February 2022EMEA Market Structure Monthly



MICROSTRUCTURE OBSERVATIONS

- In February 2022, the average daily volume in EMEA equities increased to €57.9B, 8% higher versus prior month (€53.4B) and above February 2021's volume by 31% (€44.1B).
- The median quote size at the European Best Bid and Offer (EBBO) decreased in February. The STOXX 50 decreased by 13% and STOXX 600 decreased by 9% during the intraday trading period (08:30 to 16:00 GMT).
- Median spreads increased in February. Median spreads in STOXX 50 increased by 8% to 2.7bps and STOXX 600 symbols spreads increased by 6% to 5bps, during the intraday trading period.
- Volatility levels increased significantly in February. Volatility in STOXX 50 has increased 18% and STOXX 600 symbols increased 13%, during the intraday trading period.
- The market share distribution between venues changed in February, relative to the prior month. Primary lit increased by 1.8% while primary auction venues decreased by 0.5% and dark venues also decreased by 0.9%.
- February's closing auctions volumes as % of ADV was reduced with trading volume in STOXX 50 decreased 21.9% and in STOXX 600 symbols decreased 24.5%. This is typical during higher volatility days that have occurred at the end of February 2022.

EMEA MARKET STRUCTURE NEWS

• European Securities and Markets Authority Warns Consumers of Significant Market Corrections

The European Securities and Markets Authority (ESMA) published its first Trades, Risks and Vulnerabilities Report for 2022. In its outlook, ESMA warns all investors—particularly retail investors—of further possible significant corrections as the markets remain highly volatile amid rising geopolitical tensions and uncertain economic and monetary policy environments following a late 2021 Covid-19 resurgence.

https://www.esma.europa.eu/press-news/esma-news/esma-warns-consumers-risk-significant-market-corrections

• The Federation of European Securities Exchanges Criticizes the Plans for the Non-Existing European Consolidated Tape Plans

The Federation of European Securities Exchanges (FESE) have criticized proposed changes in EU regulators' plans relating to the implementation of a real-time consolidated tape. In a personal message, FESE's Director General, Rainer Riess, commented that "Market data doesn't just appear from thin air – it is the outcome of a price formation process. But for this you need transparency, which is fading: based on ESMA figures, the share of trading on Regulated Markets fell between 2018 and 2020, while over the counter (OTC) trading approximately doubled. Put simply, without transparent trading activity, data would not exist." It's FESE's view that the consolidated tape will not address deficiencies in the European market structure, disparities in market data quality and limited systematic internalisers' (SI) pre-trade transparency. Additionally, FESE suggested that consolidate tape implementation costs will almost fall entirely to the exchanges, benefiting less transparent operators, and negatively impact the price formation function.

https://www.fese.eu/blog/personal-message-from-fese-director-general-on-the-mifir-review-position/

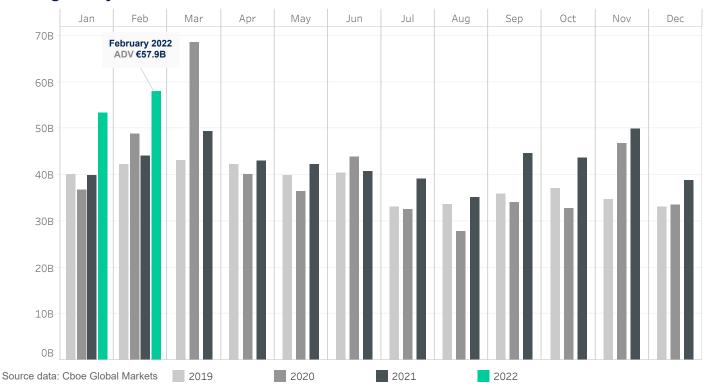
• Following the Ukrainian Invasion, European and UK Increase Economic Pressure on Russia

Following the recent Ukraine invasion by Russia, both the UK HM Treasury and European Council have imposed new sanctions impacting the trade and settlement of Russian domestic securities and Ruble currency. A ban on transactions with the Russian Central Bank was imposed in late February and several European venues have halted trading in all Russian instruments. A list of Russian banks, high ranking government officials and other private individuals have also been impacted by the assets freeze.

https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-ukraine-crisis/ https://www.clearstream.com/clearstream-en/products-and-services/settlement/a22018-2974166 https://www.gov.uk/government/publications/financial-sanctions-ukraine-sovereignty-and-territorial-integrity



Average Daily Market Volume



Venue Type Market Share

Source data: Cboe Global Markets



Auctions

DARK

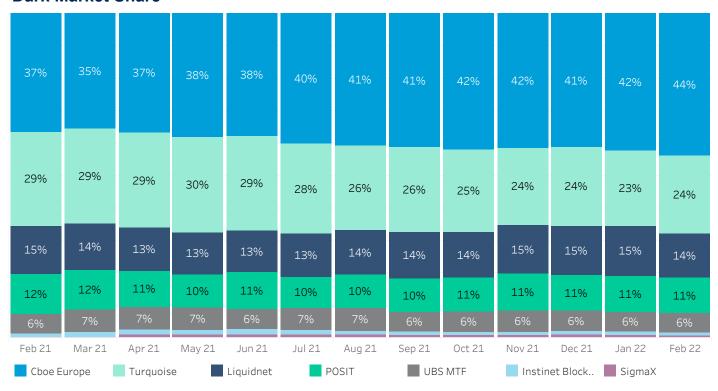
FBA

Primary

MTF

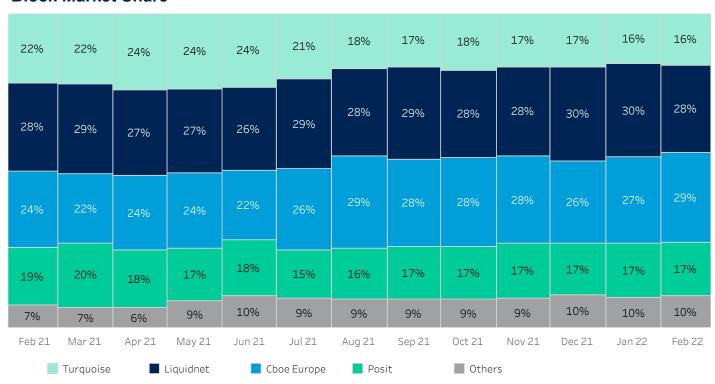


Dark Market Share



Source data: Cboe Global Markets

Block Market Share



Large In Scale values as per defined per symbol by ESMA; Source data: Virtu Financial



Quotesize in Notional USD

| | | 1Q 21 | | 2Q 21 | | | 3Q 21 | | | 4Q 21 | | | 1Q 22 | |
|---------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Feb 21 | Mar 21 | Apr 21 | May 21 | Jun 21 | Jul 21 | Aug 21 | Sep 21 | Oct 21 | Nov 21 | Dec 21 | Jan 22 | Feb 22 |
| 8:00 - 8:30 | Stoxx50 | 25.5K | 26.3K | 20.8K | 21.9K | 22.4K | 19.3K | 20.0K | 18.7K | 19.1K | 18.0K | 18.5K | 18.8K | 16.2K |
| | Stoxx600 | 11.0K | 11.4K | 11.0K | 11.0K | 11.5K | 10.6K | 11.0K | 10.6K | 10.4K | 10.1K | | 10.4K | 9.6K |
| 8:30 - 16:00 | Stoxx50 | 37.8K | 40.4K | 35.0K | 36.3K | 37.4K | 32.5K | 34.4K | 32.7K | 33.3K | 32.0K | 33.6K | | 29.7K |
| | Stoxx600 | 16.2K | 17.2K | 16.9K | 17.3K | 18.2K | 16.0K | 17.0K | 16.7K | | 16.3K | 17.0K | 17.0K | 15.5K |
| 16:00 - 16:30 | Stoxx50 | 46.7K | 51.1K | 44.3K | 43.3K | 44.8K | 38.1K | 40.2K | 37.8K | 39.7K | 38.1K | 39.3K | 37.9K | 35.1K |
| | Stoxx600 | | 21.3K | 20.6K | 20.8K | 22.1K | 18.4K | 19.4K | 19.1K | 19.9K | 18.9K | 19.0K | 19.1K | 18.6K |
| | | | | | | | | | | | | | | |

Spread Bps

| 8:00 - 8:30 | Stoxx50 | 5.1 | 4.6 | 3.7 | 3.9 | 3.8 | 4.5 | 4.1 | 3.9 | 4.1 | 4.2 | 4.2 | 4.0 | 4.5 |
|---------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Stoxx600 | 8.9 | 7.8 | 7.0 | 7.2 | 6.9 | 8.0 | 7.2 | 7.0 | 7.6 | 8.1 | | 8.2 | 8.8 |
| 8:30 - 16:00 | Stoxx50 | 3.1 | 3.1 | 2.4 | 2.4 | 2.4 | 2.7 | 2.3 | 2.3 | 2.3 | 2.4 | 2.5 | 2.5 | 2.7 |
| | Stoxx600 | 4.7 | 4.5 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.2 | 4.5 | 4.5 | 4.7 | 5.0 |
| 16:00 - 16:30 | Stoxx50 | 2.8 | 2.8 | 2.2 | 2.2 | 2.1 | 2.3 | 2.0 | 2.0 | 2.0 | 2.1 | 2.2 | 2.2 | 2.3 |
| | Stoxx600 | 4.1 | 3.9 | 3.5 | 3.6 | 3.5 | | 3.4 | 3.5 | 3.5 | 3.8 | 4.0 | 4.1 | 4.1 |

One Minute Volatility Bps

| 8:00 - 8:30 | Stoxx50 | 14.3 | 12.2 | 10.3 | 11.1 | 9.1 | 12.7 | 10.5 | 11.9 | 12.7 | 12.9 | 12.1 | 14.8 | 17.6 |
|---------------|----------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| | Stoxx600 | 14.0 | 12.2 | 10.4 | 10.5 | 9.2 | | 9.8 | 11.0 | 11.8 | 12.5 | 11.0 | 14.1 | 16.5 |
| 8:30 - 16:00 | Stoxx50 | 5.5 | 5.5 | 4.5 | 4.7 | 4.2 | | 4.5 | 5.3 | 5.2 | 5.6 | 5.3 | 6.6 | 7.8 |
| | Stoxx600 | 5.1 | 5.1 | 4.3 | 4.4 | 4.0 | 4.8 | 4.2 | 4.8 | 4.9 | 5.2 | | 5.9 | 6.7 |
| 16:00 - 16:30 | Stoxx50 | 6.2 | 5.6 | 4.4 | 4.7 | 4.2 | 5.1 | 4.2 | 5.1 | 4.7 | 4.9 | 5.6 | 6.7 | 7.0 |
| | Stoxx600 | 5.4 | 4.9 | 4.2 | 4.2 | 3.8 | 4.3 | 3.8 | | 4.1 | 4.5 | 4.8 | 5.5 | 5.5 |

Percent ADV by Time of Day

| | | | | • | | | | | | | | | | |
|---------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Open | Stoxx50 | 1.1% | 1.2% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% | 1.0% | 1.0% |
| | Stoxx600 | 0.6% | 0.6% | 0.5% | 0.6% | 0.5% | 0.5% | 0.5% | | 0.5% | 0.5% | 0.6% | 0.7% | 0.6% |
| | | | | | | | | | | | | | | |
| 8:00 - 8:30 | Stoxx50 | 8.7% | 7.2% | 6.9% | 7.2% | 6.1% | 7.0% | 7.1% | 7.0% | 8.5% | 9.4% | 9.0% | 9.9% | 9.2% |
| | Stoxx600 | 7.9% | 7.3% | 7.1% | 7.2% | 6.2% | 6.6% | 6.5% | 7.0% | | 7.3% | 6.8% | 8.3% | 7.9% |
| 16:00 - 16:30 | Stoxx50 | 19.3% | 15.9% | 15.4% | 20.1% | 18.0% | 16.3% | 17.2% | 15.2% | 11.7% | 18.3% | 19.4% | 16.1% | 15.5% |
| | Stoxx600 | 15.3% | 15.1% | 14.4% | 15.2% | 14.4% | 13.0% | 13.8% | 13.1% | 11.5% | 12.8% | | 12.7% | 12.2% |
| | | | | | | | | | | | | | | |
| Close | Stoxx50 | 24.8% | 26.6% | 26.6% | 26.6% | 29.3% | 27.2% | 26.5% | 26.5% | 26.6% | 25.8% | 28.7% | 22.2% | 21.9% |
| | Stoxx600 | | 27.4% | 28.9% | 26.9% | 30.4% | 27.8% | 27.7% | 26.9% | 26.7% | 26.3% | 29.0% | 24.0% | 24.5% |

Median used for all metrics

One minute volatility is calculated using the difference between the high and low price within a one minute time bin, divided by that bin's VWAP Source data: Virtu Financial



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