates
US Equity Capital Formation: Monthly Issuance Trends

- Total equities: $22.3B, -99.5% M/M, +213.9% Y/Y
- Secondaries: $13.6B, +41.6% M/M, +179.6% Y/Y
- Preferreds: $1.5B, 0.0% M/M, +435.7% Y/Y
- IPOs: $7.2B, +9276.1% M/M, +267.3% Y/Y
- SPACs: $0.0B, -59.4% M/M, -55.1% Y/Y

Source: Dealogic, SIFMA estimates
Note: Equity data includes rank eligible deals, excludes, BDCs, SPACs, ETFs, CLEFs and rights offers
US Equity Capital Formation: YTD Issuance Update

- Equity issuance (excluding SPACs): $107.4B, +26.7% Y/Y
- Secondaries: $78.8B, +34.5% Y/Y
- Preferreds: $11.2B, -1.5% Y/Y
- IPOs: $17.4B, +145.8% Y/Y
- SPACs: $2.8B, -77.4% Y/Y

Source: Dealogic, SIFMA estimates
Note: YTD as of September 2023. Equity data includes rank eligible deals, excludes, BDCs, SPACs, ETFs, CLEFs and rights offers
Primary Markets: US Equity Capital Formation & Other Investment Banking

Source: Dealogic, World Federation of Exchanges, SIFMA estimates
Note: YTD as of September 2023
Other Investment Banking: Review of Quarterly Deals

- Private equity: $172.7B; -18.1% Q/Q, -21.0% Y/Y
- M&A: $337.1B; +51.4% Q/Q, +0.1% Y/Y

Source: Dealogic, Pitchbook, SIFMA estimates
Other Investment Banking: Monthly Deal Trends

- M&A: $113.8B; -18.8% M/M, +43.2% Y/Y

Other Investment Banking: YTD Deal Update

- Private equity: $611.6B, +2.8% Y/Y
- M&A: $866.5B, +706.5% Y/Y

Source: Dealogic, SIFMA estimates
Note: Private equity data not available on monthly basis

Source: Dealogic, SIFMA estimates
Note: YTD as of September 2023
US Equity Market Performance: Review of Quarterly Index Prices (Averages)

- S&P 500: $4,458.14; +6.0% Q/Q, +12.0% Y/Y
  - Top sector breakout: technology 26.1%, healthcare 14.2%, financials 12.9%
  - Short interest: 23.1B shares
  - P/E ratio: 21.0x
- Nasdaq: $13,783.92; +8.7% Q/Q, +15.9% Y/Y
- DJIA: $34,669.48; +3.1% Q/Q, +9.1% Y/Y
- Russell 2000: $1,891.74; +5.2% Q/Q, +3.1% Y/Y

Source: Bloomberg, SIFMA estimates
Secondary Markets: US Equity Market Performance, Volatility, and Volumes

S&P 500 Sector Breakdown
- Information Technology: 26.1%
- Health Care: 14.2%
- Financials: 12.9%
- Consumer Discretionary: 10.1%
- Industrials: 8.7%
- Communication Services: 8.1%
- Consumer Staples: 7.2%
- Energy: 4.6%
- Utilities: 2.9%
- Materials: 2.6%
- Real Estate: 2.6%

Total Equity Market Short Interest (B shares)

S&P 500 Average P/E Ratio

S&P 500 Average P/E Ratio by Sector
- Real Estate: 34.4
- Information Technology: 32.0
- Consumer Discretionary: 28.2
- Health Care: 21.4
- S&P 500: 21.0
- Communication Services: 20.1
- Industrials: 20.0
- Consumer Staples: 19.8
- Utilities: 17.6
- Materials: 16.7
- Financials: 14.8
- Energy: 9.7

Source: Bloomberg, S&P Dow Jones Indices, SIFMA estimates
US Equity Market Performance: Monthly Index Price Trends (Averages)

- S&P 500: $4,409.09; -1.1% M/M, +14.5% Y/Y
- Nasdaq: $13,585.84; -1.1% M/M, +19.1% Y/Y
- DJIA: $33,318.89; -1.6% M/M, +12.0% Y/Y
- Russell 2000: $1,829.06; -4.0% M/M, +2.9% Y/Y

Source: Bloomberg, SIFMA estimates
US Equity Market Performance: YTD Index Price Update (Averages)

- S&P 500: $4,222.69, +1.0% Y/Y
- Nasdaq: $12,653.45, -0.3% Y/Y
- DJIA: $33,848.14, -3.5% Y/Y
- Russell 2000: $1,848.85, -3.5% Y/Y

Source: Bloomberg, SIFMA estimates
Note: YTD as of September 2023
Volatility Trends: Average VIX

- Quarter: 15.01; -8.7% Q/Q, -39.5% Y/Y
- Final Month: 15.17; -4.3% M/M, -44.5% Y/Y
- YTD: 17.37; -32.8% Y/Y

Source: Bloomberg, SIFMA estimates
Note: YTD as of September 2023
US Equity Volumes: Review of Quarterly ADV

- Equity ADV: 10.4B shares; -2.9% Q/Q, -14.5% Y/Y
- Off-exchange trading: 44.9%; -1.3 pps Q/Q

Source: Bloomberg, Cboe Global Markets, SIFMA estimates
### US Equity Exchanges: Quarterly Market Share

#### Quarterly US Equity Exchange Market Share

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasdaq</td>
<td>15.5%</td>
</tr>
<tr>
<td>NYSE</td>
<td>9.7%</td>
</tr>
<tr>
<td>NYSE Arca</td>
<td>8.6%</td>
</tr>
<tr>
<td>Cboe EDGX</td>
<td>5.7%</td>
</tr>
<tr>
<td>Cboe BZX</td>
<td>4.5%</td>
</tr>
<tr>
<td>MEMX</td>
<td>3.0%</td>
</tr>
<tr>
<td>IEX</td>
<td>2.1%</td>
</tr>
<tr>
<td>MIAx PEARL</td>
<td>1.8%</td>
</tr>
<tr>
<td>Cboe EDGA</td>
<td>1.6%</td>
</tr>
<tr>
<td>Cboe BYX</td>
<td>0.9%</td>
</tr>
<tr>
<td>NYSE National</td>
<td>0.4%</td>
</tr>
<tr>
<td>NYSE Chicago</td>
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</tr>
<tr>
<td>Nasdaq BX</td>
<td>0.4%</td>
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<tr>
<td>Nasdaq PHLX</td>
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</tr>
<tr>
<td>NYSE American</td>
<td>0.3%</td>
</tr>
<tr>
<td>LTSE</td>
<td>0.002%</td>
</tr>
</tbody>
</table>

#### Market Share by Exchange Group

- **ICE**: 19.4%
- **Nasdaq**: 16.2%
- **Cboe**: 12.7%
- **Other**: 6.8%
- **Off Exchange**: 44.9%

Source: Cboe Global Markets, FINRA, SIFMA estimates

Note: Intercontinental Exchange (ICE) owns the NYSE exchanges. Other = IEX, MEMX, LTSE

IEX = Investors Exchange; MEMX = Members Exchange; LTSE = Long-Term Stock Exchange
US Equity Volumes: Monthly ADV Trends

- Equity ADV: 10.3B shares; -1.8% M/M, -9.3% Y/Y

Source: Bloomberg, Cboe Global Markets, SIFMA estimates
Note: Tape A = NYSE listed stocks, Tape B = formerly regionals, now mostly NYSE Arca, Tape C = Nasdaq listed stocks
US Equity Volumes: YTD ADV Update

- Equity ADV: 11.0B shares, -9.2% Y/Y

Source: Cboe Global Markets, SIFMA estimates
Note: YTD as of September 2023. Tape A = NYSE listed stocks, Tape B = formerly regionals, now mostly NYSE Arca, Tape C = Nasdaq listed stocks
US ETF Volumes: Review of Quarterly ADV

- ETF ADV: 2.0B shares; -6.0% Q/Q, -13.6% Y/Y
- ETF as a percent of total equity volumes: 19.0%; -0.6 pps Q/Q, -2.1 pps Y/Y

Source: Bloomberg, Cboe Global Markets, SIFMA estimates
US ETF Exchange & Providers: Quarterly Market Share

**Quarterly ETF Market Share by Exchange**

- NYSE: 20.1%
- Cboe: 15.2%
- NASDAQ: 12.5%
- MIAX: 3.5%
- MEMX: 2.9%
- IEX: 1.3%
- LTSE: 0.003%
- Off Exchange: 44.5%

**Quarterly ETF Market Share by Provider**

- Blackrock: 32.2%
- Vanguard: 29.2%
- State Street Global Advisors: 14.7%
- Invesco: 5.5%
- Charles Schwab: 4.0%
- Other: 14.4%

Source: Cboe Global Markets, etf.com, SIFMA estimates
US ETF Volumes: Monthly ADV Trends

- ETF: 2.0B shares; -0.7% M/M, -24.5% Y/Y

US ETF Volumes: YTD ADV Trends

- ETF: 2.2B shares; -16.1% Y/Y

Source: Bloomberg, Cboe Global Markets, SIFMA estimates
Note: YTD as of September 2023
US Multi-Listed Options Volumes: Review of Quarterly ADV

- Multi-listed options ADV: 43.4M contracts; +1.0% Q/Q, +8.7% Y/Y
- Equity options percent of total options volumes: 91.3%; -0.1 pps Q/Q, -1.3 pps Y/Y

Source: Bloomberg, The Options Clearing Corporation, SIFMA estimates
US Multi-Listed Options Exchanges: Quarterly Market Share

Quarterly US Multi-Listed Options Exchange Market Share

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cboe</td>
<td>18.2%</td>
</tr>
<tr>
<td>NYSE ARCA</td>
<td>11.2%</td>
</tr>
<tr>
<td>Nasdaq PHLX</td>
<td>10.3%</td>
</tr>
<tr>
<td>NYSE American</td>
<td>6.8%</td>
</tr>
<tr>
<td>MIAX PEARL</td>
<td>6.0%</td>
</tr>
<tr>
<td>BOX</td>
<td>6.0%</td>
</tr>
<tr>
<td>MIAX</td>
<td>5.9%</td>
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<tr>
<td>Nasdaq</td>
<td>5.9%</td>
</tr>
<tr>
<td>Cboe EDGX</td>
<td>5.5%</td>
</tr>
<tr>
<td>Nasdaq ISE</td>
<td>5.4%</td>
</tr>
<tr>
<td>Cboe BZX</td>
<td>5.0%</td>
</tr>
<tr>
<td>Cboe C2</td>
<td>4.2%</td>
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<tr>
<td>Nasdaq BX</td>
<td>3.3%</td>
</tr>
<tr>
<td>MIAA Emerald</td>
<td>2.7%</td>
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<tr>
<td>Nasdaq GEMX</td>
<td>2.2%</td>
</tr>
<tr>
<td>Nasdaq MRX</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Source: The Options Clearing Corporation (OCC), SIFMA estimates
Note: MEMX started trading options on September 2023. Intercontinental Exchange (ICE) owns the NYSE exchanges. Excludes futures and stock loan data.
US Multi-Listed Options Volumes: Monthly ADV Trends

- Multi-listed options ADV monthly average: 42.2M contracts; -4.8% M/M, -2.8% Y/Y

Source: Bloomberg, The Options Clearing Corporation, SIFMA estimates

US Multi-Listed Options Volumes: YTD ADV Update

- Multi-listed options ADV annual average: 44.1M contracts, +8.7% Y/Y

Source: Bloomberg, The Options Clearing Corporation, SIFMA estimates
Note: YTD as of September 2023
Appendix: Historical Trends

US Equity Capital Formation

Total Equity Issuance

Volume ($B) | # Deals (RHS)
--- | ---
FY00: 306 | 977
FY01: 186 | 697
FY02: 146 | 642
FY03: 127 | 733
FY04: 224 | 966
FY05: 186 | 779
FY06: 194 | 816
FY07: 227 | 770
FY08: 256 | 730
FY09: 265 | 781
FY10: 185 | 663
FY11: 265 | 824
FY12: 285 | 1100
FY13: 304 | 1076
FY14: 249 | 901
FY15: 203 | 794
FY16: 220 | 972
FY17: 222 | 916
FY18: 228 | 885
FY19: 390 | 390
FY20: 435 | 435
FY21: 500 | 500
FY22: 100 | 100

Total Equity Issuance by Type ($B)

IPOs | Secondary Offerings | Preferred Stock
--- | --- | ---
FY00: 306 | 977 | 697
FY01: 186 | 642 | 733
FY02: 146 | 779 | 816
FY03: 127 | 770 | 966
FY04: 224 | 730 | 781
FY05: 186 | 663 | 824
FY06: 194 | 265 | 1100
FY07: 227 | 249 | 1076
FY08: 256 | 203 | 901
FY09: 265 | 220 | 794
FY10: 185 | 222 | 972
FY11: 265 | 228 | 916
FY12: 285 | 390 | 885
FY13: 304 | 435 | 390
FY14: 249 | 500 | 500
FY15: 203 | 100 | 100
FY16: 220 | 100 | 100
FY17: 222 | 100 | 100
FY18: 228 | 100 | 100
FY19: 390 | 100 | 100
FY20: 435 | 100 | 100
FY21: 500 | 100 | 100
FY22: 100 | 100 | 100

Total Equity Issuance by Type (# Deals)

IPOs | Secondary Offerings | Preferred Stock
--- | --- | ---
FY00: 977 | 697 | 642
FY01: 779 | 733 | 816
FY02: 770 | 966 | 816
FY03: 730 | 779 | 816
FY04: 781 | 966 | 816
FY05: 824 | 779 | 816
FY06: 1,100 | 901 | 779
FY07: 1,076 | 794 | 779
FY08: 972 | 972 | 794
FY09: 916 | 916 | 794
FY10: 885 | 885 | 794
FY11: 1,155 | 1,155 | 794
FY12: 1,395 | 1,395 | 794
FY13: 500 | 500 | 794
FY14: 100 | 100 | 794
FY15: 100 | 100 | 794
FY16: 100 | 100 | 794
FY17: 100 | 100 | 794
FY18: 100 | 100 | 794
FY19: 100 | 100 | 794
FY20: 100 | 100 | 794
FY21: 100 | 100 | 794
FY22: 100 | 100 | 794

Source: Dealogic, SIFMA estimates
Note: Equity data includes rank eligible deals, excludes, BDCs, SPACs, ETFs, CLEFs and rights offers
Appendix: Historical Trends

Source: Dealogic, SIFMA estimates
Appendix: Historical Trends

Total IPO Deals
- Volume ($B)
- # Deals (RHS)

SPAC Deals
- Volume ($B)
- # Deals (RHS)

Source: Dealogic, SIFMA estimates
Note: IPO data includes rank eligible deals, excludes, BDCs, SPACs, ETFs, CLEFs and rights offers
Appendix: Historical Trends

**Equity Market Capitalization ($T)**

- FY00: $15.1T
- FY01: $14.0T
- FY02: $11.1T
- FY03: $14.3T
- FY04: $16.3T
- FY05: $17.0T
- FY06: $19.6T
- FY07: $19.9T
- FY08: $11.6T
- FY09: $15.1T
- FY10: $17.3T
- FY11: $15.6T
- FY12: $18.7T
- FY13: $24.0T
- FY14: $26.3T
- FY15: $25.1T
- FY16: $27.4T
- FY17: $32.1T
- FY18: $30.4T
- FY19: $34.1T
- FY20: $41.6T
- FY21: $48.5T
- FY22: $40.3T

**Number of Listed Companies**

- Domestic
- Total

Source: World Federation of Exchanges, SIFMA estimates
Appendix: Historical Trends

Market Performance

Historic Index Performance: S&P 500

Historic Index Performance: Nasdaq

Source: Bloomberg, SIFMA estimates
Appendix: Historical Trends

Historic Index Performance: DJIA

Historic Index Performance: Russell 2000

Source: Bloomberg, SIFMA estimates
Volatility & Volumes

Source: Bloomberg, Cboe Global Markets, The Options Clearing Corporation, SIFMA estimates
Appendix: Historical Trends

ETF ADV (B shares)

Listed Options ADV (M Contracts)

Source: Cboe Global Markets, The Options Clearing Corporation, SIFMA estimates
US Equities

Intercontinental Exchange (ICE)
- New York Stock Exchange
- NYSE ARCA
- NYSE National
- NYSE Chicago
- NYSE American

Nasdaq (NDAQ)
- Nasdaq Stock Market
- Nasdaq PHLX
- Nasdaq BX

CBOE Global Markets (CBOE)
- CBOE EDGX
- CBOE BZX
- CBOE EDGA
- CBOE BYX

Members Exchange (MEMX)
- Investors Exchange (IEX)
- MIAX Pearl
- Long Term Stock Exchange (LTSE)

Note: BOX was approved in January 2022 to open BSTX, not yet in operation
US Multi-Listed Options

- CBOE Global Markets (CBOE)
  - Cboe
  - Cboe EDGX
  - Cboe BZX
  - Cboe C2

- Nasdaq (NDX)
  - Nasdaq PHLX
  - Nasdaq
  - Nasdaq ISE
  - Nasdaq BX
  - Nasdaq GEMX
  - Nasdaq MRX

- Intercontinental Exchange (ICE)
  - NYSE
  - NYSE American

- Miami Int’l Securities Ex (MIAX)
  - MIAIX
  - MIAIX Pearl
  - MIAIX Emerald

- Box Options Exchange
  - Members Exchange (MEMX)
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 has historically been a widely-watched benchmark index for U.S. blue-chip stocks.
  - S&P 500: A market capitalization weighted index of the 505 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 the 3,668 equities listed on the Nasdaq stock exchange. Its composition is over 50% technology (this percentage has come down over the years), followed by consumer services, health care and financials.
  - 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 every day 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: Terms to Know

<table>
<thead>
<tr>
<th>ADV</th>
<th>Average Daily Trading Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algo</td>
<td>Algorithm (algorithmic trading)</td>
</tr>
<tr>
<td>AP</td>
<td>Authorized Participant</td>
</tr>
<tr>
<td>AT</td>
<td>Automated Trading</td>
</tr>
<tr>
<td>ATS</td>
<td>Alternative Trading System</td>
</tr>
<tr>
<td>AUM</td>
<td>Assets Under Management</td>
</tr>
<tr>
<td>Best Ex</td>
<td>Best Execution</td>
</tr>
<tr>
<td>CEF</td>
<td>Closed-End Fund</td>
</tr>
<tr>
<td>CLOB</td>
<td>Central Limit Order Book</td>
</tr>
<tr>
<td>D2C</td>
<td>Dealer-to-Client</td>
</tr>
<tr>
<td>D2D</td>
<td>Dealer-to-Dealer</td>
</tr>
<tr>
<td>Dark Pool</td>
<td>Private trading venues</td>
</tr>
<tr>
<td>ECN</td>
<td>Electronic Communication Network</td>
</tr>
<tr>
<td>EMS</td>
<td>Equity Market Structure</td>
</tr>
<tr>
<td>ETF</td>
<td>Exchange-Traded Fund</td>
</tr>
<tr>
<td>ETP</td>
<td>Exchange-Traded Product</td>
</tr>
<tr>
<td>HFT</td>
<td>High-Frequency Trading</td>
</tr>
<tr>
<td>IDB</td>
<td>Inter-Dealer Broker</td>
</tr>
<tr>
<td>IIV</td>
<td>Intraday Indicative Value</td>
</tr>
<tr>
<td>IOI</td>
<td>Indication of Interest</td>
</tr>
<tr>
<td>IPO</td>
<td>Initial Public Offering</td>
</tr>
<tr>
<td>MF</td>
<td>Mutual Fund</td>
</tr>
<tr>
<td>MM</td>
<td>Market Maker</td>
</tr>
<tr>
<td>NAV</td>
<td>Net Asset Value</td>
</tr>
<tr>
<td>OEF</td>
<td>Open-End Fund</td>
</tr>
<tr>
<td>OTC</td>
<td>Over-the-Counter</td>
</tr>
<tr>
<td>PCF</td>
<td>Portfolio Composition File</td>
</tr>
<tr>
<td>PFOF</td>
<td>Payment For Order Flow</td>
</tr>
<tr>
<td>SI</td>
<td>Systematic Internaliser</td>
</tr>
<tr>
<td>Tick Size</td>
<td>Minimum price movement</td>
</tr>
<tr>
<td>UIT</td>
<td>Unit Investment Trust</td>
</tr>
<tr>
<td>Y/Y</td>
<td>Year-over-Year</td>
</tr>
<tr>
<td>Q/Q</td>
<td>Quarter-over-Quarter</td>
</tr>
<tr>
<td>YTD</td>
<td>Year-to-Date</td>
</tr>
<tr>
<td>BPS</td>
<td>Basis Points</td>
</tr>
<tr>
<td>PPS</td>
<td>Percentage Points</td>
</tr>
<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
</tr>
<tr>
<td>CFTC</td>
<td>Commodity Futures Trading Commission</td>
</tr>
<tr>
<td>FINRA</td>
<td>Financial Industry Regulatory Authority</td>
</tr>
<tr>
<td>SEC</td>
<td>Securities and Exchange Commission</td>
</tr>
<tr>
<td>SRO</td>
<td>Self-Regulatory Organization</td>
</tr>
<tr>
<td>NMS</td>
<td>National Market System</td>
</tr>
<tr>
<td>Reg NMS</td>
<td>Regulation National Market System</td>
</tr>
<tr>
<td>SIP</td>
<td>Security Information Processor</td>
</tr>
</tbody>
</table>
Appendix: Terms to Know

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid</td>
<td>An offer made to buy a security</td>
</tr>
<tr>
<td>Ask, Offer</td>
<td>The price a seller is willing to accept for a security</td>
</tr>
<tr>
<td>Spread</td>
<td>The difference between the bid and ask price prices for a security, an indicator of supply (ask) and demand (bid)</td>
</tr>
<tr>
<td>NBBO</td>
<td>National Best Bid and Offer</td>
</tr>
<tr>
<td>Locked Market</td>
<td>A market is locked if the bid price equals the ask price</td>
</tr>
<tr>
<td>Crossed Market</td>
<td>A bid is entered higher than the offer or an offer is entered lower than the bid</td>
</tr>
<tr>
<td>Opening Cross</td>
<td>To determine the opening price of a stock, accumulating all buy and sell interest a few minutes before the market open</td>
</tr>
<tr>
<td>Closing Cross</td>
<td>To determine the closing price of a stock, accumulating all buy and sell interest a few minutes before the market close</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order Types</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AON</td>
<td>All or none; an order to buy or sell a stock that must be executed in its entirety, or not executed at all</td>
</tr>
<tr>
<td>Block</td>
<td>Trades with at least 10,000 shares in the order</td>
</tr>
<tr>
<td>Day</td>
<td>Order is good only for that trading day, else cancelled</td>
</tr>
<tr>
<td>FOK</td>
<td>Fill or kill; must be filled immediately and in its entirety or not at all</td>
</tr>
<tr>
<td>Limit</td>
<td>An order to buy or sell a security at a specific price or better</td>
</tr>
<tr>
<td>Market</td>
<td>An order to buy or sell a security immediately; guarantees execution but not the execution price</td>
</tr>
<tr>
<td>Stop</td>
<td>(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</td>
</tr>
</tbody>
</table>

| 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 |

<table>
<thead>
<tr>
<th>Investors</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional</td>
<td>Organization, fewer protective regulations as assumed to be more knowledgeable and better able to protect themselves*</td>
</tr>
<tr>
<td>Retail</td>
<td>Individual, a non-professional investor; either advised or self directed</td>
</tr>
</tbody>
</table>

*Types of institutional investors: asset managers, endowment funds, mutual funds, hedge funds, pension funds, etc.
### Appendix: Terms to Know

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPO</td>
<td>Initial Public Offering: private company raises capital by offering its common stock to the public for the first time in the primary markets</td>
</tr>
<tr>
<td>SPAC</td>
<td>Special Purpose Acquisition Company: blank check shell corporation designed to take companies public without going through the traditional IPO process</td>
</tr>
<tr>
<td>Bought Deal</td>
<td>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</td>
</tr>
<tr>
<td>Best Effort Deal</td>
<td>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</td>
</tr>
<tr>
<td>Secondary</td>
<td>(Follow-on) Issuance of shares to investors by a public company already listed on an exchange</td>
</tr>
<tr>
<td>Direct Listing</td>
<td>(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.</td>
</tr>
</tbody>
</table>

#### Underwriting

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underwriting</td>
<td>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</td>
</tr>
<tr>
<td>Underwriter</td>
<td>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</td>
</tr>
<tr>
<td>Bookrunner</td>
<td>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)</td>
</tr>
<tr>
<td>Lead Left Bookrunner</td>
<td>Investment bank chosen by the issuer to lead the deal (identified on the offering document cover as the upper left hand bank listed)</td>
</tr>
<tr>
<td>Syndicate</td>
<td>Investment banks underwriting and selling all or part of an IPO</td>
</tr>
<tr>
<td>Arranger</td>
<td>The lead bank in the syndicate for a debt issuance deal</td>
</tr>
</tbody>
</table>

#### Pitch

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch</td>
<td>Sales presentation by an investment bank to the issuer, marketing the firm’s services and products to win the mandate</td>
</tr>
<tr>
<td>Mandate</td>
<td>The issuing company selects the investment banks to underwrite its offering</td>
</tr>
<tr>
<td>Engagement Letter</td>
<td>Agreement between the issuer and underwriters clarifying: terms, fees, responsibilities, expense reimbursement, confidentiality, indemnity, etc.</td>
</tr>
<tr>
<td>Letter of Intent</td>
<td>Investment banks’ commitment to the issuer to underwrite the IPO</td>
</tr>
<tr>
<td>Underwriting Agreement</td>
<td>Issued after the securities are priced, underwriters become contractually bound to purchase the issue from the issuer at a specific price</td>
</tr>
<tr>
<td>Registration Statement</td>
<td>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</td>
</tr>
<tr>
<td>The Prospectus</td>
<td>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</td>
</tr>
<tr>
<td>Red Herring Document</td>
<td>An initial prospectus with company details, but not inclusive of the effective date of offering price</td>
</tr>
</tbody>
</table>

#### Roadshow

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadshow</td>
<td>Investment bankers take issuing companies to meet institutional investors to interest them in buying the security they are bringing to market.</td>
</tr>
<tr>
<td>Non-Deal Roadshow</td>
<td>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.</td>
</tr>
<tr>
<td>Pricing</td>
<td>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</td>
</tr>
<tr>
<td>Stabilization</td>
<td>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</td>
</tr>
<tr>
<td>Quiet Period</td>
<td>(Cooling off period) The SEC mandates a quiet period on research recommendations, lasting 10 days (formerly 25 days) after the IPO</td>
</tr>
</tbody>
</table>

#### Reg S-K

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reg S-X</td>
<td>Regulation which lays out the specific form and content of financial reports, specifically the financial statements of public companies</td>
</tr>
<tr>
<td>Form S-1</td>
<td>Registration statement for U.S. companies (described above)</td>
</tr>
<tr>
<td>Form S-2</td>
<td>Registration statement for foreign issuers of certain securities, for which no other specialized form exists or is authorized</td>
</tr>
<tr>
<td>Form 10-Q</td>
<td>Quarterly report on the financial condition and state of the business (discussion of risks, legal proceedings, etc.), mandated by the SEC</td>
</tr>
<tr>
<td>Form 10-K</td>
<td>More detailed annual version of the 10Q, mandated by the SEC</td>
</tr>
<tr>
<td>Greenshoe</td>
<td>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</td>
</tr>
<tr>
<td>Tombstone</td>
<td>An announcement that securities are available for sale. (Also a plaque awarded to celebrate the completion of a transaction or deal)</td>
</tr>
<tr>
<td>EGC</td>
<td>Emerging Growth Company</td>
</tr>
</tbody>
</table>
Appendix: SIFMA Research Reports

SIFMA Research: www.sifma.org/research

- Quarterly Reports
  - Equity and related: capital formation (IPOs, other issuance statistics); market performance (index prices); volatility (VIX); cash equites, ETFs, and multi-listed options volumes; exchange market shares and landscapes; equity market cap and number of listed companies
  - Fixed Income – Issuance & Trading: issuance and trading metrics for U.S. Treasuries, mortgage-backed securities, corporate bonds, municipal securities, federal agency securities, asset-backed securities, and secured overnight financing rate (SOFR), as well as statistics on fixed income ESG issuance for green, social, and sustainability bonds
  - Fixed Income – Outstanding: outstanding balances for U.S. Treasuries, mortgage-backed securities, corporate bonds, municipal securities, federal agency securities, asset-backed securities, money markets, repurchase agreements, and secured overnight financing rate (SOFR)
  - Financial Institutions: financial (income statement and balance sheet metrics) and regulatory (ratios such as capital levels) data for CCAR firms, essentially a proxy for the financial services industry

- Capital Markets Fact Book: a comprehensive look at capital markets, including
  - Global equity and fixed income markets (outstanding, issuance, volumes); investment banking landscape; international securities transactions
  - U.S. equity, fixed income, derivatives and private placement markets (outstanding, issuance, volumes, index prices); investment banking landscape; mutual fund and ETF statistics
  - U.S. investor participation showing household liquid financial asset breakout; household equity ownership; and holders of equities
  - U.S. savings & investment metrics on retirement asset breakout and mix across asset classes; savings rates and other economic indicators; and federal balance sheet overview
  - U.S. securities industry statistics on number of broker-dealers, registered representatives, registered investment advisors, and branch offices; industry financial overview; and state maps showing number firms/reps
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