December 2022 EMEA Market Structure Monthly

MICROSTRUCTURE OBSERVATIONS

• In December 2022, the average daily volume in EMEA equities decreased to €36.4B, 16% lower than previous month (€43.2B) also below December 2021's volume by 6% (€38.7B).

• The median quote size increased at the European Best Bid and Offer (EBBO) in December for STOXX 50 by 3% and STOXX 600 by 15% during the intraday trading period (08:30 to 16:00 GMT) compared to the prior month.

• Median quoted spreads at the EBBO didn't change significantly in December compared to the prior month; STOXX 50 stayed at 3.1bps and STOXX 600 symbol spreads decreased by 4% to 5.1bps, during the intraday trading period.

• Volatility levels decreased significantly in December; STOXX 50 volatility decreased by 15% and STOXX 600 volatility decreased by 17% during intraday trading compared to the prior month.

• The market share distribution between venue types changed slightly compared to the prior month. Primary Auctions market share increased by 3.3%, largely driven by the FTSE rebalance at the end of December. Both Primary and MTF lit market share decreased by 1.6% and 1%, respectively. Dark venues market share decreased as well by 1% while Frequent Batch Auctions (aka FBA) venues market share didn't change significantly relative to the prior month.

• Cboe dark market share decreased by 2% while Turquoise market share increased by 2% relative to the prior month.

• In December, the closing auction volume increased as a percentage of the daily volume; STOXX50 closing auction volume was up 4.2% to 23.5% and STOXX600 was up 2.7% to 21.3% - still significantly lower than 2021 closing auction volumes which were around 29% for both indices.

EMEA MARKET STRUCTURE NEWS

EU States Reject 'Payment for Order Flow' Ban and Propose Raising Dark Trading Cap

European Union (EU) member states rejected plans to have an outright ban on brokers receiving fees in return for directing trades to specific trading platforms. The EU's executive European Commission proposed a ban on such payments as part of its draft law updating the bloc's securities rules. EU states also supported raising the cap on dark trading to 10% of a stock's volume, from the current cap of 8%, and eliminating the venue level cap on reference price waiver transactions. EU member states also backed the European Commission's plans to create a close to real-time consolidated tape for stock and bond trades. EU states will now negotiate a final deal with the European parliament on updating the securities laws.

https://www.reuters.com/markets/europe/eu-states-reject-ban-payment-for-order-flow-share-trades-2022-12-20 https://www.consilium.europa.eu/media/61065/st16099-en22.pdf

UK Chancellor Announces Edinburgh Reforms

The UK's Chancellor of the Exchequer Jeremy Hunt set out how the framework for UK financial services regulation will adapt to support a dynamic, stable, and competitive financial services sector. A subset of changes included below: 1. Committing to having a regime for a UK consolidated tape in place by 2024. 2. Establishing an Accelerated Settlement Taskforce. 3. Reforming the ring-fencing regime for banks. 4. Launching a call for evidence on reforming the short selling regulation. 5. Consulting on reform to the VAT treatment of fund management. 6. From April 2023, improving the tax rules for real estate investment trusts. 7. Repealing the Packaged Retail and Insurance-based Investment Products (PRIIPs) Regulation, and consulting on a new direction for retail disclosure. For full list of changes please see link

https://questions-statements.parliament.uk/written-statements/detail/2022-12-09/hcws425

Consolidated Tape Investment

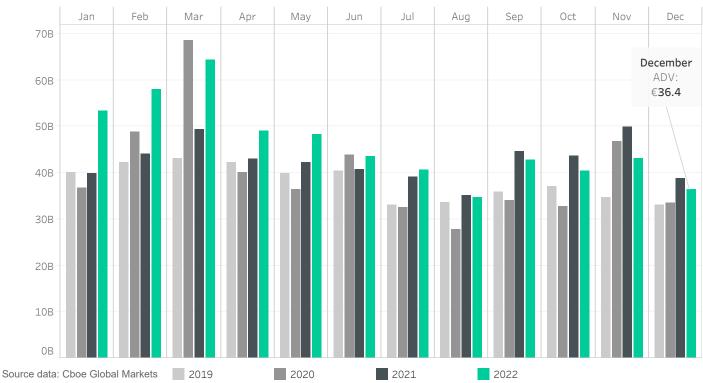
On December the 12th, LDC, the private equity arm of Lloyds Banking Group, made an investment in Etrading Software, a capital markets technology firm which specialises in the provision of market and reference data used by international financial institutions. Sassan Danesh, CEO of Etrading Software, said: "LDC's investment will cement our position as one of the leading technology providers to global capital markets. One immediate benefit is to strengthen our proposition for creating a Consolidated Tape market data infrastructure for increased market transparency in the UK and Europe."

https://etradingsoftware.com/ldc-invests-in-etrading-software/

LSE Group and Microsoft Collaboration Agreement

The London Stock Exchange Group (aka LSEG) signed an agreement with Microsoft to build the exchange's next generation cloud-based analytics infrastructure for \$2.8 billion (£2.3 billion). Microsoft agreed to purchase approximately a 4% equity stake in LSEG through the acquisition of shares from the Blackstone/Thomson Reuters Consortium.

https://www.lseg.com/en/media-centre/press-releases/2022/lseg-and-microsoft-launch-strategic-partnership



Average Daily Market Volume

Venue Type Market Share

42.3%	44.2%	46.0%	45.0%	43.4%	41.3%	40.4%	41.3%	40.2%	38.9%	40.3%	39.0%	37.4%
19.8%	20.9%	20.6%	20.5%	21.1%	21.3%	21.5%	23.0%	22.9%	23.3%	25.1%	23.9%	22.9%
23.3%	18.8%	18.3%	19.7%	19.7%	21.9%	22.6%	19.8%	21.7%	22.8%	18.8%	21.9%	25.2%
9.2%	10.4%	9.5%	9.7%	10.3%	10.0%	9.7%	10.4%	10.1%	9.5%	9.9%	9.7%	8.7%
5.3%	5.7%	5.6%	5.1%	5.5%	5.6%	5.8%	5.6%	5.1%	5.5%	5.8%	5.6%	5.8%
Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22
Source data	a: Cboe Glol	oal Markets	Prir	mary 📃 🛚	VITE	Auctions	DARK	FBA	A			

Dark Market Share

41%	42%	44%	43%	48%	47%	46%	46%	44%	46%	48%	45%	43%
24%	23%	24%	23%	22%	22%	22%	22%	24%	26%	22%	22%	24%
15%	15%	14%	15%	12%	11%	11%	12%	11%	10%	11%	11%	11%
11%	11%	11%	11%	11%	11%	12%	12%	12%	11%	12%	12%	12%
6%	6%	6%	5%	6%	6%	6%	6%	6%	3%	5%	5%	6%
Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22
Cboe E	urope	Turquoise	Liqui	dnet	POSIT	UBS	5 MTF	Instinet	Blo Ac	quis	Sigma >	<

Source data: Cboe Global Markets

Block Market Share

18%	17%	17%	14%	17%	17%	17%	16%	17%	18%	16%	16%	16%
30%	29%	28%	31%	26%	24%	24%	25%	25%	23%	24%	24%	24%
25%	27%	28%	27%	28%	32%	30%	32%	31%	33%	31%	32%	32%
17%	17%	17%	17%	18%	17%	18%	16%	16%	15%	17%	17%	16%
11%	10%	11%	10%	11%	10%	10%	11%	11%	11%	11%	11%	11%
Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22
	Turquoise	— l	iquidnet	E Ct	ooe Europe	Pos	sit	📕 Othe	rs			

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

Quotesize in Notional USD

		4Q 21		1Q 22			2Q 22			3Q 22			4Q 22	
		Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22
8:00 - 8:30	Stoxx50	18.5K	18.8K	16.3K	17.3K	18.3K	17.9K	21.0K	16.8K	19.2K	18.2K	18.0K	23.6K	25.8K
	Stoxx600	10.6K		9.6K	10.1K	11.0K	10.5K	10.0K	9.5K	10.2K	10.9K	9.8K	10.7K	12.1K
8:30 - 16:00	Stoxx50	33.6K	33.8K	29.7K	23.1K	25.8K	26.4K	33.9K	26.0K	26.6K	25.8K	25.1K	34.3K	35.4K
	Stoxx600	17.0K	17.0K	15.5K	12.6K	14.0K		12.9K	11.9K	12.2K	13.4K	11.5K	13.0K	14.9K
16:00 - 16:30	Stoxx50	39.3K	37.9К	35.1K	28.3K		33.1K	39.8K	31.3K	31.4K	29.0K	28.8K	40.9K	42.2K
	Stoxx600	19.0K	19.1K	18.6K	14.6K	17.0K		15.4K	14.6K	14.7K	15.0K	13.8K	16.6K	18.6K

Spread Bps

8:00 - 8:30	Stoxx50	4.2	4.0	4.5	5.3	4.9	5.0	5.4	5.9	5.0	5.3	5.3	4.8	4.8
	Stoxx600	7.8	8.2	8.8	10.1	9.1	9.4	9.6	10.4		9.6	9.9	9.1	8.8
8:30 - 16:00	Stoxx50	2.5	2.5	2.7	3.2	3.0	3.0	3.4	3.6	3.2	3.5	3.4	3.1	3.1
	Stoxx600	4.5	4.7	5.0	5.8	5.2	5.6	5.9	6.3		5.9	6.0	5.3	5.1
16:00 - 16:30	Stoxx50	2.2	2.2	2.3	2.7	2.5	2.6	2.8	3.0	2.7	2.9	2.8	2.6	2.8
	Stoxx600	4.0	4.1	4.1	4.7	4.4	4.7	4.8	5.1		4.8	4.9	4.3	4.4

One Minute Volatility Bps

8:00 - 8:30	Stoxx50	12.1	14.8	17.6	22.3	18.2	16.5	16.9	22.3	14.6	17.4	17.3	13.9	11.9
	Stoxx600	11.0	14.1	16.5	21.5	17.3		16.2	18.2	14.1	17.4	18.0	15.2	12.5
8:30 - 16:00	Stoxx50	5.3	6.6	7.8	10.0	7.3		7.6	10.2	6.6	8.7	8.1	5.9	5.0
	Stoxx600	4.9	5.9		8.5	6.5	6.8	6.8	7.7	5.9	7.4	7.6	6.0	5.0
16:00 - 16:30) Stoxx50	5.6	6.7	7.0	9.5		8.4	8.1	9.2	6.9	8.5	8.5	6.0	5.5
	Stoxx600	4.8	5.5	5.5	7.3		7.0	6.5	6.8	5.4	6.8	7.0	5.4	4.8

Percent ADV by Time of Day

Open	Stoxx50	0.9%	1.0%	1.0%	0.9%	1.0%	0.8%	0.9%	0.7%	0.7%	0.7%	0.6%	0.7%	0.9%
	Stoxx600	0.6%	0.7%	0.6%	0.5%	0.6%	0.5%		0.4%	0.4%	0.4%	0.3%	0.4%	0.4%
8:00 - 8:30	Stoxx50	9.0%		9.2%	7.8%	7.5%	7.6%	15.1%	22.2%	14.5%	15.5%	14.8%	14.4%	9.5%
	Stoxx600	6.8%		7.9%	7.8%	8.2%	7.7%	8.3%	9.3%	9.6%	9.9%	9.8%	9.8%	8.6%
16:00 - 16:30) Stoxx50	19.4%	16.1%	15.5%	16.9%	14.8%	15.3%	16.2%	16.1%	12.3%	11.0%	12.2%	10.2%	6.9%
	Stoxx600	13.6%	12.7%		12.4%	10.6%	11.9%	12.1%	12.7%	13.7%	12.9%	12.2%	11.8%	11.0%
Close	Stoxx50	28.7%	22.2%	21.9%	23.6%	23.5%	23.8%	25.7%	24.4%	22.5%	20.7%	18.2%	19.3%	23.5%
	Stoxx600	29.0%	24.0%	24.5%	23.8%	26.0%	24.2%	26.3%	23.2%	21.1%	20.3%	18.3%	18.6%	21.3%

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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