

January 2023

Canada Market Structure Monthly

MARKET MICROSTRUCTURE OBSERVATIONS

- In January 2023, the average daily volume for TSX listed securities was 663 million shares, down 5% compared to December 2022 and down 18% compared to January 2022. While volatility conditions improved, liquidity and spread conditions were flat compared to December 2022.
- In non-TSX listed securities, the average daily volume was 360 million shares. This was flat vs December 2022 and down 25% compared to January 2022. While spread and volatility conditions improved, liquidity conditions were flat compared to December 2022.
- Dark Venue market share increased significantly compared to December 2022 and set a new 12-month high. Market share growth was most noted in MATCHNow increasing by nearly 0.8% compared to December 2022. • TSX and non-TSX block volumes increased compared to November 2022. Dark venue market share increased slightly compared to November 2022 and Cboe MATCHNow continued to have the largest market share.

CANADA MARKET STRUCTURE NEWS

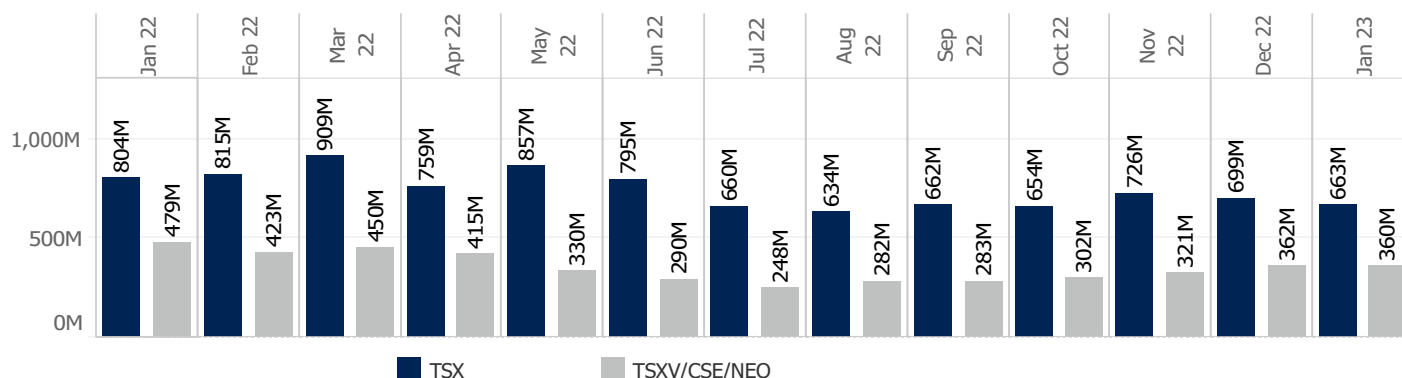
New Self-Regulatory Organization of Canada

On 3 January, 2023 the New Self-Regulatory Organization of Canada (New SRO) and New Canadian Investor Protection Fund (CPIF) was officially launched, completing the Canadian Securities Administrators' plan to create a new, single self-regulatory organization and an integrated investor protection fund. For further information, consult the link below:

<https://www.iiroc.ca/news-and-publications/notices-and-guidance/new-self-regulatory-organization-canada-and-canadian-investor-protection-fund-officially-launch>

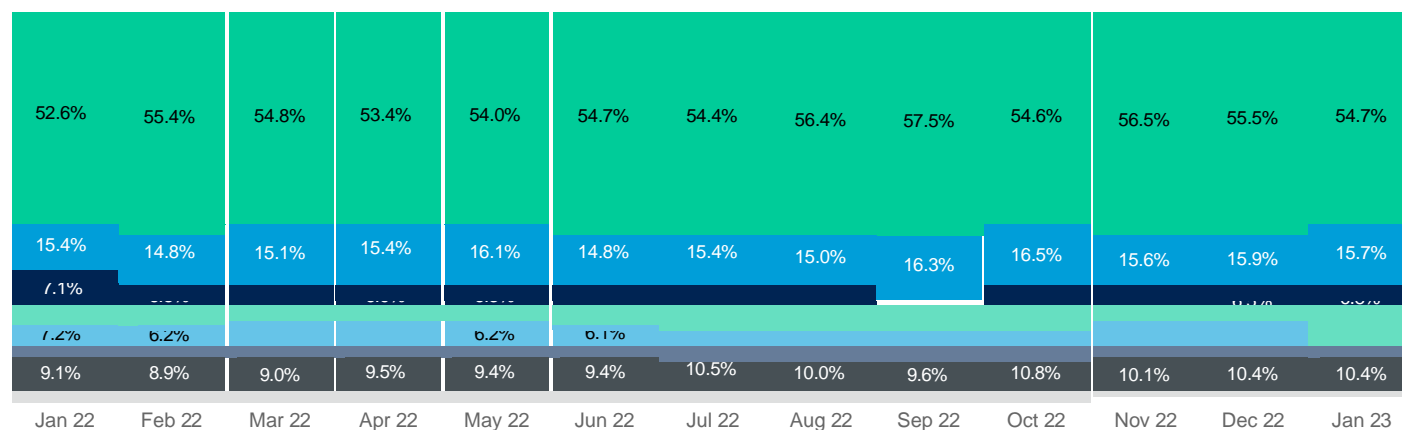


Average Daily Market Volume By Listing Exchange (Shares)

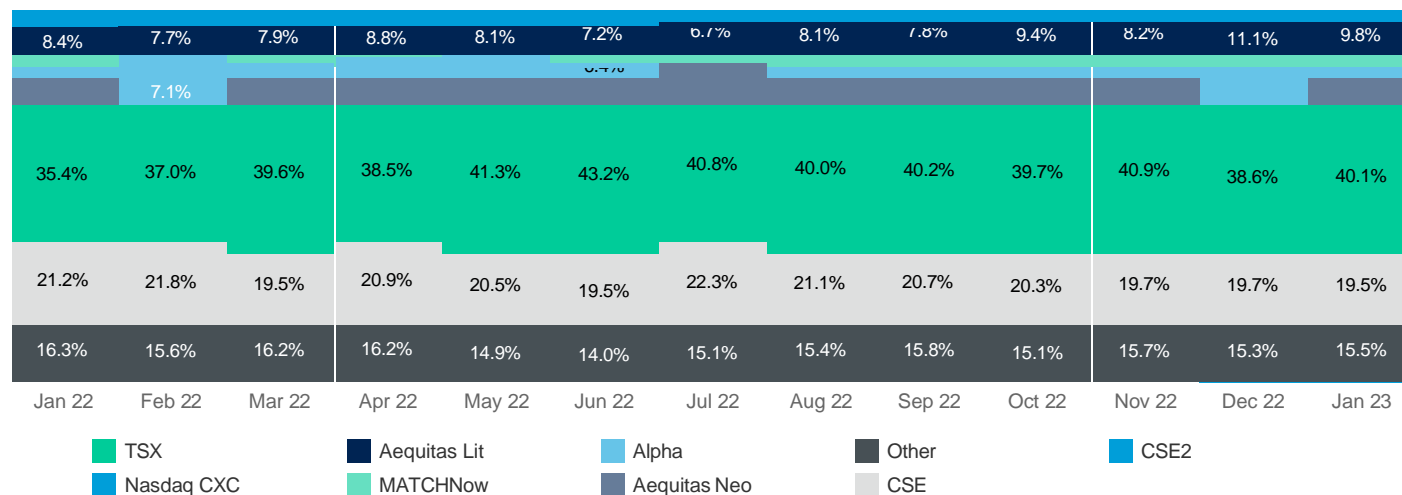


Source data: Virtu Financial

Venue Market Share (TSX-Listed)



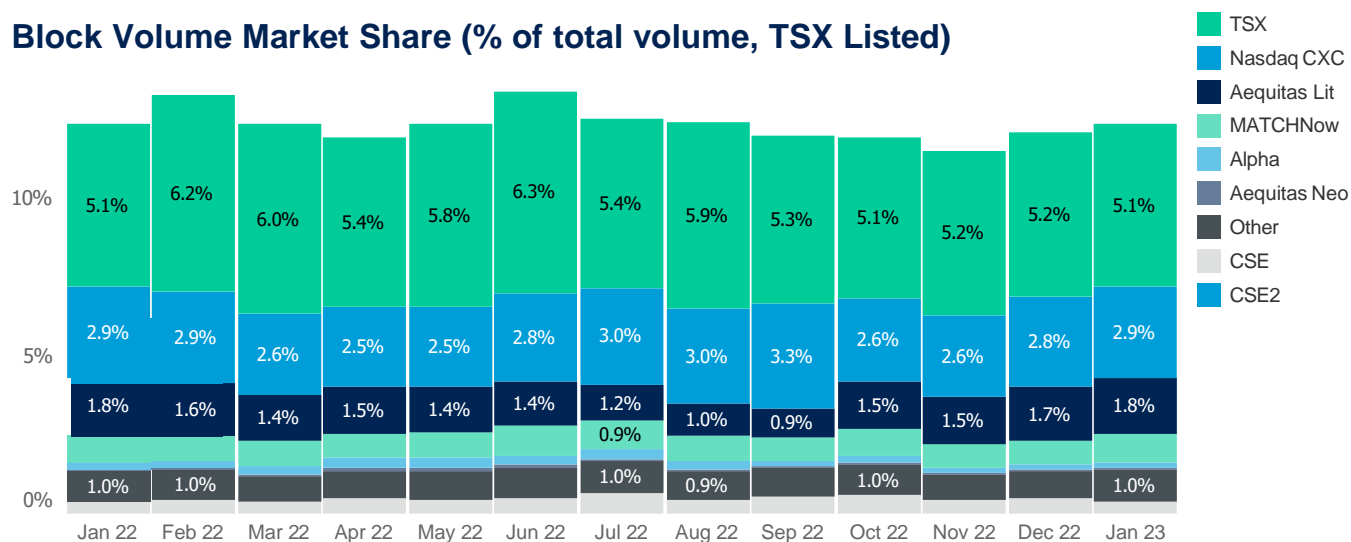
Venue Market Share (Non-TSX-Listed)



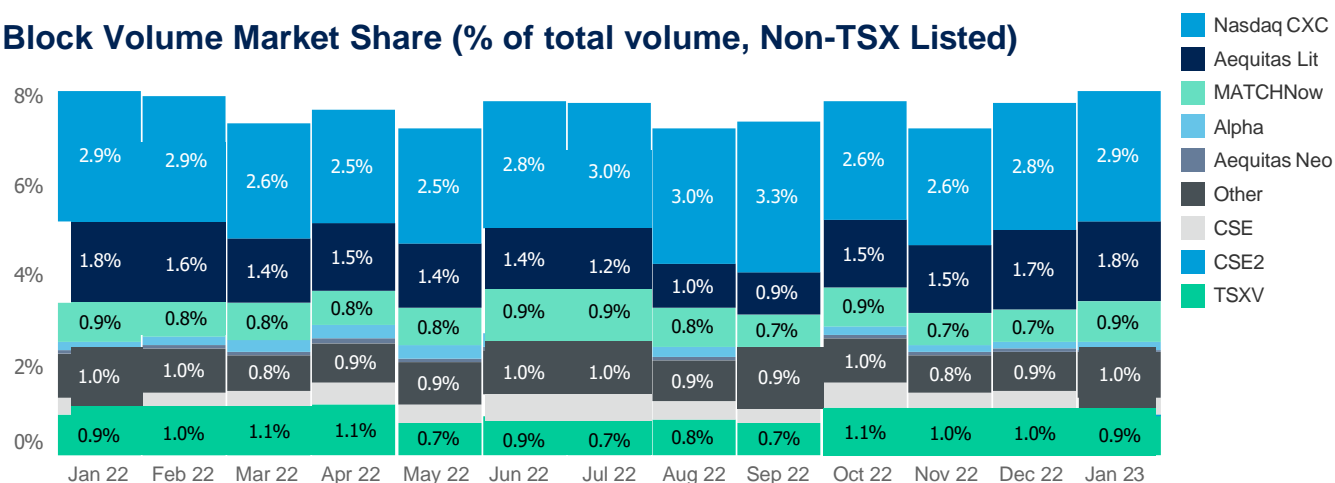
Source data: Virtu Financial



Block Volume Market Share (% of total volume, TSX Listed)

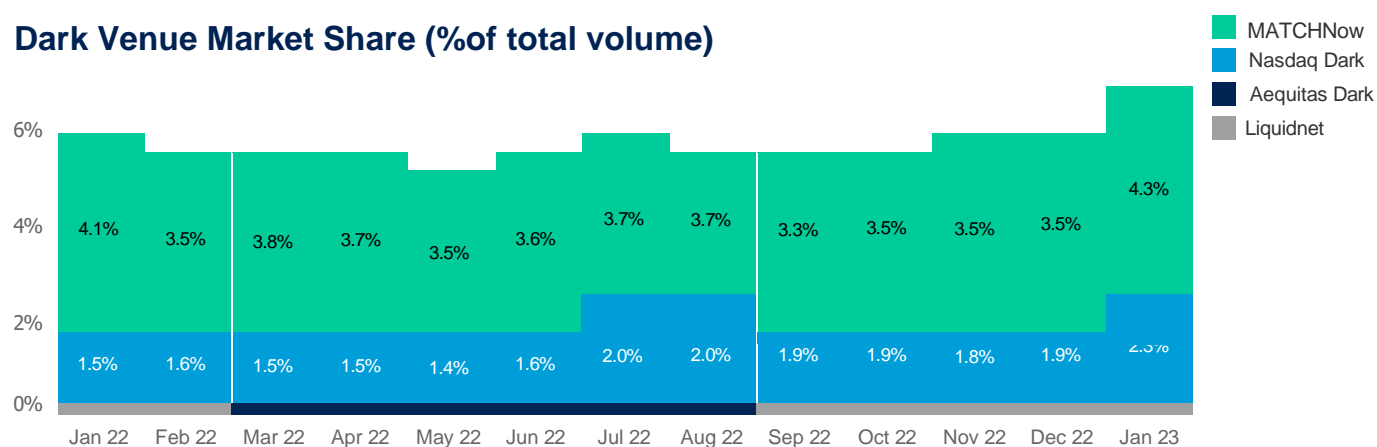


Block Volume Market Share (% of total volume, Non-TSX Listed)



Blocks defined as >5100 shares and > \$30,000 CAD or >=\$100K CAD; Source data: Virtu Financial

Dark Venue Market Share (% of total volume)



TSX listed securities only; Source data: Virtu Financial



Quotesize in Shares

		1Q 22			2Q 22			3Q 22			4Q 22			1Q 23
		Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23
First 30 Min	S&P/TSX 60	819	761	801	800	769	864	900	803	795	836	870	930	871
	S&P/TSX Composite	957	883	954	997	961	1,070	1,103	961	946	1,032	1,055	1,106	1,132
	Non-TSX-Listed	5,189	5,000	6,079	5,540	5,120	4,698	4,334	4,388	4,500	4,599	4,778	4,969	4,945
Mid Day	S&P/TSX 60	977	929	952	914	909	1,013	1,080	994	971	980	1,024	1,075	1,042
	S&P/TSX Composite	1,156	1,089	1,132	1,136	1,145	1,249	1,317	1,188	1,170	1,219	1,286	1,336	1,363
	Non-TSX-Listed	4,050	4,265	5,300	5,170	4,828	4,748	4,459	4,771	4,609	4,418	4,419	4,650	4,650
Last 30 Min	S&P/TSX 60	1,080	1,017	1,035	973	976	1,112	1,207	1,216	1,175	1,206	1,207	1,201	1,231
	S&P/TSX Composite	1,330	1,260	1,311	1,255	1,243	1,371	1,419	1,401	1,387	1,475	1,508	1,494	1,579
	Non-TSX-Listed	4,774	4,625	5,606	5,300	5,103	4,752	4,428	4,486	4,394	4,158	4,417	4,605	4,598

Spread Bps

First 30 Min	S&P/TSX 60	5.6	5.7	6.0	5.9	6.4	6.0	6.5	6.0	5.9	6.4	6.5	6.2	6.1
	S&P/TSX Composite	11.4	11.5	12.0	12.2	14.1	13.4	14.6	13.8	14.3	14.8	13.9	13.3	13.3
	Non-TSX-Listed	172.4	163.1	175.4	170.5	204.9	215.7	229.8	201.2	220.6	219.5	218.1	215.1	210.5
Mid Day	S&P/TSX 60	3.6	3.4	3.6	3.5	4.0	3.8	4.1	3.8	3.9	3.8	3.8	3.7	3.6
	S&P/TSX Composite	7.7	7.6	7.6	7.5	8.9	8.3	8.6	8.1	8.7	8.6	8.3	8.3	8.4
	Non-TSX-Listed	124.2	122.2	132.7	129.0	145.0	152.7	163.9	143.0	148.3	151.6	156.4	156.9	149.3
Last 30 Min	S&P/TSX 60	2.9	2.8	2.7	2.7	3.1	3.0	3.0	2.9	3.0	2.9	2.9	2.8	2.8
	S&P/TSX Composite	6.7	6.7	6.5	6.4	7.5	7.2	7.5	7.2	7.8	7.5	7.1	7.2	7.4
	Non-TSX-Listed	125.5	125.5	133.3	129.0	147.1	144.9	155.4	140.9	140.7	150.4	147.7	145.5	140.1

One Minute Volatility Bps

First 30 Min	S&P/TSX 60	13.9	14.0	15.4	14.4	17.2	15.4	15.9	13.9	14.2	17.0	14.3	13.5	11.9
	S&P/TSX Composite	17.9	17.9	19.1	17.7	21.0	20.0	22.3	18.1	18.6	20.8	18.3	16.5	14.9
	Non-TSX-Listed	24.1	22.7	18.6	21.3	36.5	33.1	30.9	20.9	22.1	23.2	20.7	22.8	17.7
Mid Day	S&P/TSX 60	5.2	4.9	5.4	5.1	7.3	5.8	5.3	4.6	6.0	6.1	5.2	4.7	4.0
	S&P/TSX Composite	5.7	5.5	6.1	5.6	8.2	6.8	6.0	5.0	6.3	6.5	5.6	4.8	4.0
	Non-TSX-Listed	9.2	7.1	6.3	7.2	12.5	9.7	8.0	6.2	6.9	7.3	6.3	5.7	4.5
Last 30 Min	S&P/TSX 60	5.2	5.4	5.2	4.9	7.5	5.8	5.1	4.3	5.9	5.6	5.1	5.0	4.0
	S&P/TSX Composite	5.1	5.3	5.2	5.1	7.3	5.7	4.8	3.9	5.4	5.2	4.9	4.5	3.8
	Non-TSX-Listed	8.6	6.2	5.6	6.6	11.3	7.7	6.4	5.4	6.7	6.7	5.4	5.4	3.8

Percent MDV by Time of Day

Open	S&P/TSX 60	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.5%	0.6%	0.5%	0.4%	0.5%	0.5%	0.5%
	S&P/TSX Composite	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%
	Non-TSX-Listed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

First 30 Min	S&P/TSX 60	13.0%	13.5%	13.6%	12.5%	12.6%	12.4%	13.0%	12.9%	9.7%	10.4%	10.2%	10.1%	8.9%
	S&P/TSX Composite	12.4%	13.4%	13.9%	12.8%	12.6%	12.8%	13.7%	13.4%	11.4%	11.4%	11.4%	10.5%	10.0%
	Non-TSX-Listed	17.4%	17.5%	17.1%	18.0%	18.7%	18.9%	19.8%	20.2%	18.5%	18.0%	19.4%	17.4%	17.5%
Last 30 Min	S&P/TSX 60	33.6%	35.0%	34.6%	38.7%	36.4%	40.9%	36.1%	36.8%	36.3%	31.5%	32.5%	36.7%	35.1%
	S&P/TSX Composite	22.9%	25.8%	25.0%	25.0%	26.3%	24.5%	26.2%	25.8%	26.2%	26.1%	25.5%	26.8%	27.2%
	Non-TSX-Listed	8.4%	8.9%	8.2%	7.6%	7.2%	7.2%	6.7%	6.7%	6.9%	6.3%	6.0%	6.2%	6.3%

Close	S&P/TSX 60	6.7%	7.5%	6.9%	7.8%	6.7%	7.3%	7.4%	7.4%	16.3%	12.2%	12.8%	18.7%	15.4%
	S&P/TSX Composite	3.6%	3.9%	3.7%	4.2%	3.7%	4.4%	4.5%	4.5%	6.6%	5.7%	6.5%	7.1%	6.8%
	Non-TSX-Listed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

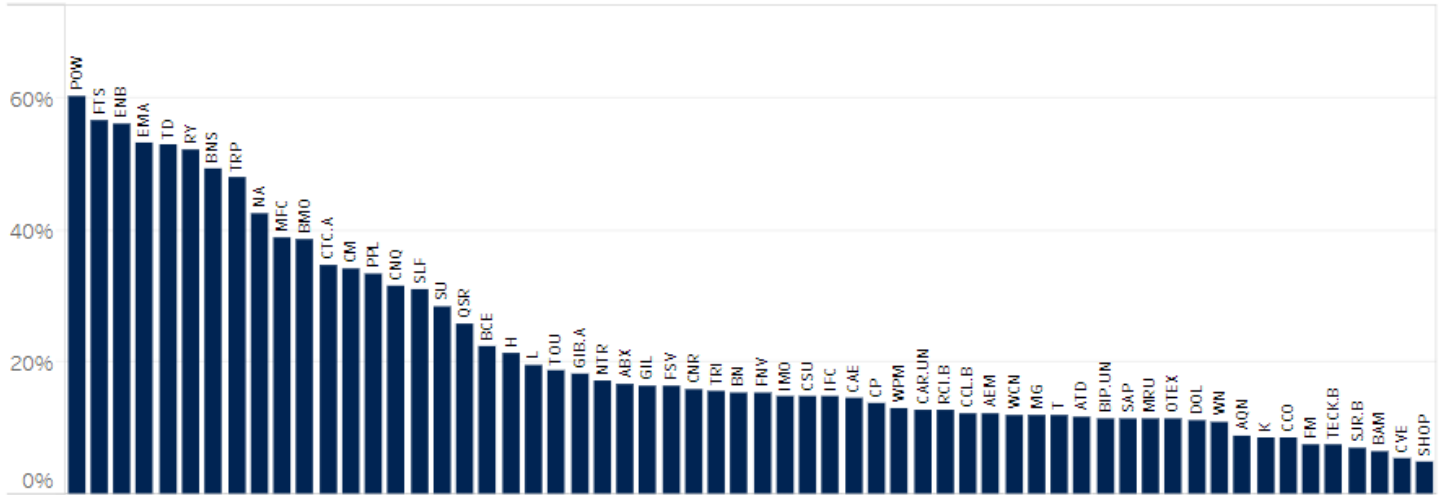
Median used for all metrics

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



January 2023 Median MOC % of Daily Volume - S&P/TSX 60



Source data: Virtu Financial



ABOUT VIRTU

Virtu is a leading financial services firm that leverages cutting-edge technology to provide execution services and data, analytics and connectivity products to its clients and deliver liquidity to the global markets. Leveraging its global market making expertise and infrastructure, Virtu provides a robust product suite including offerings in execution, liquidity sourcing, analytics and broker-neutral, multi-dealer platforms in workflow technology. Virtu's product offerings allow clients to trade on hundreds of venues across 50+ countries and in multiple asset classes, including global equities, ETFs, foreign exchange, futures, fixed income and myriad other commodities. In addition, Virtu's integrated, multi-asset analytics platform provides a range of pre and post-trade services, data products and compliance tools that clients rely upon to invest, trade and manage risk across global markets.

To learn more, contact your sales representative or call our desk at:

APAC+852.2846.3553 | **CAN**+1.416.874.0800 | **EMEA**+44.20.7670.4066 | **US**+1.646.682.6199
info@virtu.com | www.virtu.com

© 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 Investment Industry Regulatory Organization of Canada; in Europe, Virtu ITG Europe Limited, registered in Ireland No. 283940 ("VIEL") (VIEL 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). The registered office of VIEL and VFIL is Whitaker Court, Whitaker Square, Sir John Rogerson's Quay, Dublin 2, Ireland; 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).