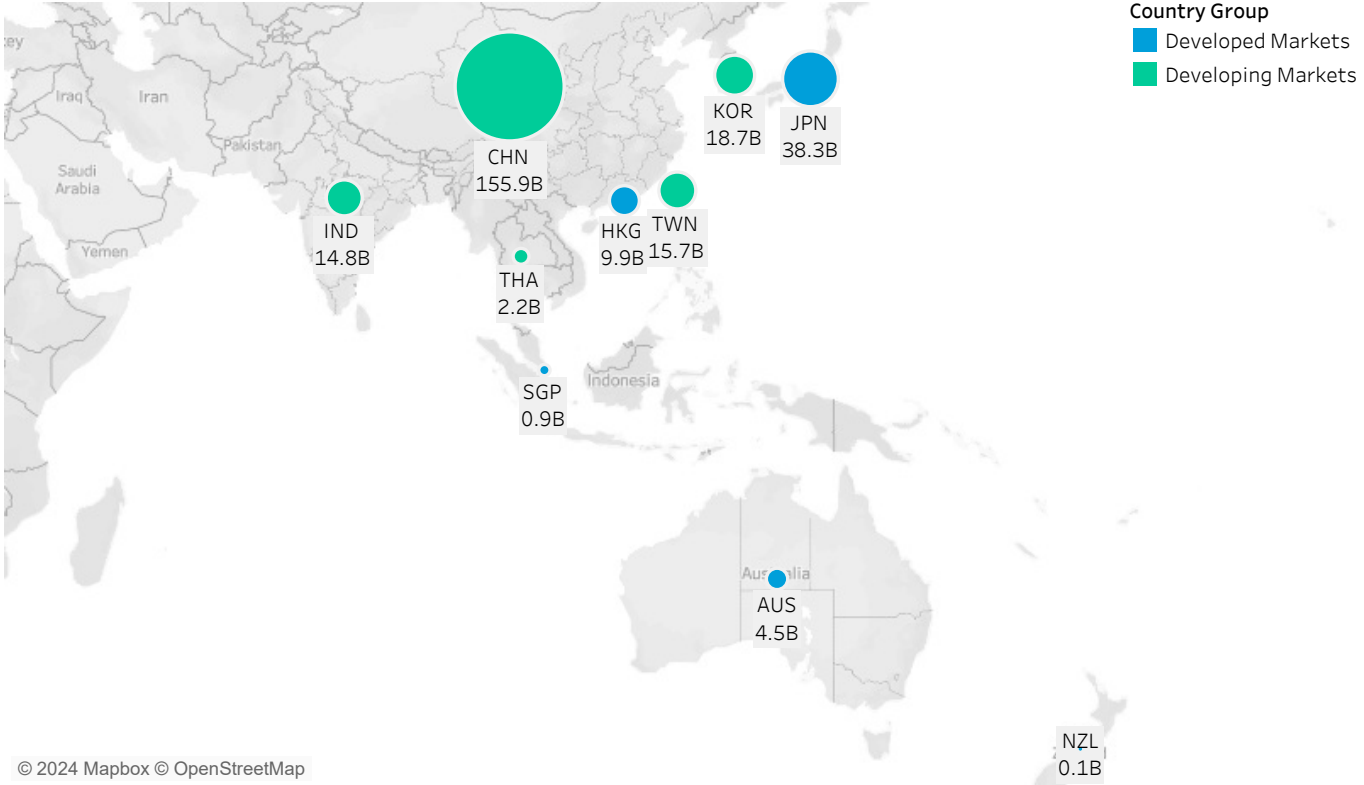


# February 2024 APAC Market Structure Monthly

## Average Daily Turnover (Notional USD)



© 2024 Mapbox © OpenStreetMap

## Country Breakdowns

Hong Kong

China

Japan

Australia

South Korea

Taiwan

India

Thailand

New Zealand

Singapore

# Feb 2024

## APAC Market Structure Monthly

### MICROSTRUCTURE OBSERVATIONS

- Overall average daily turnover (ADT) saw a noticeable uptick compared to January 2024. This increase in trading activity was led by Australia and China where ADT increased by +36% and +33% respectively month-over-month (MoM). While ADT in Japan and India in February soared to historic 3-year high level, the Hong Kong market remained quiet during the recent Lunar New Year holidays.
- Last month we observed more adverse trading conditions in Korea, namely we saw wider spreads and higher volatility throughout the day. This continued to be the case in February, particularly in the first half hour of continuous trading where volatility ticked up 22% MoM.

### APAC MARKET STRUCTURE NEWS

#### **Thailand to Extend Trading Hours by Reducing Intermission by 30 Minutes, Effective 25 March 2024**

The Stock Exchange of Thailand has announced the extension of its trading hours by reducing the intermission period by 30 minutes, with the afternoon trading session opening 30 minutes earlier. The close auction timings remain the same. This will take effect on 25 March 2024.

[https://media.set.or.th/rulebook/circular-letter/PorKor.\(Wor\)2024RevisionofTradingHours.pdf](https://media.set.or.th/rulebook/circular-letter/PorKor.(Wor)2024RevisionofTradingHours.pdf)

#### **Hong Kong Exchange and Clearing Limited Lists Its First Covered Call ETF**

On 29 Feb 2024, Hong Kong Exchange and Clearing Limited (HKEX) announced Hong Kong's first listings of covered call ETFs, expanding its Exchange Traded Product (ETP) offerings. According to HKEX, the average daily turnover (ADT) of its ETP market reached HKD 14 Billion (\$1.8B USD) in 2023, up 17 percent from a year earlier.

[https://www.hkex.com.hk/News/News-Release/2024/240229news?sc\\_lang=en](https://www.hkex.com.hk/News/News-Release/2024/240229news?sc_lang=en)

#### **Philippine Stock Exchange to Add Post-Market 15-Minute VWAP Trading Window**

On 16 Feb 2024, Philippine Stock Exchange (PSE) announced to open a Volume Weighted Average Price (VWAP) trading session from 1 March 2024. The PSE VWAP trading may be done within a 15-minute window after the market's run-off period, or from 3:00 p.m. to 3:15 p.m. local time (GMT+8), using the VWAP price computed by the PSE and executed by authorized salesperson or traders of a PSE Trading Participant (TP).

<https://www.pse.com.ph/pse-to-implement-vwap-trading-on-march-1/>

To learn more, contact your Virtu 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

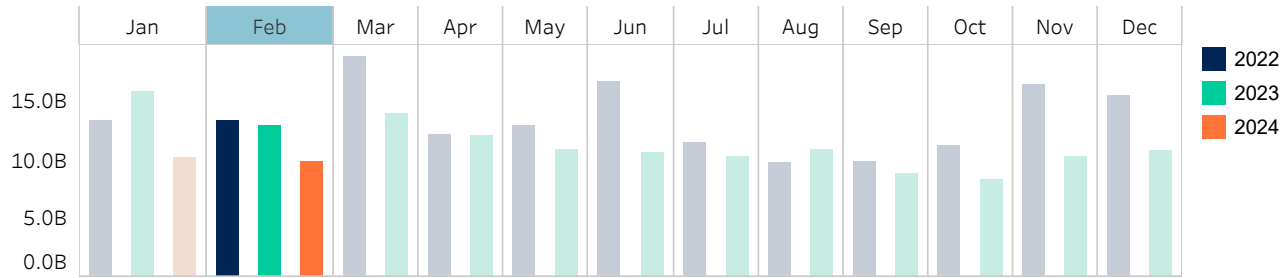
[info@virtu.com](mailto:info@virtu.com) | [www.virtu.com](http://www.virtu.com)

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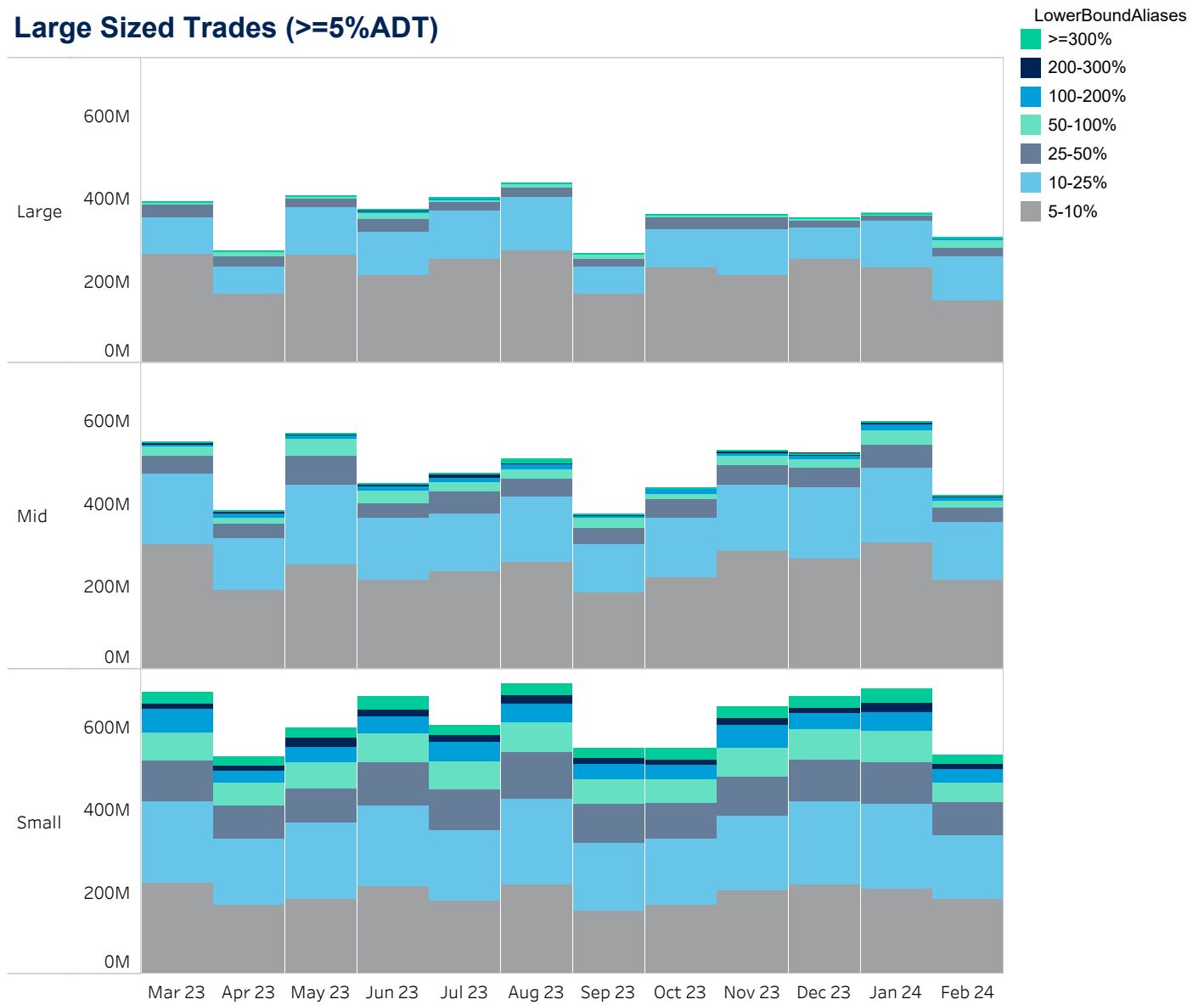
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# Hong Kong

## Average Daily Turnover (Notional USD)



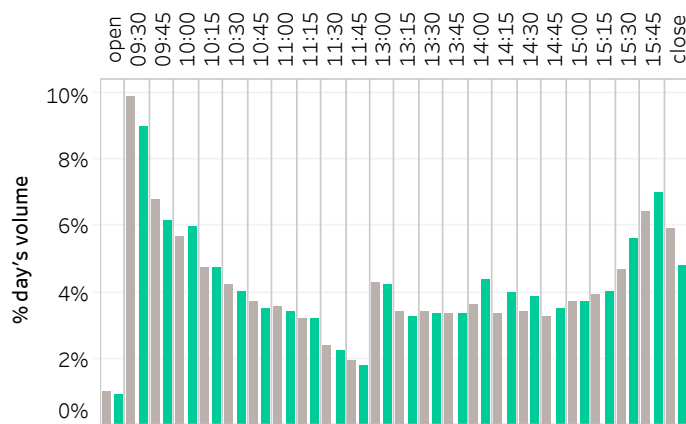
## Large Sized Trades (>=5%ADT)



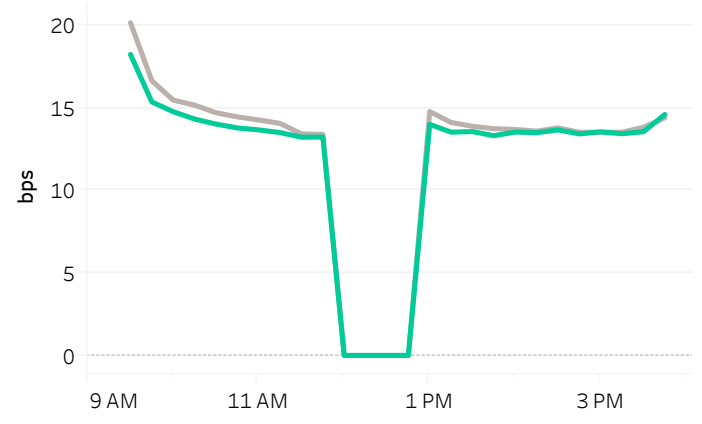
Source data: Virtu Financial

# Hong Kong

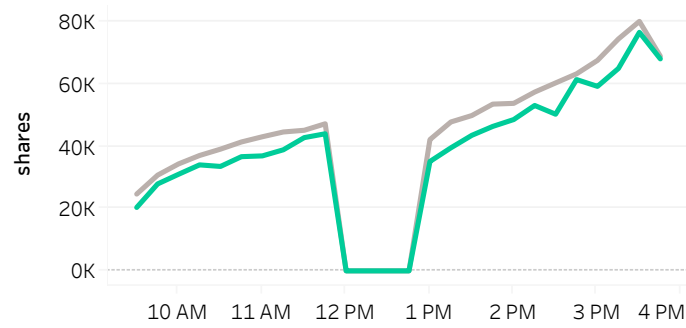
## Volume Curve



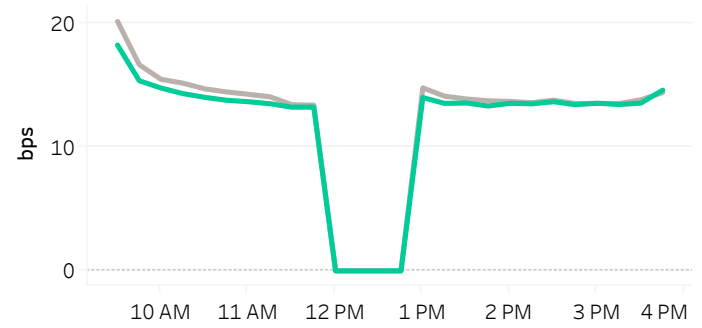
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2024

## Spread Bps

	2023						2024						
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
FirstHalfHo..	18.0	19.3	19.5	19.5	19.6	18.3	18.7	18.1	18.4	17.1	17.0	16.7	16.8
MidDay	12.8	13.7	14.5	14.0	14.6	13.5	14.0	14.4	14.7	13.4	14.2	14.4	13.6
LastHalfHo..	13.2	14.0	14.1	14.1	14.9	13.8	13.9	14.8	15.0	14.3	15.2	15.1	14.3

## One Minute Volatility Bps

FirstHalfHo..	25.3	28.1	25.8	25.2	24.1	23.6	25.8	23.8	24.3	24.3	24.1	25.7	26.8
MidDay	15.9	16.2	16.1	15.7	16.2	15.4	15.8	15.6	16.0	15.2	15.9	16.5	16.1
LastHalfHo..	16.7	17.3	16.4	16.3	17.2	15.7	16.1	16.5	16.6	16.9	17.6	17.3	16.4

## Quotesize (shares)

FirstHalfHo..	27,296	30,646	31,145	29,974	26,818	25,478	27,693	28,391	27,601	23,593	24,188	25,581	23,164
MidDay	44,622	43,572	50,780	47,975	41,143	42,053	45,912	52,298	46,953	46,472	52,781	52,997	41,722
LastHalfHo..	74,936	77,473	76,329	74,417	64,333	69,285	74,613	78,499	77,442	72,387	70,619	79,360	72,944

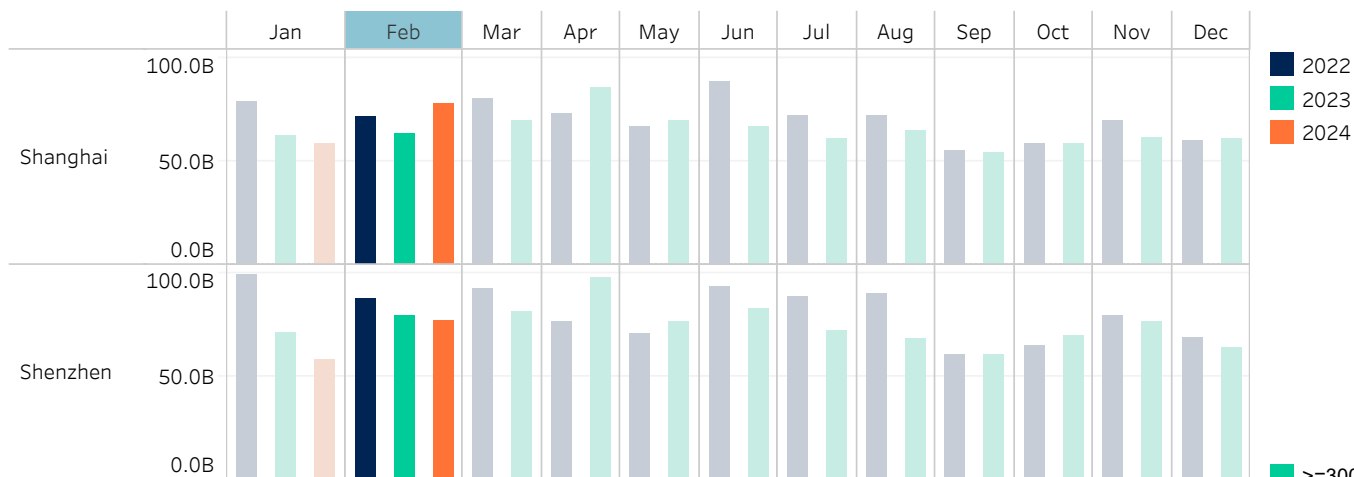
Median used for all metrics

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

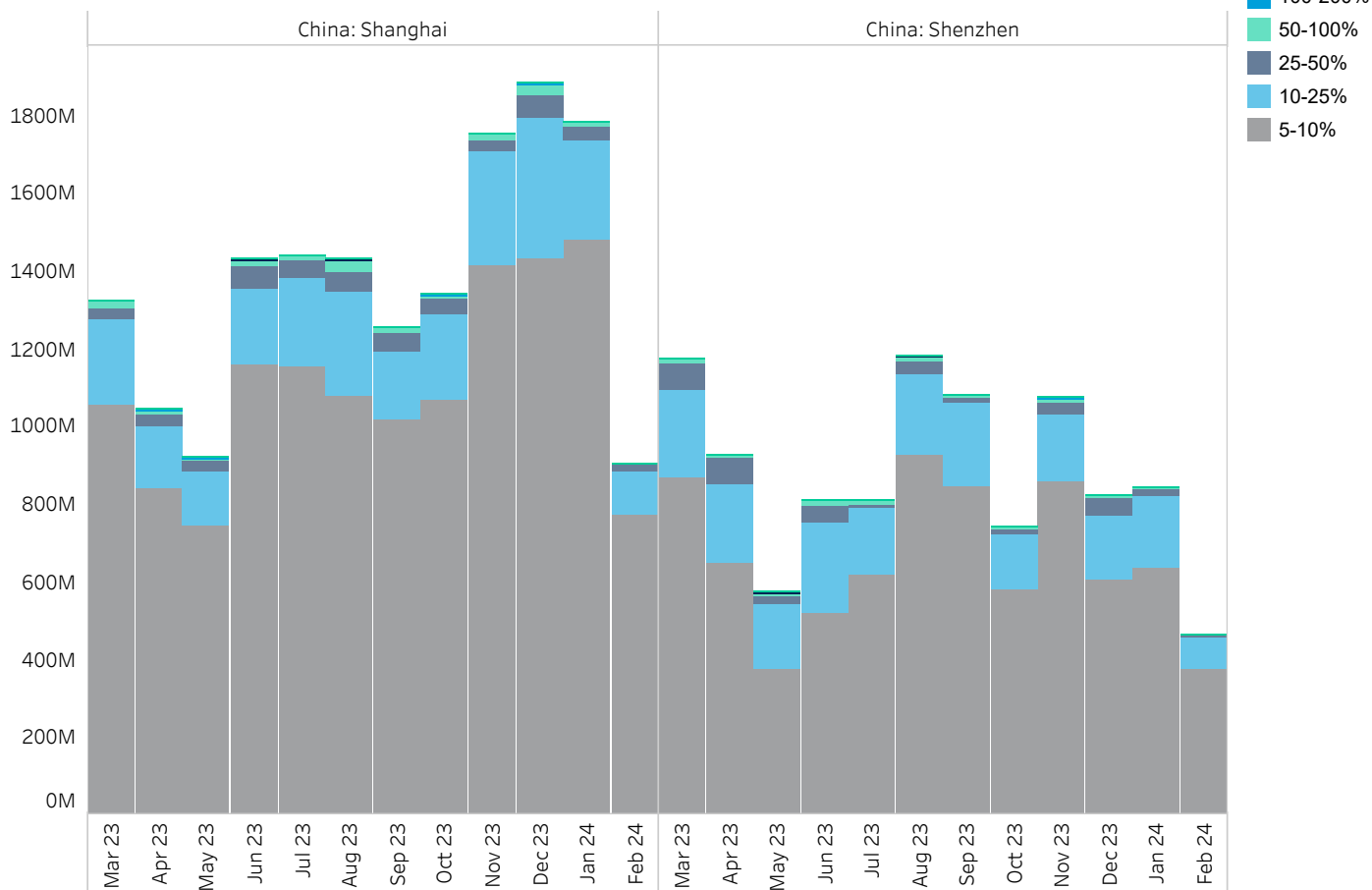
Source data: Virtu Financial

# China

## Average Daily Turnover (Notional USD)



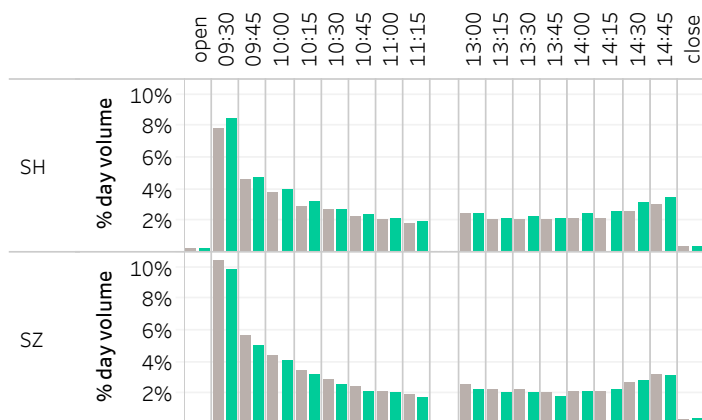
## Large Sized Trades (>=5%ADT)



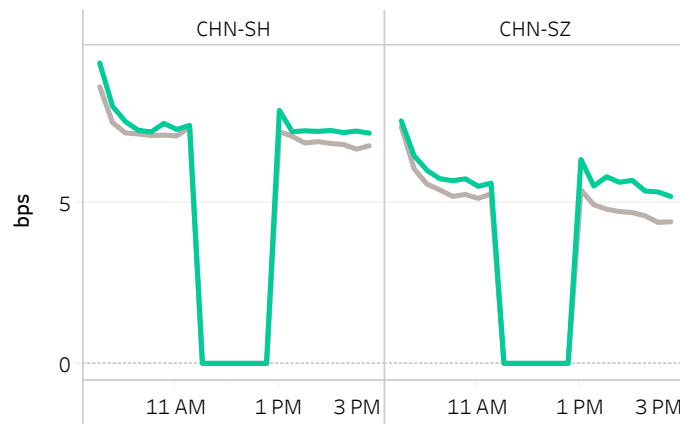
Source data: Virtu Financial

# China

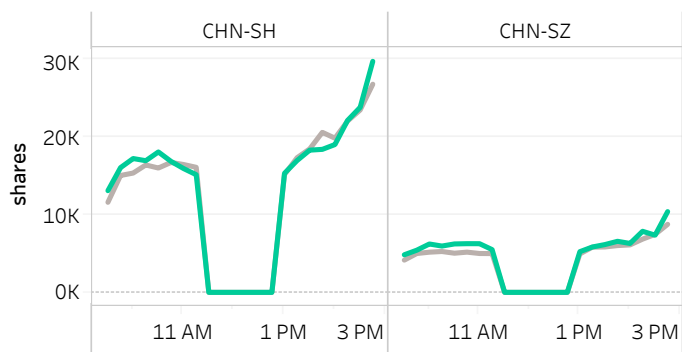
## Volume Curve



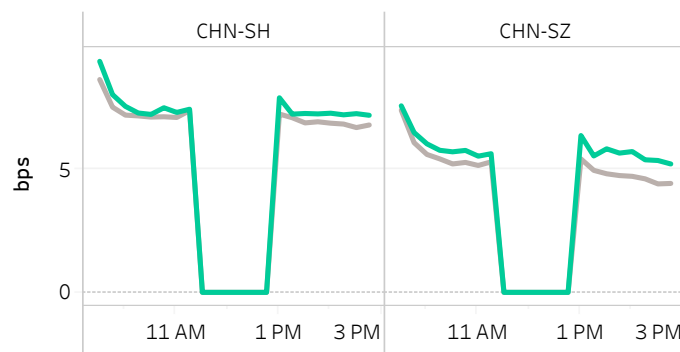
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	CHN-SH					CHN-SZ				
	Oct	Nov	Dec	Jan	Feb	Oct	Nov	Dec	Jan	Feb
FirstHalfHour	8.2	7.5	8.1	8.7	8.9	7.0	6.4	6.6	7.1	7.4
MidDay	7.1	6.9	7.4	8.0	7.8	5.4	5.1	5.5	5.9	6.0
LastHalfHour	7.1	6.8	7.4	8.2	7.8	5.0	4.7	5.1	5.8	5.6

## One Minute Volatility Bps

FirstHalfHour	25.6	21.2	23.4	27.6	32.4	28.2	23.2	25.9	30.2	34.1
MidDay	13.9	13.0	14.5	17.3	18.8	13.0	11.3	12.7	15.7	18.9
LastHalfHour	14.2	12.8	14.7	18.1	17.8	12.7	10.7	12.1	15.7	15.8

## Quotesize (shares)

FirstHalfHour	12,742	16,573	15,099	13,651	14,145	5,099	5,595	4,563	4,495	4,979
MidDay	16,209	21,210	18,639	16,308	16,111	5,775	6,549	5,263	5,280	5,654
LastHalfHour	23,440	30,704	25,698	20,444	24,112	8,647	10,309	8,150	7,099	8,454

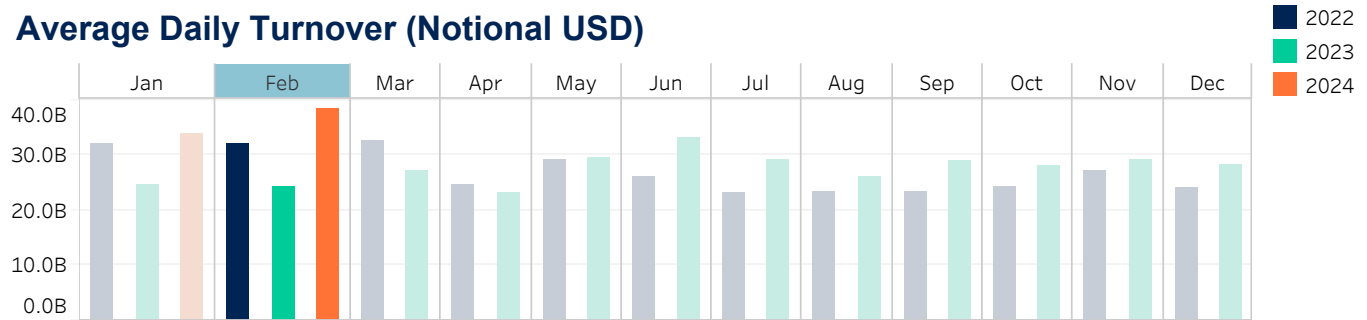
Median used for all metrics

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

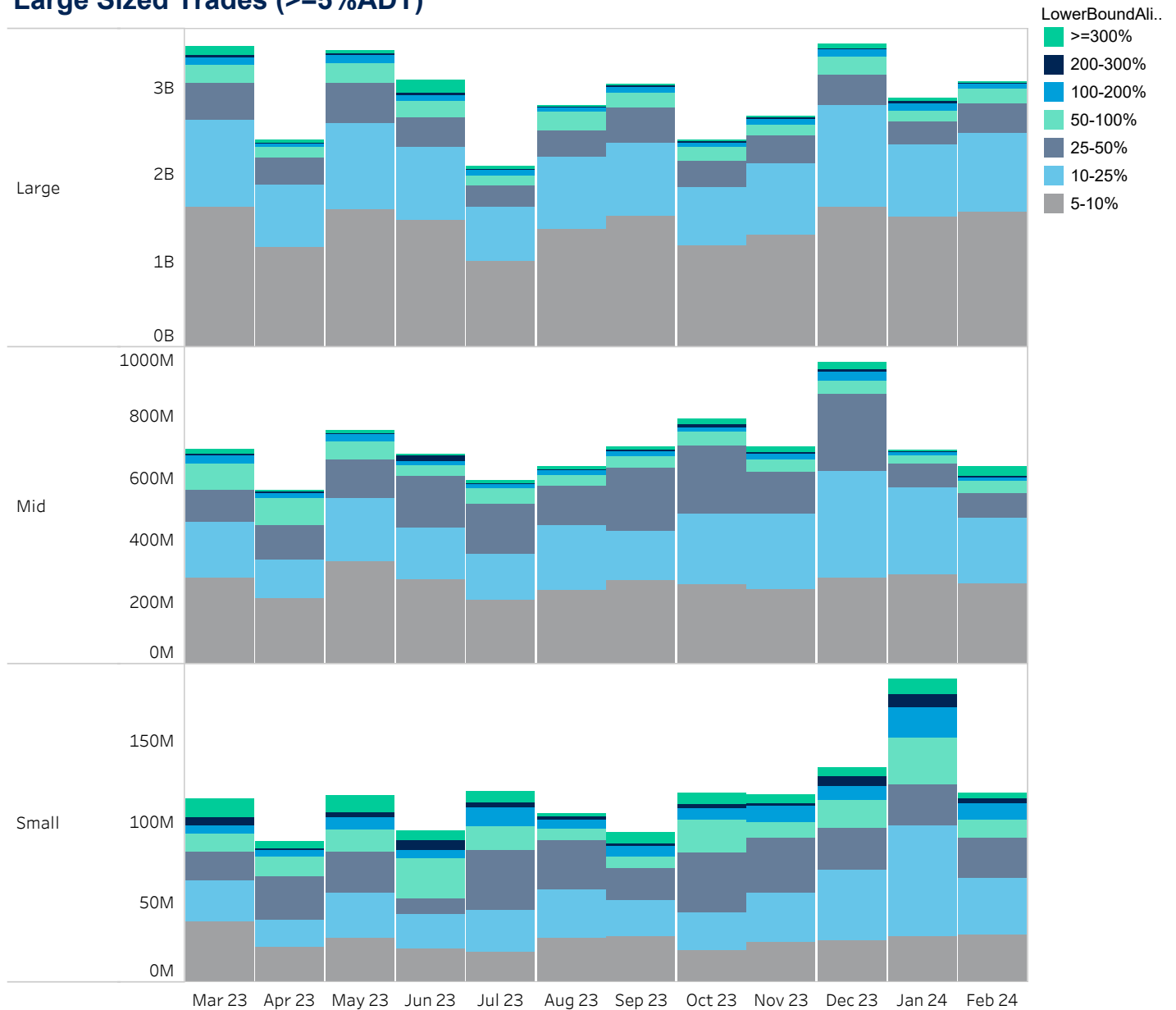
Source data: Virtu Financial

# Japan

## Average Daily Turnover (Notional USD)



## Large Sized Trades (>=5%ADT)

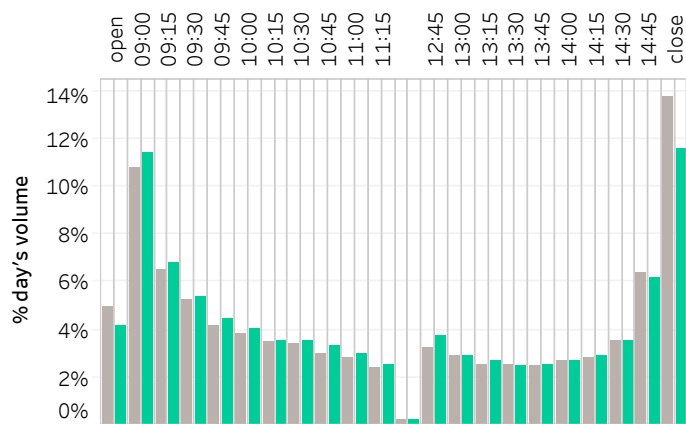


Source data: Virtu Financial

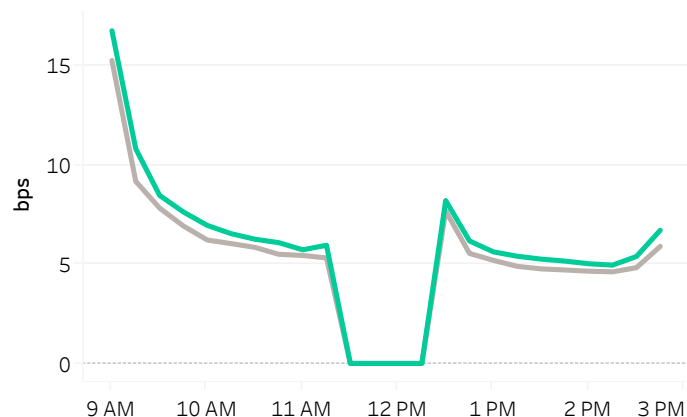


# Japan

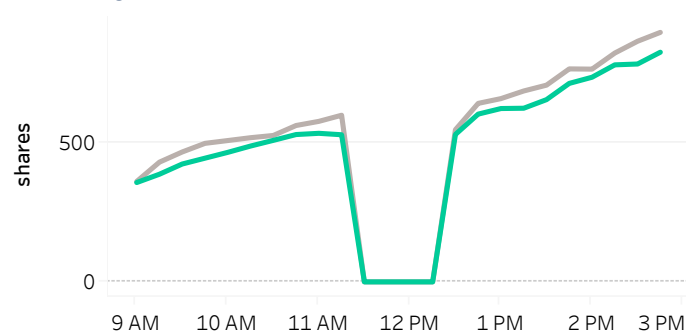
## Volume Curve



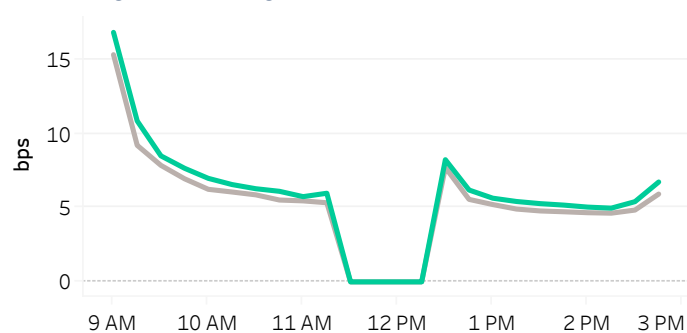
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	15.3	16.0	15.3	15.5	12.4	11.7	12.2	11.4	13.0	13.5	11.7	11.6	13.1	
MidDay	8.8	9.1	8.5	8.9	5.7	5.2	5.4	5.2	5.8	6.0	5.3	5.3	6.0	
LastHalfHo..	9.1	9.5	9.2	9.2	5.4	5.0	4.9	5.1	5.7	5.5	5.1	4.9	5.6	

## One Minute Volatility Bps

FirstHalfHo..	16.1	16.3	15.4	16.4	14.8	14.2	14.8	14.1	16.0	16.8	14.7	14.9	17.1
MidDay	8.3	8.4	7.7	8.5	6.7	5.9	6.1	6.0	7.1	7.3	6.2	6.4	7.3
LastHalfHo..	9.3	9.4	8.9	9.3	7.1	6.6	6.4	6.8	7.9	7.5	7.0	6.8	7.6

## Quotesize (shares)

FirstHalfHo..	593	556	564	569	427	386	379	388	340	340	357	359	369
MidDay	1,012	891	951	968	582	569	575	580	494	526	551	555	549
LastHalfHo..	1,620	1,387	1,495	1,578	860	855	882	829	694	779	750	764	784

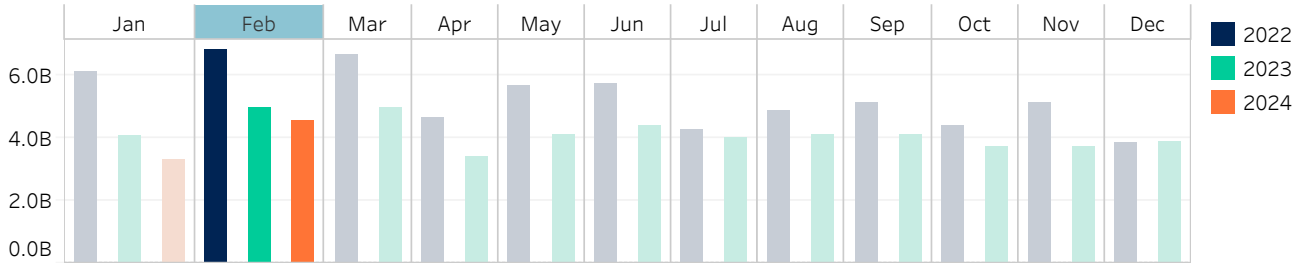
Median used for all metrics

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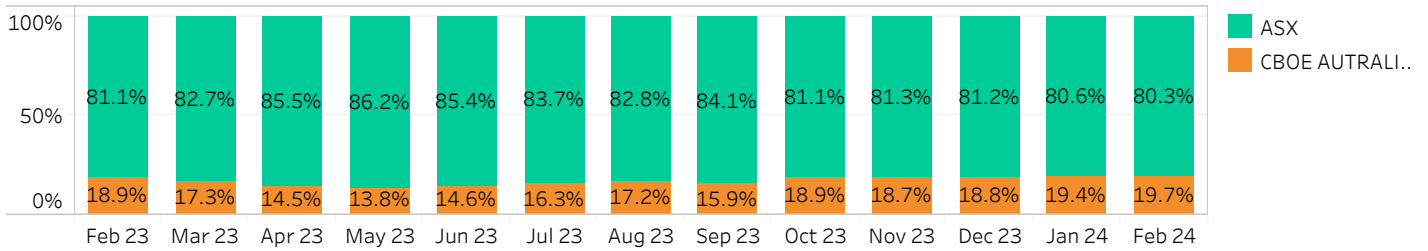
Source data: Virtu Financial

# Australia

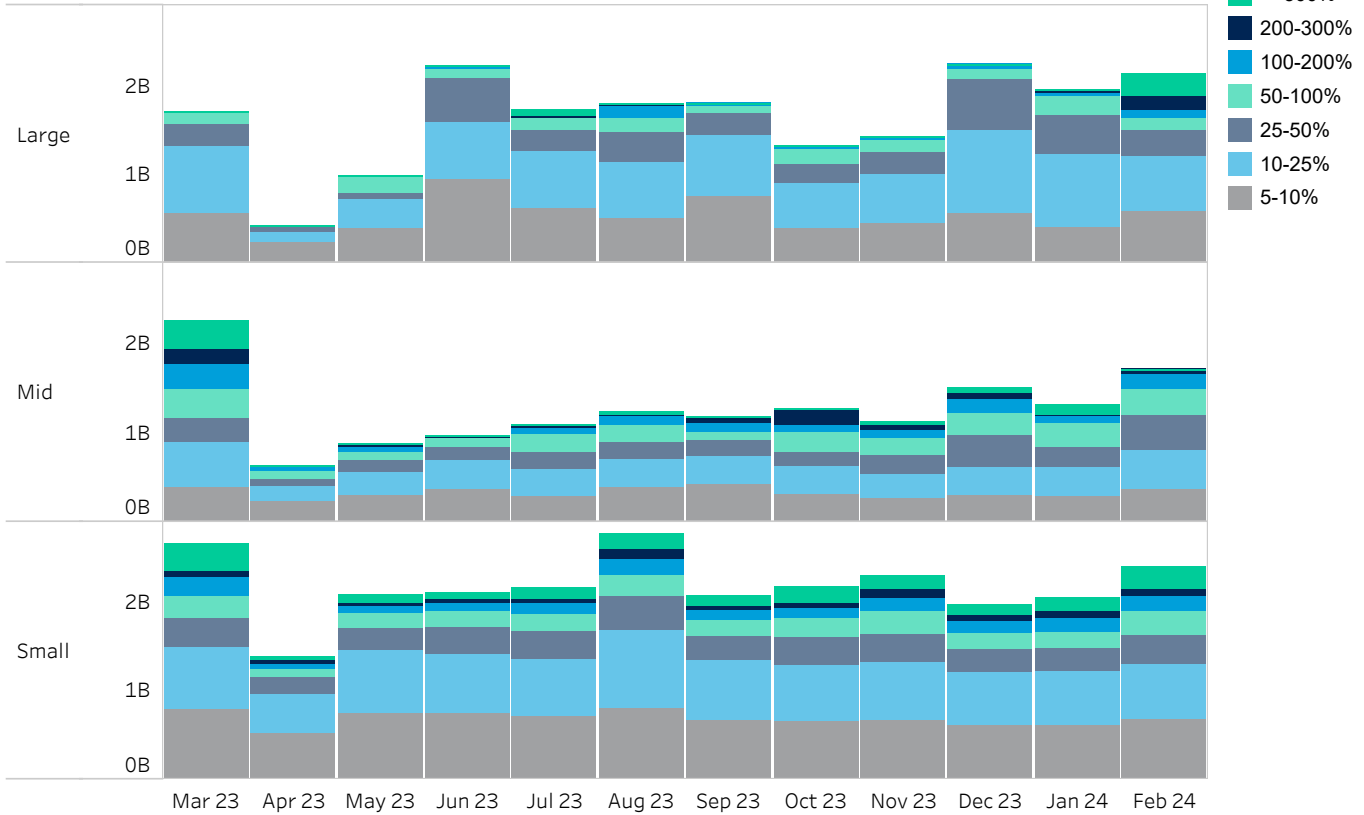
## Average Daily Turnover (Notional USD)



## Venue Market Share (Notional USD)



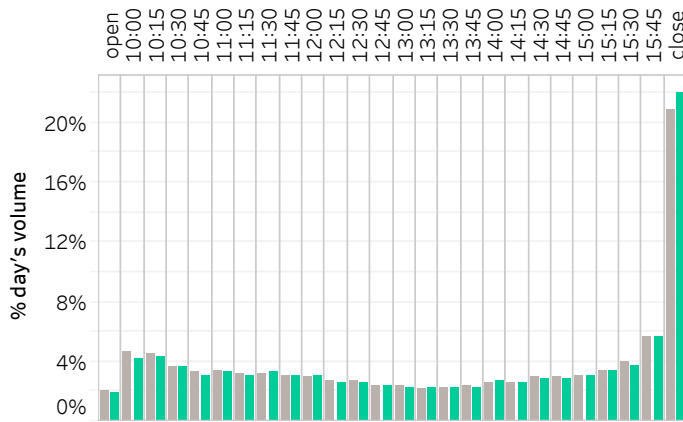
## Large Sized Trades (>=5%ADT)



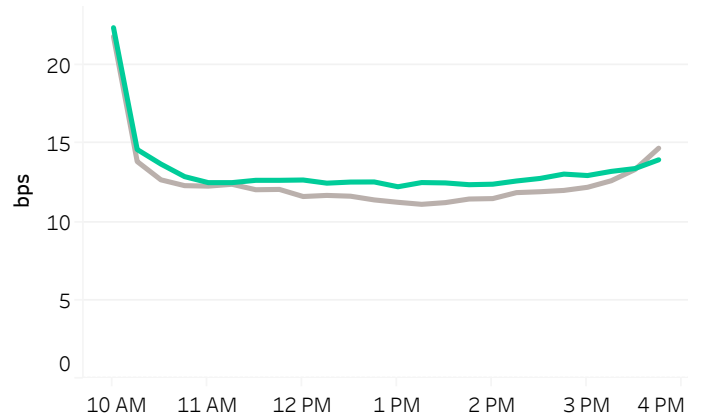
Source data: Virtu Financial

# Australia

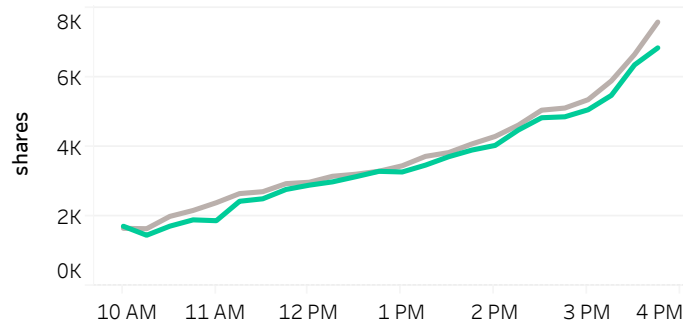
## Volume Curve



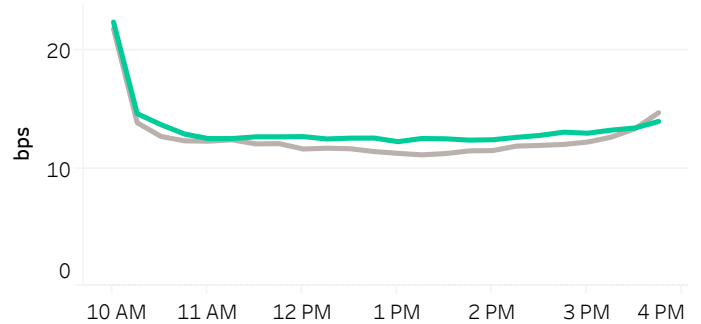
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	16.8	17.4	17.4	17.0	16.6	16.6	16.6	17.0	18.7	18.1	17.6	16.7	17.7	
MidDay	11.6	12.4	12.1	11.6	11.8	11.3	11.1	12.3	13.1	13.1	12.6	12.0	12.5	
LastHalfHo..	13.8	14.3	14.3	13.7	14.0	13.9	14.1	14.7	15.4	15.1	14.1	13.7	13.7	

## One Minute Volatility Bps

FirstHalfHo..	21.3	21.7	20.6	19.1	18.7	18.0	18.9	17.9	19.4	18.7	18.3	16.7	19.2
MidDay	10.3	10.7	9.5	9.2	9.8	9.5	9.7	9.6	10.6	10.8	10.1	9.5	10.5
LastHalfHo..	12.5	13.2	12.4	11.9	12.5	11.9	12.4	12.7	13.5	13.3	12.5	11.7	12.6

## Quotesize (shares)

FirstHalfHo..	1,640	1,864	2,108	1,897	1,901	1,672	1,703	1,756	1,601	1,443	1,515	1,528	1,587
MidDay	3,260	3,759	3,968	3,313	3,860	3,520	3,310	3,720	3,289	3,147	3,258	3,388	3,303
LastHalfHo..	7,185	8,215	8,141	7,163	8,042	7,173	7,405	7,388	7,156	6,633	6,873	6,851	6,654

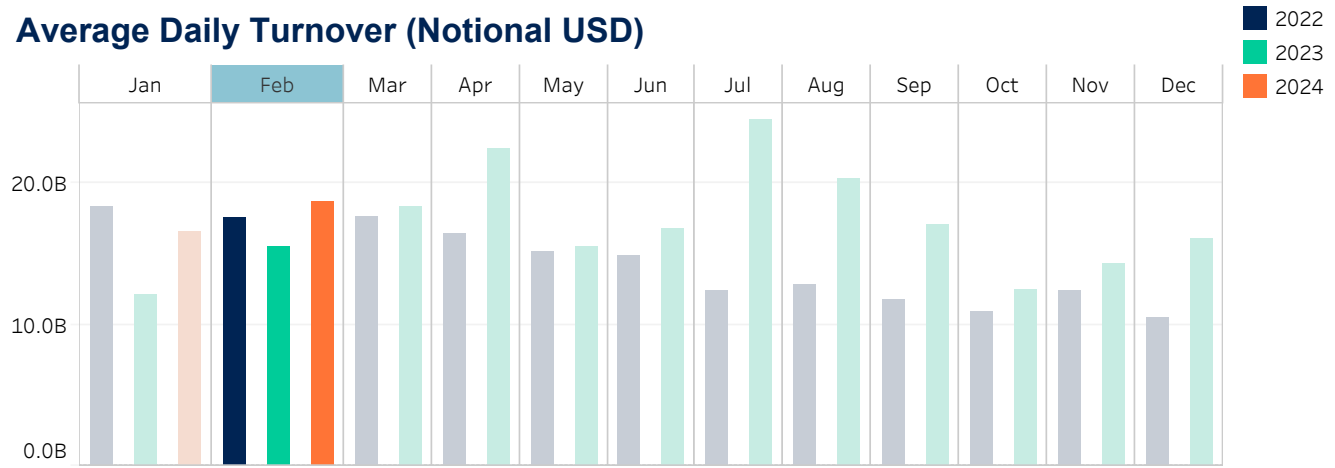
Median used for all metrics

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

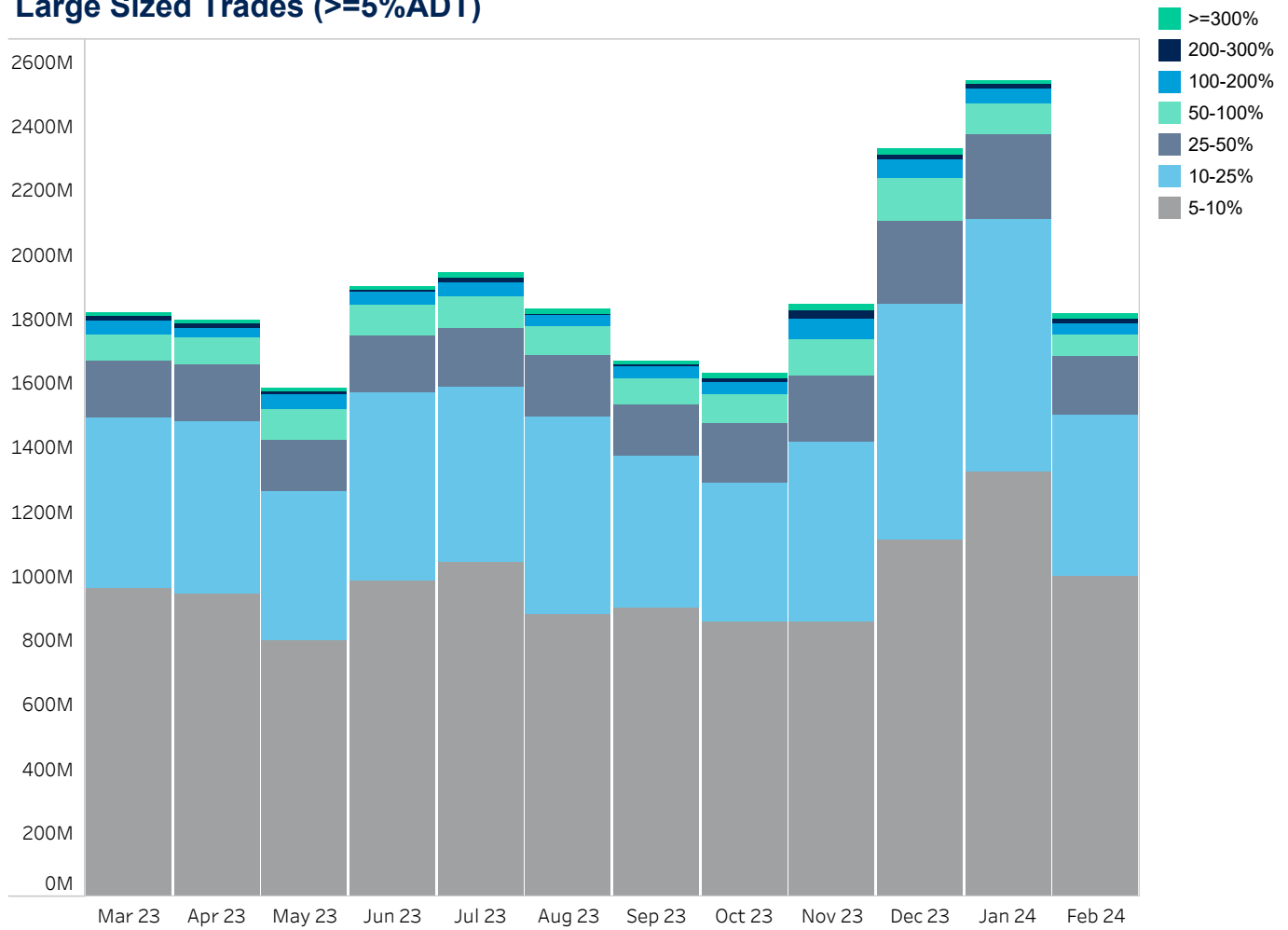
Source data: Virtu Financial

# South Korea

## Average Daily Turnover (Notional USD)



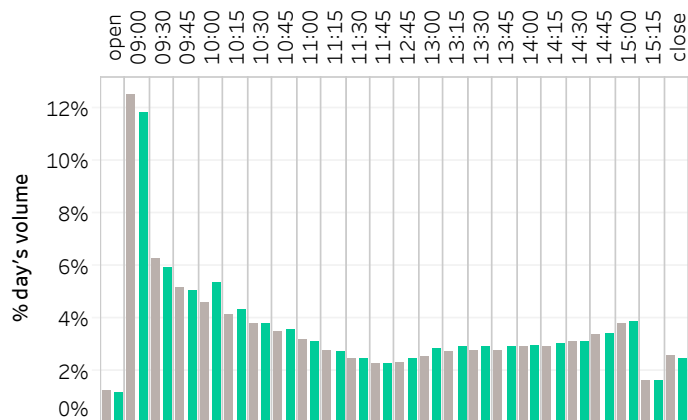
## Large Sized Trades (>=5%ADT)



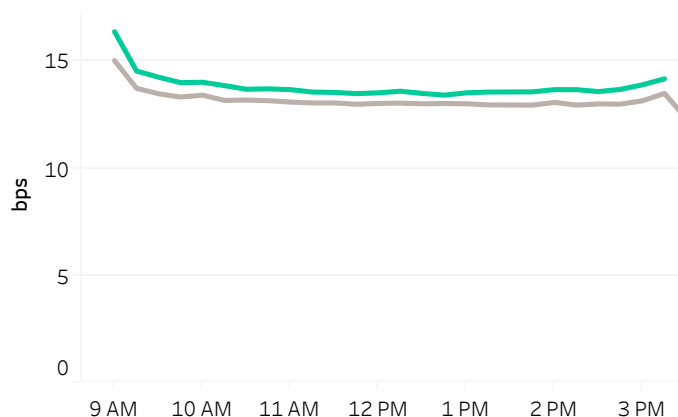
Source data: Virtu Financial

# Korea

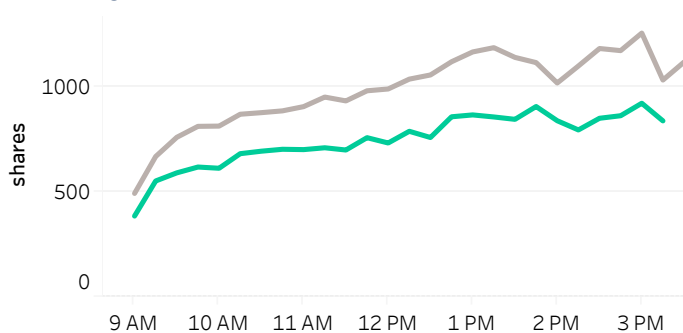
## Volume Curve



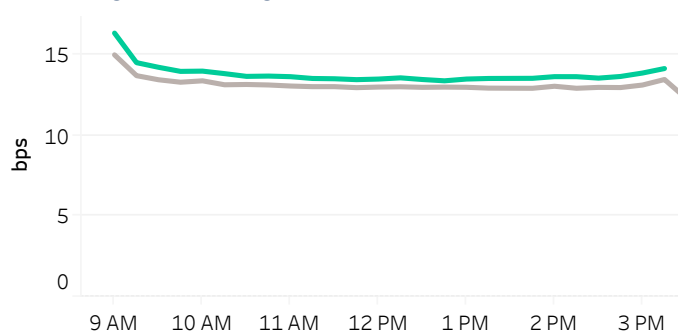
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	14.7	14.7	14.3	14.0	13.7	14.3	14.2	13.9	14.5	14.5	14.3	15.1	15.6	
MidDay	13.5	13.4	12.9	12.9	12.9	13.2	12.8	12.5	12.8	13.1	12.8	13.6	13.6	
LastHalfHo..	13.7	13.5	13.1	13.0	13.0	13.3	12.8	12.6	13.2	13.4	13.3	13.8	13.9	

## One Minute Volatility Bps

FirstHalfHo..	23.6	24.9	25.6	22.7	21.5	27.1	26.7	23.3	27.5	25.1	22.2	25.7	31.4
MidDay	14.9	15.0	14.8	14.2	14.0	14.9	14.3	14.0	14.6	15.1	14.5	15.7	16.4
LastHalfHo..	15.6	16.0	15.9	14.9	14.8	16.2	15.2	15.3	16.1	14.9	16.3	17.1	17.6

## Quotesize (shares)

FirstHalfHo..	655	595	579	580	634	563	491	491	444	458	536	446	465
MidDay	1,188	1,025	1,014	1,166	1,249	1,024	875	923	808	760	895	807	749
LastHalfHo..	1,447	1,390	1,189	1,277	1,444	1,164	1,108	1,066	912	921	1,010	871	902

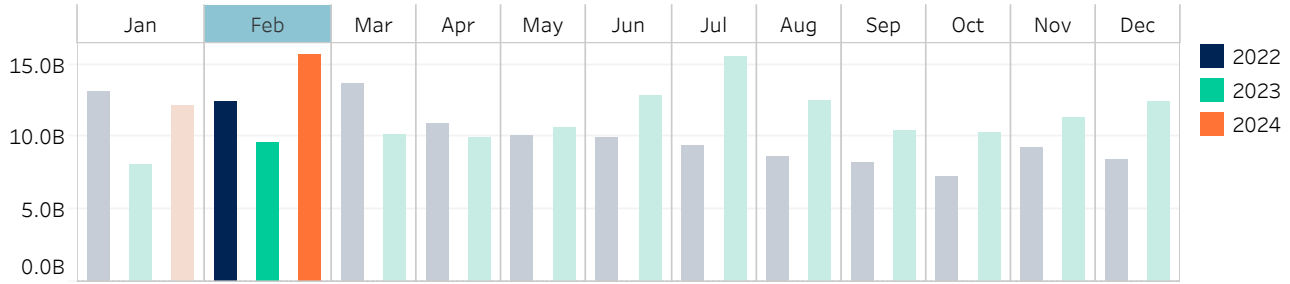
Median used for all metrics

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

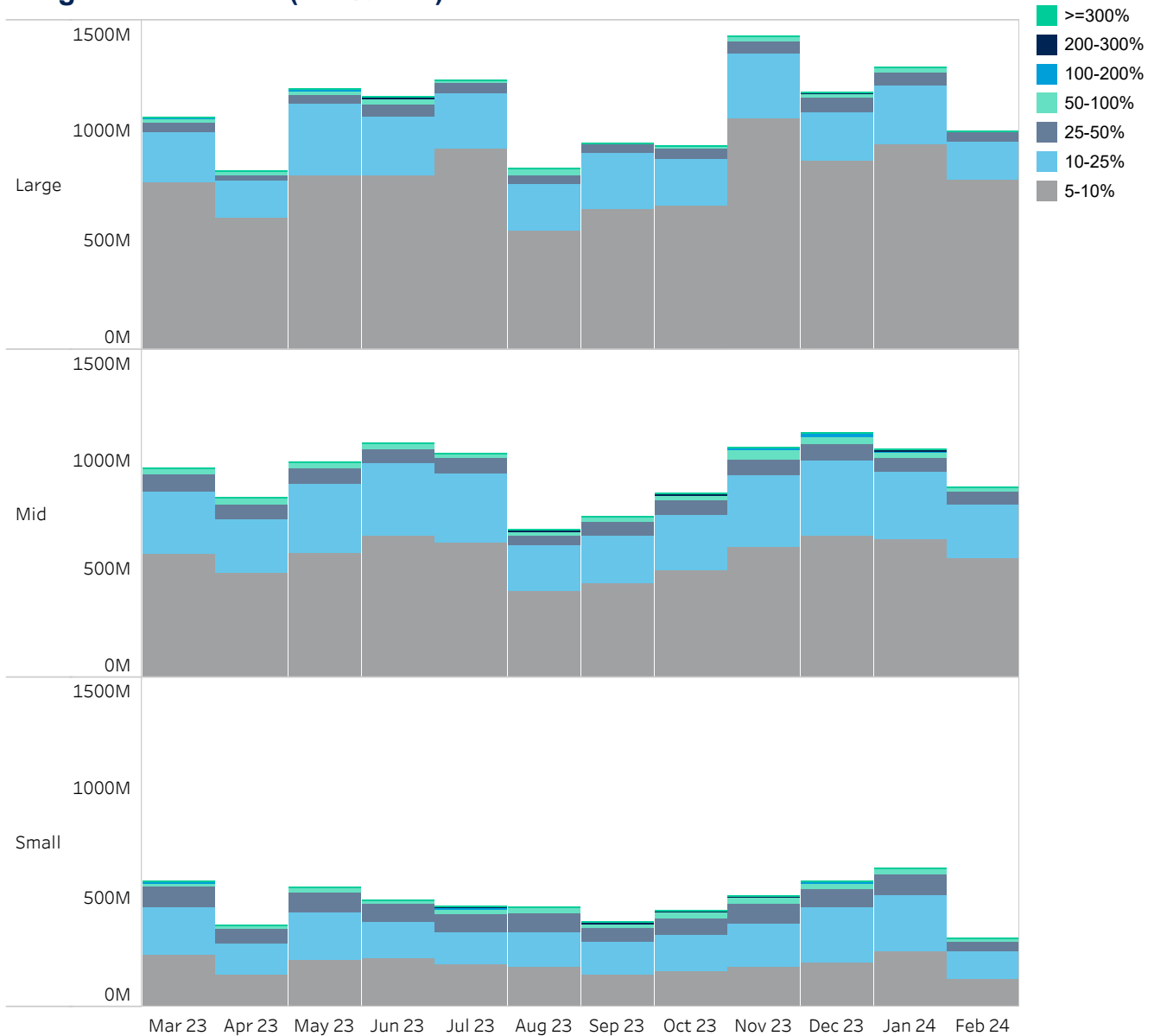
Source data: Virtu Financial

# Taiwan

## Average Daily Turnover (Notional USD)



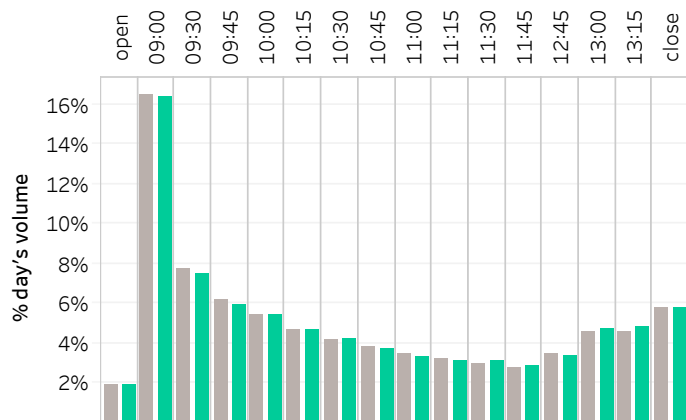
## Large Sized Trades (>=5%ADT)



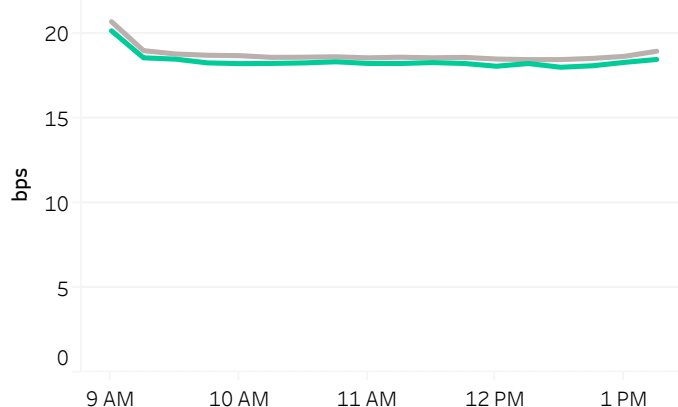
Source data: Virtu Financial

# Taiwan

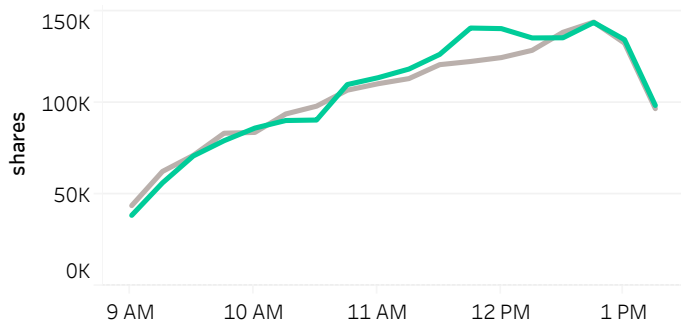
## Volume Curve



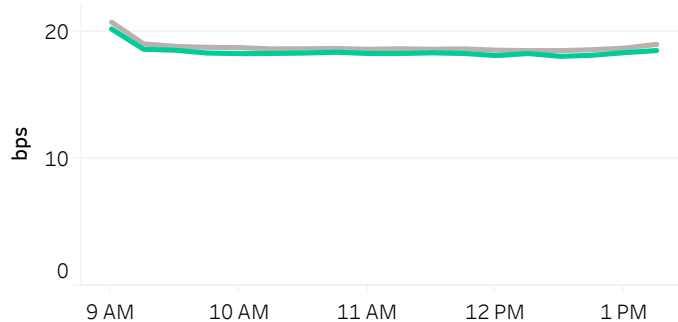
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	20.6	20.1	19.9	19.8	19.3	19.6	20.5	19.9	20.3	19.6	19.5	19.6	19.5	
MidDay	18.9	19.0	18.9	18.2	17.8	18.0	18.8	18.8	19.0	18.2	18.6	18.6	18.3	
LastHalfHo..	18.9	19.1	19.0	18.3	18.1	18.3	18.8	19.0	19.1	18.6	18.7	18.8	18.3	

## One Minute Volatility Bps

FirstHalfHo..	31.3	31.6	30.3	31.3	31.2	34.5	37.1	32.6	33.3	29.9	30.6	32.8	31.3
MidDay	28.9	29.1	28.8	28.1	28.4	31.5	36.4	29.8	31.1	26.4	27.8	29.2	28.6
LastHalfHo..	28.9	29.6	29.2	28.3	28.9	32.6	34.4	29.9	31.5	27.6	28.1	30.3	28.7

## Quotesize (shares)

FirstHalfHo..	57,971	61,802	53,240	60,150	57,819	51,257	44,628	44,984	46,915	50,161	52,263	57,046	48,244
MidDay	117,559	138,448	125,681	133,760	139,513	105,466	95,368	103,352	109,280	111,917	104,185	124,365	117,027
LastHalfHo..	116,979	124,571	121,314	127,420	122,742	102,051	100,542	105,527	109,997	124,934	124,186	118,507	116,047

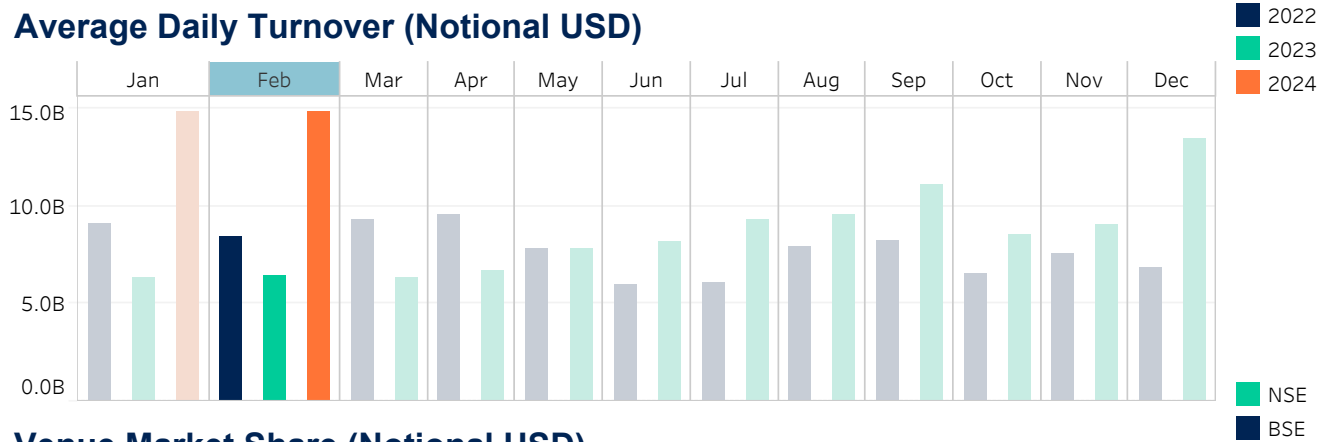
Median used for all metrics

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

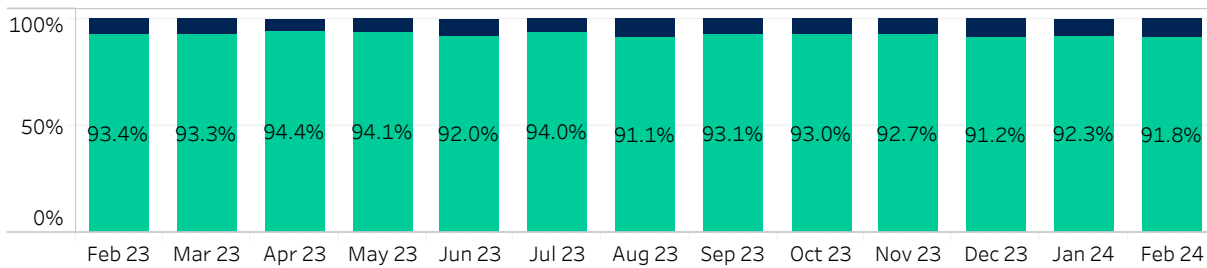
Source data: Virtu Financial

# India

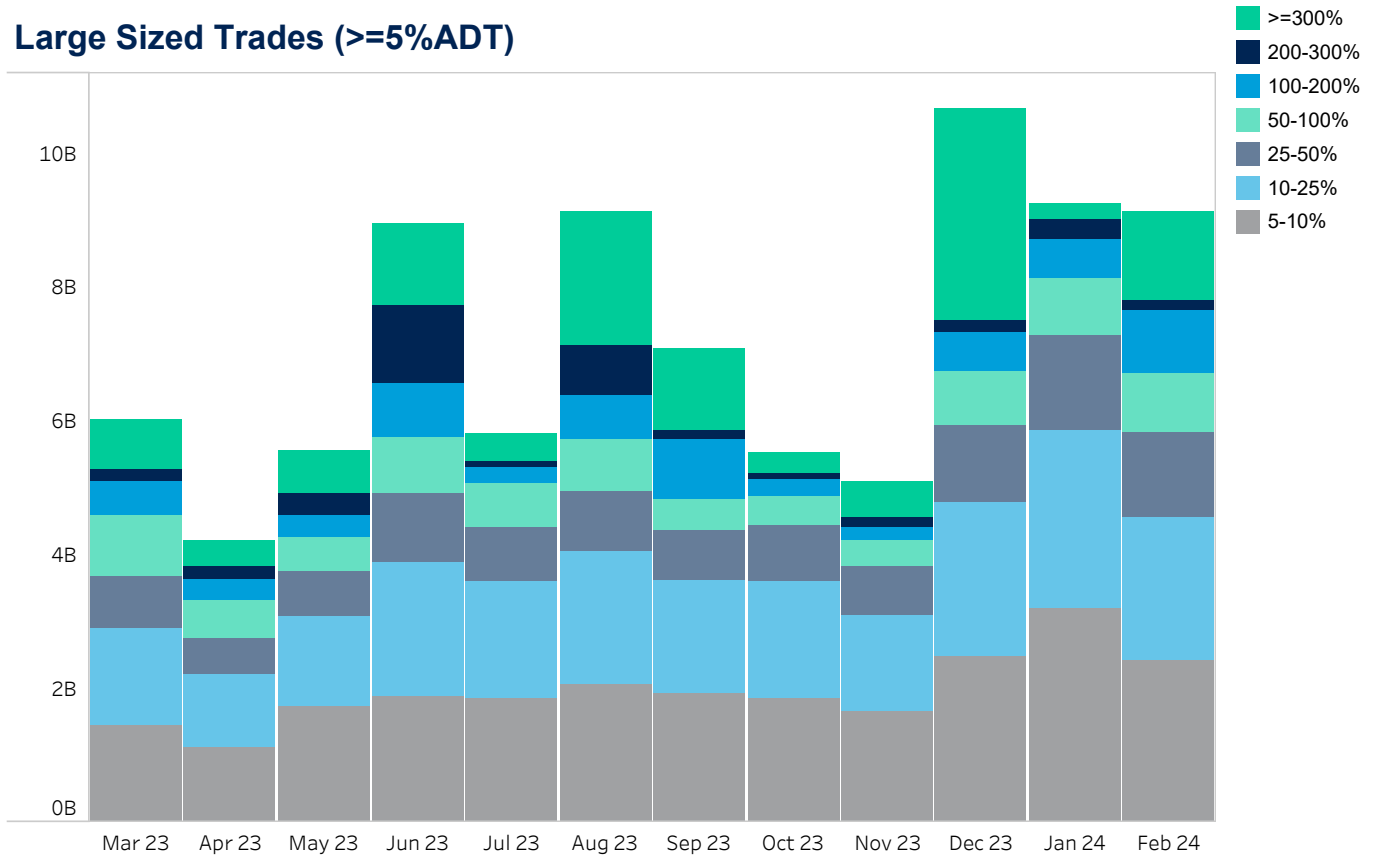
## Average Daily Turnover (Notional USD)



## Venue Market Share (Notional USD)



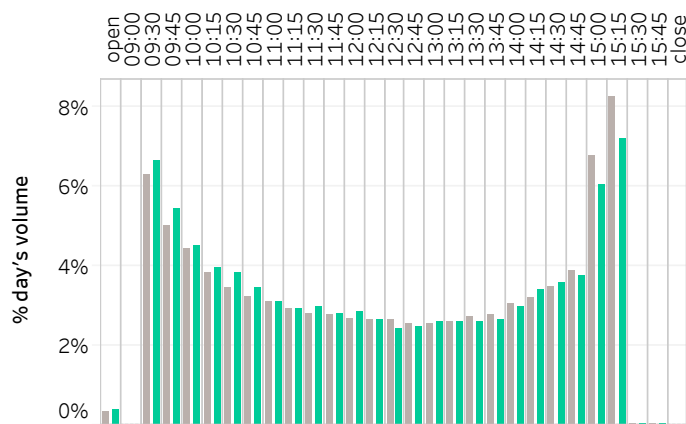
## Large Sized Trades (>=5%ADT)



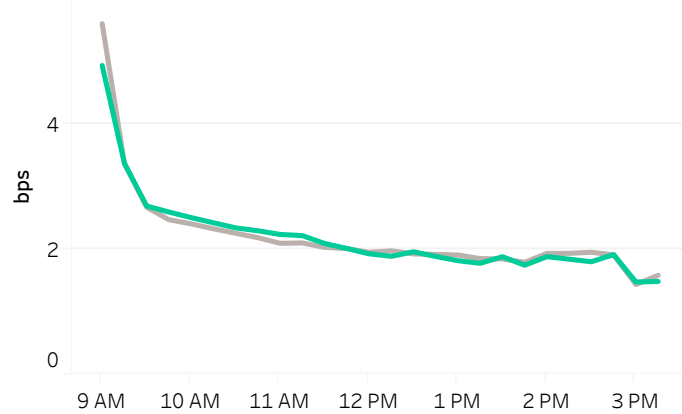


# India

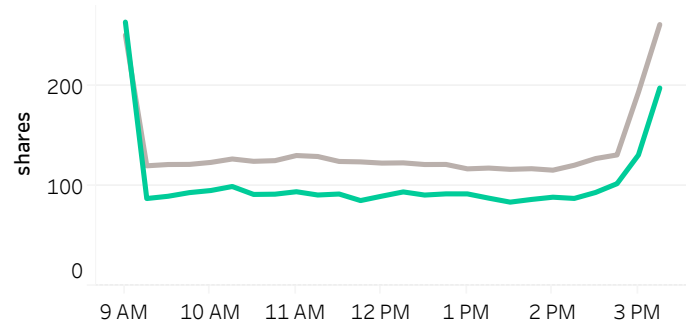
## Volume Curve



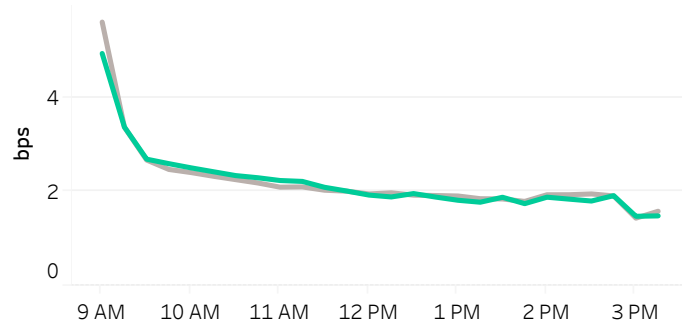
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023						2024						
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
FirstHalfHo..	3.7	3.4	3.4	3.3	3.1	3.5	3.5	3.5	3.4	3.2	3.4	3.5	3.5
MidDay	2.2	2.1	2.1	2.0	1.9	1.9	1.9	2.0	1.8	2.0	1.9	1.9	2.0
LastHalfHo..	1.8	1.7	1.7	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.5

## One Minute Volatility Bps

FirstHalfHo..	19.7	19.1	17.6	16.2	16.3	17.2	16.6	15.2	17.3	14.7	17.9	19.6	19.6
MidDay	8.4	8.2	7.7	7.4	7.6	7.1	7.0	6.8	7.6	7.1	8.0	8.7	9.1
LastHalfHo..	10.3	10.5	9.9	9.6	9.6	9.1	9.2	9.1	9.5	8.7	10.5	10.8	11.2

## Quotesize (shares)

FirstHalfHo..	119.8	123.5	133.9	142.2	143.1	131.7	114.8	117.2	112.5	108.1	118.4	102.2	90.9
MidDay	124.1	124.2	143.1	151.0	151.7	124.1	118.6	120.7	108.5	116.7	118.3	99.1	90.4
LastHalfHo..	249.5	253.0	256.4	262.0	268.0	231.3	206.0	230.8	197.4	229.1	196.5	182.0	169.3

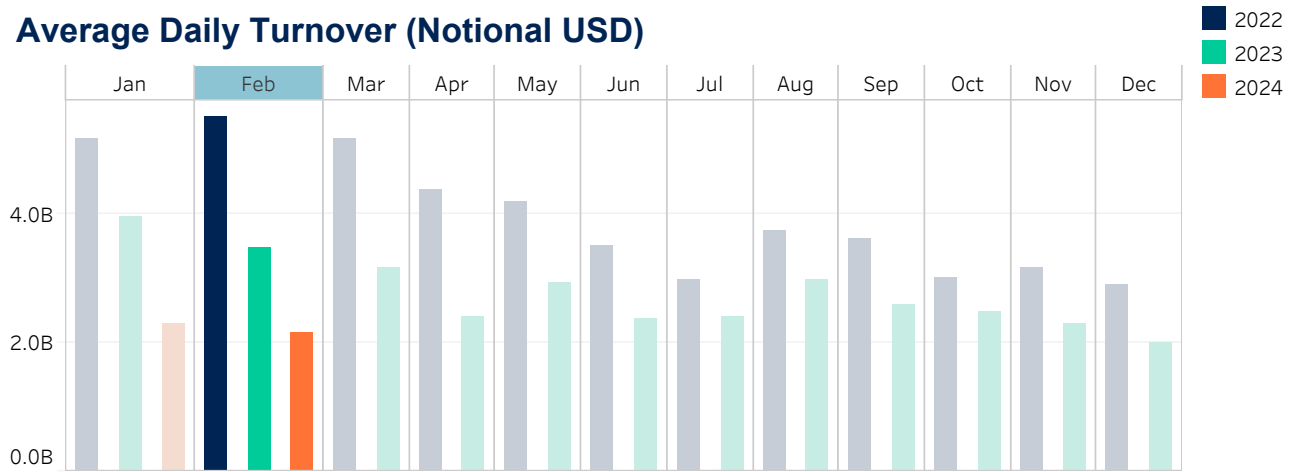
Median used for all metrics

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

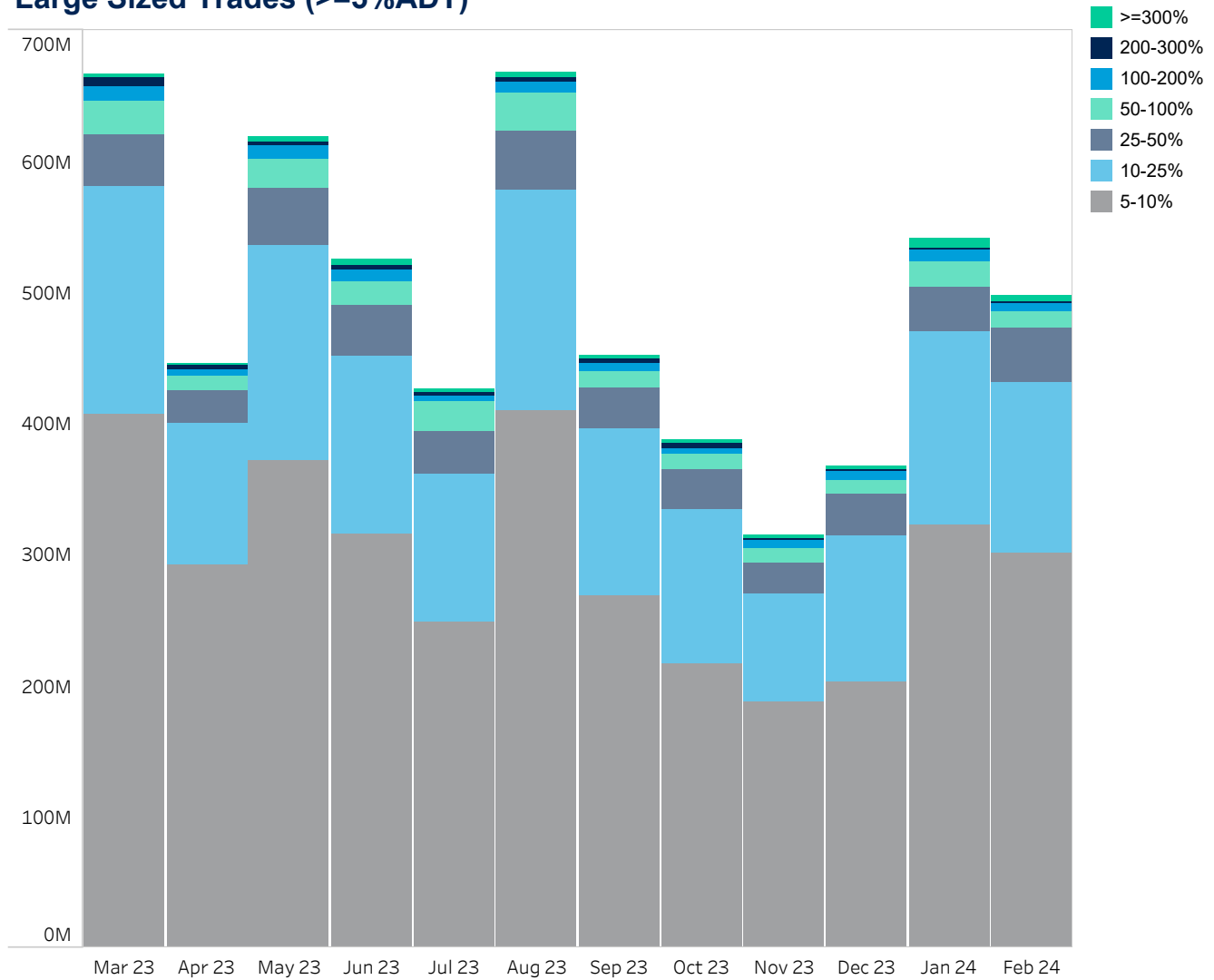
Source data: Virtu Financial

# Thailand

## Average Daily Turnover (Notional USD)



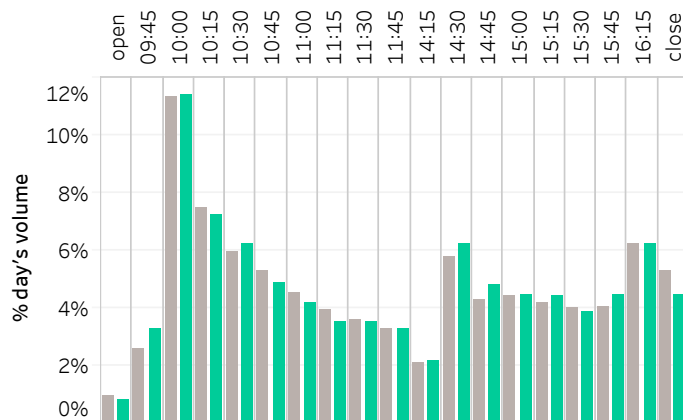
## Large Sized Trades (>=5%ADT)



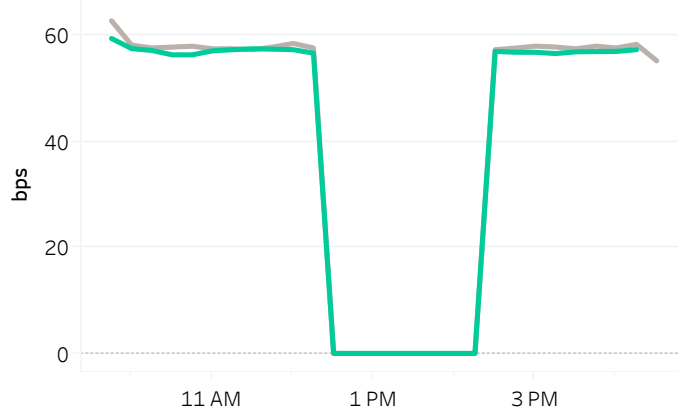
Source data: Virtu Financial

# Thailand

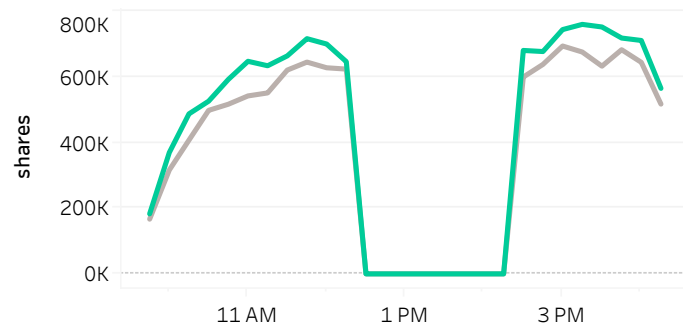
## Volume Curve



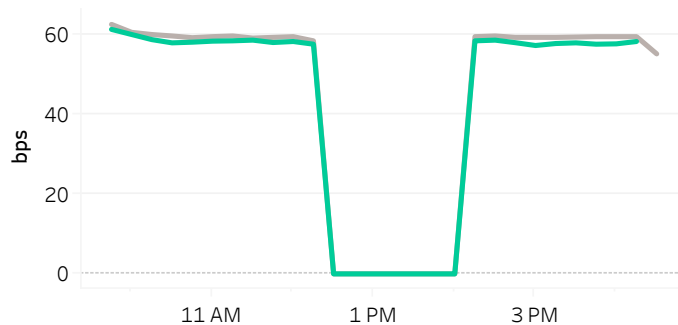
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



Rolling 12 Months Avg February 2024

## Spread Bps

	2023						2024						
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
FirstHalfHo..	56.4	59.5	59.2	65.1	65.6	61.9	62.3	61.9	64.3	62.7	64.0	61.2	60.1
MidDay	54.1	56.0	55.8	58.4	59.3	56.7	56.3	58.7	59.3	58.3	59.2	57.6	57.0
LastHalfHo..	54.8	56.7	56.0	58.7	59.3	58.0	57.0	59.0	59.3	59.0	51.4	58.3	57.3

## One Minute Volatility Bps

FirstHalfHo..	61.9	67.8	60.8	63.9	63.5	60.4	61.7	61.2	64.3	63.5	63.8	61.2	62.3
MidDay	55.4	57.6	57.0	60.4	60.8	58.7	58.3	60.1	60.4	60.4	60.4	59.3	58.1
LastHalfHo..	56.0	58.3	57.6	60.1	60.8	59.0	58.7	59.0	60.8	60.4	51.4	59.3	58.1

## Quotesize (shares)

FirstHalfHo..	236,082	219,491	200,957	156,753	157,282	170,264	205,336	202,658	146,123	160,913	162,686	190,460	187,498
MidDay	737,967	634,271	624,930	536,008	510,989	542,854	699,283	749,767	485,941	528,048	602,762	686,060	674,355
LastHalfHo..	679,491	552,716	570,432	472,021	490,710	518,167	619,275	626,196	465,624	501,806	371,650	597,307	602,884

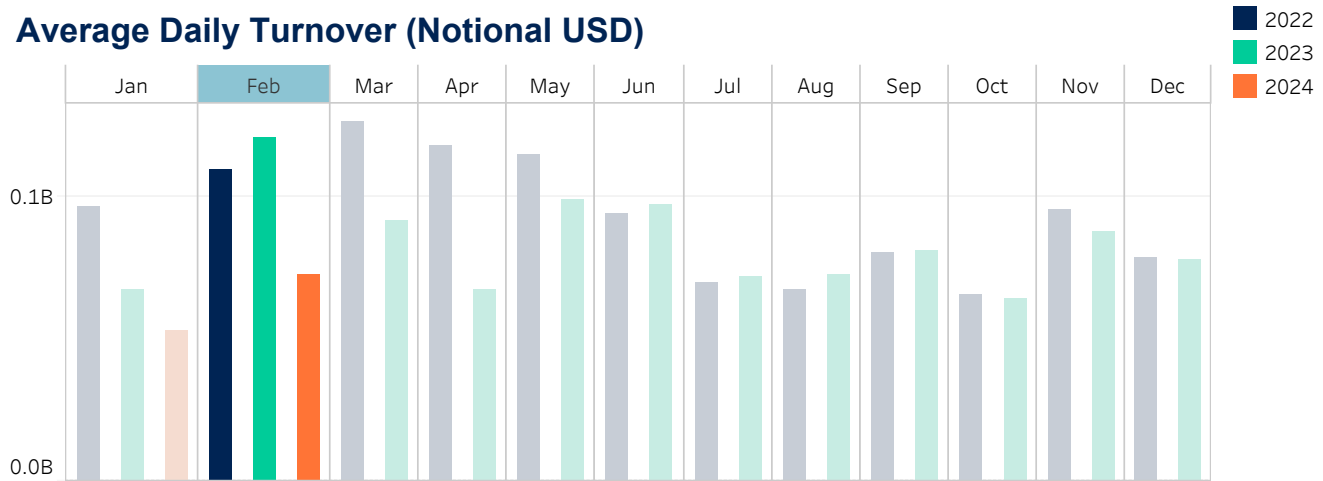
Median used for all metrics

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

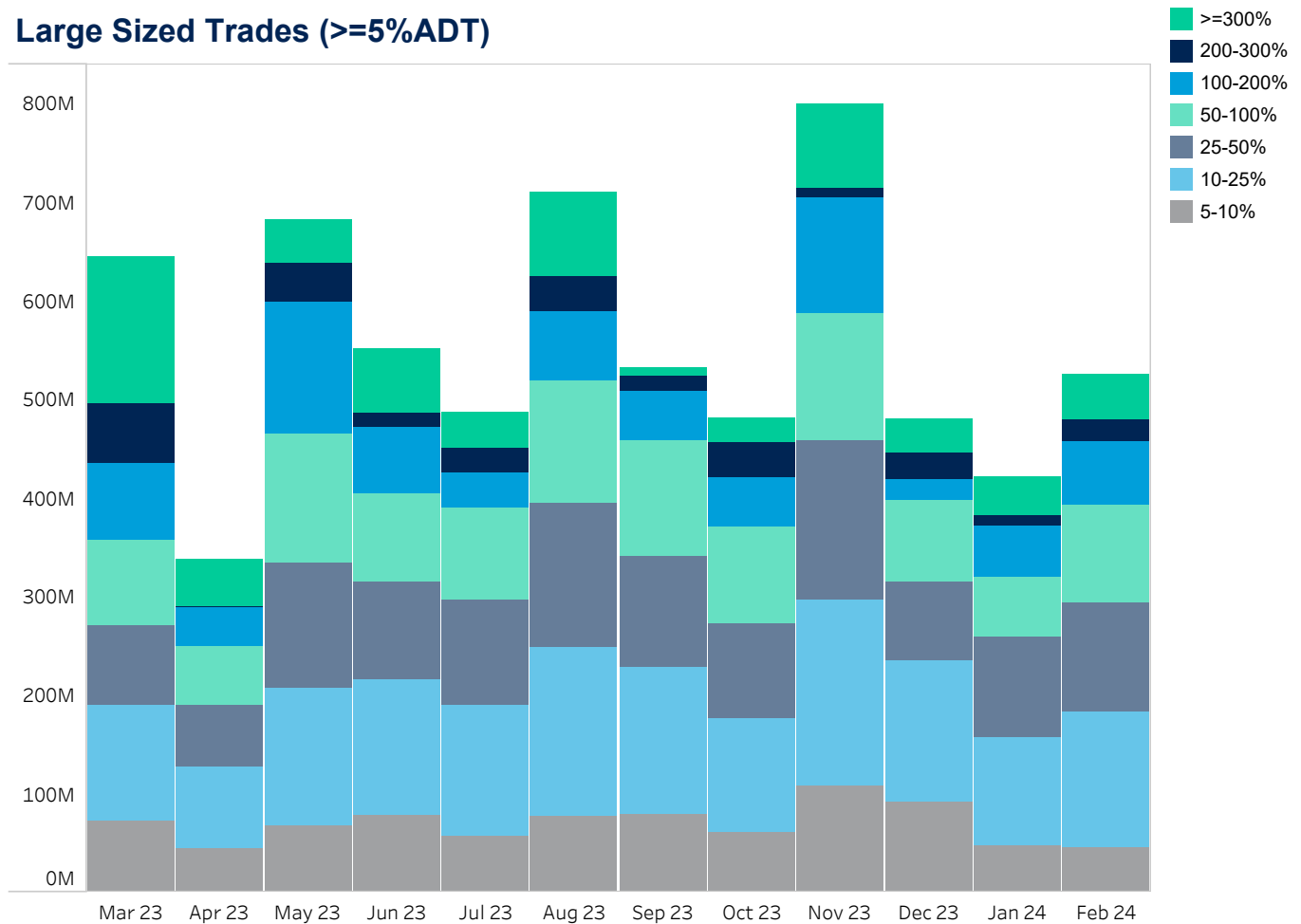
Source data: Virtu Financial

# New Zealand

## Average Daily Turnover (Notional USD)



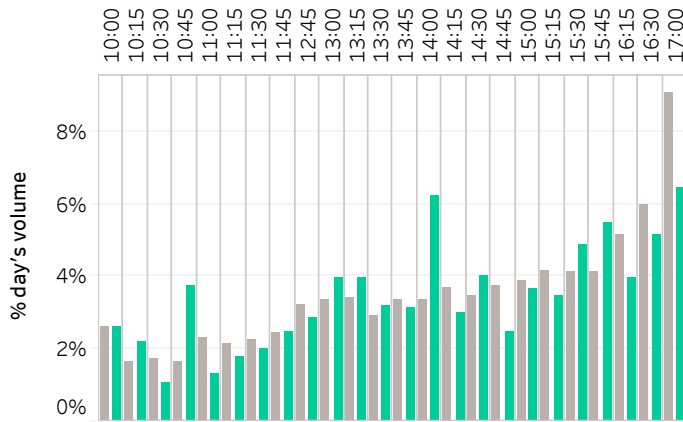
## Large Sized Trades (>=5%ADT)



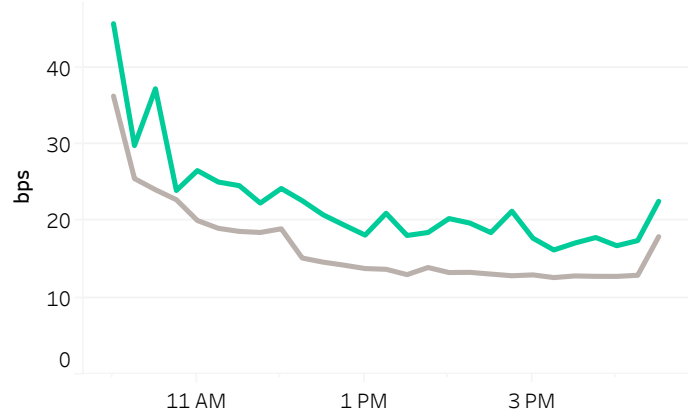
Source data: Virtu Financial

# New Zealand

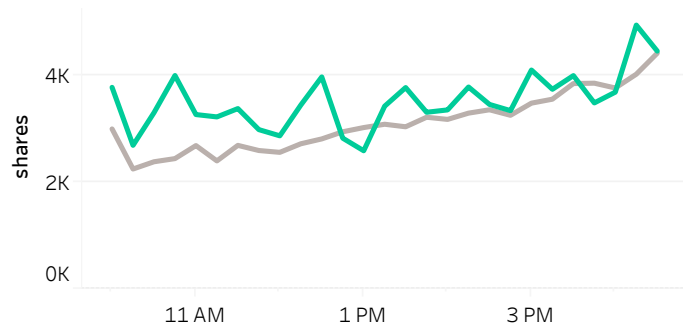
## Volume Curve



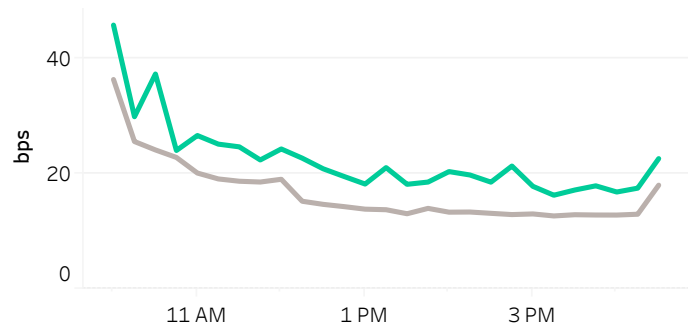
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	36.2	32.4	23.3	33.5	23.1	27.3	26.0	30.3	28.2	28.9	35.4	37.0	35.1	
MidDay	14.2	13.5	13.8	13.7	13.3	13.5	14.5	12.4	14.7	14.3	16.7	17.1	19.6	
LastHalfHo..	19.1	17.5	18.4	17.4	17.7	17.9	18.0	16.3	19.7	18.1	18.6	22.2	22.5	

## One Minute Volatility Bps

FirstHalfHo..	20.9	23.1	19.0	18.6	15.9	18.4	19.0	20.9	23.1	19.9	19.4	29.1	28.3
MidDay	15.1	13.8	15.2	13.3	13.3	12.8	13.7	12.5	15.0	14.6	16.4	17.2	19.2
LastHalfHo..	23.1	19.7	19.0	18.2	18.5	18.3	18.4	19.4	20.8	19.6	19.3	22.5	23.4

## Quotesize (shares)

FirstHalfHo..	2,572	2,470	2,669	2,496	2,658	2,980	2,981	2,681	3,043	2,397	2,093	2,584	3,199
LastHalfHo..	6,137	4,537	5,071	4,691	5,091	4,326	4,567	3,988	4,171	4,335	4,150	4,284	4,516
MidDay	3,634	3,092	3,102	3,512	3,372	3,016	3,363	3,098	3,456	2,624	2,939	2,784	3,414

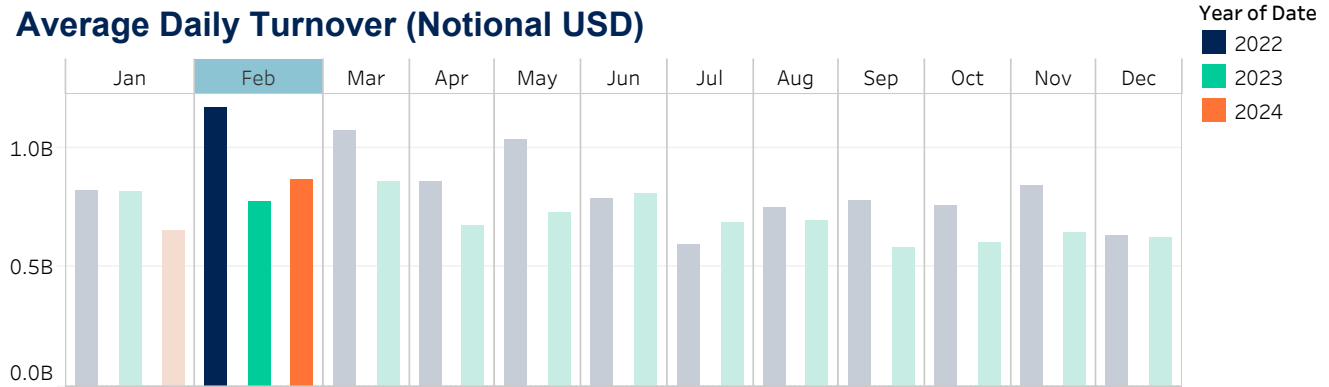
Median used for all metrics

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

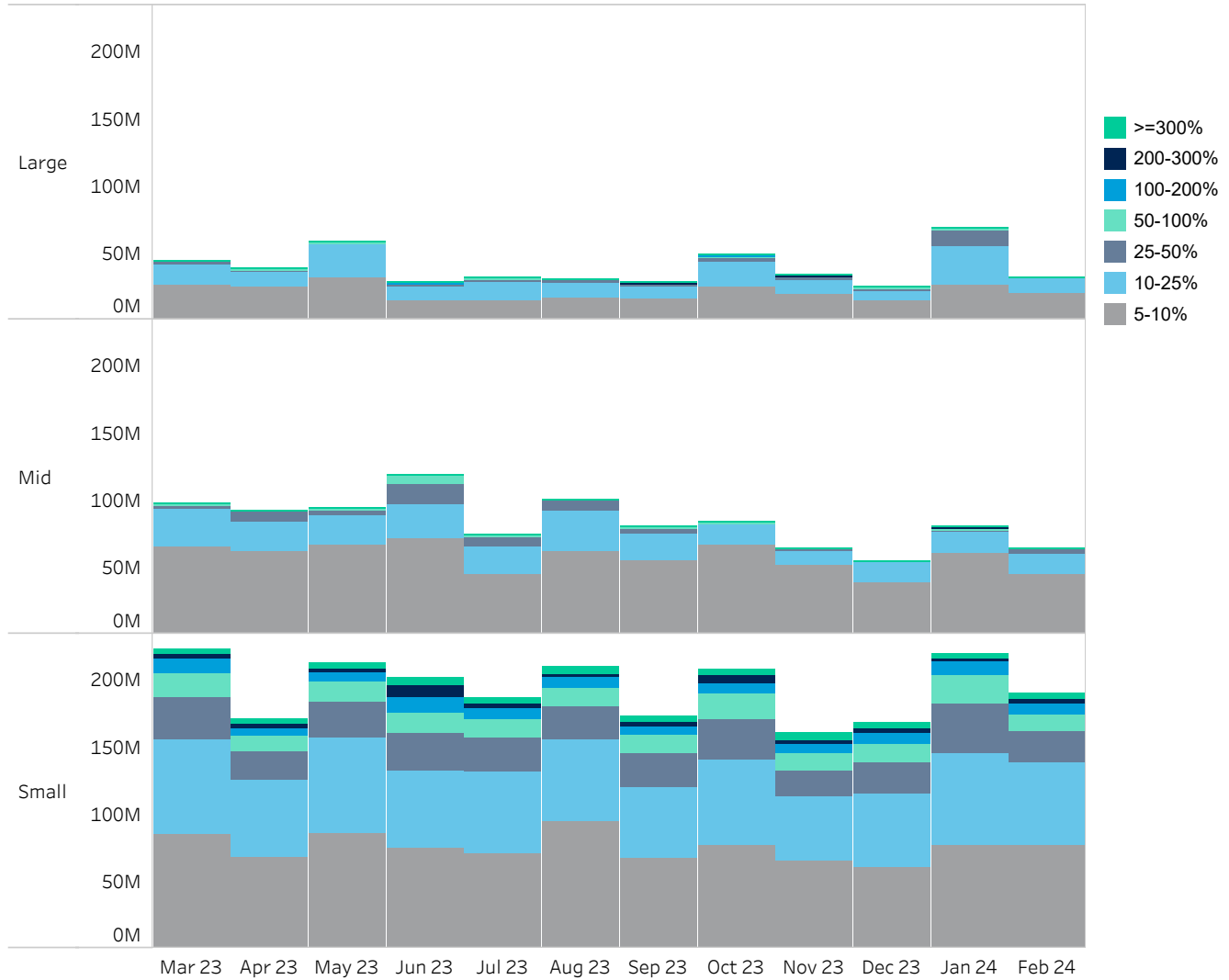
Source data: Virtu Financial

# Singapore

## Average Daily Turnover (Notional USD)



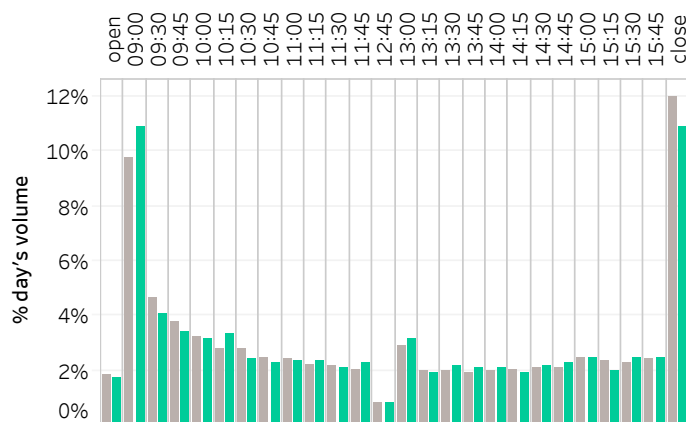
## Large Sized Trades (>=5%ADT)



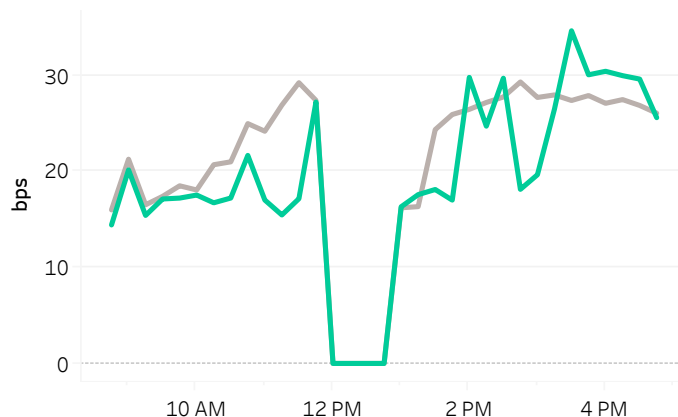
Source data: Virtu Financial

# Singapore

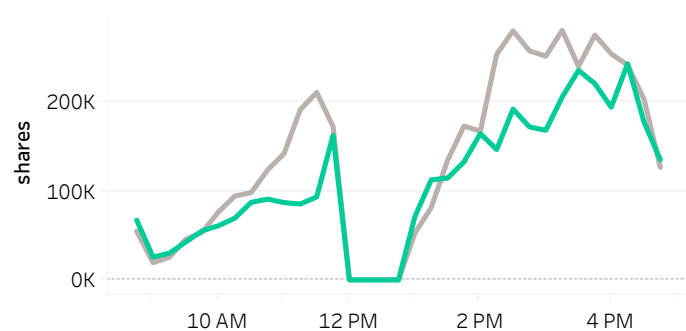
## Volume Curve



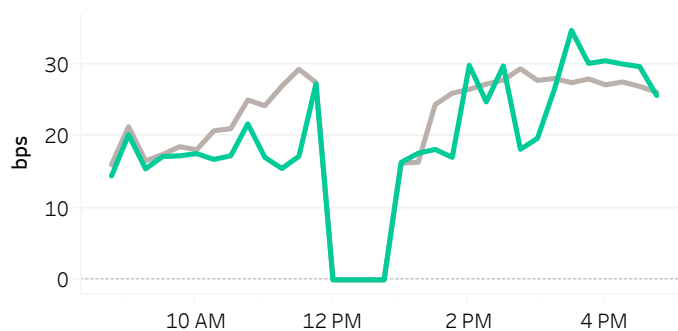
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2024

## Spread Bps

	2023												2024	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
FirstHalfHo..	14.5	16.6	14.2	16.4	16.6	14.6	19.1	16.2	15.8	16.8	15.1	15.0	15.0	
MidDay	25.0	27.2	27.0	27.0	24.5	17.5	27.1	26.7	28.5	26.5	28.9	26.8	18.1	
LastHalfHo..	25.1	25.3	26.8	26.3	25.8	26.4	26.3	26.9	29.5	27.1	28.0	29.7	26.4	

## One Minute Volatility Bps

FirstHalfHo..	43.5	34.5	34.4	35.7	41.7	41.7	51.4	31.3	50.6	52.8	40.9	41.6	42.5
MidDay	25.4	28.4	27.6	27.5	26.9	26.3	27.6	27.0	31.3	27.3	29.1	28.8	26.3
LastHalfHo..	25.5	27.6	27.1	26.8	27.4	27.1	28.0	27.4	32.6	27.9	29.4	32.6	30.4

## Quotesize (shares)

FirstHalfHo..	49,035	126,098	48,869	57,725	86,605	39,923	30,361	36,050	50,518	72,786	53,345	55,164	68,837
MidDay	159,315	169,961	327,685	231,700	112,054	126,638	232,427	176,852	239,708	89,777	193,459	181,018	116,322
LastHalfHo..	138,744	141,752	256,196	170,897	139,765	143,803	181,844	179,377	226,408	119,166	139,335	199,052	164,279

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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