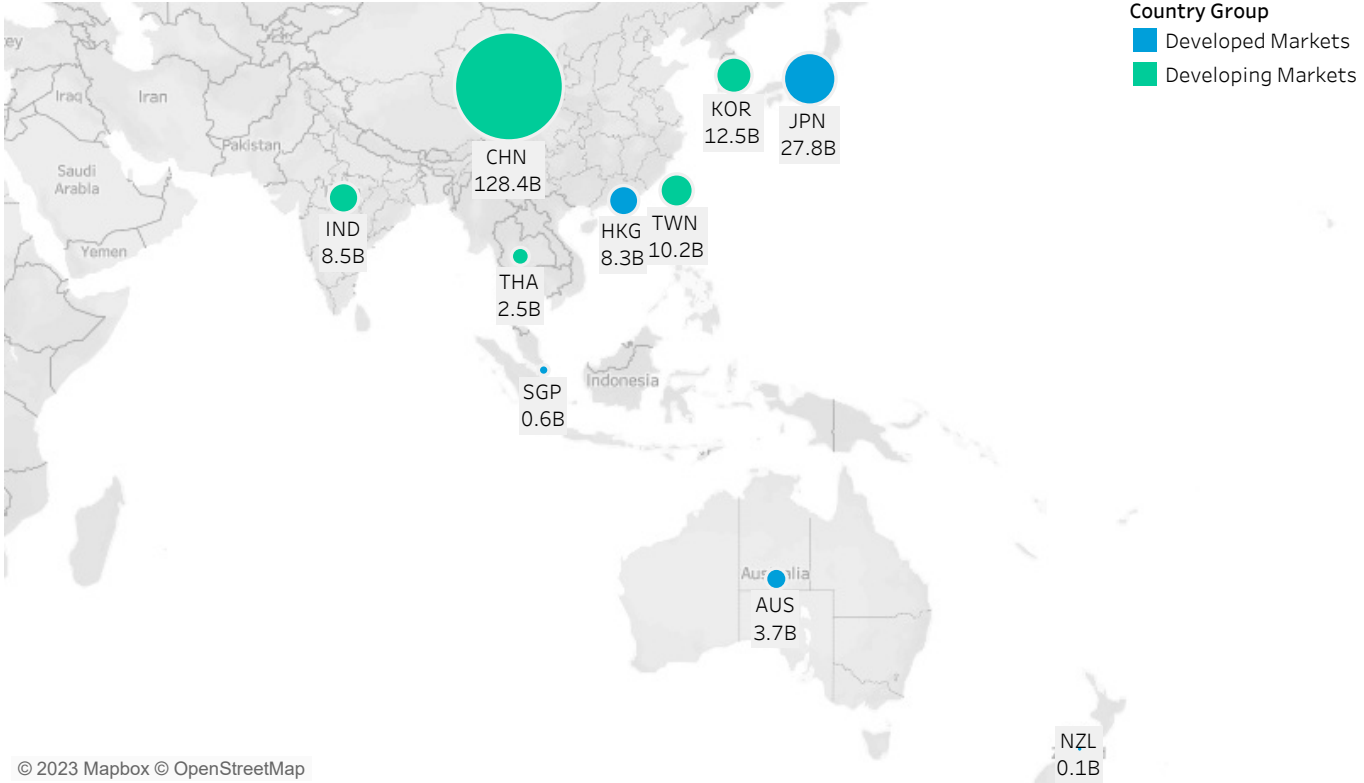


October 2023 APAC Market Structure Monthly

Average Daily Turnover (Notional USD)



© 2023 Mapbox © OpenStreetMap

Country Breakdowns

Hong Kong

China

Japan

Australia

South Korea

Taiwan

India

Thailand

New Zealand

Singapore

Oct 2023

AP Market Structure Monthly

MICROSTRUCTURE OBSERVATIONS

- Overall trading activity continued to wane as 8 out of 10 countries in our equities universe saw lower month-over-month (MoM) average daily turnover (ADT); India and Korea saw the sharpest decline in ADT, down -27% and -23% MoM to US\$12.5B and \$8.5B respectively.
- More adverse trading conditions observed in Thailand as intraday volatility hiked up 3bps consecutively since July 2023 to ~60bps. Conversely, intraday quote-size fell to year low level with max daily quote-size just shy of 600k shares.

AP MARKET STRUCTURE NEWS

[Hong Kong To Cut Stamp Duty on Stock Trading From 0.13% to 0.1%](#)

On 25 Oct 2023, in the annual policy address by Hong Kong's Chief Executive, it was announced that the Hong Kong government will reduce the stamp duty on stock trading (payable by both buyers and sellers) from 0.13% to 0.1%. The goal of this stamp duty reduction is to boost the number of stock market transactions. Hong Kong's government has not announced the effective date of this change.

[Tokyo Stock Exchange Starts Carbon Credit Market Trading on 11 October](#)

The carbon credit market was established in response to the Japanese government's 'Basic Policy for the Realization of GX' which was announced February 2023. This policy introduced an 'emissions trading system' as part of the carbon pricing system aimed at achieving carbon neutrality by 2050. Overview specifications of the carbon credit market is found below.

<https://www.jpx.co.jp/english/equities/carbon-credit/overview/index.html>

[Philippines Stock Exchange Postponed Launch of Short Sell Program from 23 Oct to 6 Nov 2023](#)

On 19 Oct 2023, Philippines Stock Exchange (PSE) postponed the go-live of the PSE Short Selling Program from 23 Oct 2023 to 6 Nov 2023, to provide market participants more time to prepare and comply with the rules.

According to PSE rules, Short Sell orders must trade through exchange Trading Participants (TP), Day orders only, Continuous Trading Session only, no odd lot/Block Sales, and Uptick rule applies.

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

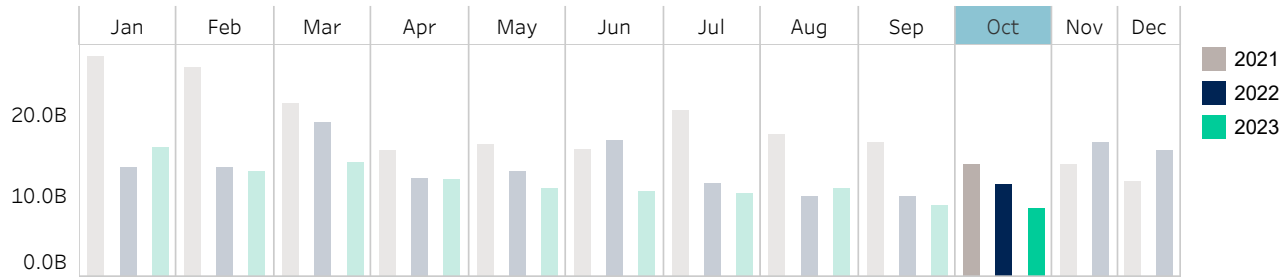
info@virtu.com | www.virtu.com

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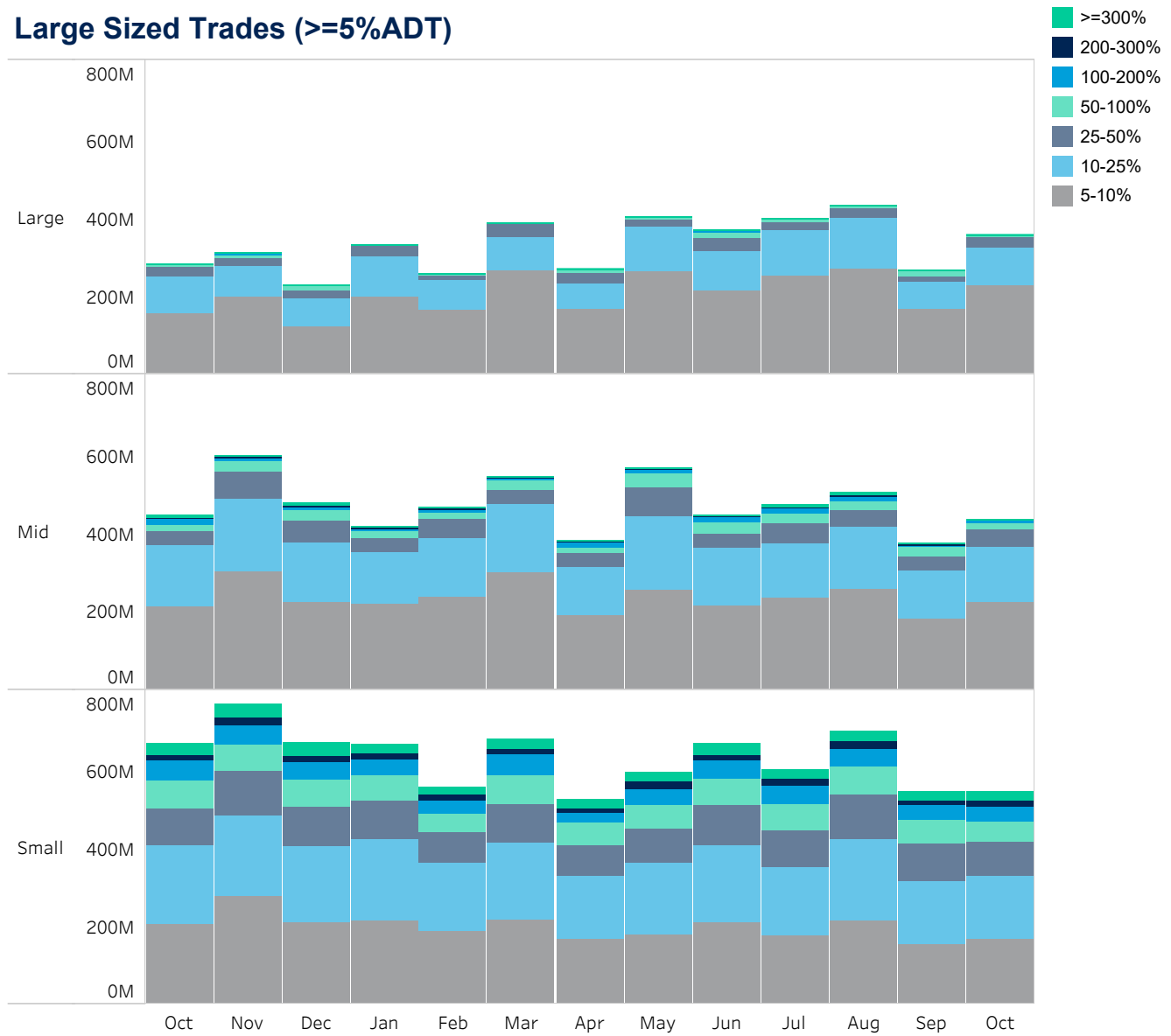
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Hong Kong

Average Daily Turnover (Notional USD)



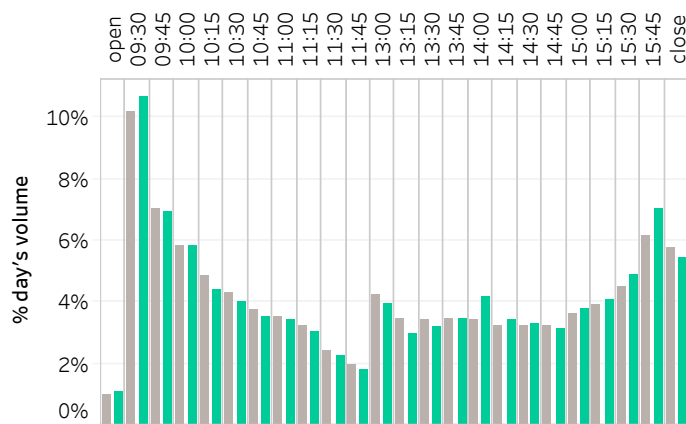
Large Sized Trades (>=5%ADT)



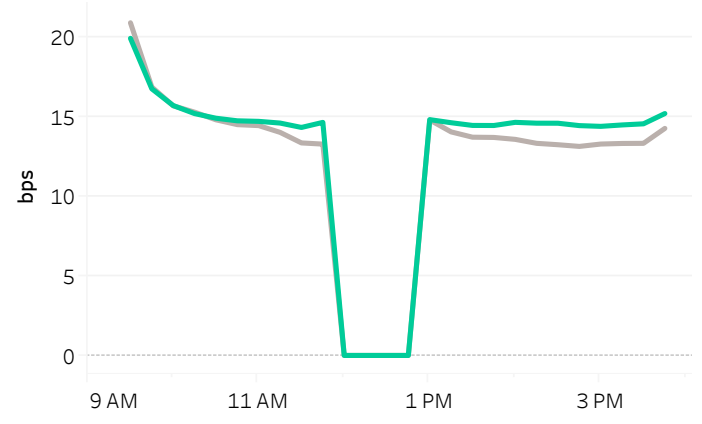
Source data: Virtu Financial

Hong Kong

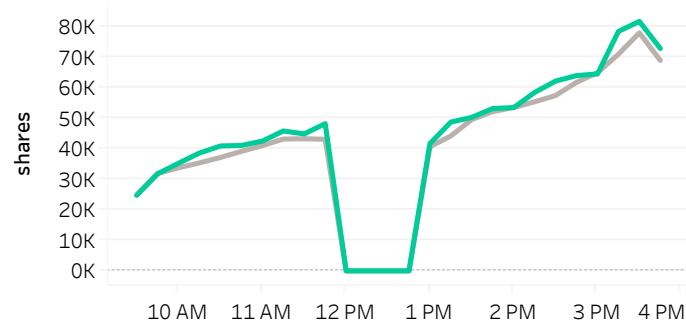
Volume Curve



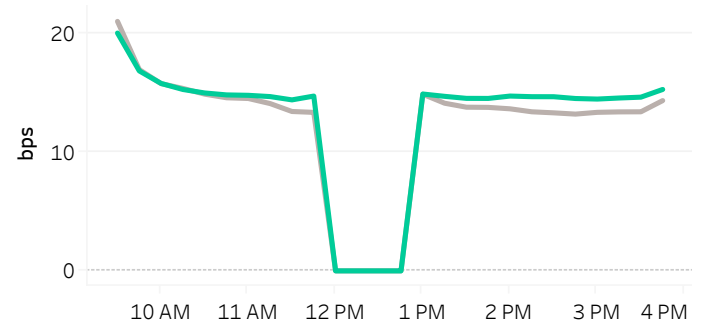
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg (Grey line) October 2023 (Green line)

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	18.3	18.0	19.3	19.5	19.5	19.6	18.3	18.7	18.1	18.4
MidDay	13.1	12.8	13.7	14.5	14.0	14.6	13.5	14.0	14.4	14.7
LastHalfHour	13.0	13.2	14.0	14.1	14.1	14.9	13.8	13.9	14.8	15.0

One Minute Volatility Bps

FirstHalfHour	26.4	25.3	28.1	25.8	25.2	24.1	23.6	25.8	23.8	24.3
MidDay	17.0	15.9	16.2	16.1	15.7	16.2	15.4	15.8	15.6	16.0
LastHalfHour	16.5	16.7	17.3	16.4	16.3	17.2	15.7	16.1	16.5	16.6

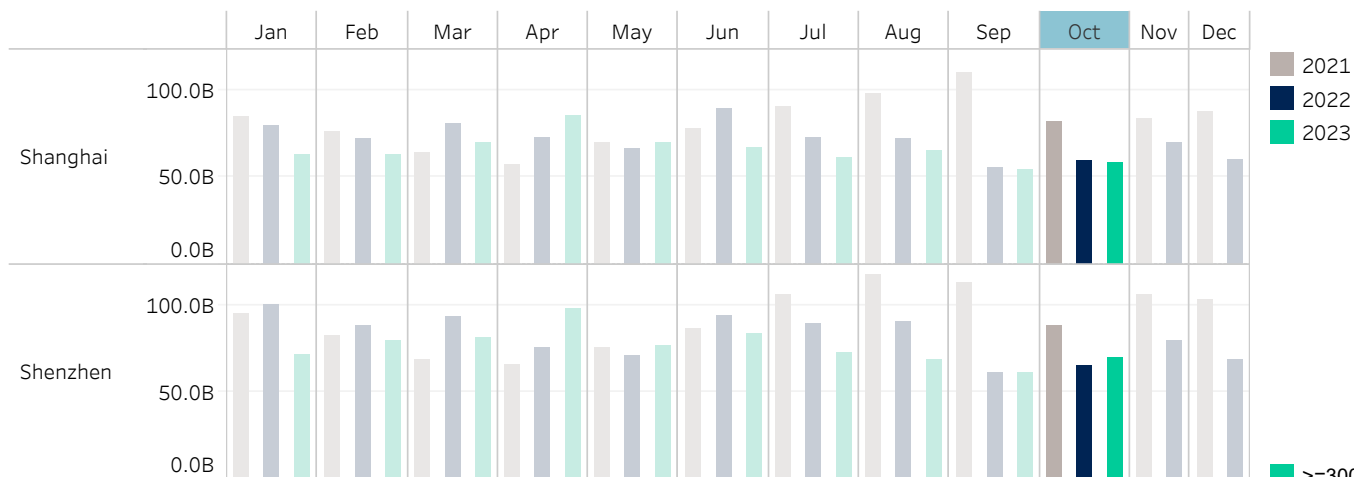
Quotesize (shares)

FirstHalfHour	29,622	27,296	30,646	31,145	29,974	26,818	25,478	27,693	28,391	27,601
MidDay	46,105	44,622	43,572	50,780	47,975	41,143	42,053	45,912	52,298	46,953
LastHalfHour	78,406	74,936	77,473	76,329	74,417	64,333	69,285	74,613	78,499	77,442

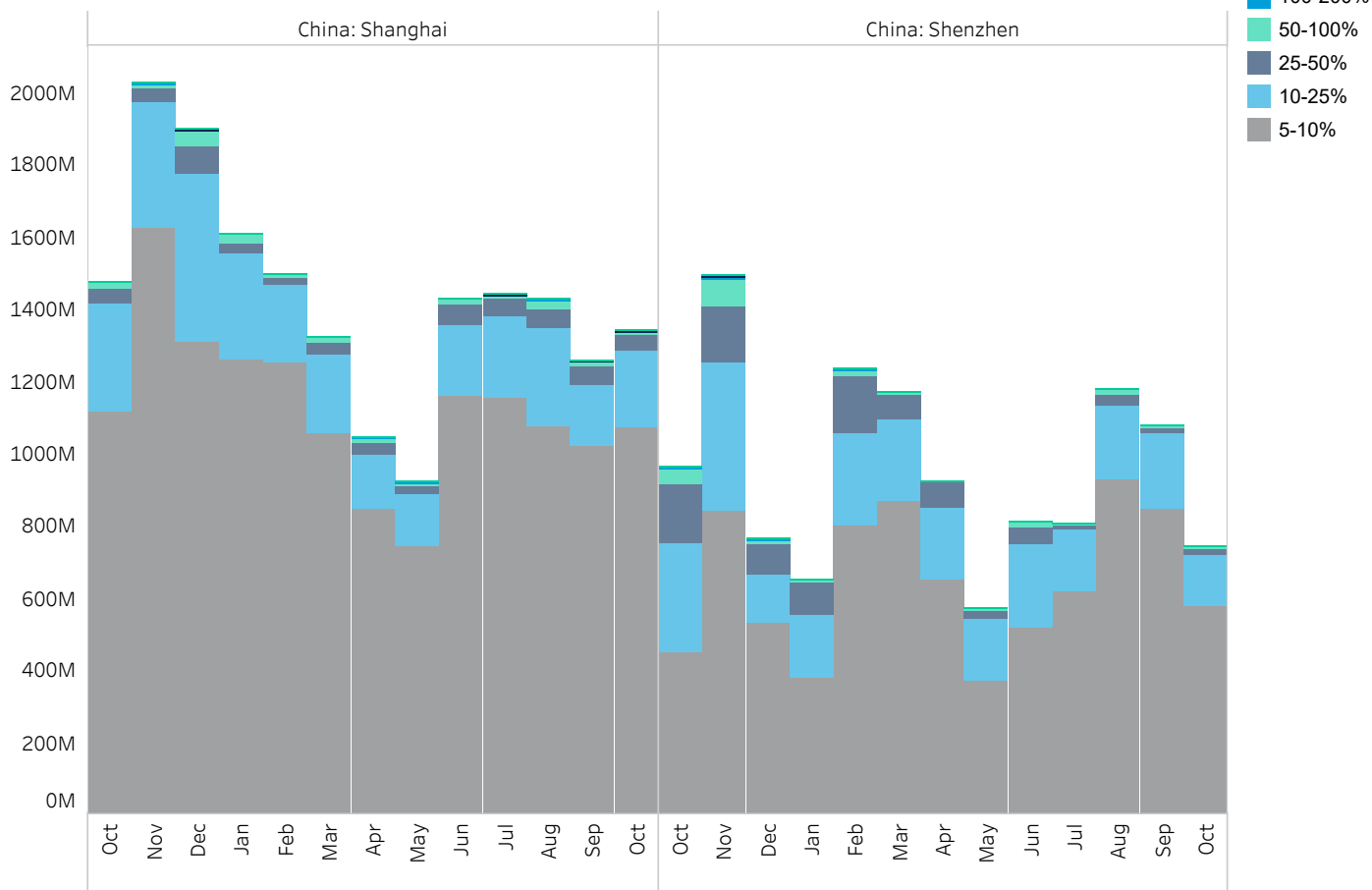
Median used for all metrics
 One minute volatility is calculated using the difference between the high and low price within a one minute time bin, divided by that bin's VWAP
 Source data: Virtu Financial

China

Average Daily Turnover (Notional USD)



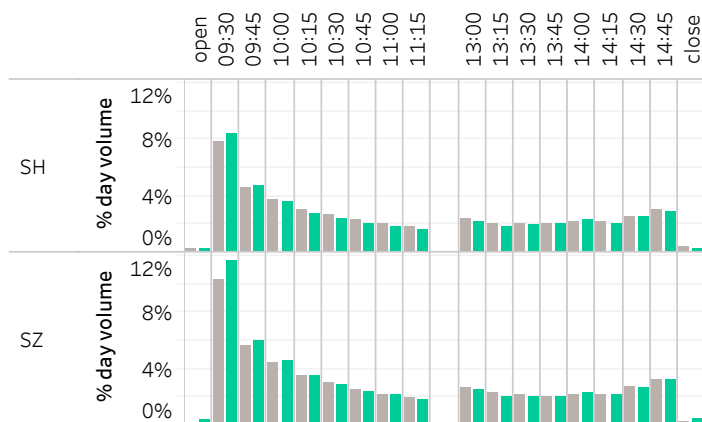
Large Sized Trades (>=5%ADT)



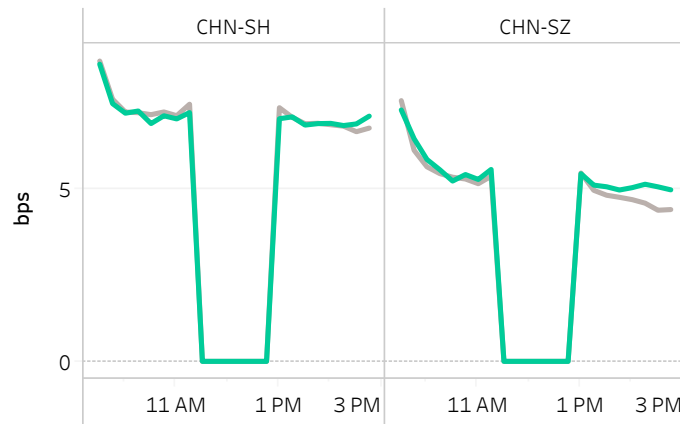
Source data: Virtu Financial

China

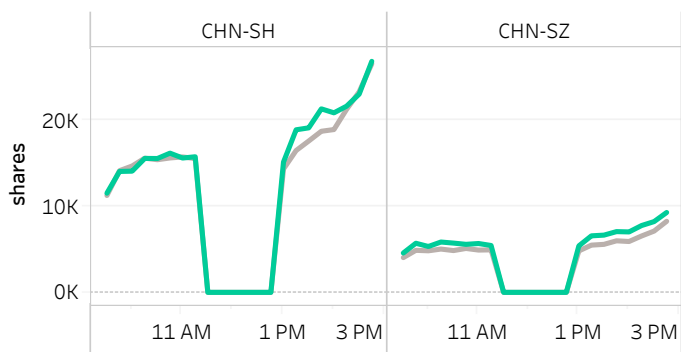
Volume Curve



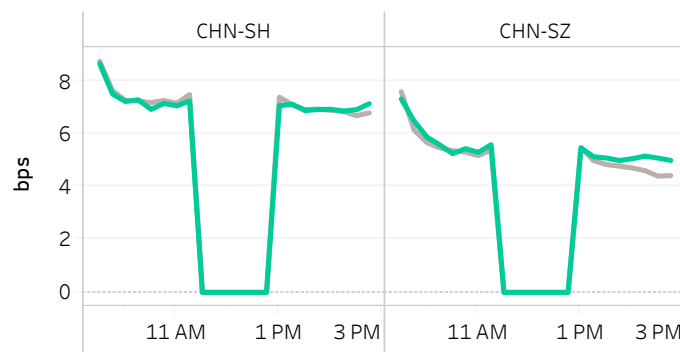
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg October 2023

Spread Bps

	CHN-SH							CHN-SZ						
	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHo..	8.1	8.2	8.3	8.0	8.1	7.6	8.2	7.0	7.0	7.1	6.8	6.9	6.3	7.0
MidDay	7.1	7.2	7.3	7.0	7.1	6.8	7.1	5.3	5.3	5.5	5.1	5.5	5.0	5.4
LastHalfHo..	6.5	6.7	6.7	6.6	6.9	6.7	7.1	4.3	4.4	4.3	4.3	4.8	4.6	5.0

One Minute Volatility Bps

FirstHalfHo..	24.0	26.8	21.8	29.2	29.5	27.0	25.6	24.8	26.4	22.6	30.3	27.5	28.3	28.2
MidDay	13.8	15.3	13.1	15.8	15.5	14.7	13.9	11.7	13.3	10.9	14.5	13.2	13.6	13.0
LastHalfHo..	13.1	14.9	13.2	14.2	14.1	13.8	14.2	10.4	12.3	10.8	11.8	11.3	11.3	12.7

Quotesize (shares)

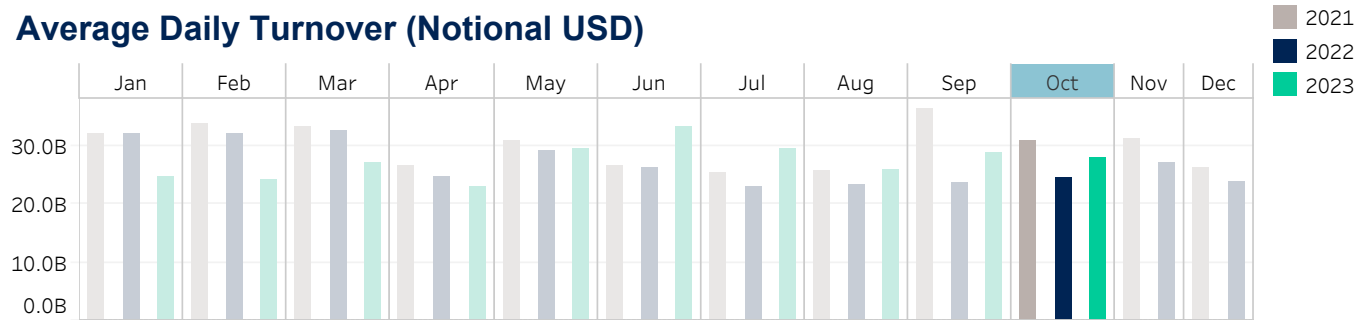
FirstHalfHo..	13,565	11,717	11,880	13,213	12,047	13,236	12,742	4,663	4,290	4,454	4,893	4,432	4,575	5,099
MidDay	15,771	13,954	14,210	17,111	14,014	16,898	16,209	5,174	4,869	5,189	5,637	4,897	5,593	5,775
LastHalfHo..	26,364	22,269	25,362	27,475	21,342	25,276	23,440	7,784	7,398	8,597	9,319	7,434	8,373	8,647

Median used for all metrics

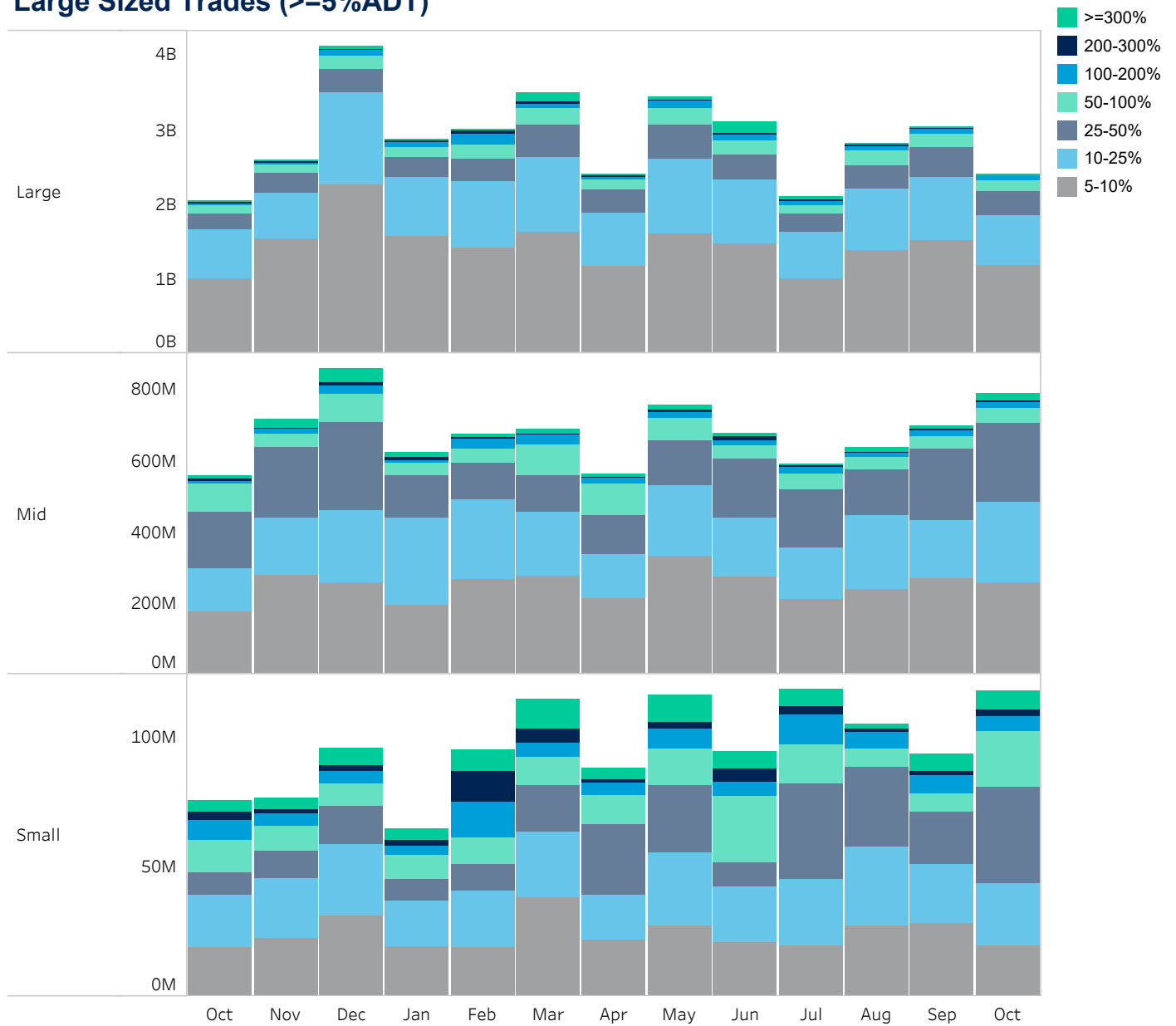
One minute volatility is calculated using the difference between the high and low price within a one minute time bin, divided by that bin's VWAP..

Japan

Average Daily Turnover (Notional USD)



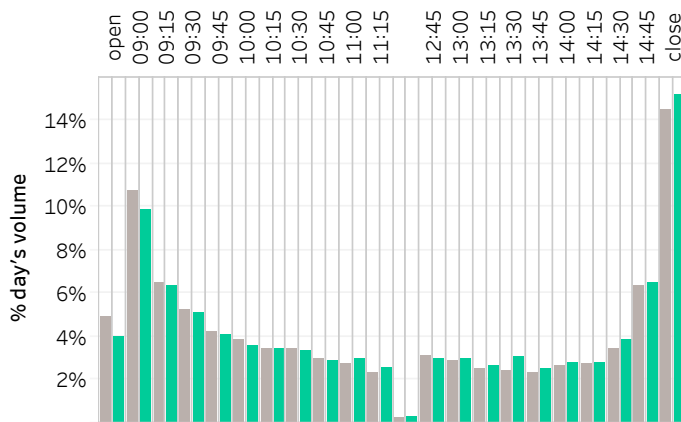
Large Sized Trades (>=5%ADT)



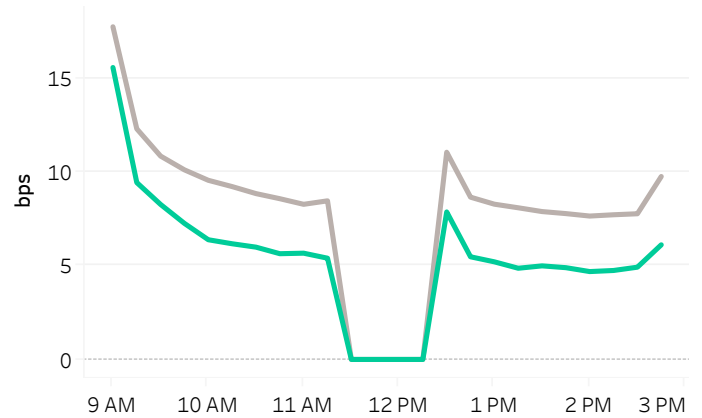
Source data: Virtu Financial

Japan

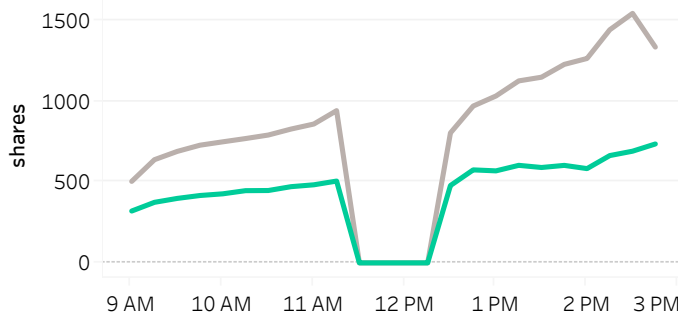
Volume Curve



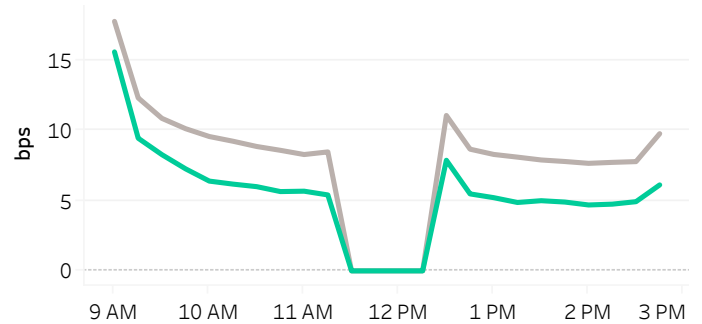
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg October 2023

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	15.6	15.3	16.0	15.3	15.5	12.4	11.7	12.2	11.4	13.0
MidDay	8.6	8.8	9.1	8.5	8.9	5.7	5.2	5.4	5.2	5.8
LastHalfHour	9.1	9.1	9.5	9.2	9.2	5.4	5.0	4.9	5.1	5.7

One Minute Volatility Bps

FirstHalfHour	16.2	16.1	16.3	15.4	16.4	14.8	14.2	14.8	14.1	16.0
MidDay	8.0	8.3	8.4	7.7	8.5	6.7	5.9	6.1	6.0	7.1
LastHalfHour	9.3	9.3	9.4	8.9	9.3	7.1	6.6	6.4	6.8	7.9

Quotesize (shares)

FirstHalfHour	550	593	556	564	569	427	386	379	388	340
MidDay	897	1,012	891	951	968	582	569	575	580	494
LastHalfHour	1,414	1,620	1,387	1,495	1,578	860	855	882	829	694

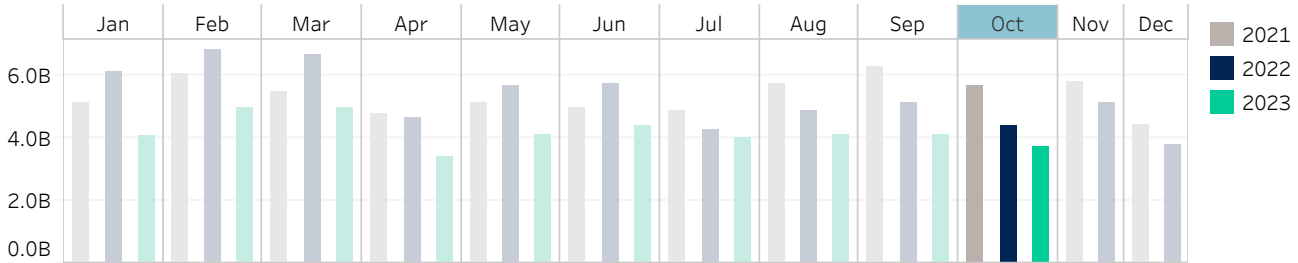
Median used for all metrics

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

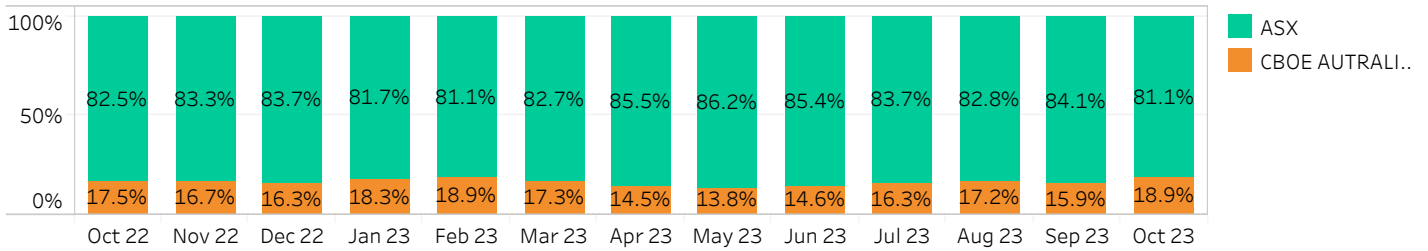
Source data: Virtu Financial

Australia

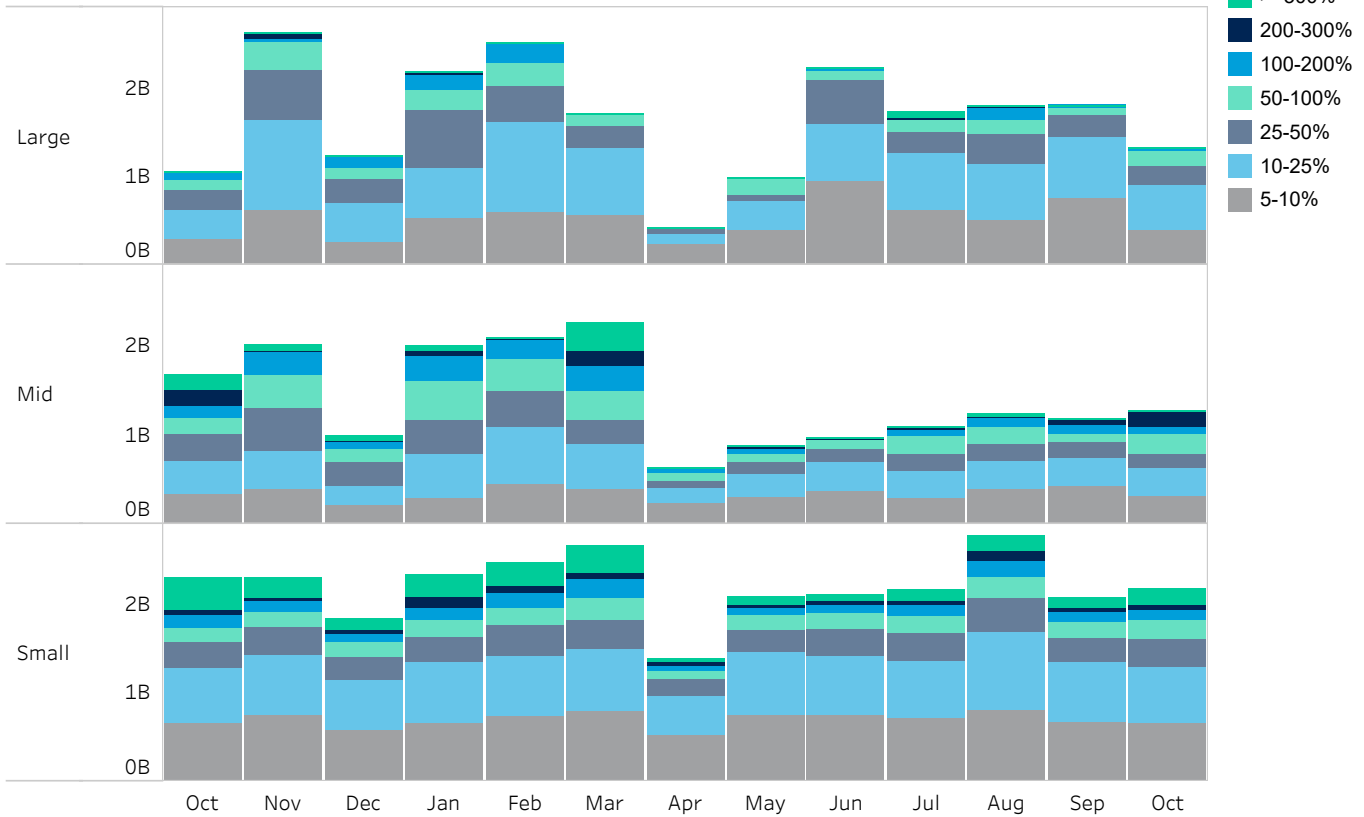
Average Daily Turnover (Notional USD)



Venue Market Share (Notional USD)



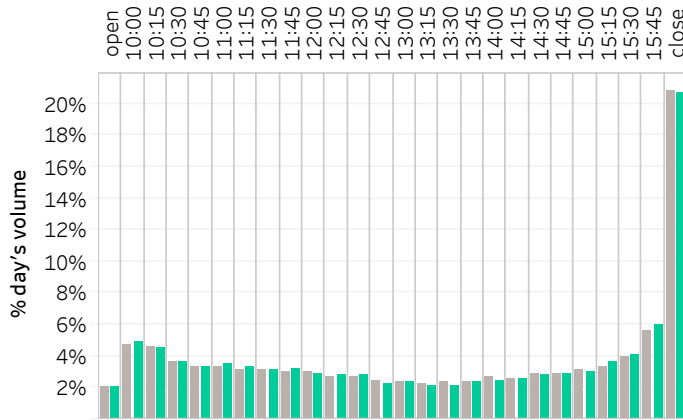
Large Sized Trades (>=5%ADT)



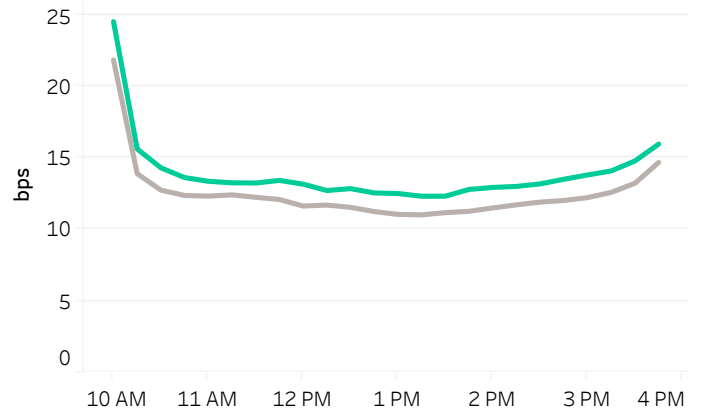
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Australia

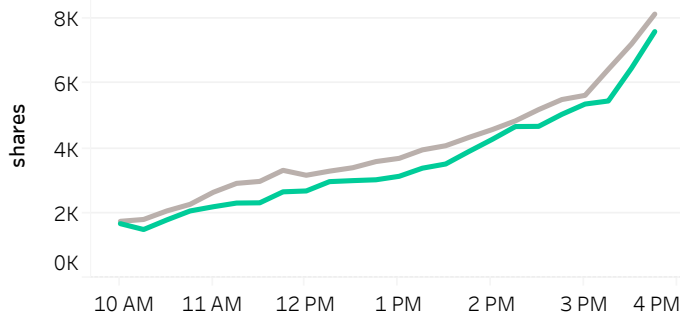
Volume Curve



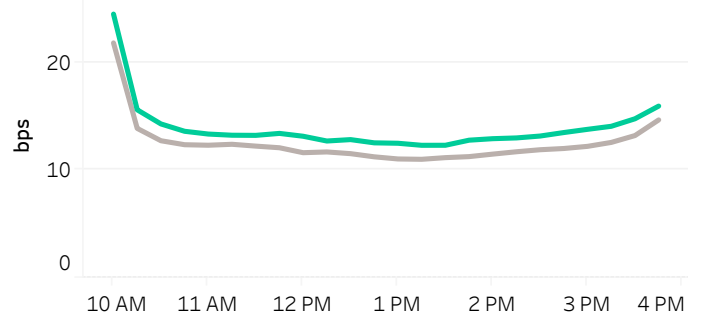
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg October 2023

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	15.9	16.8	17.4	17.4	17.0	16.6	16.6	16.6	17.0	18.7
MidDay	11.1	11.6	12.4	12.1	11.6	11.8	11.3	11.1	12.3	13.1
LastHalfHour	13.1	13.8	14.3	14.3	13.7	14.0	13.9	14.1	14.7	15.4

One Minute Volatility Bps

FirstHalfHour	19.1	21.3	21.7	20.6	19.1	18.7	18.0	18.9	17.9	19.4
MidDay	9.9	10.3	10.7	9.5	9.2	9.8	9.5	9.7	9.6	10.6
LastHalfHour	12.2	12.5	13.2	12.4	11.9	12.5	11.9	12.4	12.7	13.5

Quotesize (shares)

FirstHalfHour	1,629	1,640	1,864	2,108	1,897	1,901	1,672	1,703	1,756	1,601
MidDay	3,279	3,260	3,759	3,968	3,313	3,860	3,520	3,310	3,720	3,289
LastHalfHour	6,643	7,185	8,215	8,141	7,163	8,042	7,173	7,405	7,388	7,156

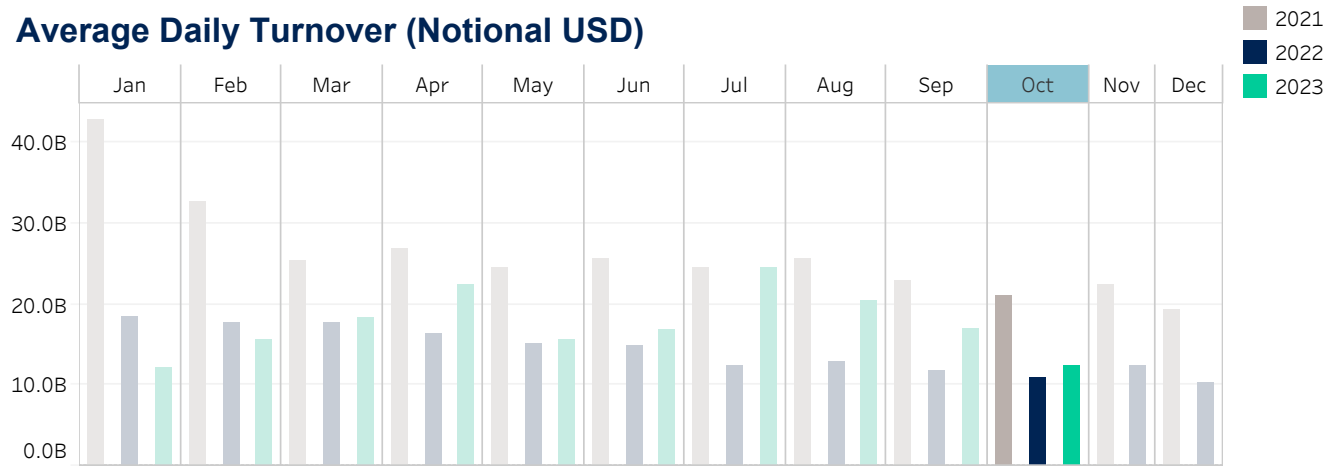
Median used for all metrics

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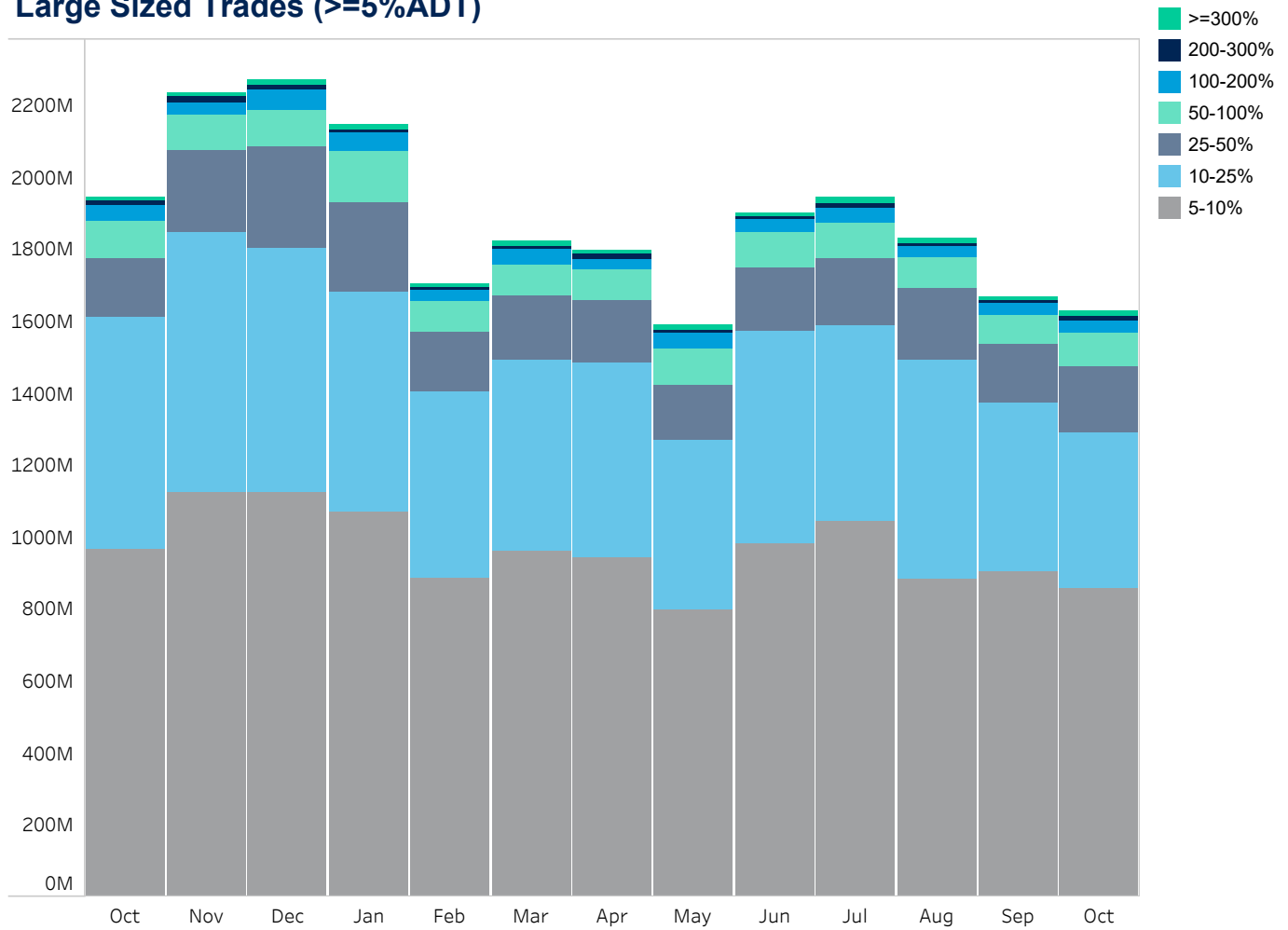
Source data: Virtu Financial

South Korea

Average Daily Turnover (Notional USD)



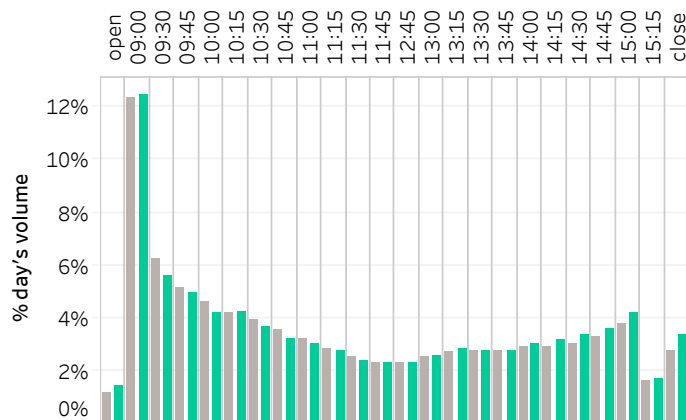
Large Sized Trades (>=5%ADT)



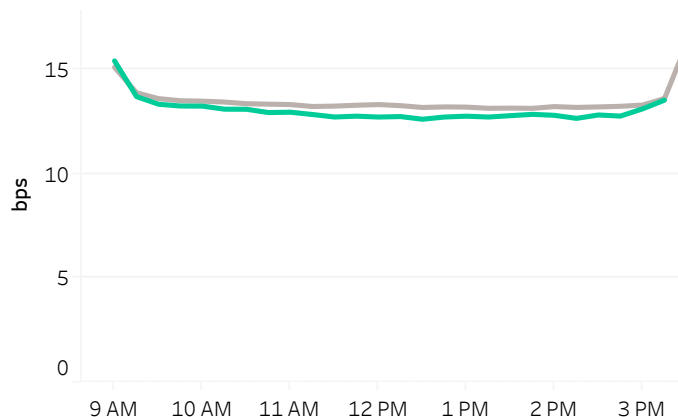
Source data: Virtu Financial

Korea

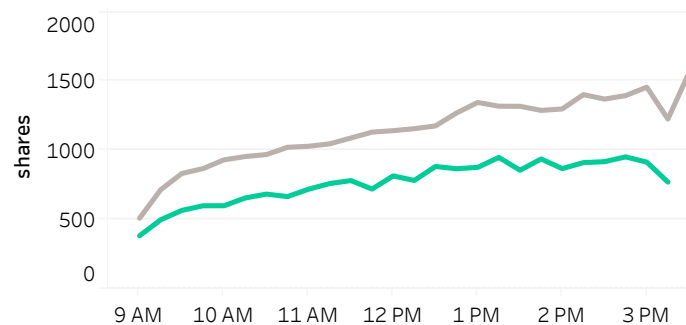
Volume Curve



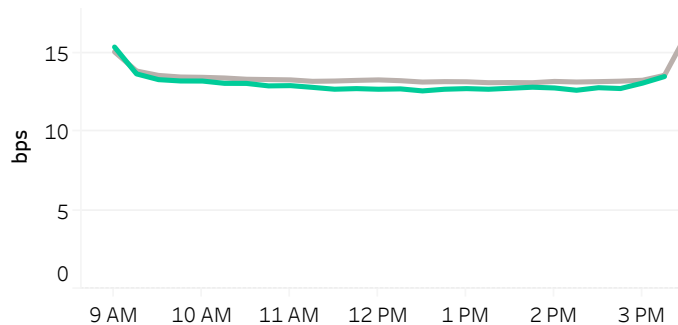
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg (Grey line) October 2023 (Green line)

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	17.4	14.7	14.7	14.3	14.0	13.7	14.3	14.2	13.9	14.5
MidDay	16.5	13.5	13.4	12.9	12.9	12.9	13.2	12.8	12.5	12.8
LastHalfHour	16.5	13.7	13.5	13.1	13.0	13.0	13.3	12.8	12.6	13.2

One Minute Volatility Bps

FirstHalfHour	29.4	23.6	24.9	25.6	22.7	21.5	27.1	26.7	23.3	27.5
MidDay	18.1	14.9	15.0	14.8	14.2	14.0	14.9	14.3	14.0	14.6
LastHalfHour	18.9	15.6	16.0	15.9	14.9	14.8	16.2	15.2	15.3	16.1

Quotesize (shares)

FirstHalfHour	727	655	595	579	580	634	563	491	491	444
MidDay	1,396	1,188	1,025	1,014	1,166	1,249	1,024	875	923	808
LastHalfHour	1,506	1,447	1,390	1,189	1,277	1,444	1,164	1,108	1,066	912

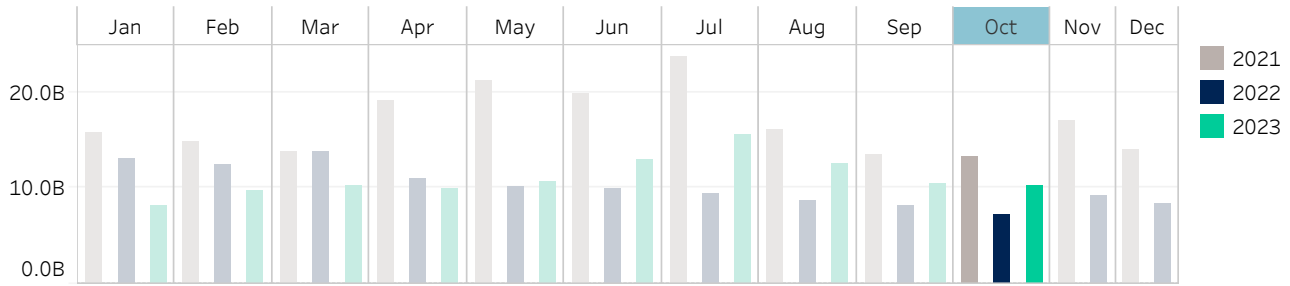
Median used for all metrics

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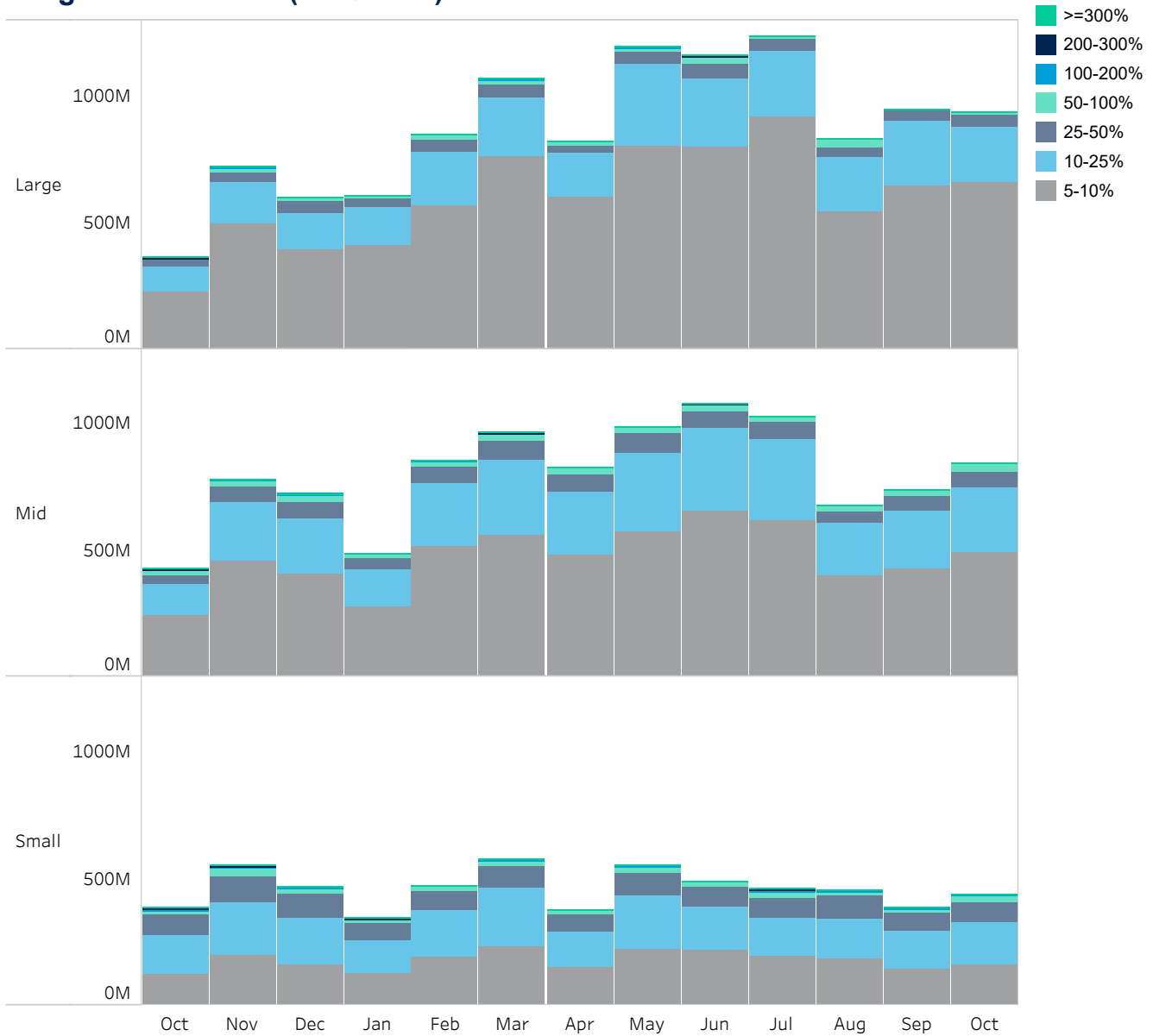
Source data: Virtu Financial

Taiwan

Average Daily Turnover (Notional USD)



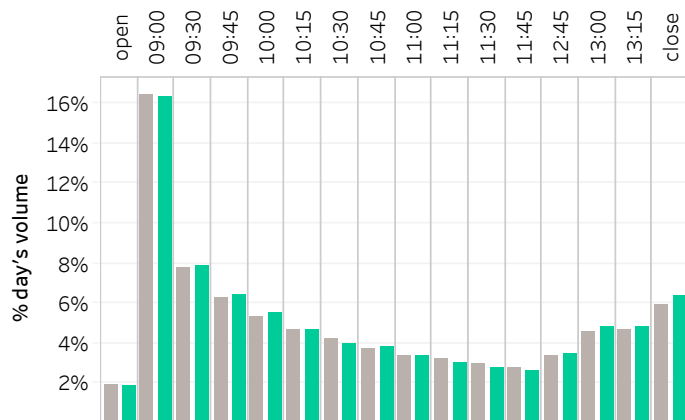
Large Sized Trades (>=5%ADT)



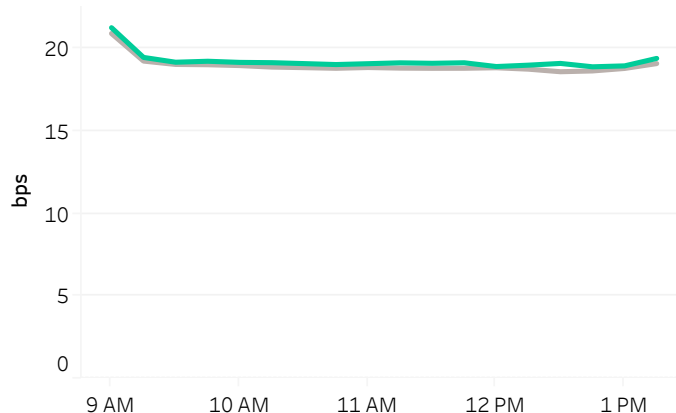
Source data: Virtu Financial

Taiwan

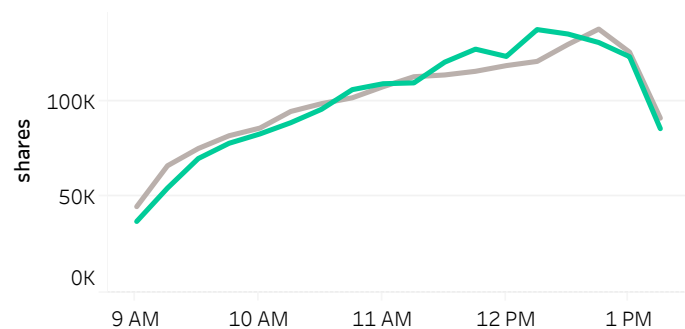
Volume Curve



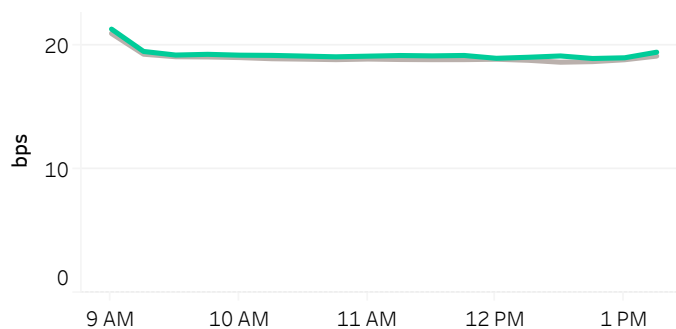
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg (Grey line) October 2023 (Green line)

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	20.2	20.6	20.1	19.9	19.8	19.3	19.6	20.5	19.9	20.3
MidDay	18.5	18.9	19.0	18.9	18.2	17.8	18.0	18.8	18.8	19.0
LastHalfHour	18.7	18.9	19.1	19.0	18.3	18.1	18.3	18.8	19.0	19.1

One Minute Volatility Bps

FirstHalfHour	31.1	31.3	31.6	30.3	31.3	31.2	34.5	37.1	32.6	33.3
MidDay	28.9	28.9	29.1	28.8	28.1	28.4	31.5	36.4	29.8	31.1
LastHalfHour	29.0	28.9	29.6	29.2	28.3	28.9	32.6	34.4	29.9	31.5

Quotesize (shares)

FirstHalfHour	59,008	57,971	61,802	53,240	60,150	57,819	51,257	44,628	44,984	46,915
MidDay	118,834	117,559	138,448	125,681	133,760	139,513	105,466	95,368	103,352	109,280
LastHalfHour	113,870	116,979	124,571	121,314	127,420	122,742	102,051	100,542	105,527	109,997

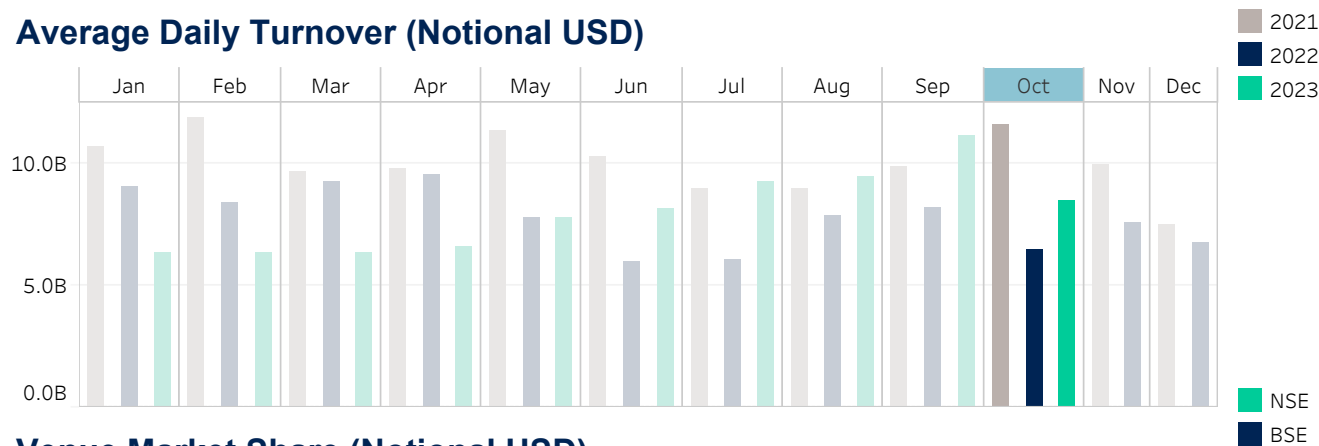
Median used for all metrics

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

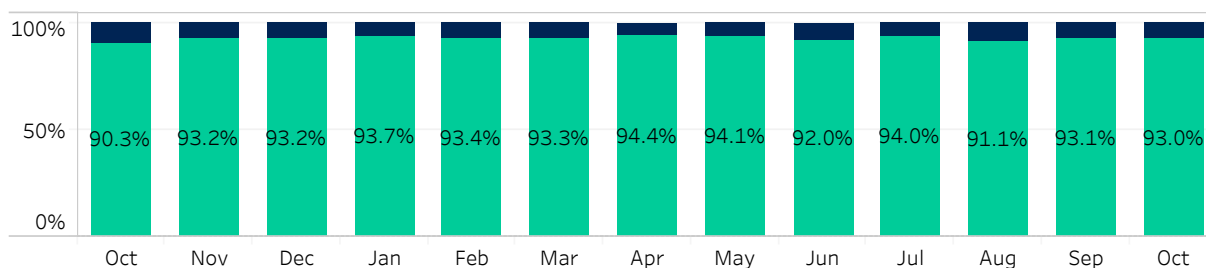
Source data: Virtu Financial

India

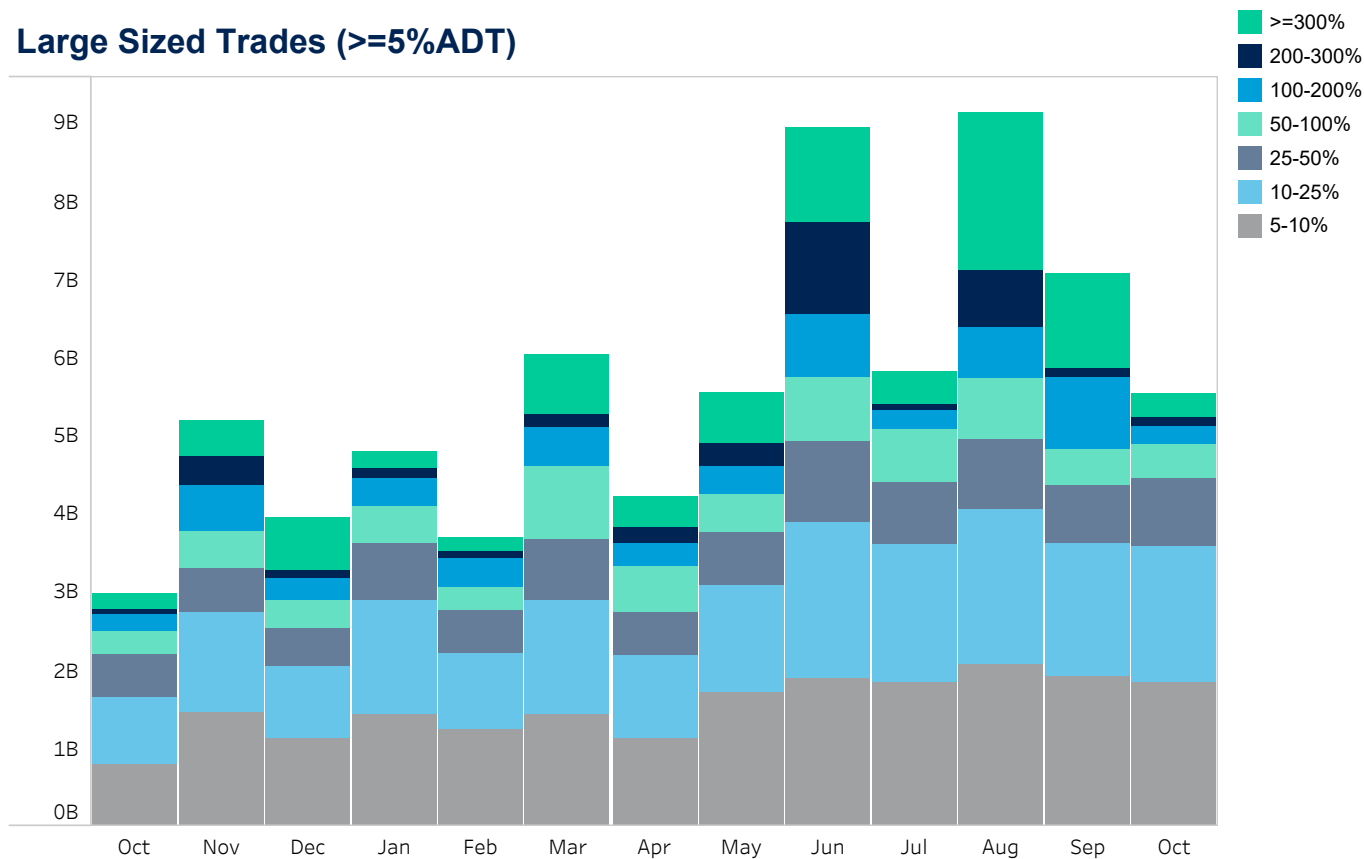
Average Daily Turnover (Notional USD)



Venue Market Share (Notional USD)

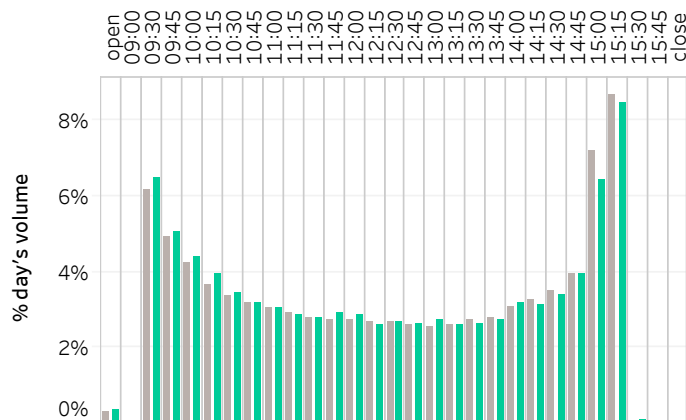


Large Sized Trades (>=5%ADT)

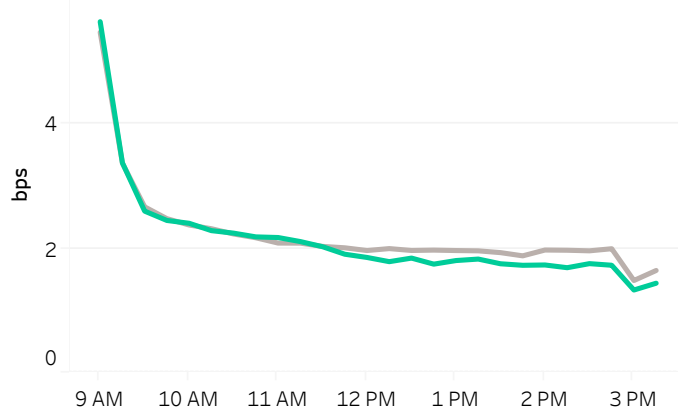


India

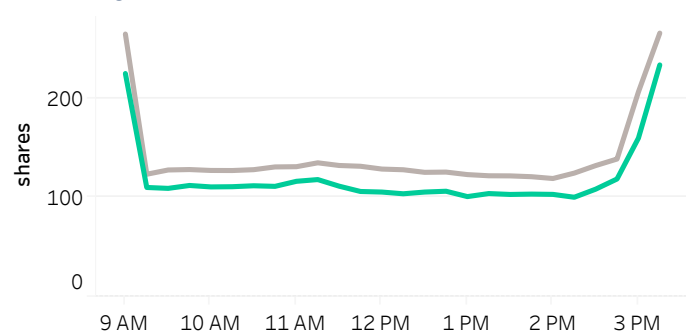
Volume Curve



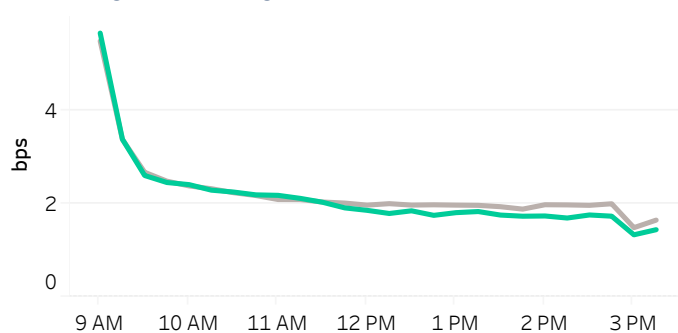
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg (Brown line) October 2023 (Green line)

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	3.5	3.7	3.4	3.4	3.3	3.1	3.5	3.5	3.5	3.4
MidDay	2.1	2.2	2.1	2.1	2.0	1.9	1.9	1.9	2.0	1.8
LastHalfHour	1.7	1.8	1.7	1.7	1.6	1.5	1.5	1.5	1.4	1.4

One Minute Volatility Bps

FirstHalfHour	17.6	16.2	16.3	18.8	19.7	19.1	17.2	16.6	15.2	17.3
MidDay	7.7	7.4	7.6	8.2	8.4	8.2	7.1	7.0	6.8	7.6
LastHalfHour	9.9	9.6	9.6	10.1	10.3	10.5	9.1	9.2	9.1	9.5

Quotesize (shares)

FirstHalfHour	121.8	119.8	123.5	133.9	142.2	143.1	131.7	114.8	117.2	112.5
MidDay	128.7	124.1	124.2	143.1	151.0	151.7	124.1	118.6	120.7	108.5
LastHalfHour	228.8	249.5	253.0	256.4	262.0	268.0	231.3	206.0	230.8	197.4

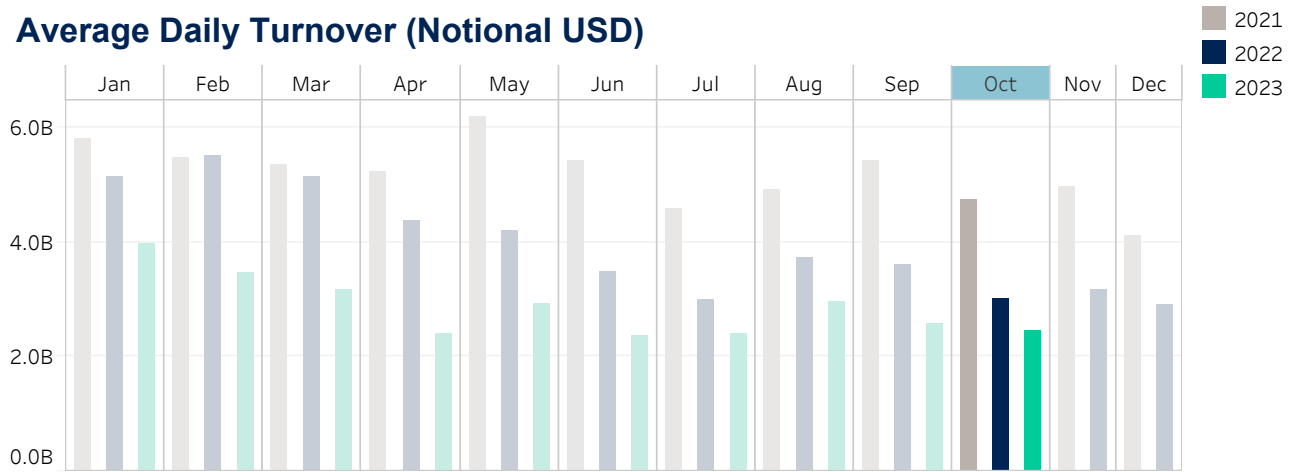
Median used for all metrics

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

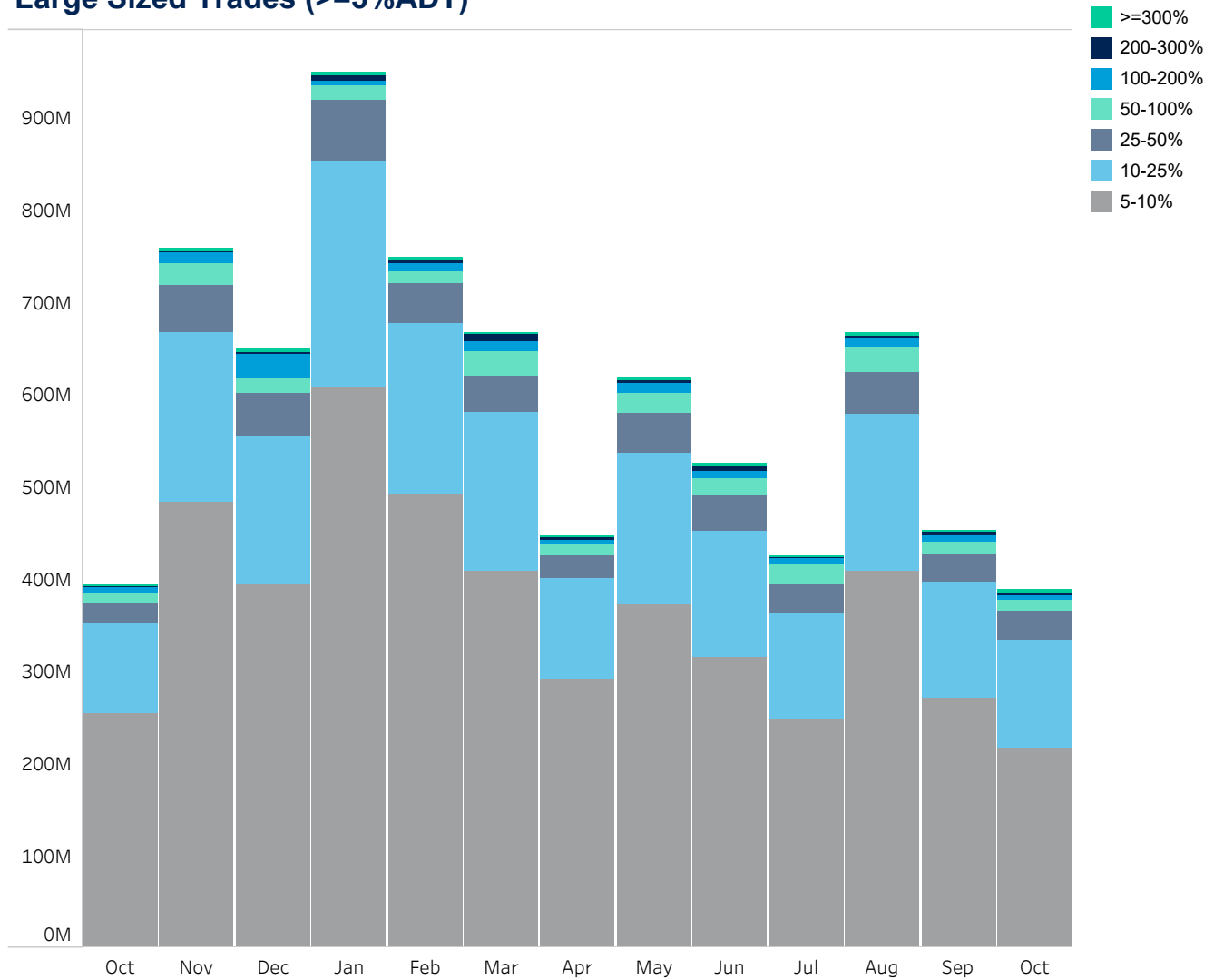
Source data: Virtu Financial

Thailand

Average Daily Turnover (Notional USD)



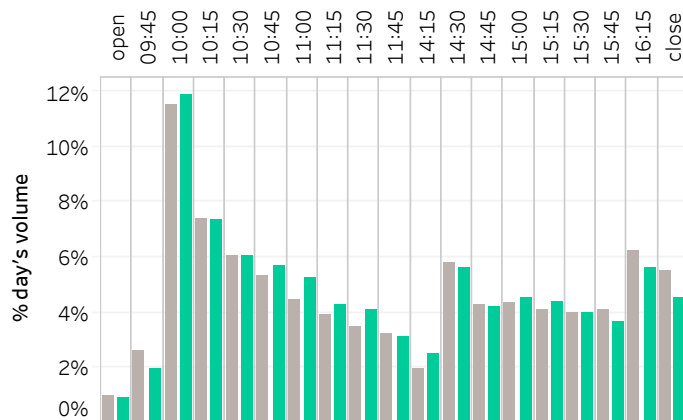
Large Sized Trades (>=5%ADT)



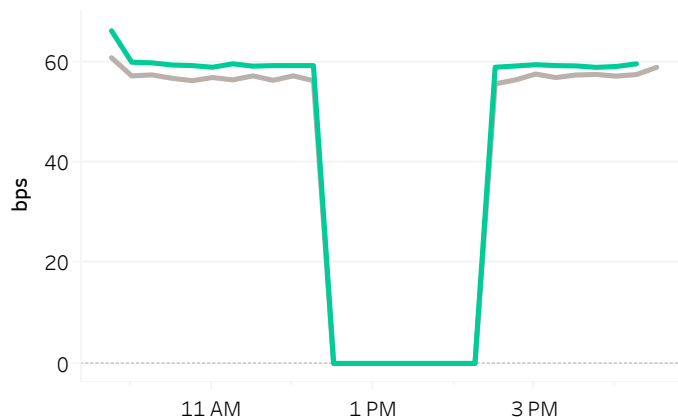
Source data: Virtu Financial

Thailand

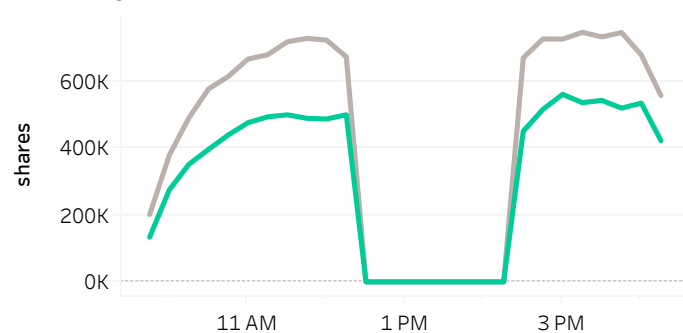
Volume Curve



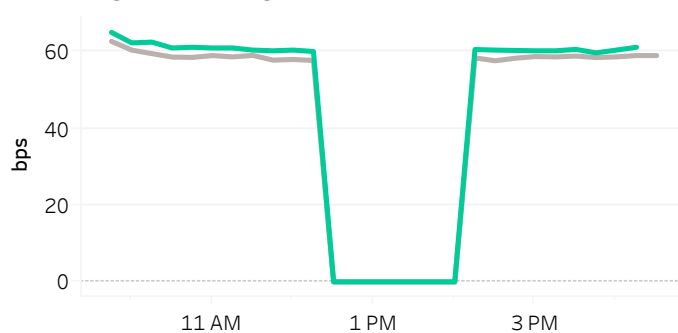
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg October 2023

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	58.0	56.4	59.5	59.2	65.1	65.6	61.9	62.3	61.9	64.3
MidDay	54.1	54.1	56.0	55.8	58.4	59.3	56.7	56.3	58.7	59.3
LastHalfHour	54.2	54.8	56.7	56.0	58.7	59.3	58.0	57.0	59.0	59.3

One Minute Volatility Bps

FirstHalfHour	64.3	61.9	67.8	60.8	63.9	63.5	60.4	61.7	61.2	64.3
MidDay	55.4	55.4	57.6	57.0	60.4	60.8	58.7	58.3	60.1	60.4
LastHalfHour	56.0	56.0	58.3	57.6	60.1	60.8	59.0	58.7	59.0	60.8

Quotesize (shares)

FirstHalfHour	284,548	236,082	219,491	200,957	156,753	157,282	170,264	205,336	202,658	146,123
MidDay	865,107	737,967	634,271	624,930	536,008	510,989	542,854	699,283	749,767	485,941
LastHalfHour	812,231	679,491	552,716	570,432	472,021	490,710	518,167	619,275	626,196	465,624

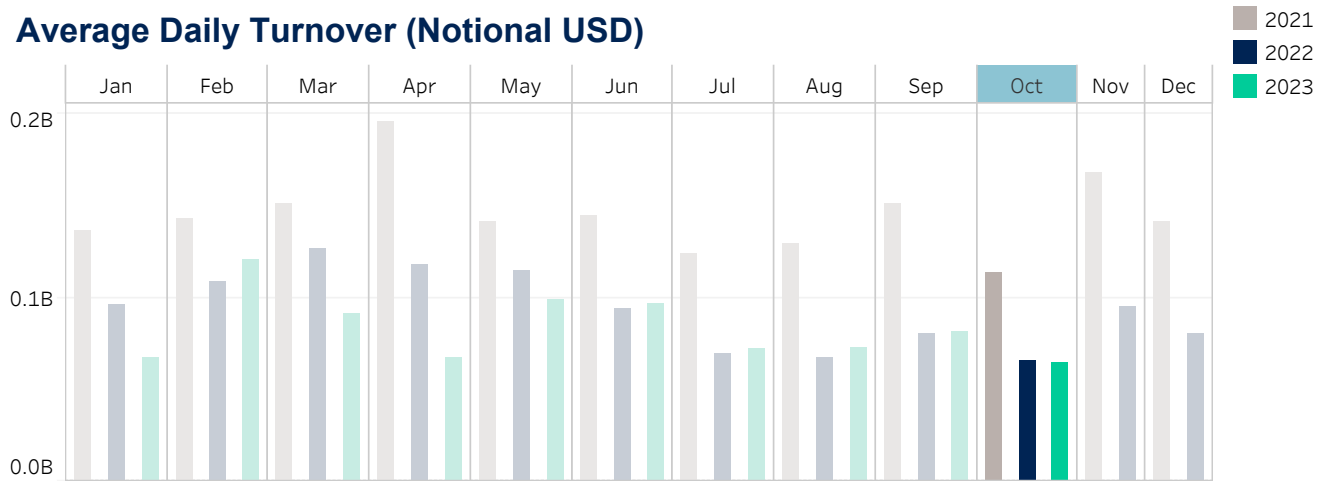
Median used for all metrics

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

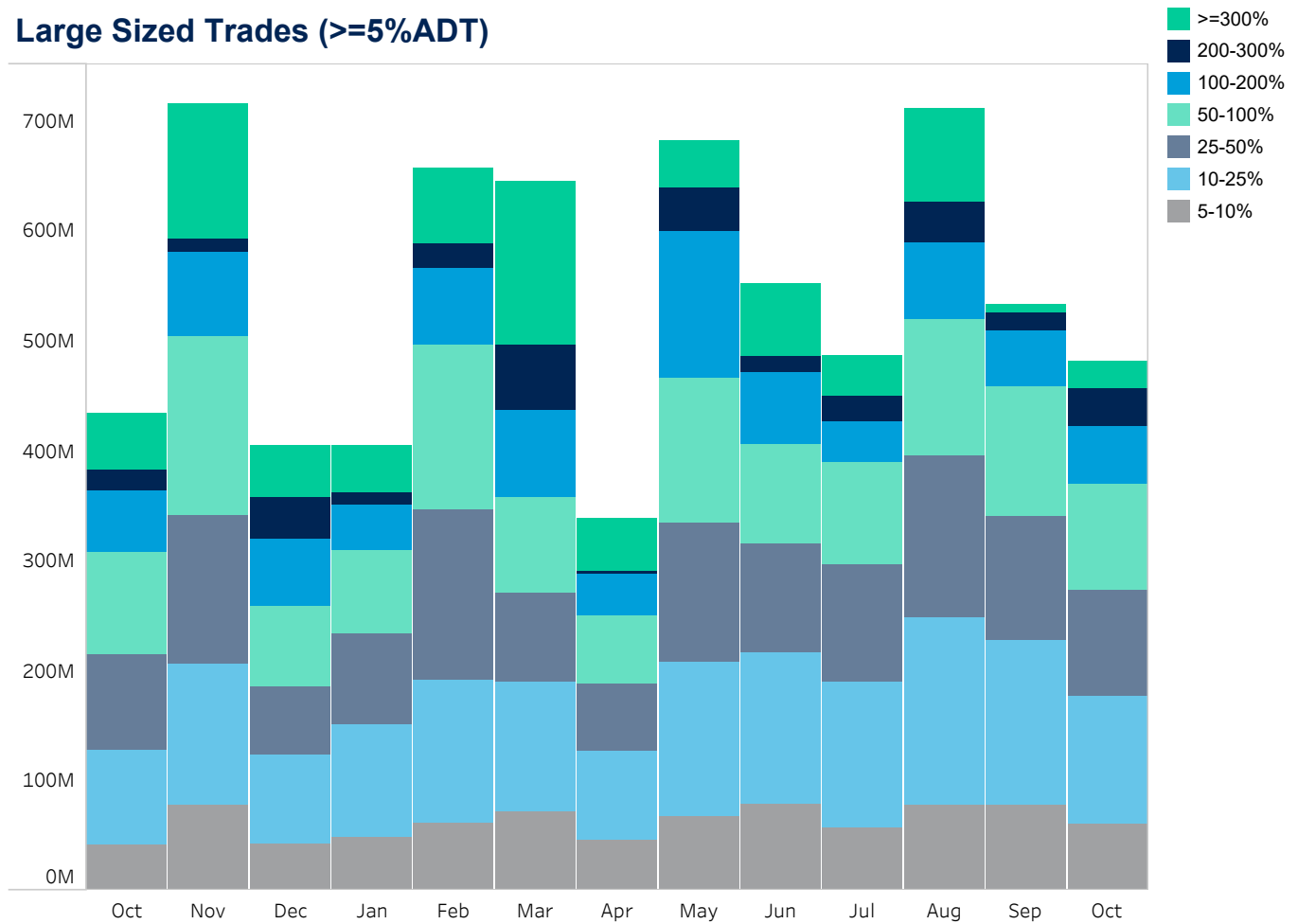
Source data: Virtu Financial

New Zealand

Average Daily Turnover (Notional USD)



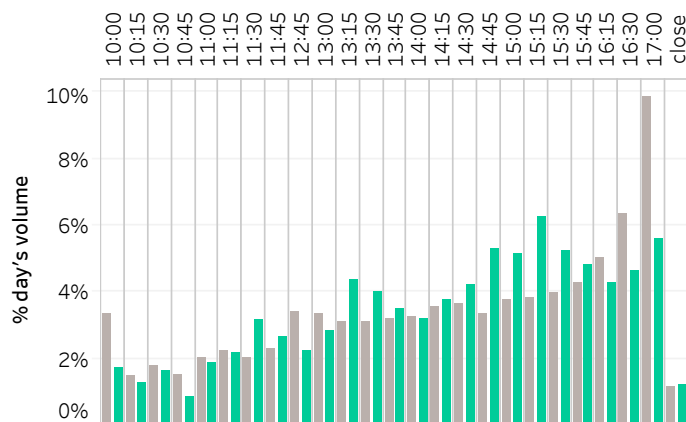
Large Sized Trades (>=5%ADT)



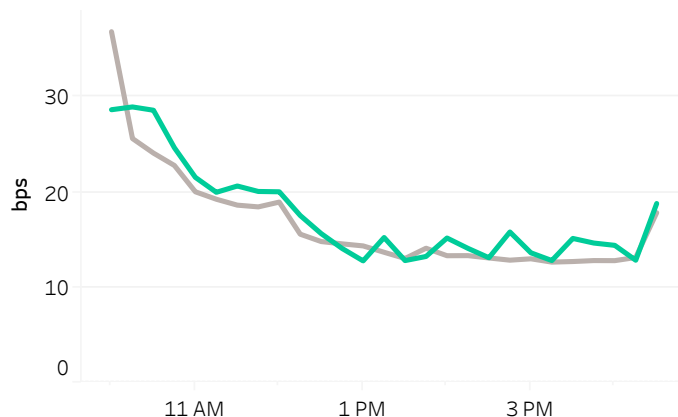
Source data: Virtu Financial

New Zealand

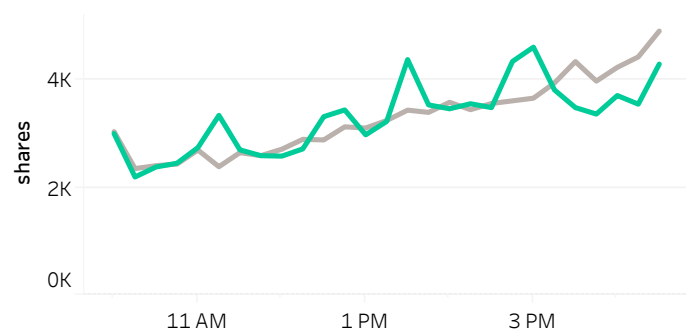
Volume Curve



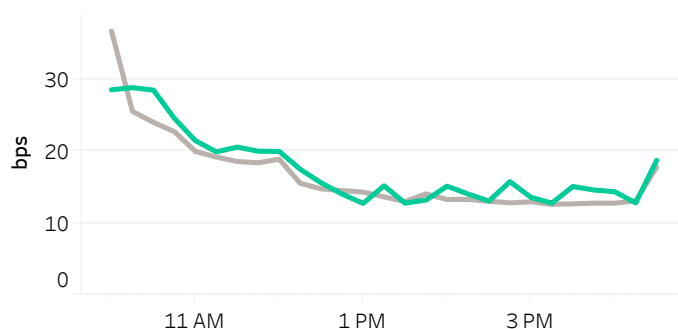
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ October 2023

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	28.6	36.2	32.4	23.3	33.5	23.1	27.3	26.0	30.3	28.2
MidDay	13.0	14.2	13.5	13.8	13.7	13.3	13.5	14.5	12.4	14.7
LastHalfHour	17.6	19.1	17.5	18.4	17.4	17.7	17.9	18.0	16.3	19.7

One Minute Volatility Bps

FirstHalfHour	19.2	20.9	23.1	19.0	18.6	15.9	18.4	19.0	20.9	23.1
MidDay	12.9	15.1	13.8	15.2	13.3	13.3	12.8	13.7	12.5	15.0
LastHalfHour	18.7	23.1	19.7	19.0	18.2	18.5	18.3	18.4	19.4	20.8

Quotesize (shares)

FirstHalfHour	2,352	2,572	2,470	2,669	2,496	2,658	2,980	2,981	2,681	3,043
LastHalfHour	5,554	6,137	4,537	5,071	4,691	5,091	4,326	4,567	3,988	4,171
MidDay	2,964	3,634	3,092	3,102	3,512	3,372	3,016	3,363	3,098	3,456

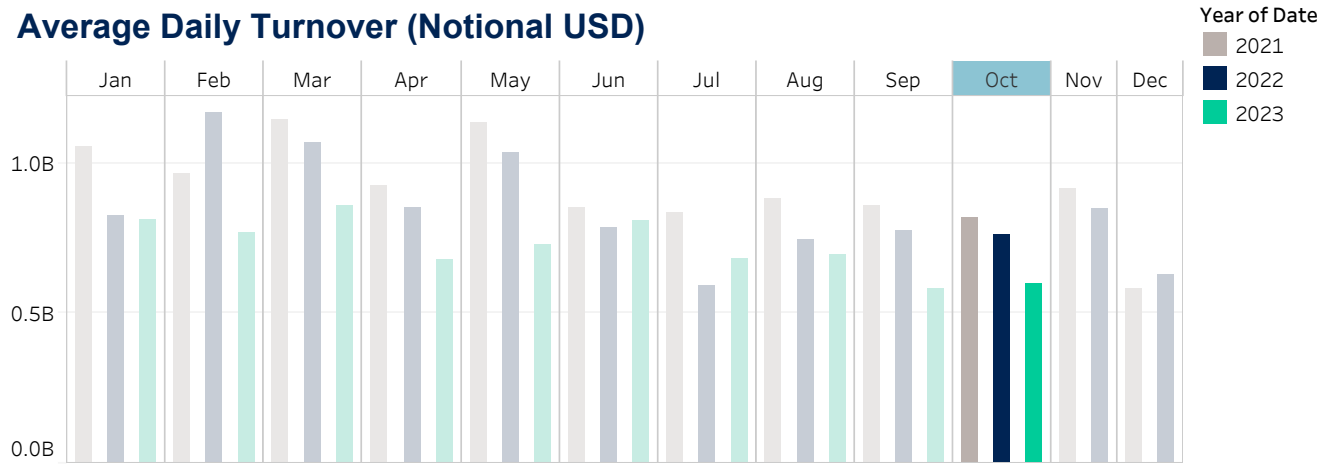
Median used for all metrics

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

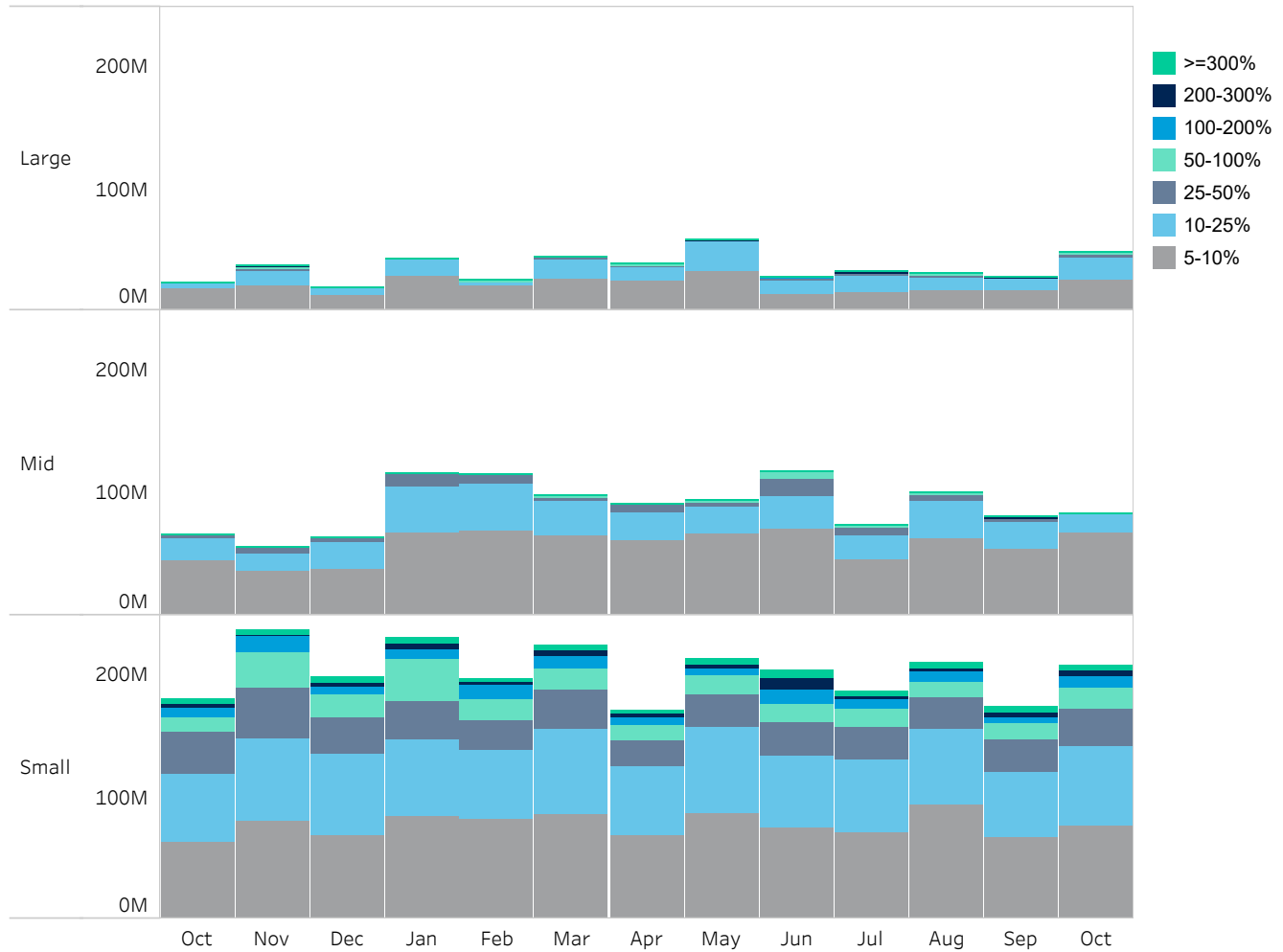
Source data: Virtu Financial

Singapore

Average Daily Turnover (Notional USD)



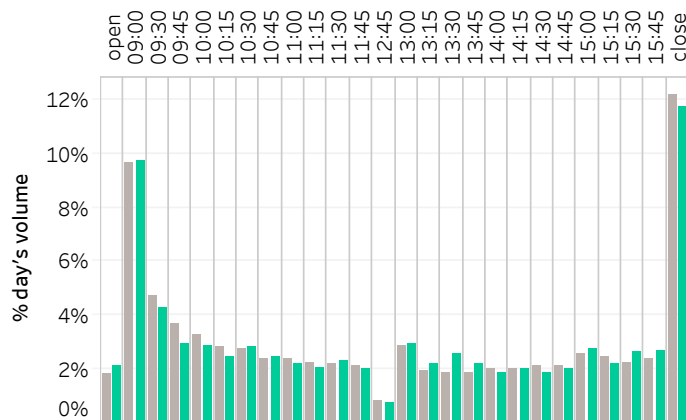
Large Sized Trades (>=5%ADT)



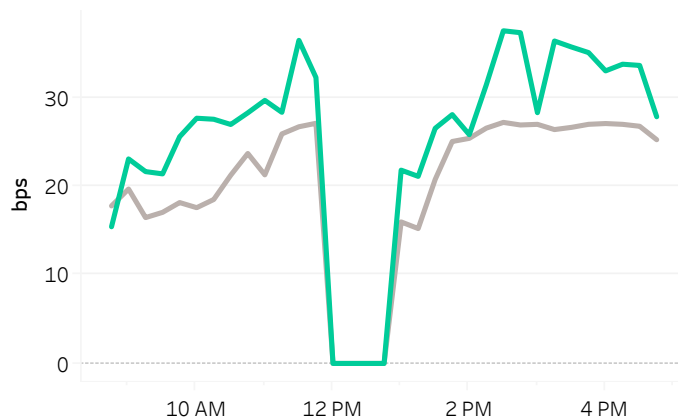
Source data: Virtu Financial

Singapore

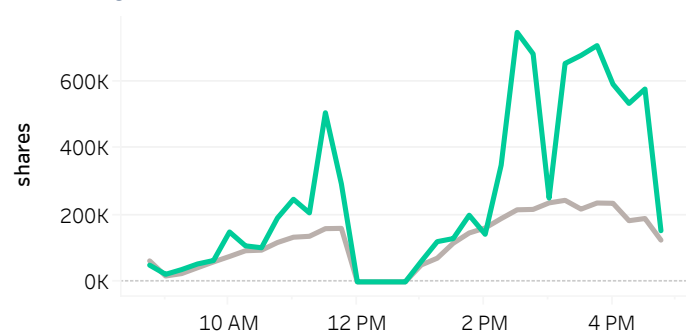
Volume Curve



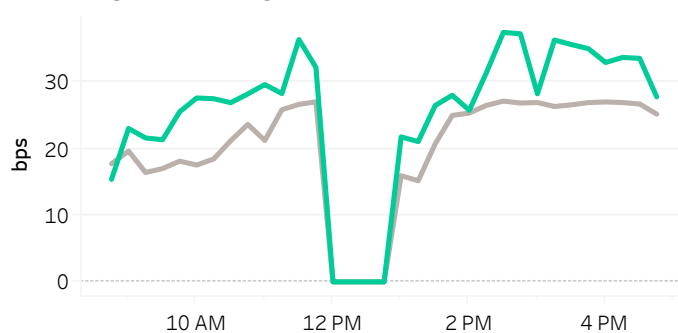
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



Rolling 12 Months Avg (brown line) | October 2023 (green line)

Spread Bps

	2023									
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
FirstHalfHour	19.8	14.5	16.6	14.2	16.4	16.6	14.6	19.1	16.2	15.8
MidDay	24.3	25.0	27.2	27.0	27.0	24.5	17.5	27.1	26.7	28.5
LastHalfHour	24.2	25.1	25.3	26.8	26.3	25.8	26.4	26.3	26.9	29.5

One Minute Volatility Bps

FirstHalfHour	37.7	43.5	34.5	34.4	35.7	41.7	41.7	51.4	31.3	50.6
MidDay	25.2	25.4	28.4	27.6	27.5	26.9	26.3	27.6	27.0	31.3
LastHalfHour	24.8	25.5	27.6	27.1	26.8	27.4	27.1	28.0	27.4	32.6

Quotesize (shares)

FirstHalfHour	55,481	49,035	126,098	48,869	57,725	86,605	39,923	30,361	36,050	50,518
MidDay	140,704	159,315	169,961	327,685	231,700	112,054	126,638	232,427	176,852	239,708
LastHalfHour	109,921	138,744	141,752	256,196	170,897	139,765	143,803	181,844	179,377	226,408

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

Glossary

Volume curve - average of value traded during the month, per 15-minute time bin.

Intraday volatility - Median of difference between the high and low price within a one minute time bin, divided by that bin's VWAP

Spread - median of bid-ask spread of the index.

Quotesize - Median bid and ask size of all stocks in the index.

Average daily turnover - average daily value traded in the market.

Indices used:

Australia: ASX 200

Japan: TOPIX

China: CSI 300

Hong Kong: Hang Seng Index

Taiwan: TWSE

India: NIFTY 50

Korea: MSCI Korea 25/50 Index

New Zealand: MSCI New Zealand IMI 25/50 Index

Singapore: MSCI Singapore Index

Thailand: MSCI Thailand IMI 25/50 Index

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