May 2023 EMEA Market Structure Monthly

MICROSTRUCTURE OBSERVATIONS

- In May 2023, the average daily turnover in EMEA equities decreased to €34.3B, 17% lower than the previous month and 29% below May 2022.
- The median quote size at the European Best Bid and Offer (EBBO) in May decreased for STOXX 50 by 7% and decreased for STOXX 600 by 6% during the intraday trading period (08:30 to 16:00 GMT) compared to the previous month.
- Median quoted spreads at the EBBO did not change for STOXX50 compared to the previous month, remaining at 3.4bps. Similarly, STOXX 600 symbol spreads remained at 5.1bps during the intraday trading period.
- Volatility levels decreased slightly compared to the previous month; STOXX 50 volatility decreased 7% and STOXX 600 volatility decreased 4% during intraday trading.
- The market share distribution among venue types changed minimally compared to the previous month. Frequent Batch Auctions ("FBA") venues' market share increased 0.4% to a new record high of 6.2% of overall market share. Dark venues' market share decreased 0.5% relative to the previous month.
- There was no significant change to dark market share distribution among venues compared to previous month.
- In May, closing auction turnover increased as a percentage of the daily turnover; STOXX50 closing auction turnover was up 1.6% to 29.3% and STOXX600 was up 0.8% to 30.6%.

EMEA MARKET STRUCTURE NEWS

Financial Conduct Authority Published Changes to Equity Secondary Markets

The UK Financial Conduct Authority (FCA) published a list of changes designed to improve how equity secondary markets operate. The changes include removing venue restrictions related to tick sizes, allowing UK trading venues to reference prices from overseas venues, removing limitations on iceberg display size, and more. The FCA also indicated further reviews of the UK retail market (RSP) and the formation of a task force to improve market-wide resilience during trading venue outages to minimize interruptions to the price formation process which increases uncertainty and lowers market confidence.

Euronext Announced the launce of a New Dark Execution Venue and Retail Venue

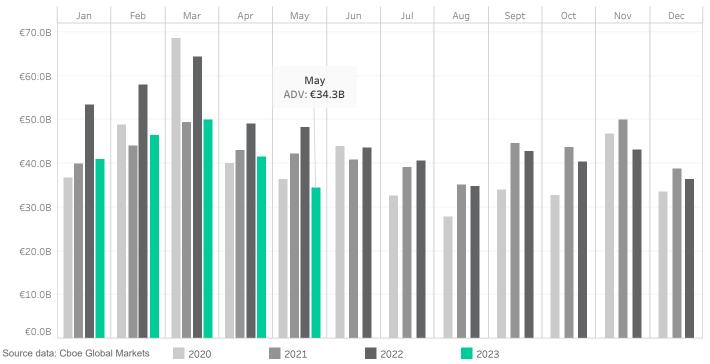
Euronext plans to launch a new dark execution facility for institutional investors by Q4 2023. This new facility will enable participants to benefit from an expanded suite of on-exchange execution models. For the first time, Euronext will admit pan-European (non-domestic) and US securities to trade on its Italian MTF GEM (*Global Equity Market*).

Financial Conduct Authority Proposes Rules to Encourage UK Listing

After SoftBank decided to list its Cambridge based chip designer, Arm, on Nasdaq rather than the LSE, the UK Financial Conduct Authority (FCA) proposed to reform and streamline the listing rules in the UK to help attract a wider range of companies, encourage competition and improve choice for investors. The FCA said the plans would be "more permissive" of dual class shares, which give company founders greater voting rights over ordinary shareholders and will remove the need for businesses to have three years of audited accounts, among other initiatives.

European Securities and Markets Authority Published the Market Outages Report

The European Securities and Markets Authority's (ESMA) Market Outage report provides guidance on how trading venues should communicate with market participants in the event of an outage. This report sets out ESMA's expectations on how National Competent Authorities (NCA) should ensure that trading venues have appropriate communication protocols in place, which arrangements should be in place to avoid an outage affecting the closing auction, and how trading venues should ensure the market is provided with an official closing price.

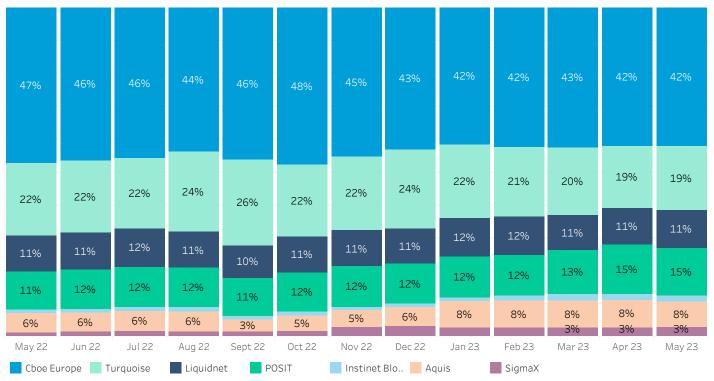


Average Daily Market Volume

Venue Type Market Share

41.3%	40.4%	41.3%	40.2%	38.9%	40.3%	39.0%	37.4%	38.7%	38.0%	38.2%	37.9%	38.0%
21.3%	21.5%	23.0%	22.9%	23.3%	25.1%	23.9%	22.9%	24.6%	24.3%	24.3%	23.6%	23.1%
21.9%	22.6%	19.8%	21.7%	22.8%	18.8%	21.9%	25.2%	20.2%	21.8%	23.1%	22.2%	22.5%
10.0%	9.7%	10.4%	10.1%	9.5%	9.9%	9.7%	8.7%	10.5%	9.9%	9.5%	10.6%	10.1%
5.6%	5.8%	5.6%	5.1%	5.5%	5.8%	5.6%	5.8%	6.1%	6.0%	4.9%	5.8%	6.2%
May 22	Jun 22	Jul 22	Aug 22	Sept 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23
Source data	: Cboe Globa	al Markets	Prin	nary 📃 M	TF	Auctions	DARK	FBA				

European Dark Market Share



Source data: Cboe Global Markets

European Block Market Share

16%	17%	16%	17%	18%	16%	16%	16%	16%	15%	16%	13%	13%
24%	24%	25%	25%	23%	24%	24%	24%	25%	25%	23%	24%	24%
32%	31%	32%	31%	33%	31%	32%	32%	32%	33%	31%	31%	33%
17%	18%	17%	17%	16%	16%	17%	16%	17%	16%	17%	19%	17%
10%	11%	11%	11%	11%	12%	11%	11%	10%	12%	13%	13%	12%
May 22	Jun 22	Jul 22	Aug 22	Sept 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23
	Turquoise Liquidnet 🔲 C		📕 Cboe	Europe	Posit		Others					

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

Quotesize in Notional USD

		2Q 22			3Q 22			4Q 22			1Q 23			23
		May 22	Jun 22	Jul 22	Aug 22	Sept 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23
8:00 - 8:30	Stoxx50	18.1K	21.0K	16.8K	19.2K	18.3K	18.0K	23.6K	25.9K	29.8K	32.1K	27.7K	31.3K	29.3K
	Stoxx600	10.7K	10.1K	9.6K	10.3K		9.9K	10.8K	12.3K	13.7K	14.1K	14.5K	15.2K	14.2K
8:30 - 16:00	Stoxx50	26.4K	33.9K	26.0K	26.6K	25.8K	25.1K	34.3K	35.4K	40.6K	44.2K	38.5K	42.1K	39.3K
	Stoxx600	13.3K	12.9K	11.9K	12.2K		11.5K	13.0K	14.9K	16.7K	17.4K	18.1K	19.1K	17.9K
16:00 - 16:30	Stoxx50	33.1K	39.8K	31.3K	31.4K	29.0K	28.8K	40.9K	42.2K	49.1K	47.8K	45.3K	49.5K	46.9K
	Stoxx600	16.0K	15.4K	14.6K	14.7K	15.0K	13.8K		18.6K	20.2K	21.3K	22.4K	24.1K	23.3K

Spread Bps

8:00 - 8:30	Stoxx50	4.9	5.3	5.8	4.9	5.2	5.2	4.7	4.7	4.7	4.5	5.0	5.4	5.5
	Stoxx600	9.2	9.4	10.3	9.1	9.4	9.8		8.7	8.3	7.7	8.4	8.3	8.4
8:30 - 16:00	Stoxx50	3.0	3.4	3.6	3.2	3.5	3.4	3.1	3.1	3.2	3.0	3.3	3.4	3.4
	Stoxx600	5.6	5.9	6.3	5.4	5.9	6.0	5.3	5.1	4.9	4.9		5.1	5.1
16:00 - 16:30) Stoxx50	2.6	2.8	3.0	2.7	2.9	2.8	2.6	2.8	2.8	2.6	2.9	3.1	3.1
	Stoxx600	4.7	4.8	5.1		4.8	4.9	4.3	4.4	4.1	4.2	4.6	4.5	4.5

One Minute Volatility Bps

8:00 - 8:30	Stoxx50	16.2	16.3	21.5	14.2	17.1	16.9	13.4	11.5	11.6	12.4	14.1	12.3	12.4
	Stoxx600	15.9	15.6	17.8		16.9	17.4	14.8	12.2	12.0	11.4	12.8	11.7	11.2
8:30 - 16:00	Stoxx50	7.3	7.6	10.2		8.7	8.1	5.9	5.0	5.4	5.5	6.9	5.5	5.1
	Stoxx600	6.8	6.8	7.7	5.9	7.4	7.6	6.0	5.0	4.9	4.9		4.8	4.6
16:00 - 16:30) Stoxx50	8.4	8.1	9.2	6.9	8.5	8.5	6.0	5.5	5.6	5.7	6.6	5.9	5.7
	Stoxx600	7.0	6.5	6.8	5.4	6.8	7.0		4.8	4.6	4.7	5.1	4.5	4.5

Percent ADV by Time of Day

Open	Stoxx50	0.9%	0.9%	0.7%	0.7%	0.7%	0.7%	0.7%	0.9%	1.1%	1.0%	1.0%	1.0%	1.0%
	Stoxx600	0.5%		0.4%	0.4%	0.4%	0.3%	0.4%	0.4%	0.6%	0.6%	0.6%	0.6%	0.5%
8:00 - 8:30	Stoxx50	5.8%	11.8%	17.0%	10.9%	11.5%	11.6%	10.1%	7.1%	6.4%	5.9%	4.8%	2.9%	3.4%
	Stoxx600	5.7%	6.1%		7.2%	7.9%	7.8%	7.4%	6.5%	8.8%	8.3%	6.3%	6.5%	6.6%
16:00 - 16:30) Stoxx50	15.3%	16.2%	16.1%	12.3%	11.0%	12.2%	10.2%	6.9%	5.5%	3.3%	4.2%	2.0%	2.8%
	Stoxx600	11.9%	12.1%	12.7%	13.7%		12.2%	11.8%	11.0%	13.1%	13.3%	13.2%	13.3%	13.9%
Close	Stoxx50	23.8%	25.4%	24.3%	22.4%	20.4%	18.1%	19.4%	23.5%	23.1%	25.7%	27.4%	26.7%	29.3%
	Stoxx600		26.3%	23.2%	21.3%	20.5%	18.3%	18.6%	21.5%	25.8%	26.8%	29.7%	29.8%	30.6%

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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