October 2023 EMEA Market Structure Monthly

MICROSTRUCTURE OBSERVATIONS

- Average daily volume in EMEA equities increased slightly to €37.3B, up 1% MoM and down 8% YoY.
- Dark trading was up 10% MoM to 11.3% of overall volume while Periodic Auctions (FBA) recorded a market share high of 6.5%.
- Closing auction volumes as a percent of total daily volume remained broadly flat MoM at 31.5% for the STOXX 50 and 34.2% for the STOXX 600.
- Intraday volatility was up 13% MoM for the STOXX 50 and up 15% MoM for the STOXX 600, whilst intraday spreads remained flat for the STOXX 50 and were up slightly for the STOXX 600 at +8%.

EMEA MARKET STRUCTURE NEWS

ESMA consults on the potential impact of shortening the standard settlement cycle

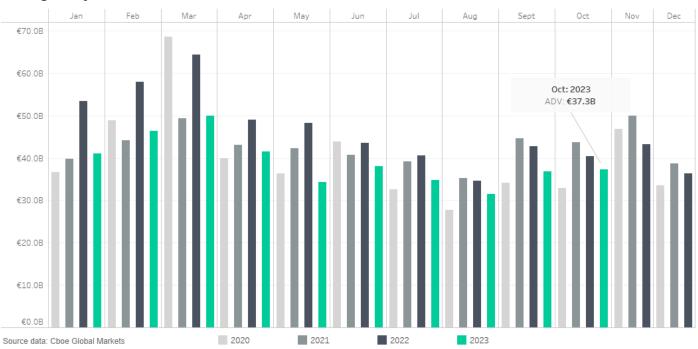
The Call for Evidence will help ESMA assess the costs and benefits of shortening the settlement cycle to T+1 in the European Union (EU) and identify whether any regulatory action is needed to soften the impact for EU market participants.

https://www.esma.europa.eu/press-news/esma-news/esma-consults-potential-impact-shortening-standard-settlement-cycle

FCA Guidance on Trading Venue perimeter came into effect October 9

The FCA's guidance regarding the post-Brexit definition of trading venues went into effect on October 9. The regulator did not make any changes to the regulatory regime applicable to trading venues, allowing the definition to continue to focus on the substance of a firm's activity, rather than how it is labeled.

https://www.fca.org.uk/publication/policy/ps23-11.pdf

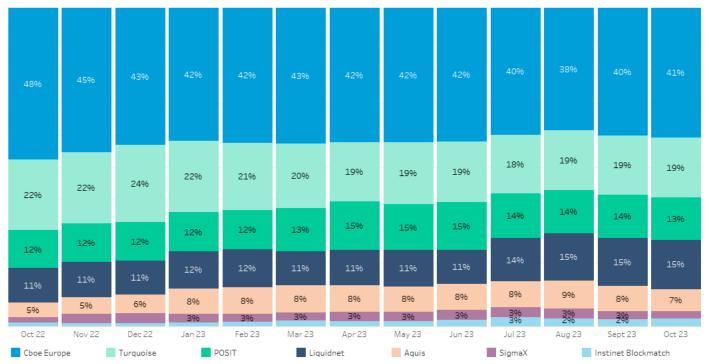


Average Daily Market Volume

Venue Type Market Share

40.3%	39.0%	37.4%	38.7%	38.0%	38.2%	37.9%	38.0%	34.6%	37.7%	37.6%	35.3%	37.5%
25.1%	23.9%	22.9%	24.6%	24.3%	24.3%	23.6%	23.1%	21.0%	21.9%	21.3%	20.4%	21.7%
18.8%	21.9%	25.2%	20.296	21.896	23.1%	22.296	22.5%	28.2%	23.496	25.4%	28.0%	22.9%
5.8%	5.6%	5.8%	6.1%	6.0%	4.9%	5.8%	6.2%	6.2%	6.4%	6.1%	6.0%	6.5%
9.9%	9.7%	8.7%	10.5%	9.9%	9.5%	10.6%	10.1%	10.0%	10.6%	9.6%	10.3%	11.3%
Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23
Source data: Cboe Global Markets		Prim	nary	MTF	Auct	ions	FBA	Dark				

European Dark Market Share



Source data: Cboe Global Markets

European Block Market Share

31%	3396	33%	3296	3396	3496	3296	3496	3296	3096	28%	29%	28%
2496	23%	23%	25%	2596	20%	2496	2496	2196	2796	30%	29%	28%
16%	1696	15%	17%	16%	15%	19%	18%	20%	1796	17%	16%	1696
16%	16%	1796	16%	1596	17%	13%	13%	1496	13%	14%	14%	1496
12%	12%	1196	10%	1296	14%	12%	1196	12%	13%	12%	12%	1496
0ct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23
	Cboe Europe		Liquidnet		Posit		Turquoise		Others			

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

			4Q 22			1Q 23			2Q 23			3Q 23		4Q 23
		Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sept 23	Oct 23
8:00 - 8:30	Stoxx50	18.0K	23.6K	25.9K	29.8K	32.1K	27.7K	31.3K	29.3K	25.8K	27.9К	28.0K	25.1K	22.4K
	Stoxx600	9.9K	10.8K	12.3K	13.7K	14.1K	14.5K	15.2K	14.3K	13.5K		12.4K	12.1K	11.2K
8:30 -	Stoxx50	25.1K	34.3K	35.4K	40.6K	44.2K	38.5K	42.1K	39.4К	34.2K	39.0K	39.9K	36.5K	36.9K
16:00	Stoxx600	11.5K	13.0K	14.9K		17.4K	18.1K	19.1K	18.0K	17.6K	17.1K	16.2K	16.1K	15.6
6:00 -	Stoxx50	28.8K	40.9K	42.2K	49.1K	47.8K	45.3K	49.5K	47.3K	41.8K	48.1K	51.5K	51.6K	51.4
16:30	Stoxx600	13.8K	16.6K	18.6K	20.2K	21.3K	22.4K	24.1K	23.4K	23.3K	22.9K		22.7K	20.9
pread	Bps													
8:00 -	Stoxx50	5.2	4.7	4.7	4.7	4.5	5.0	5.4	5.5	5.3	5.2	4.8	4.7	4.0
8:30	Stoxx600	9.8	9.0	8.7	8.3	7.7	8.4		8.4	8.0	8.1	8.1	7.9	7.8
8:30 -	Stoxx50	3.4	3.1	3.1	3.2	3.0	3.3	3.4	3.4	3.3	3.4		3.2	3.2
16:00	Stoxx600	6.0	5.3	5.1	4.9	4.9	5.4	5.1	5.1	5.0	5.1	5.1	5.0	5.4
16:00 -	Stoxx50	2.8	2.6	2.8	2.8	2.6	2.9	3.1	3.1	3.1	3.1	3.0	2.7	2.7
16:30	Stoxx600	4.9	4.3	4.4	4.1	4.2	4.6	4.5	4.4	4.5	4.5	4.6	4.4	4.7
			4.5	4.4	4.1	4.2	4.0	4.5	4.4	4.5		4.0	4.4	-+.7
	nute Volati													
8:00 - 8:30	Stoxx50	16.9	13.4	11.5	11.6	12.4	14.1	12.3	12.4	11.4	11.4	10.4	10.2	11.2
	Stoxx600	17.4	14.8	12.2	12.0		12.8	11.7	11.1	10.2	10.4	9.6	9.4	10.6
8:30 - 16:00	Stoxx50	8.1	5.9	5.0	5.4	5.5	6.9	5.5	5.1	5.1	5.0	5.3	5.2	5.9
0.00	Stoxx600	7.6	6.0	5.0	4.9	4.9	6.0	4.8	4.6	4.5	4.5	4.5	4.6	5.3
16:00 - 16:30	Stoxx50 Stoxx600	8.5	6.0	5.5	5.6	5.7	6.6	5.9	5.7	5.8	5.1	5.4	4.8	5.9
		7.0	5.4	4.8		4.7	5.1	4.5	4.5	4.4	4.2	4.3	4.2	4.8
ercent	ADV by T	ime of Da	У											
Open	Stoxx50	0.7%	0.8%	0.9%	1.1%	1.0%	1.0%	1.0%	1.0%	1.1%	1.1%	1.0%	1.0%	1.0%
	Stoxx600	0.3%	0.4%	0.4%	0.6%	0.6%	0.6%		0.6%	0.6%	0.6%	0.5%	0.5%	0.5%
8:00 -	Stoxx50	11.6%	10.1%	7.1%	6.4%	5.9%	4.8%	2.9%	3.4%	3.0%	4.1%	6.4%	7.3%	4.2%
8:30	Stoxx600	7.8%	7.4%	6.5%	8.8%	8.3%	6.3%		6.6%	5.7%	5.7%	5.7%	5.1%	4.7%
16:00 - 16:30	Stoxx50	12.2%	10.2%	6.9%	5.5%	3.3%	4.2%	2.0%	2.8%	2.9%	4.4%	8.4%	11.2%	5.7%
	Stoxx600	12.2%	11.8%	11.0%	13.1%	13.3%	13.2%		13.9%	13.6%	14.4%	15.8%	16.1%	13.89
Close	Stoxx50	18.0%	19.4%	23.5%	23.1%	25.7%	27.4%	26.6%	29.3%	32.7%	29.5%	27.7%	31.5%	31.59

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

To learn more, contact your sales representative or call our desk at: **APAC** +852.2846.3592 | **CAN** +1.416.874.0800 | **EMEA** +44.20.7670.4066 | **US** +1.646.682.6199 <u>info@virtu.com</u> | <u>www.virtu.com</u>

© 2023 Virtu Financial, Inc. All rights reserved. Not to be reproduced or retransmitted without permission. These materials are for informational purposes and are not intended to be used to make trading or investment decisions, they are not intended as an offer to sell or the solicitation of an offer to buy any security or financial product, and are not intended as advice (investment, tax or legal). The information contained herein includes Virtu proprietary information and/or has been taken from sources we believe to be reliable, but we do not represent or warrant that such information is accurate or complete and it should not be relied upon as such.

Securities products and services are offered by the following subsidiaries of Virtu Financial, Inc. In the U.S., Virtu Americas LLC, member FINRA and SIPC; in Canada, Virtu Canada Corp., member Canadian Investor Protection Fund and Canadian Investment Regulatory Organization; in Europe, Virtu Europe Trading Limited, registered in Ireland No. 283940 ("VETL") (VETL is authorized and regulated by the Central Bank of Ireland), and Virtu Financial Ireland Limited, registered in Ireland No. 471719 ("VFIL") (VFIL is authorized and regulated by the Central Bank of Ireland), and Virtu Financial Ireland Limited, registered office of VETL and VFIL is North Dock One, Fifth Floor, 91-92 North Wall Quay, Dublin 1, Ireland, D01 H7V7; in Asia, Virtu ITG Hong Kong Limited (SFC License No. AHD810), Virtu ITG Singapore Pte Limited (CMS License No. 100138-1), and Virtu ITG Australia Limited (AFS License No. 219582)