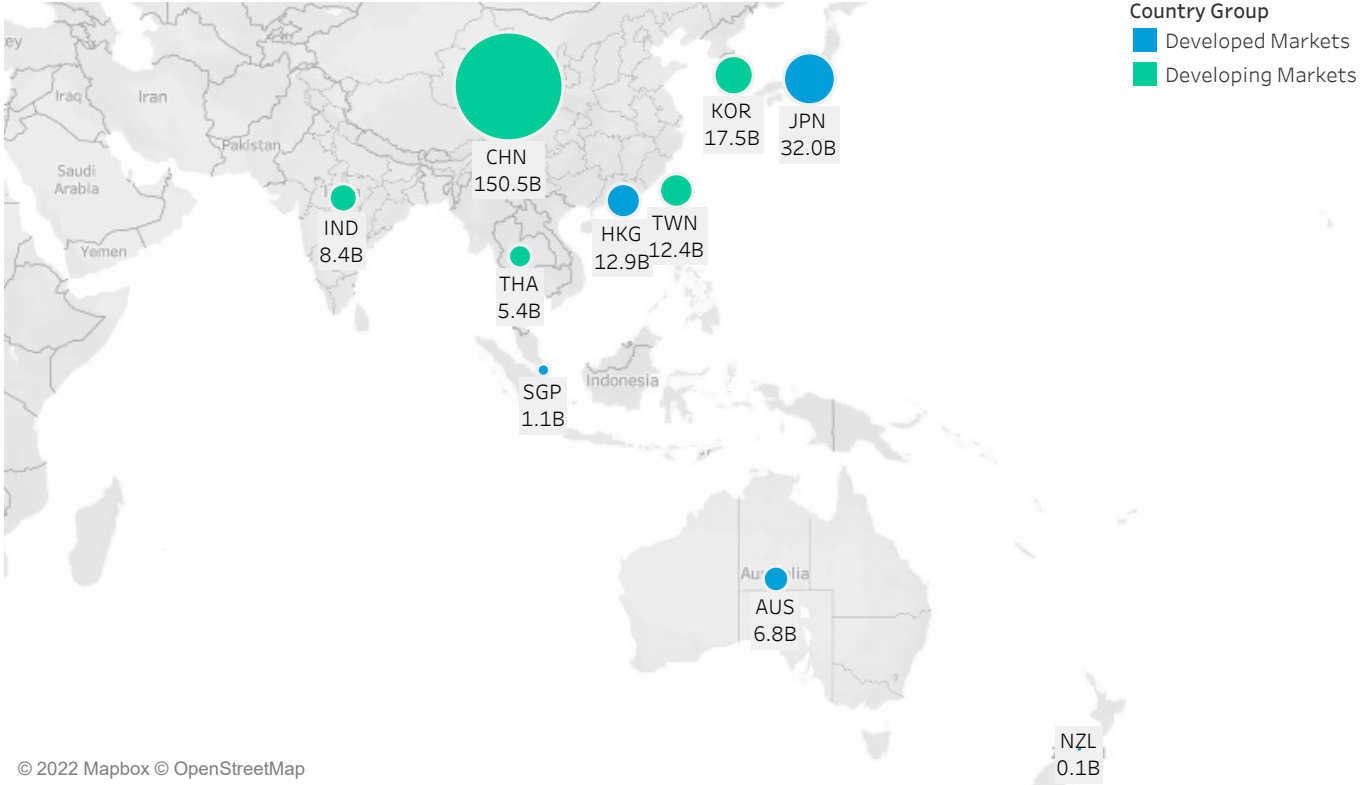


February 2022

APAC Market Structure Monthly

Average Daily Turnover (Notional USD)



© 2022 Mapbox © OpenStreetMap

Country Breakdowns

Hong Kong

China

Japan

Australia

South Korea

Taiwan

India

Thailand

New Zealand

Singapore

Feb 2022

AP Market Structure Monthly

MICROSTRUCTURE OBSERVATIONS

- Overall regional trading across most countries in our universe recorded lower turnover MoM. Exception to this was Australia, Singapore and Thailand.
- In Japan, intraday volatility increased to its highest level since 4Q 2020, whereas intraday quote size continued to decrease steadily and is now ~30% off from 3Q 2021 levels. Otherwise, intraday spreads and volatility in other countries were generally consistent MoM.

AP MARKET STRUCTURE NEWS

The Stock Exchange of Thailand Amends Foreign Listing Rules to Attract Overseas Companies

On 22 February 2022, The Stock Exchange of Thailand (SET) amended its foreign listing rules in pursuit of attracting foreign companies to raise funds in Thailand. Specifically, the period for newly listed foreign firms to retain financial advisors is now one year (previously three years), and the silent period for strategic holders was similarly reduced and is now 18 months (from three years) with eligibility to sell 20% of their shares one year after listing.

<https://www.set.or.th/set/newsdetails.do?newsId=16454852108260&sequence=2022018788&language=en&country=US>

Japan Exchange Publishes Sustainable Finance Platform Development Report

On 25 February 2022, Japan Exchange Group (JPX) published its first English report formulated by its Sustainable Finance Platform Development Working Group, which was established in Oct 2021. The report recaps the current state of the Sustainable Finance Market in Japan and the current barriers to its development. In this context, the JPX Sustainable Finance Platform Development Working Group will first focus on measures including the creation of supportive information platform and ensuring the eligibility for Environmental, Social, and Governance (ESG) bond labels.

<https://www.jpjx.co.jp/english/corporate/news/news-releases/0090/20220225-01.html>
<https://www.jpjx.co.jp/english/corporate/news/news-releases/0090/b5b4pj000004pt4e-att/JPXSFPlatformDevelopmentWGFirstReport.pdf>

Philippine Stock Exchange Goes Back to Full-Day Five-Hour Trading Schedule from 1 March 2022

On 17 February 2022, Philippine Stock Exchange, Inc (PSE) announced that it would revert to its full-day five-hour trading schedule, with market close at 3pm local time. This differs from its temporary pandemic driven shortened schedule that ended at 1pm local time.

<https://documents.pse.com.ph/CircularOPSPDF/CN-2022-0009.pdf>

Hang Seng Indexes Company Seeks Market Views on Creating a New 'Comprehensive' China Index

On 15 February 2022, Hang Seng Indexes Company (HSI) published a Consultation Paper on launching a new "comprehensive" China Index to access both onshore and offshore China stock markets. According to the index provider, the new 'comprehensive' China index would help investors access China investment opportunities more holistically, driven by the increased accessibility of the onshore China market via Hong Kong-China Stock Connect Northbound Trading, and diversified sector composition from onshore/offshore China investment opportunities.

<https://www.hsi.com.hk/static/uploads/contents/en/news/consultations/20220215T163000.pdf>

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

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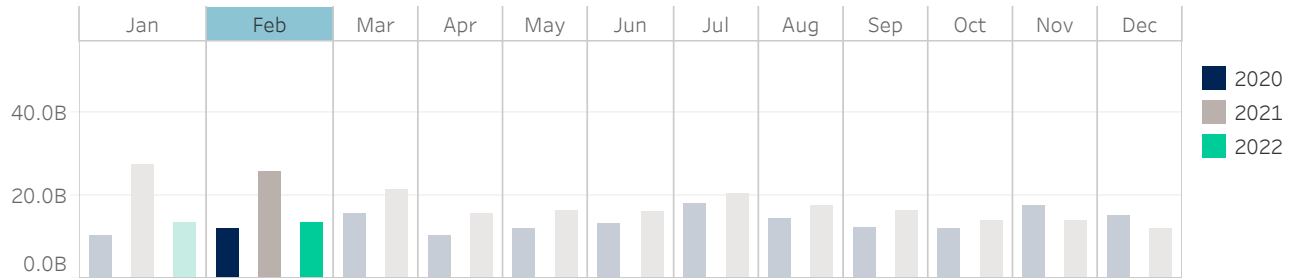
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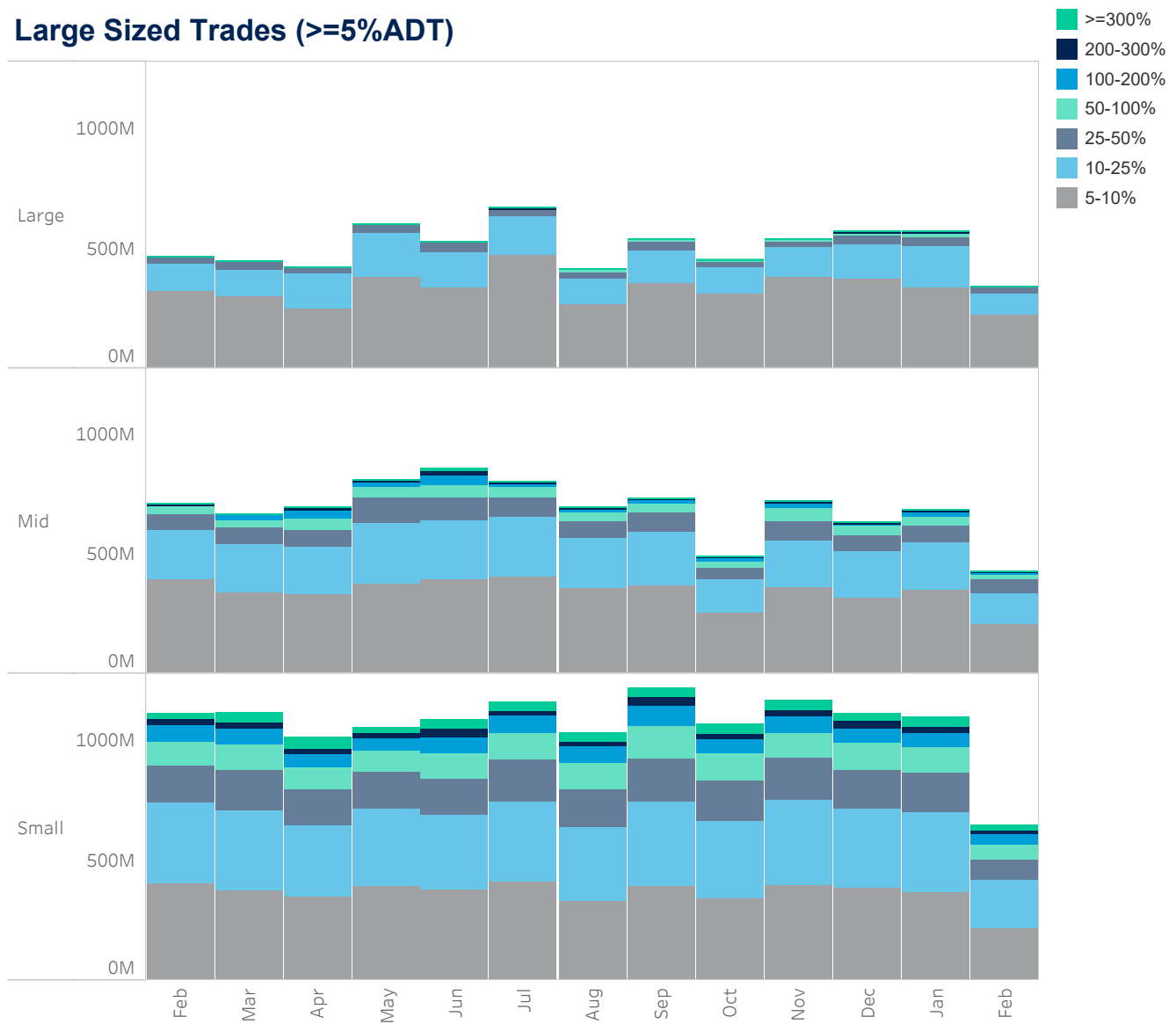
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Hong Kong

Average Daily Turnover (Notional USD)



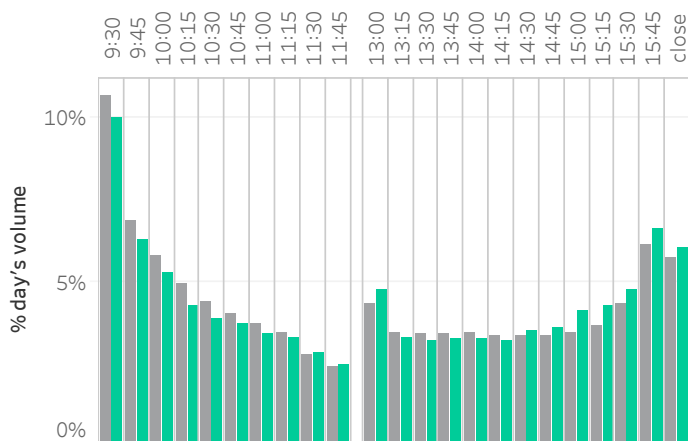
Large Sized Trades (>=5%ADT)



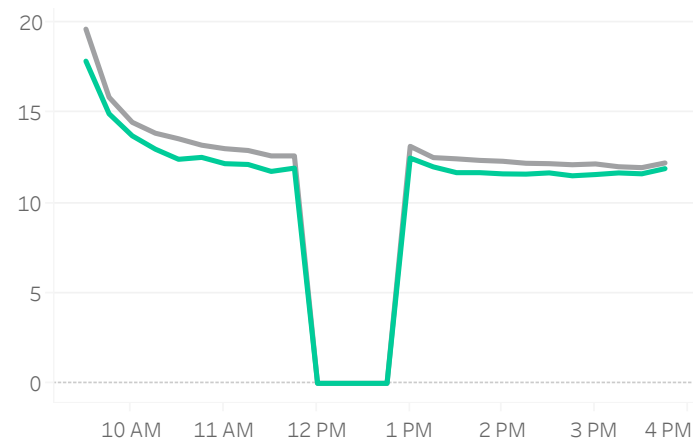
Source data: Virtu Financial

Hong Kong

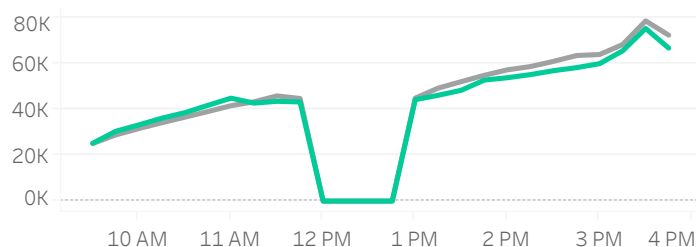
Volume Curve



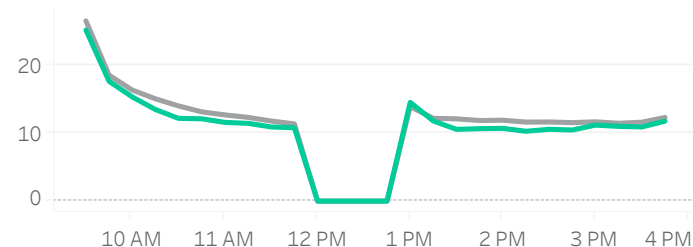
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	16.9	18.4	18.1	18.5	17.3	17.3	16.2	15.8
midday	13.1	13.7	12.9	12.7	12.8	12.5	11.9	11.9
lastHalfHour	12.3	12.6	12.3	12.3	12.5	12.4	11.6	11.6

One Minute Volatility Bps

firstHalfHour	15.8	16.7	17.5	18.2	13.8	14.7	15.5	14.7
midday	7.8	7.0	7.5	6.7	6.1	6.3	6.4	6.3
lastHalfHour	8.1	6.7	6.5	6.5	6.0	5.8	6.1	6.9

Quotesize in Shares

firstHalfHour	26,823	27,946	28,697	26,921	27,455	23,936	28,480	28,387
midday	49,961	47,200	49,020	47,554	47,292	35,935	47,428	47,555
lastHalfHour	76,912	80,882	77,790	75,001	72,389	54,283	70,843	73,131

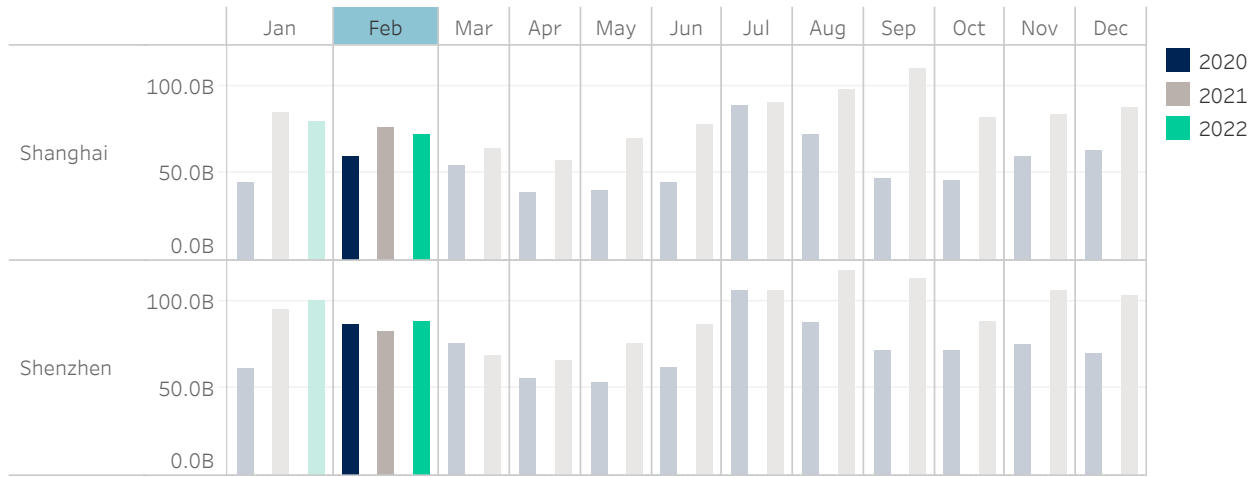
Median used for all metrics

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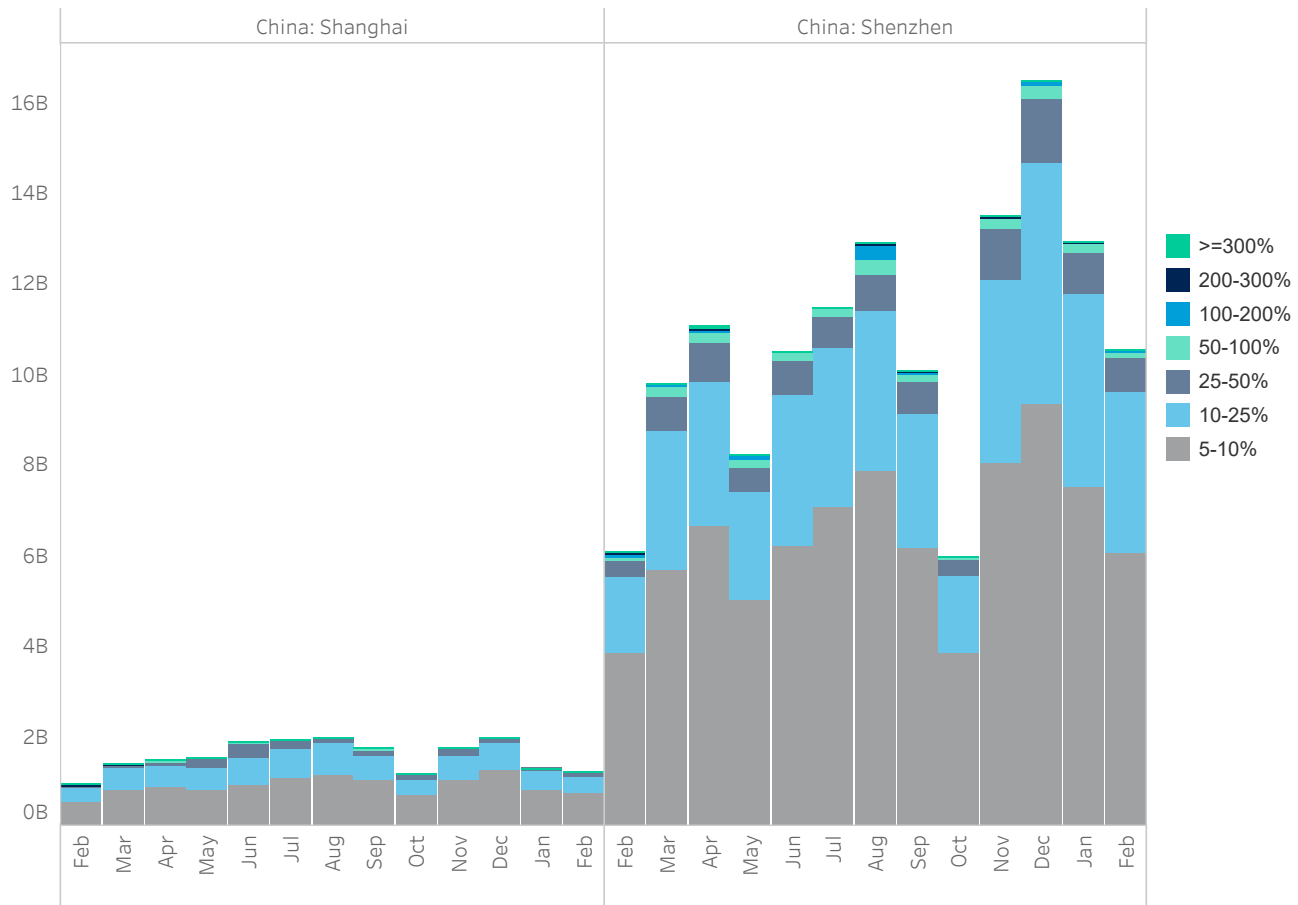
Source data: Virtu Financial

China

Average Daily Turnover (Notional USD)



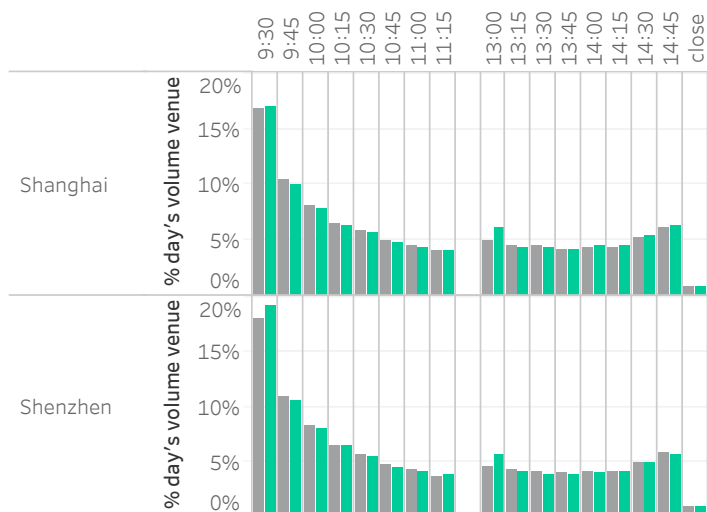
Large Sized Trades (>=5%ADT)



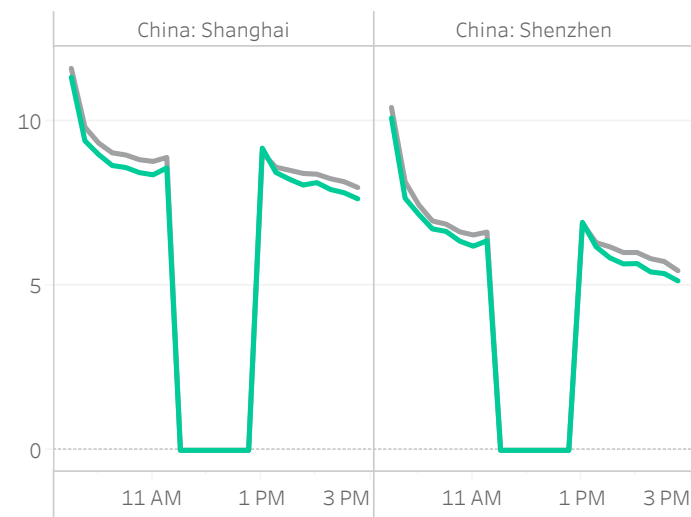
Source data: Virtu Financial

China

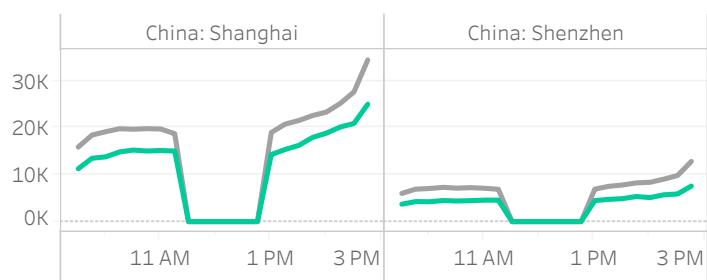
Volume Curve



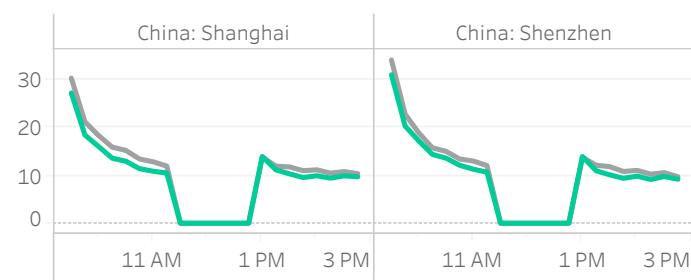
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	China: Shanghai							China: Shenzhen						
	21 Q3			21 Q4			22 Q1	21 Q3			21 Q4			22 Q1
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Jul	Aug	Sep	Oct	Nov	Dec	Jan
firstHalfHour	10.5	10.8	10.7	10.3	9.8	9.3	10.0	8.8	9.3	9.3	9.0	8.4	7.8	9.0
midday	8.6	8.7	8.5	8.5	8.3	8.0	8.2	6.4	6.6	6.5	6.5	6.2	5.8	6.3
lastHalfHour	7.8	7.7	7.4	7.6	7.6	7.3	7.7	5.4	5.5	5.4	5.4	5.3	4.9	5.3

One Minute Volatility Bps

firstHalfHour	21.6	23.3	25.1	22.8	19.2	17.8	20.5	18.2	25.1	26.6	27.3	26.3	24.1	21.8	27.0	22.0
midday	9.2	10.0	10.8	9.0	7.5	7.3	8.4	7.8	11.1	11.7	11.3	10.4	9.6	9.2	11.3	9.9
lastHalfHour	7.7	7.5	8.1	7.1	5.9	5.9	7.4	6.7	8.2	8.2	8.2	7.9	7.2	7.1	8.8	7.8

Quotesize in Shares

firstHalfHour	17K	17K	17K	14K	16K	16K	13K	13K	7K	7K	7K	6K	7K	5K	4K	4K
midday	21K	21K	18K	17K	19K	19K	16K	16K	8K	8K	8K	8K	8K	6K	4K	5K
lastHalfHour	31K	33K	29K	26K	31K	30K	23K	23K	12K	13K	13K	12K	13K	9K	6K	6K

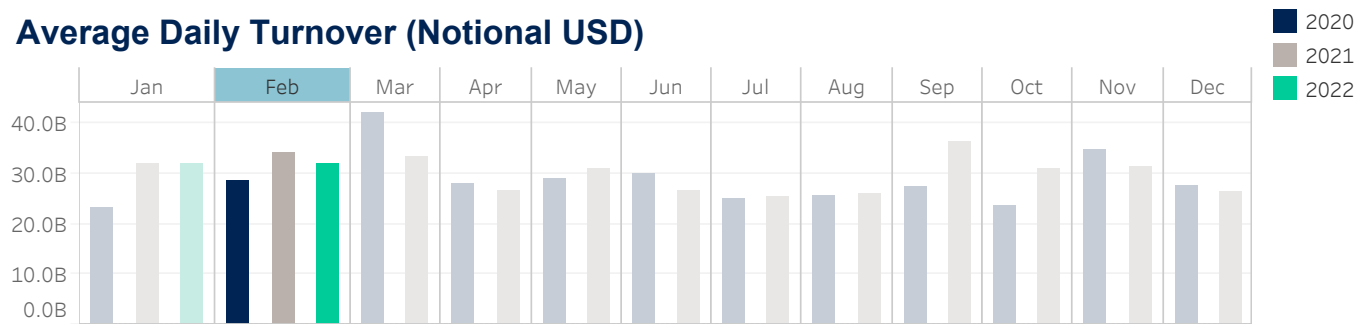
Median used for all metrics

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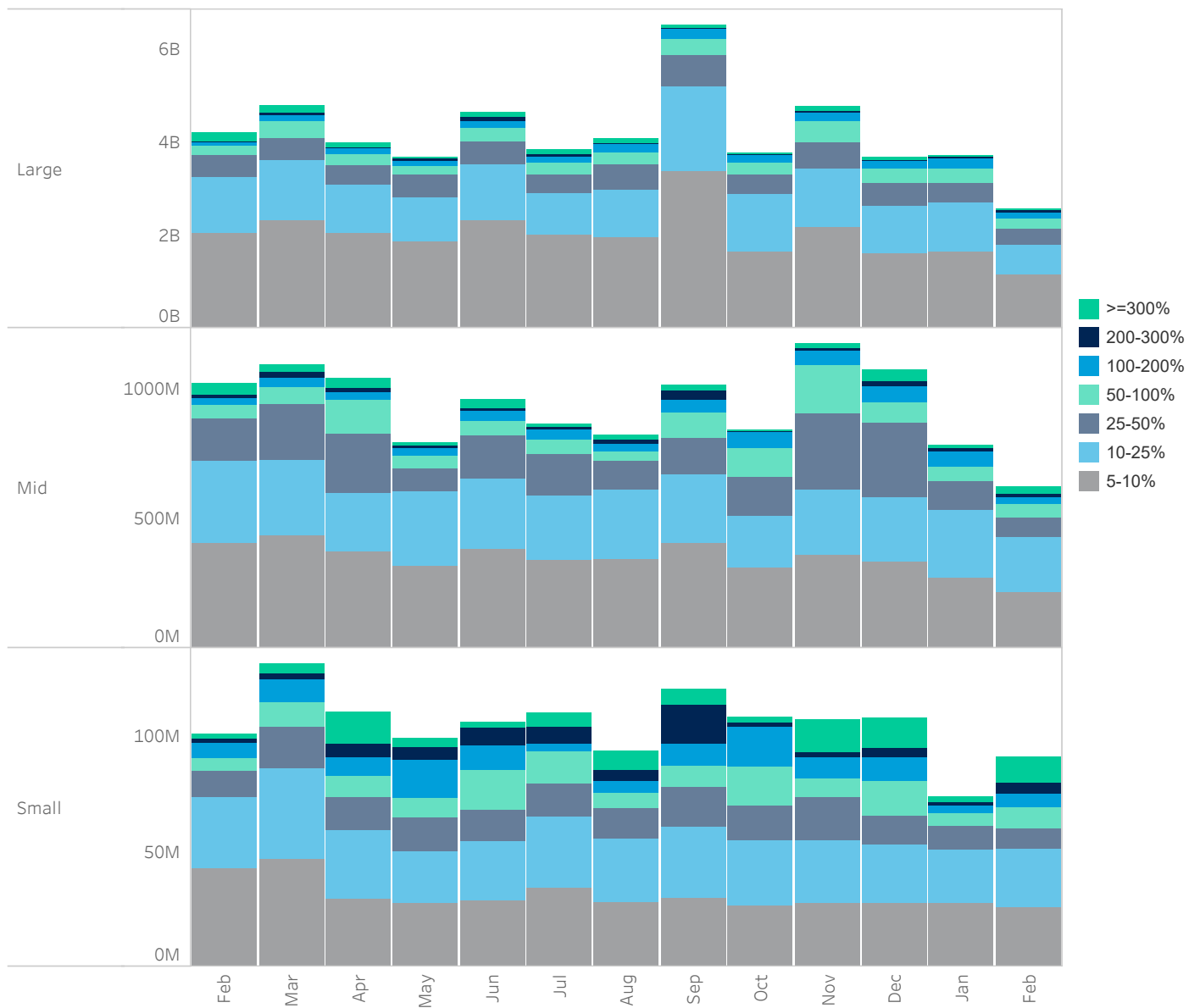
Source data: Virtu Financial

Japan

Average Daily Turnover (Notional USD)



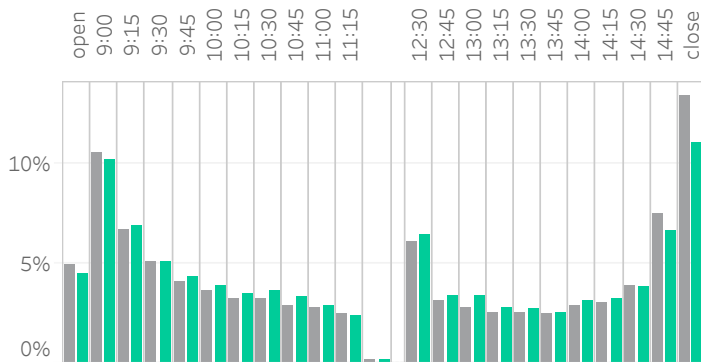
Large Sized Trades (>=5%ADT)



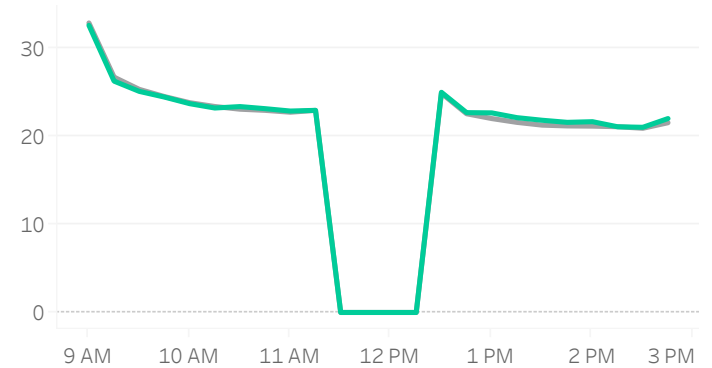
Source data: Virtu Financial

Japan

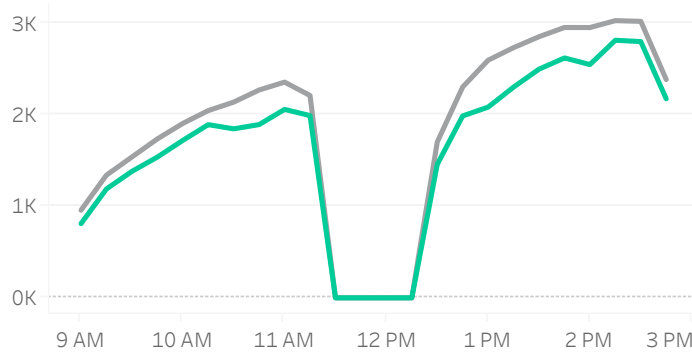
Volume Curve



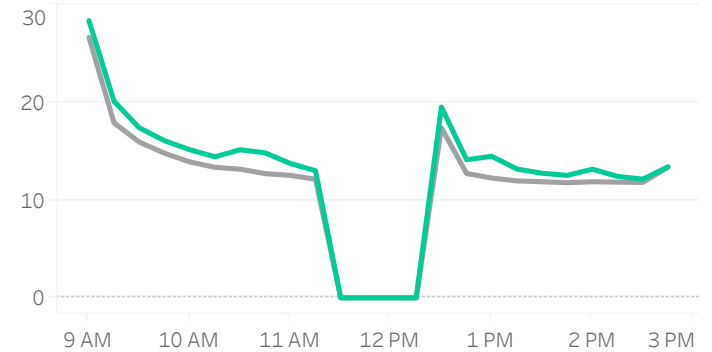
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	25.6	27.3	25.8	26.7	27.2	28.7	29.4	28.1
midday	20.7	21.4	21.1	21.9	22.1	22.5	23.3	22.6
lastHalfHour	19.6	19.9	19.8	19.7	20.2	20.7	21.6	21.2

One Minute Volatility Bps

firstHalfHour	12.1	12.6	12.4	14.5	13.2	14.6	16.5	16.8
midday	6.2	5.9	6.0	7.1	6.1	6.4	7.7	7.6
lastHalfHour	11.5	7.9	7.9	6.8	10.1	6.1	6.5	7.0

Quotesize in Shares

firstHalfHour	1,334	1,280	1,380	1,263	1,289	1,136	1,084	1,043
midday	2,700	2,525	2,630	2,521	2,700	2,453	2,128	2,043
lastHalfHour	3,218	3,328	3,397	3,161	3,282	2,896	2,602	2,625

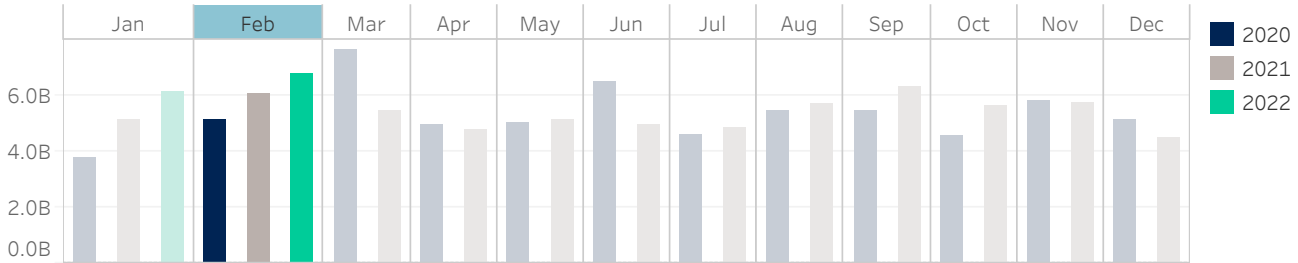
Median used for all metrics

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

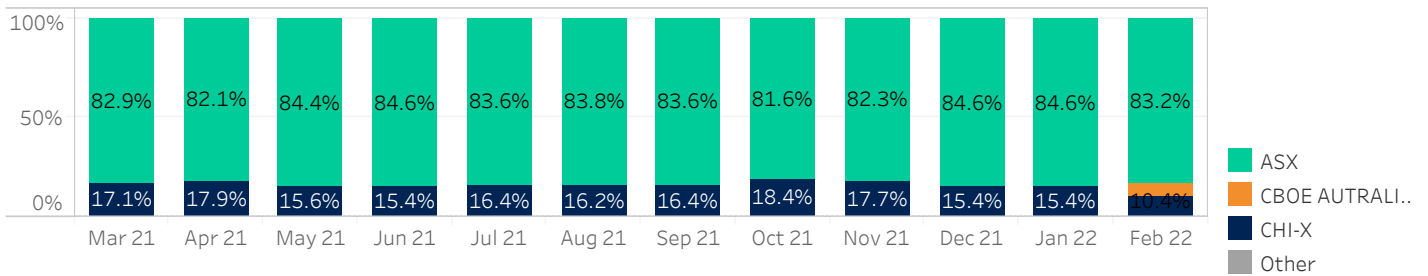
Source data: Virtu Financial

Australia

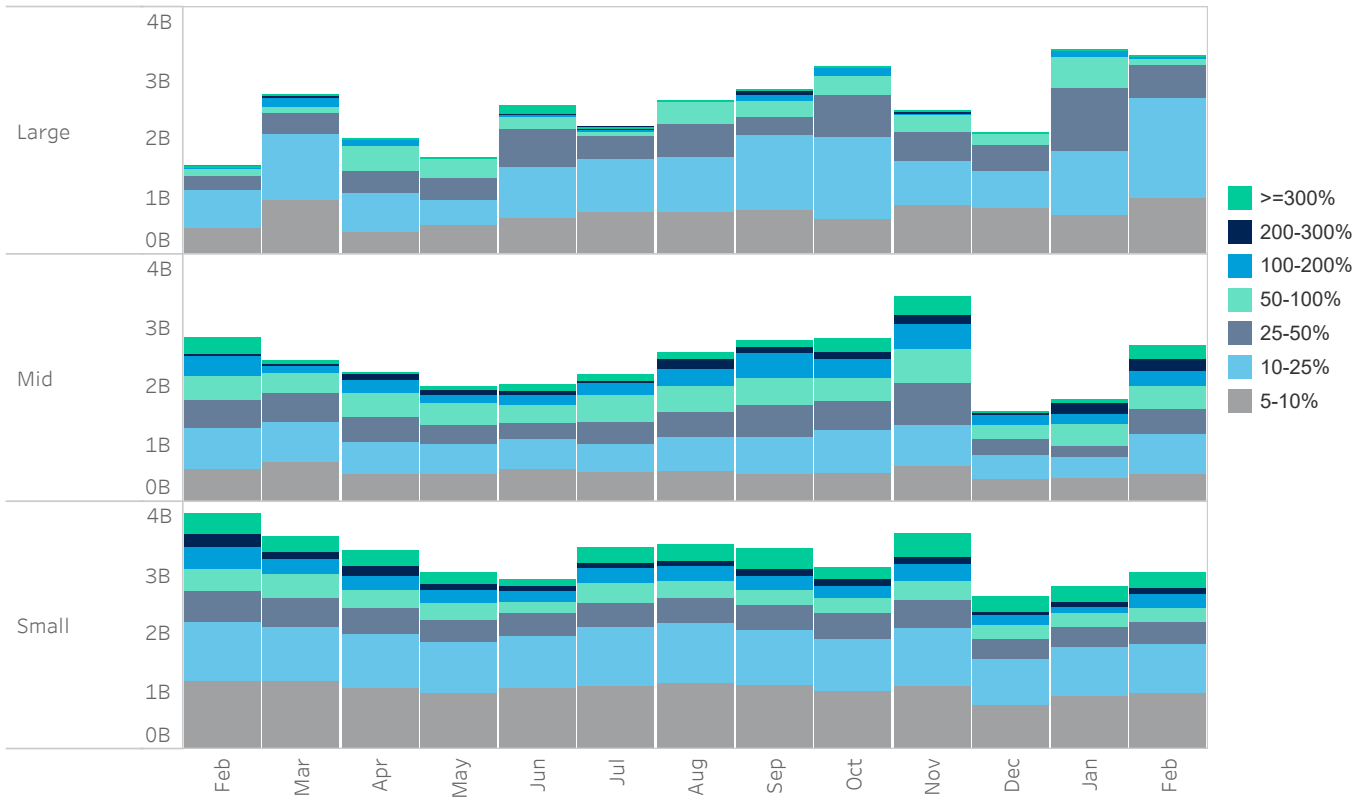
Average Daily Turnover (Notional USD)



Venue Market Share (Notional USD)



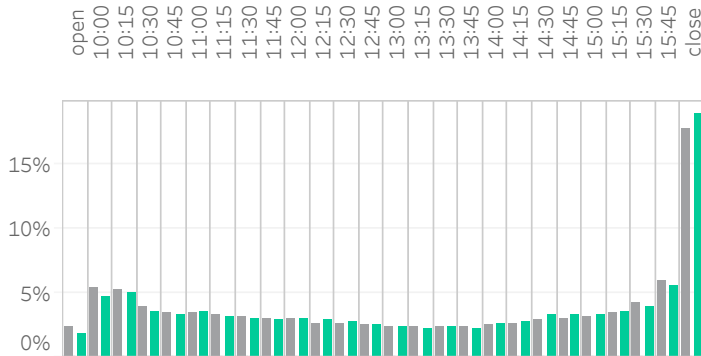
Large Sized Trades (>=5%ADT)



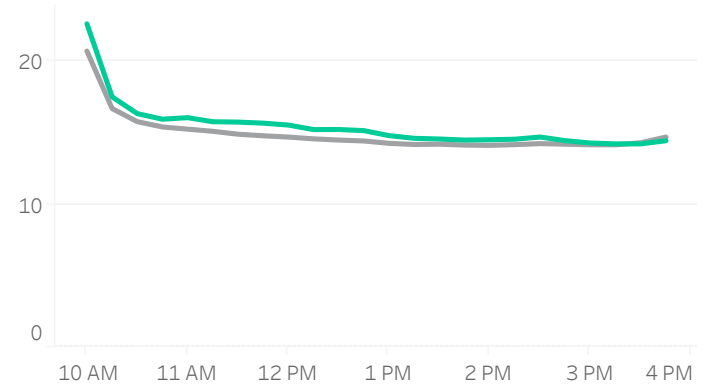
Source data: Virtu Financial

Australia

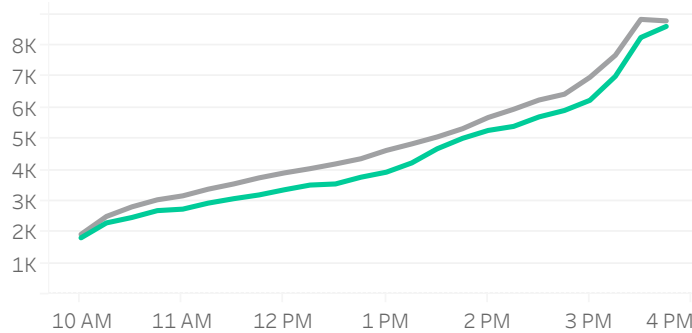
Volume Curve



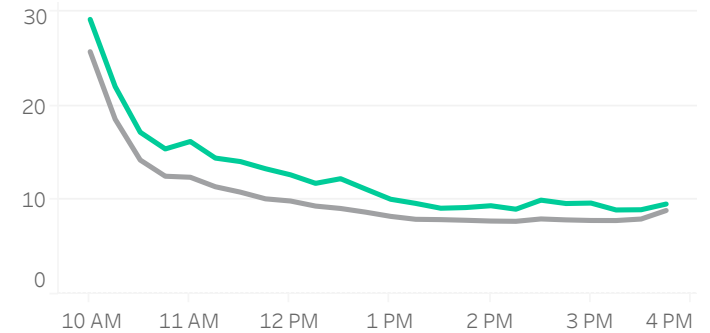
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	17.1	16.5	16.9	16.9	17.1	17.7	18.0	18.9
midday	13.7	13.7	14.2	14.0	14.1	14.5	14.6	15.0
lastHalfHour	13.9	13.8	14.3	13.9	14.1	14.2	14.1	14.2

One Minute Volatility Bps

firstHalfHour	15.5	15.4	16.9	15.6	15.7	16.0	16.5	21.2
midday	3.6	3.6	4.0	4.4	4.3	4.3	5.5	6.1
lastHalfHour	3.3	2.7	3.7	4.0	3.6	3.2	4.9	3.8

Quotesize in Shares

firstHalfHour	2,425	2,398	2,375	2,178	2,129	1,938	1,994	2,080
midday	4,620	4,845	4,604	4,298	4,450	4,134	3,969	4,023
lastHalfHour	8,999	9,113	8,565	9,226	9,302	8,480	8,111	8,652

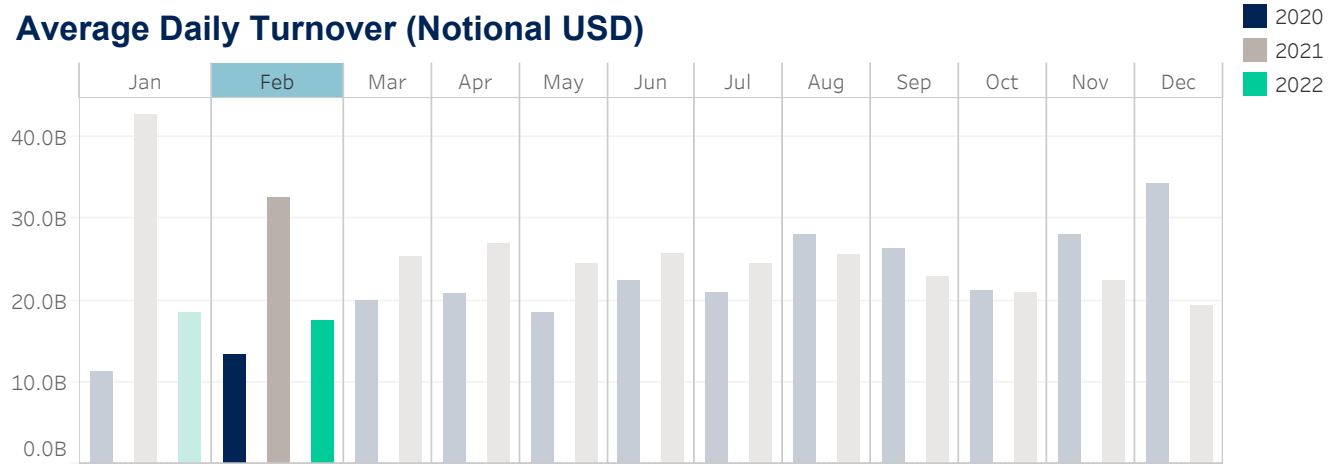
Median used for all metrics

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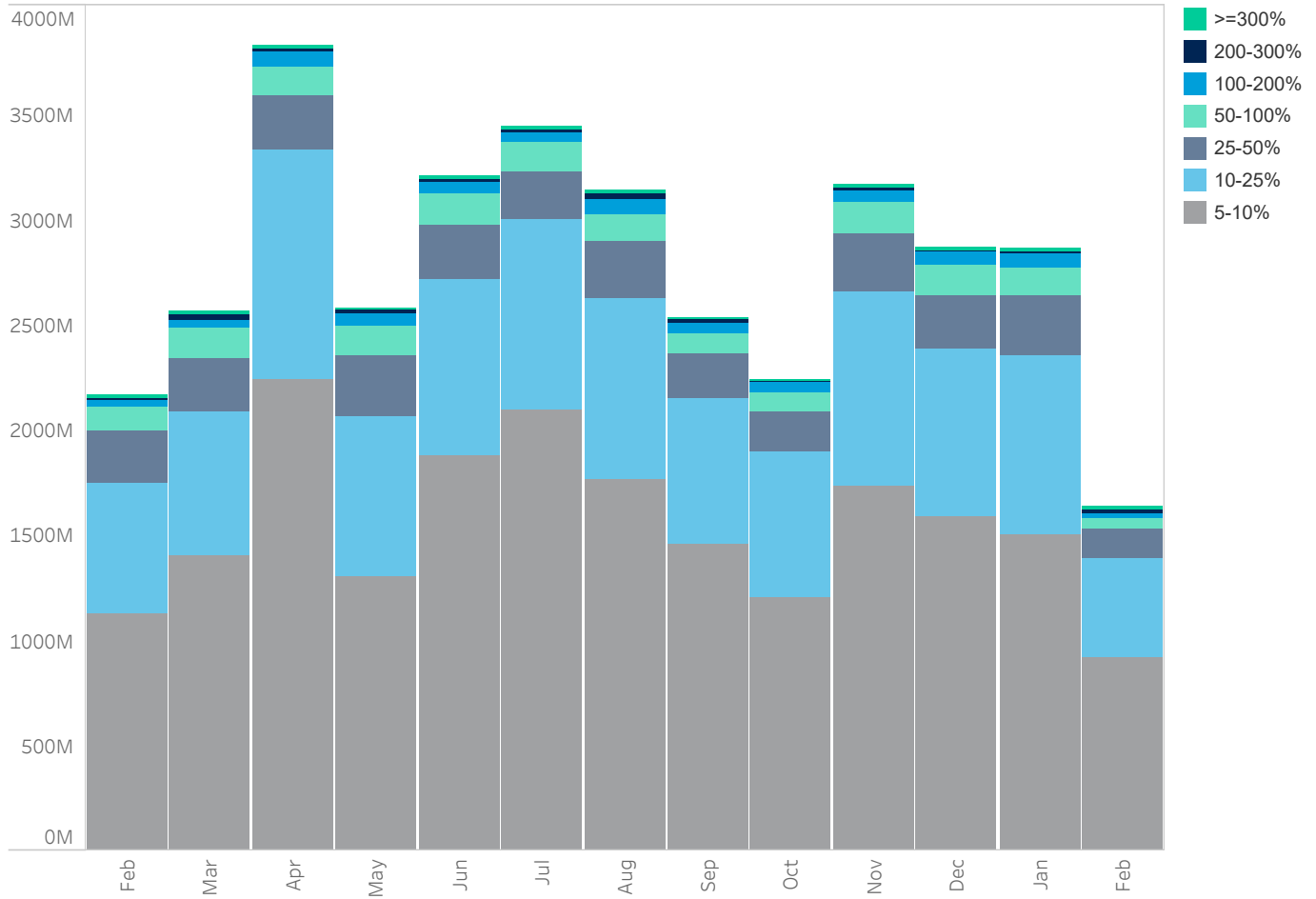
Source data: Virtu Financial

South Korea

Average Daily Turnover (Notional USD)



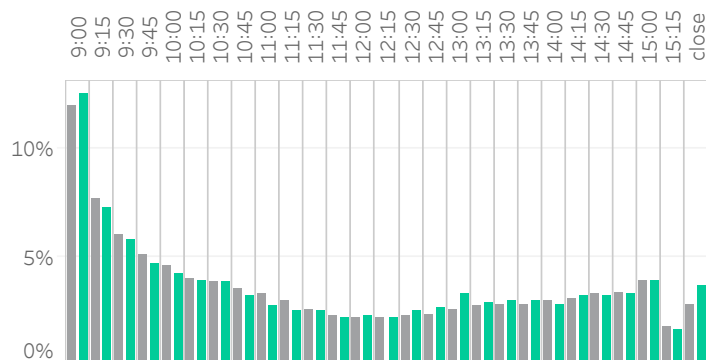
Large Sized Trades (>=5%ADT)



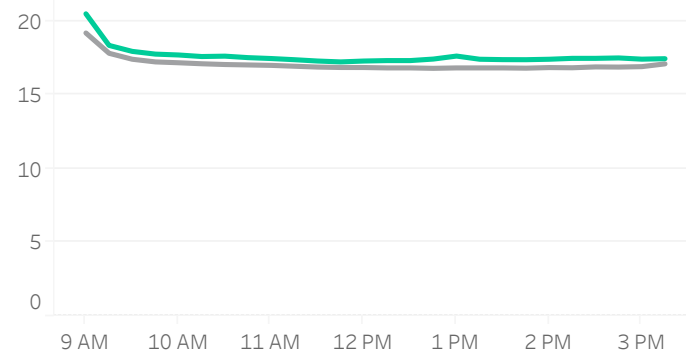
Source data: Virtu Financial

South Korea

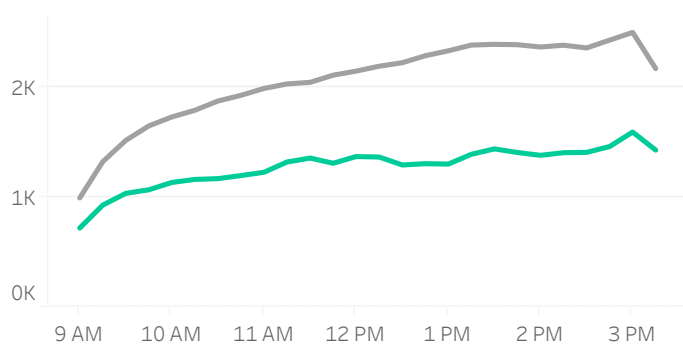
Volume Curve



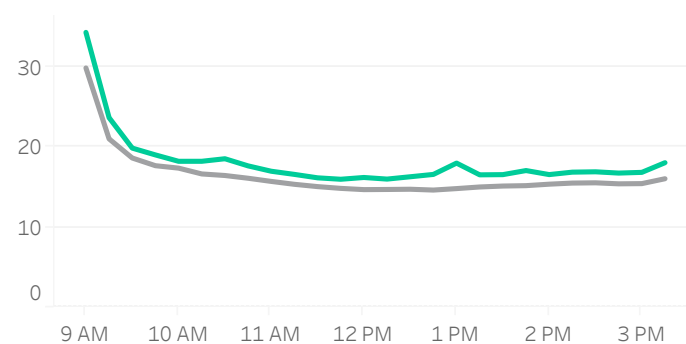
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	18.3	18.5	18.7	18.9	19.8	18.3	18.9	18.8
midday	17.7	17.3	17.6	17.2	17.9	17.2	17.4	17.4
lastHalfHour	17.8	17.3	17.6	17.2	17.9	17.3	17.4	17.4

One Minute Volatility Bps

firstHalfHour	13.0	15.8	15.1	16.5	16.9	14.9	18.2	17.9
midday	10.5	11.1	10.1	10.7	11.2	10.6	11.9	11.6
lastHalfHour	22.9	15.0	19.0	12.7	15.6	25.1	13.0	13.3

Quotesize in Shares

firstHalfHour	1,526	1,053	1,012	890	909	899	813	816
midday	2,812	2,004	2,023	1,653	1,773	1,608	1,528	1,300
lastHalfHour	3,230	2,336	2,362	1,871	2,018	1,807	1,727	1,576

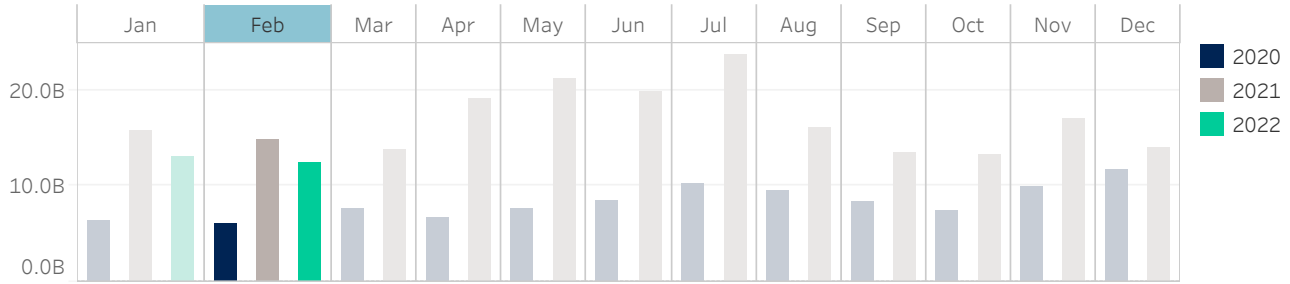
Median used for all metrics

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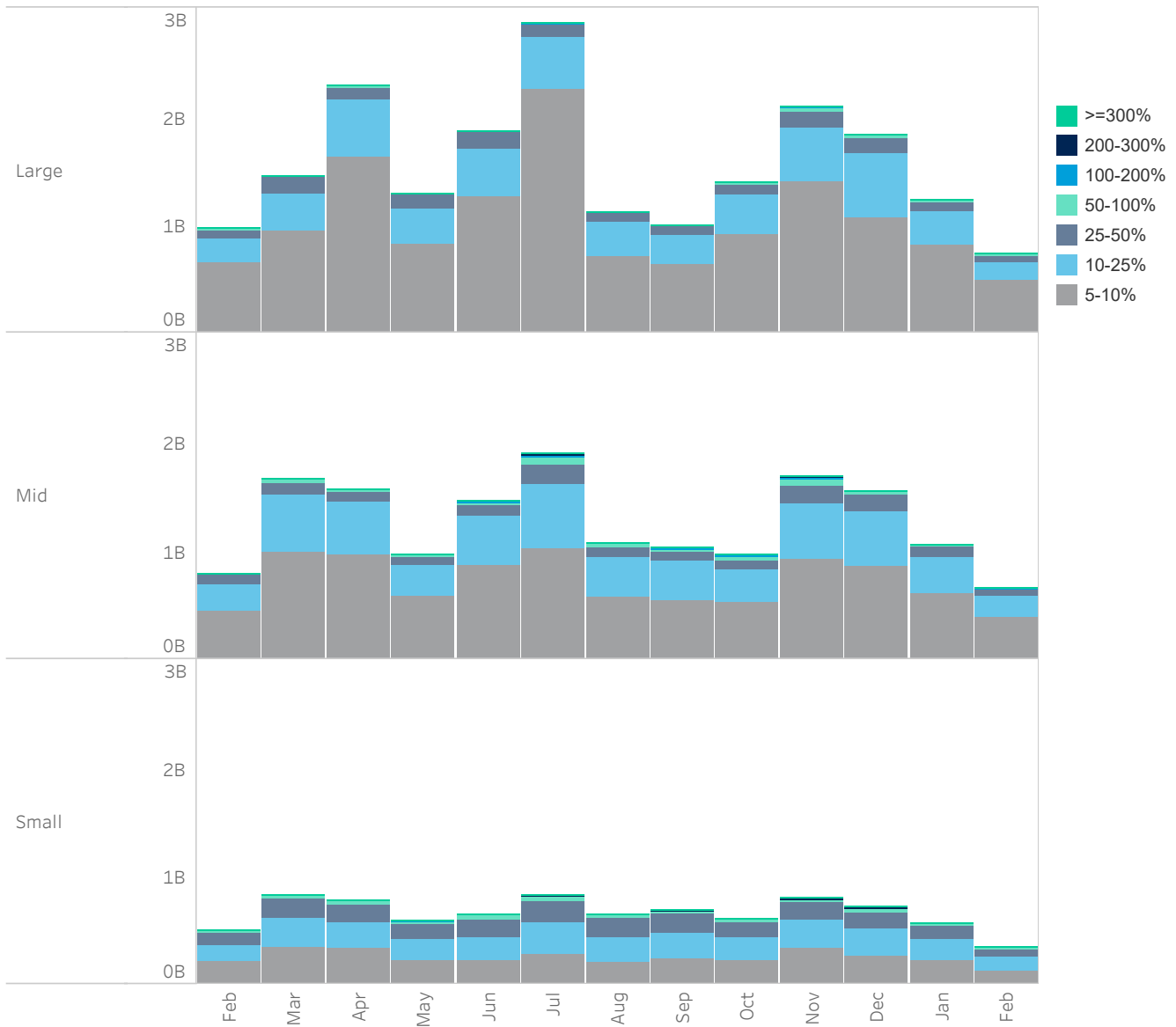
Source data: Virtu Financial

Taiwan

Average Daily Turnover (Notional USD)



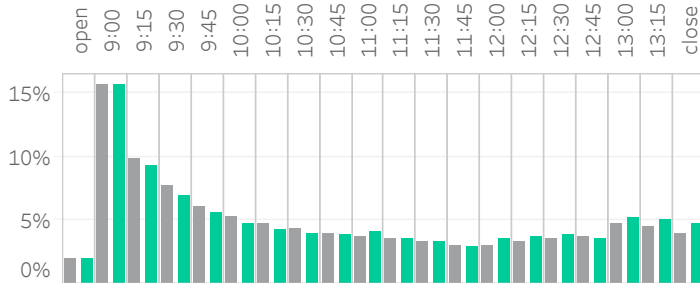
Large Sized Trades (>=5%ADT)



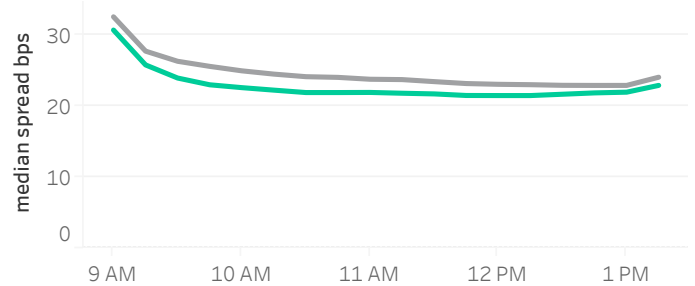
Source data: Virtu Financial

Taiwan

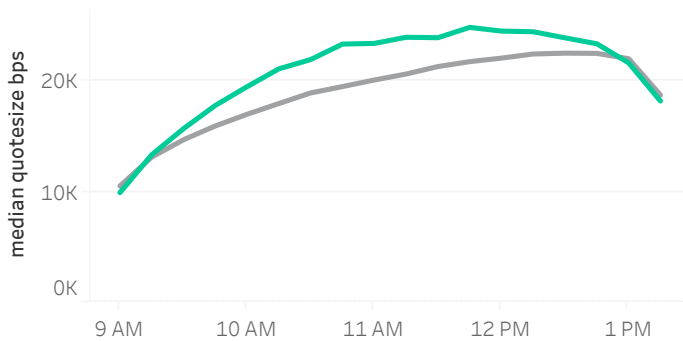
Volume Curve



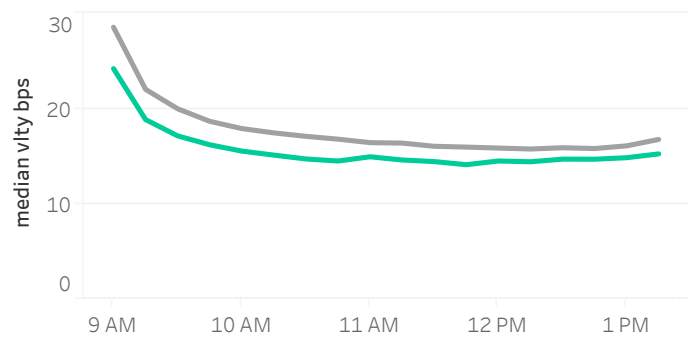
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	29.0	30.1	29.1	30.4	28.0	26.5	28.6	26.7
midday	23.6	24.1	23.2	24.2	22.5	21.7	22.2	21.8
lastHalfHour	22.7	23.8	23.4	23.8	22.4	21.6	22.6	22.3

One Minute Volatility Bps

firstHalfHour	17.1	17.1	14.7	15.5	14.4	11.7	13.6	11.9
midday	7.5	7.6	6.8	7.2	6.6	6.6	7.6	6.4
lastHalfHour	7.9	7.8	7.9	8.1	9.3	9.2	7.8	9.0

Quotesize in Shares

firstHalfHour	12,027	10,553	11,061	10,944	12,921	13,588	12,185	11,886
midday	18,860	17,088	19,152	18,385	22,487	24,891	22,588	22,911
lastHalfHour	20,270	17,592	18,484	18,001	22,498	24,520	21,888	20,500

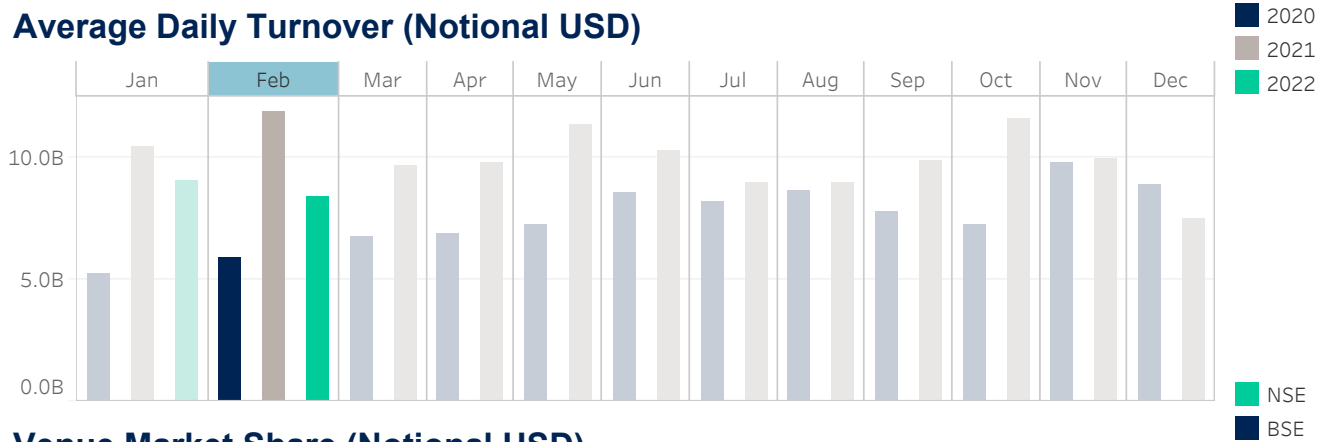
Median used for all metrics

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

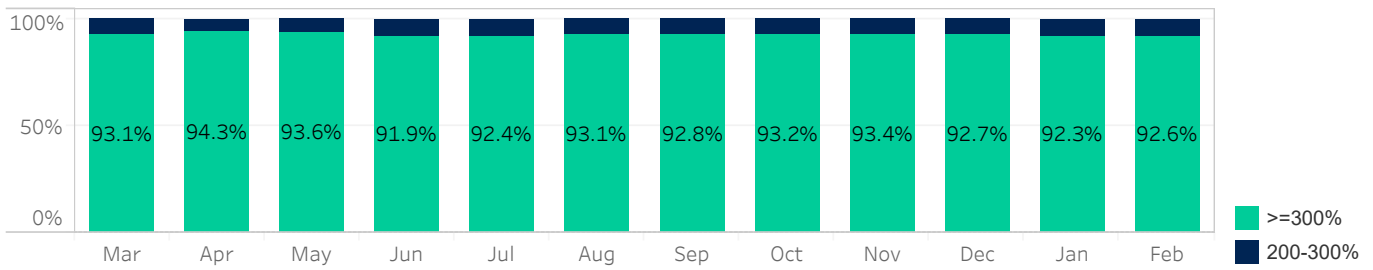
Source data: Virtu Financial

India

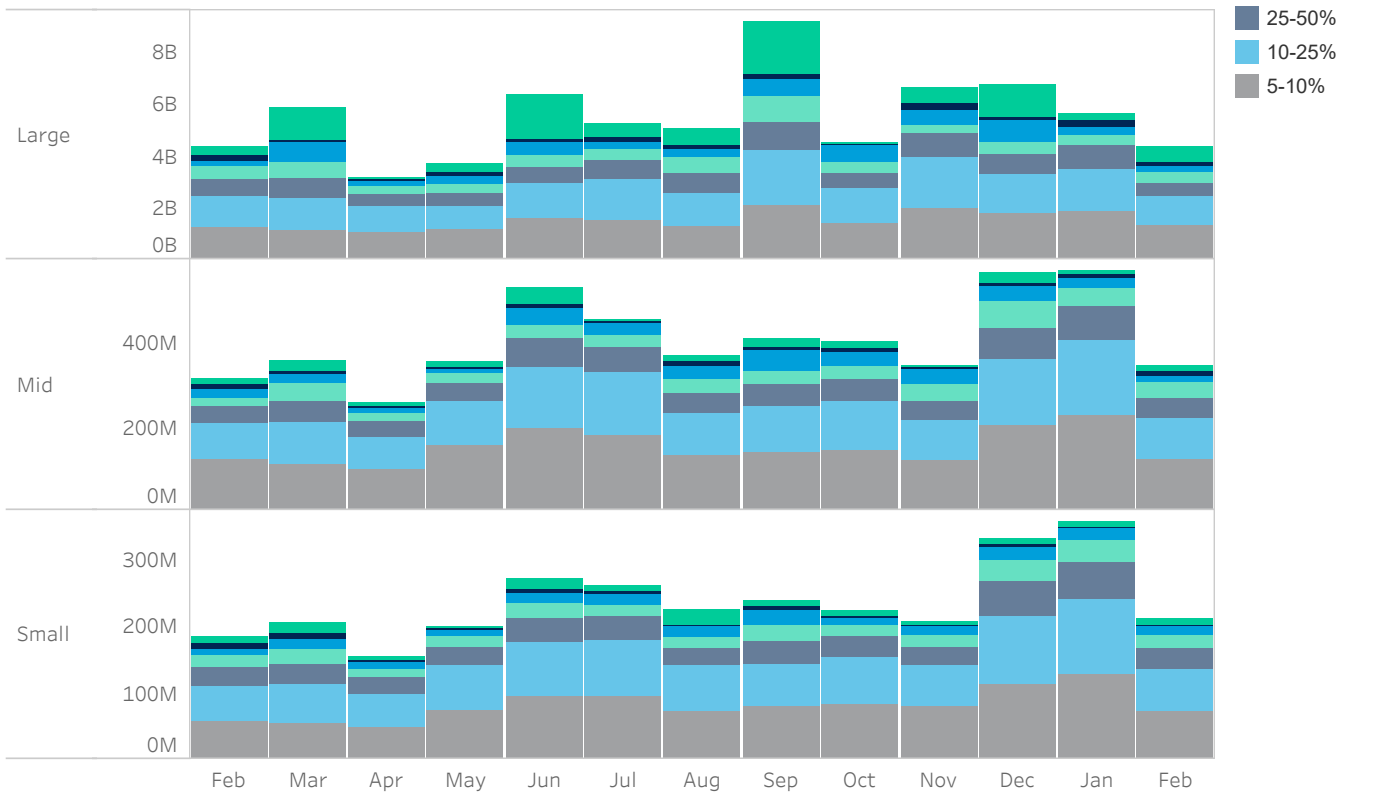
Average Daily Turnover (Notional USD)



Venue Market Share (Notional USD)



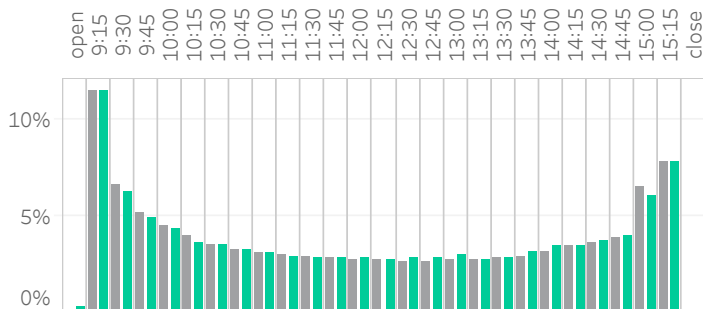
Large Sized Trades (>=5%ADT)



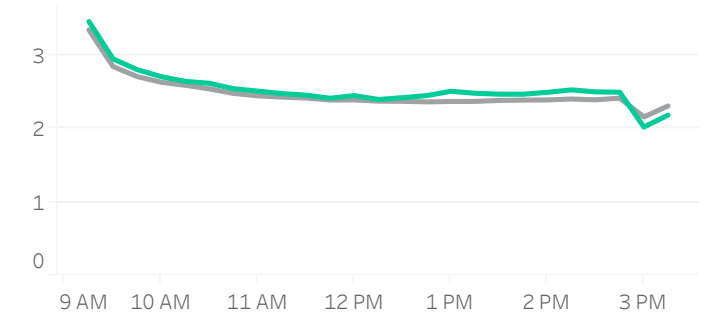
Source data: Virtu Financial

India

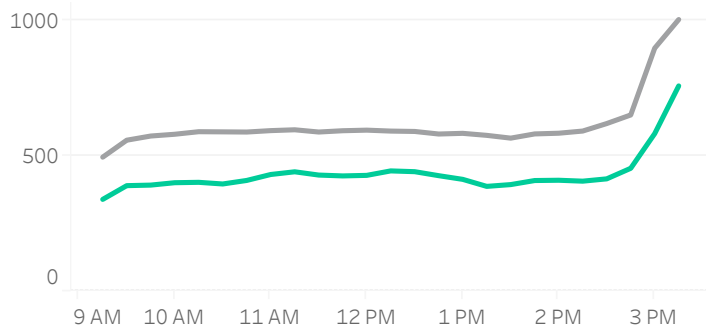
Volume Curve



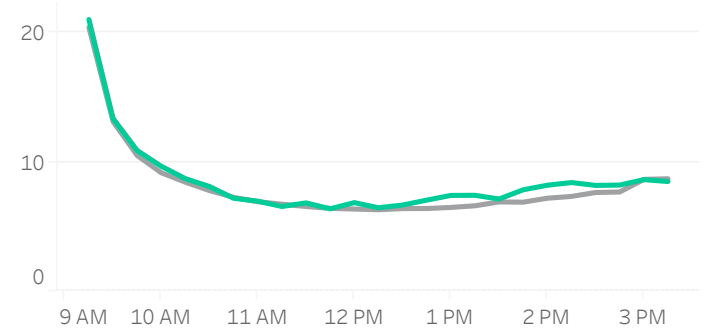
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	2.6	2.8	2.8	3.2	3.1	3.0	3.1	3.1
midday	2.2	2.4	2.3	2.6	2.5	2.4	2.4	2.5
lastHalfHour	2.0	2.1	1.9	2.1	2.0	2.0	2.0	2.0

One Minute Volatility Bps

firstHalfHour	10.5	12.6	12.7	16.9	14.7	13.7	14.7	15.8
midday	4.7	5.5	5.8	7.3	6.5	5.6	5.9	7.1
lastHalfHour	6.1	6.8	6.4	7.7	7.3	7.0	7.3	7.6

Quotesize in Shares

firstHalfHour	533	527	526	425	408	416	394	372
midday	593	583	540	459	444	502	451	417
lastHalfHour	952	929	946	780	826	856	736	660

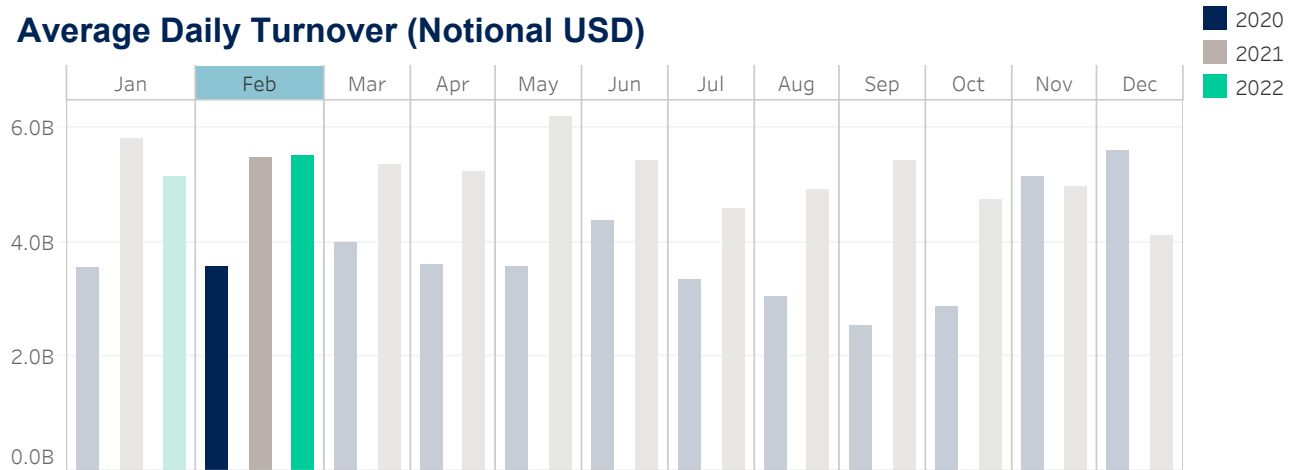
Median used for all metrics

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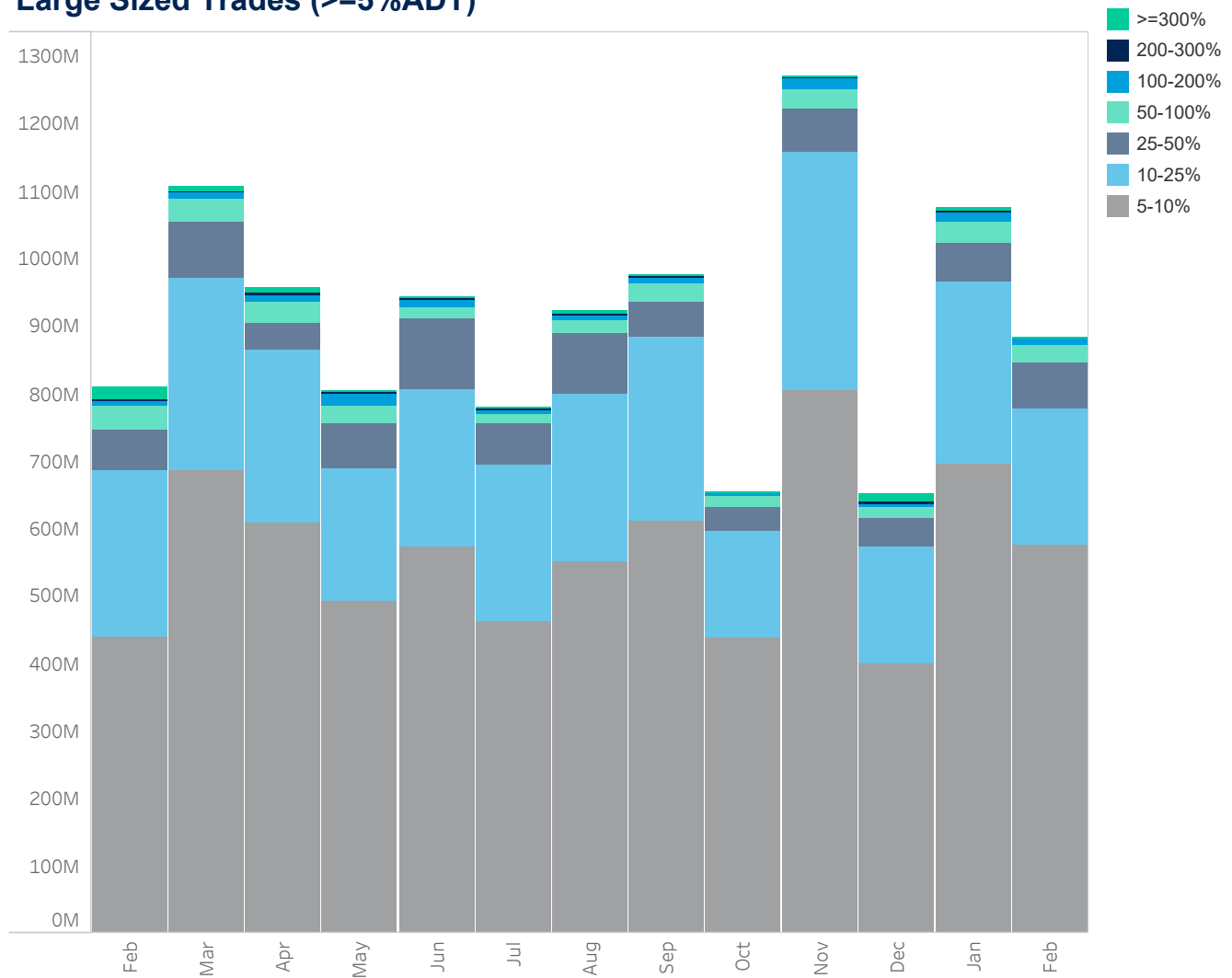
Source data: Virtu Financial

Thailand

Average Daily Turnover (Notional USD)



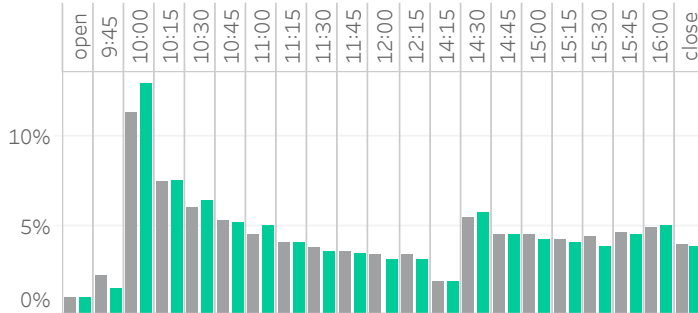
Large Sized Trades (>=5%ADT)



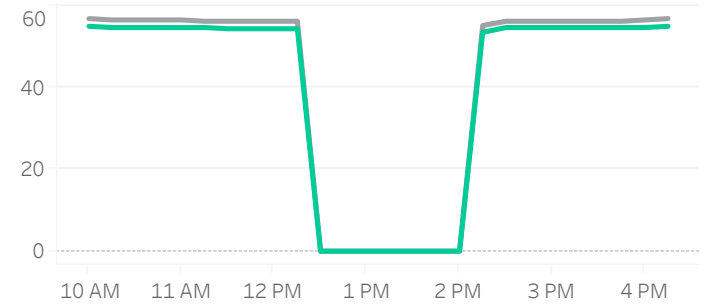
Source data: Virtu Financial

Thailand

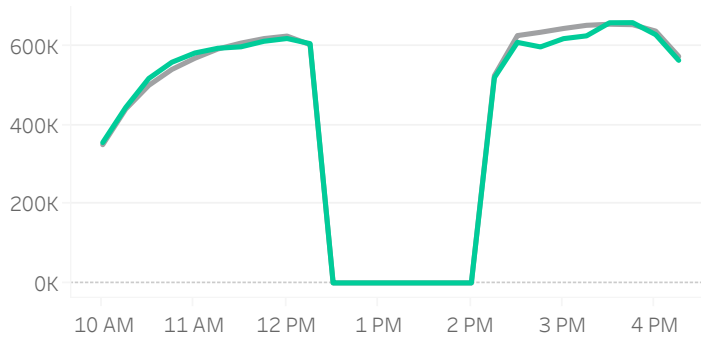
Volume Curve



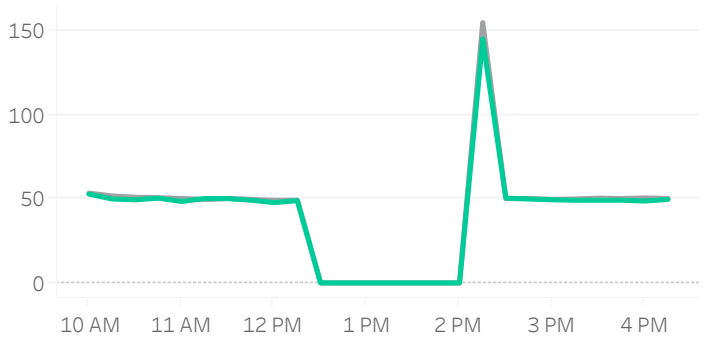
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	58.5	57.3	55.9	56.3	55.0	53.8	54.3	55.0
midday	58.0	56.8	55.6	56.2	54.4	53.2	54.1	54.6
lastHalfHour	58.7	57.1	55.9	56.5	54.9	53.6	54.2	54.9

One Minute Volatility Bps

firstHalfHour	159.4	162.4	168.7	180.7	179.3	120.6	143.8	162.4
midday	130.5	159.5	164.4	167.5	158.7	152.8	151.5	160.6
lastHalfHour								

Quotesize in Shares

firstHalfHour	327,728	343,555	393,145	415,379	402,678	363,207	388,450	388,231
midday	550,461	566,015	644,261	663,065	654,635	569,102	618,574	609,195
lastHalfHour	542,139	571,302	629,320	657,872	643,271	564,619	611,447	598,555

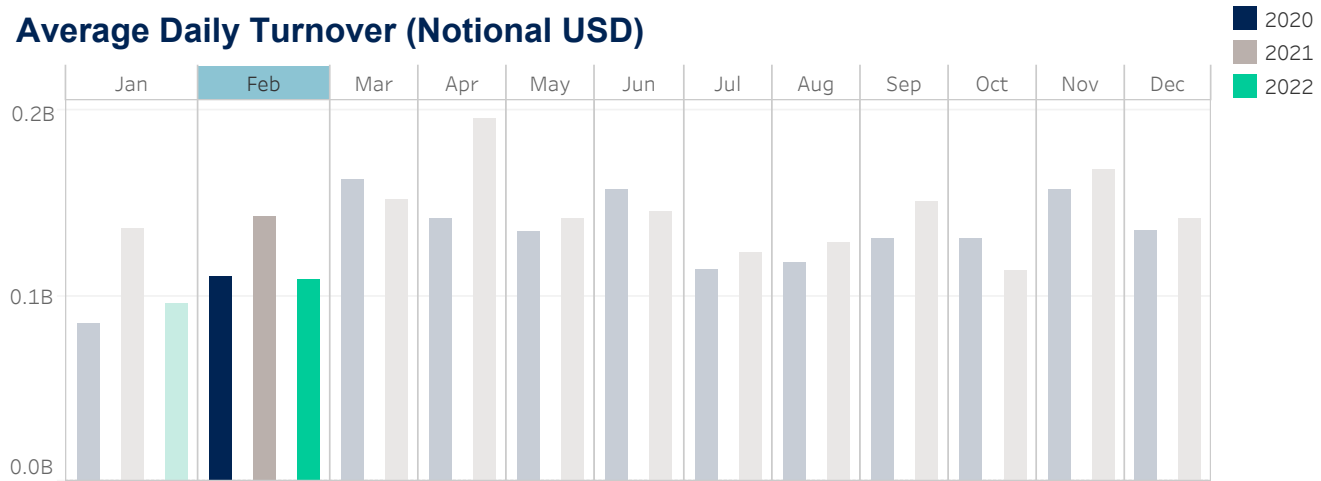
Median used for all metrics

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

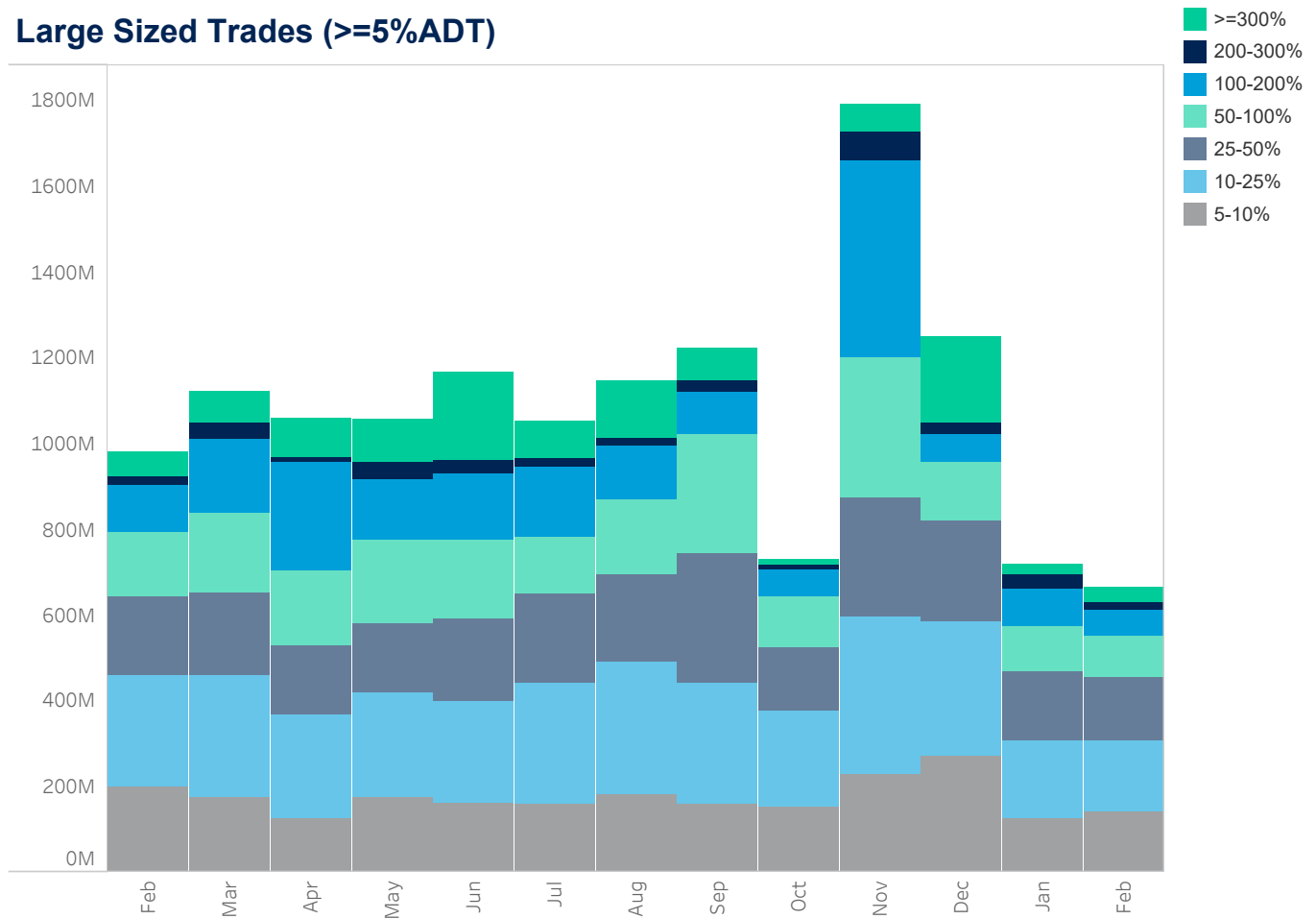
Source data: Virtu Financial

New Zealand

Average Daily Turnover (Notional USD)



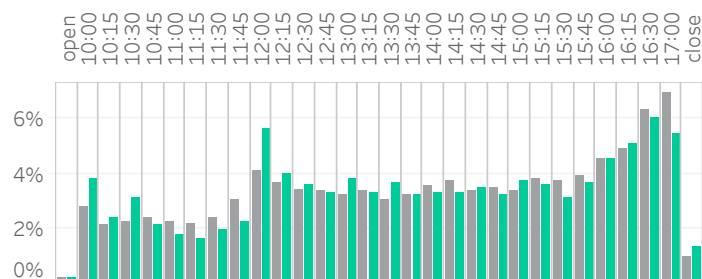
Large Sized Trades (>=5%ADT)



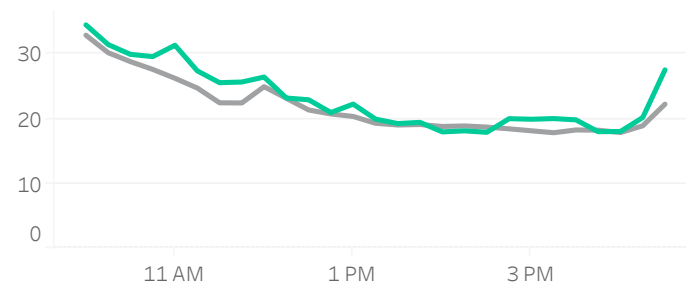
Source data: Virtu Financial

New Zealand

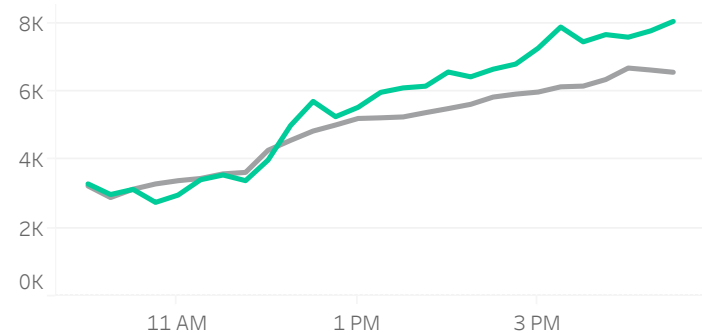
Volume Curve



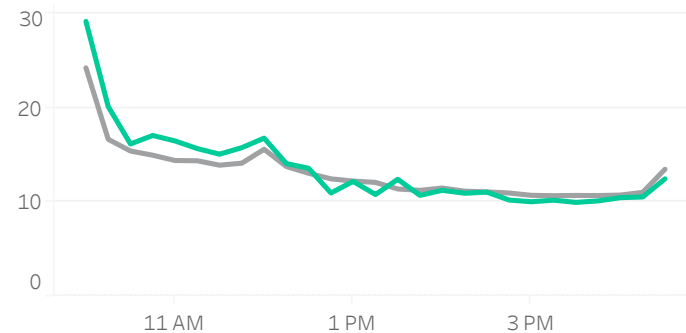
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	30.8	31.6	29.0	29.1	31.3	34.0	33.3	32.1
midday	19.0	21.0	19.5	18.2	20.0	21.7	21.6	20.9
lastHalfHour	19.0	20.0	19.7	18.3	18.7	20.5	21.3	23.3

One Minute Volatility Bps

firstHalfHour	6.1	7.0	6.0	7.5	7.4	9.1	9.6	8.6
midday	3.4	3.6	3.3	3.3	4.0	4.2	4.3	4.8
lastHalfHour	4.0	3.8	3.6	4.3	3.5	4.1	3.3	3.9

Quotesize in Shares

firstHalfHour	2,792	3,149	3,533	3,090	3,356	3,316	2,843	3,378
midday	5,453	5,494	5,752	5,679	5,456	5,315	5,011	5,750
lastHalfHour	7,213	6,762	7,042	7,910	6,898	7,038	6,831	7,978

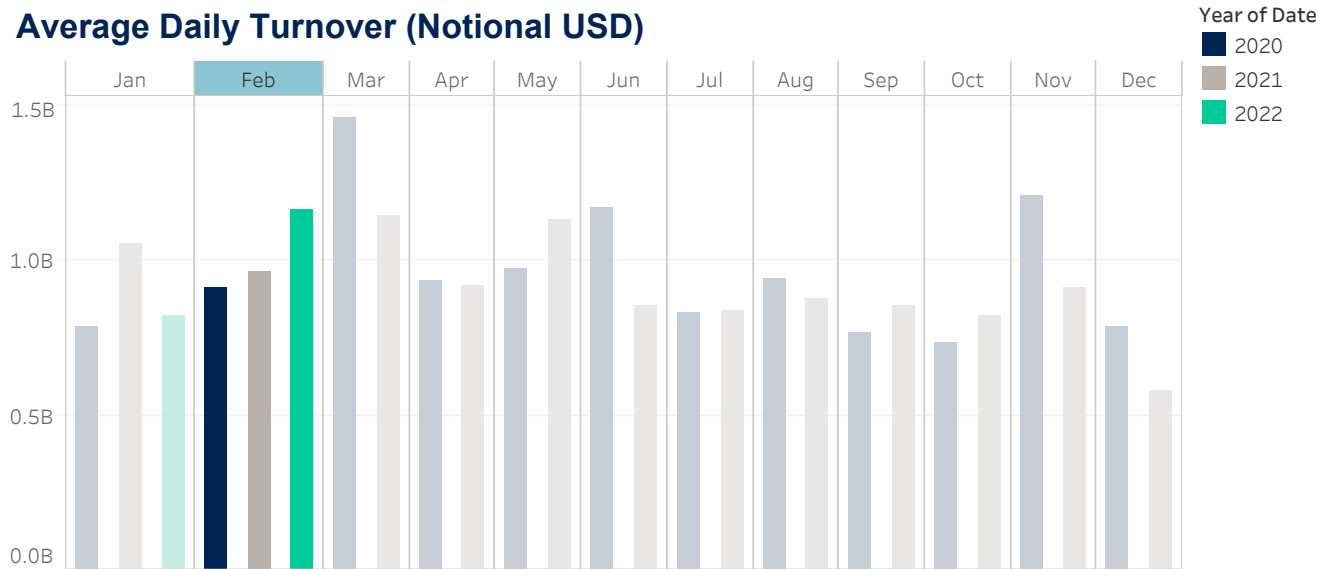
Median used for all metrics

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

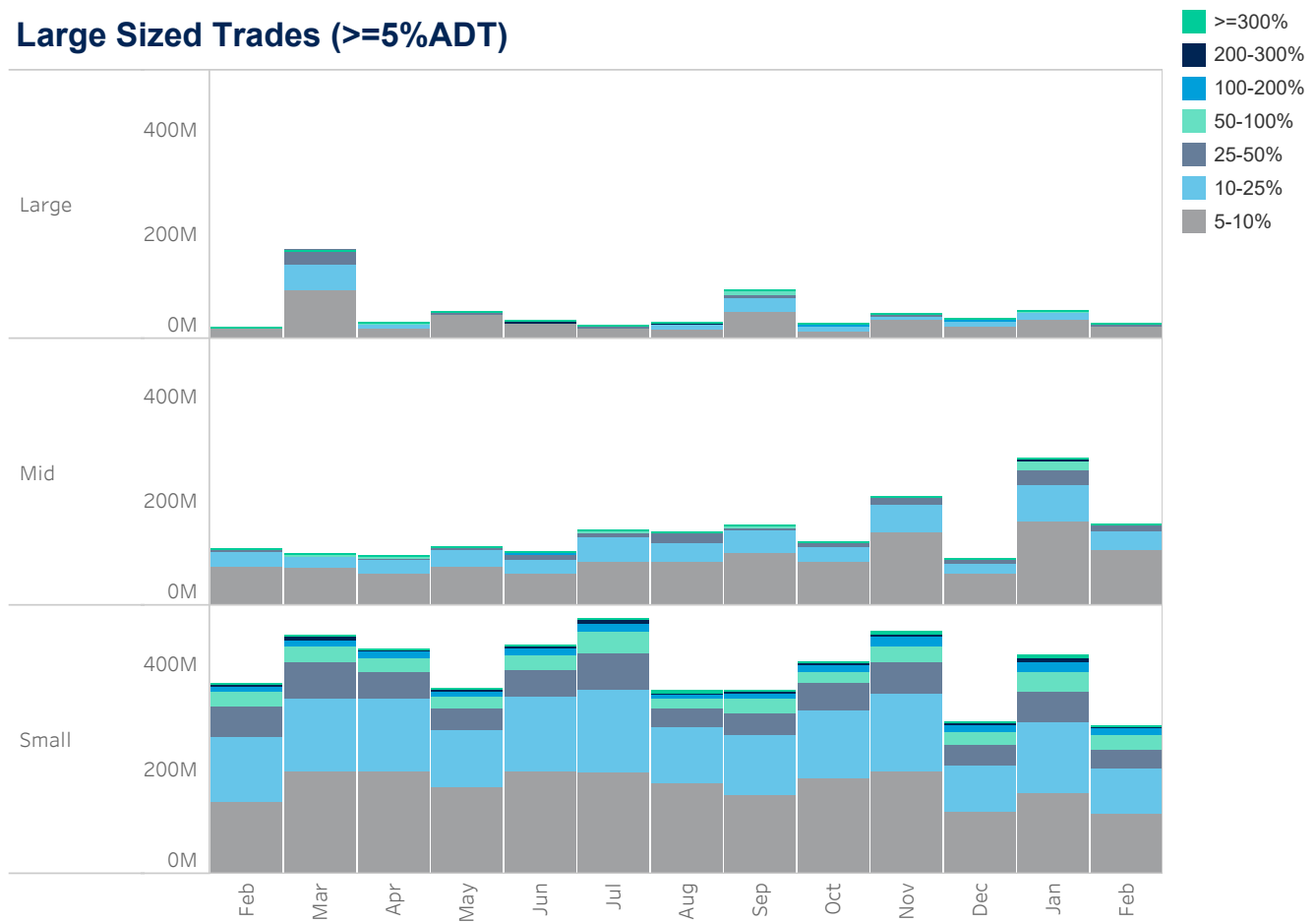
Source data: Virtu Financial

Singapore

Average Daily Turnover (Notional USD)



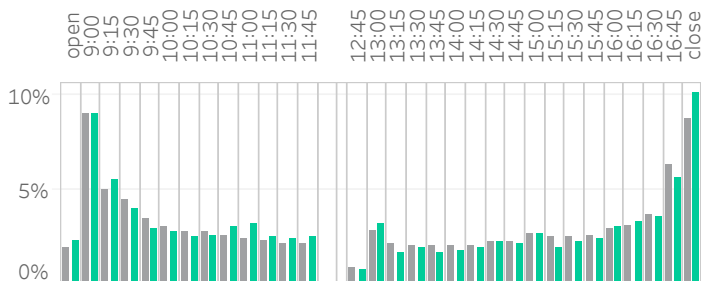
Large Sized Trades (>=5%ADT)



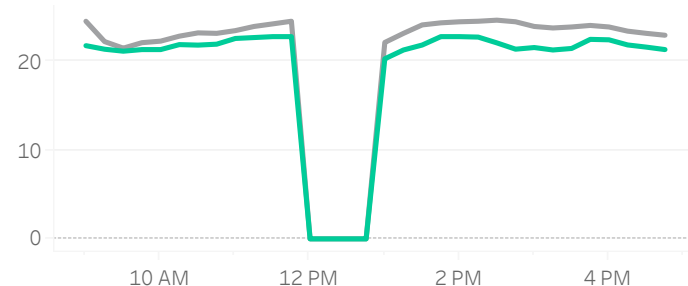
Source data: Virtu Financial

Singapore

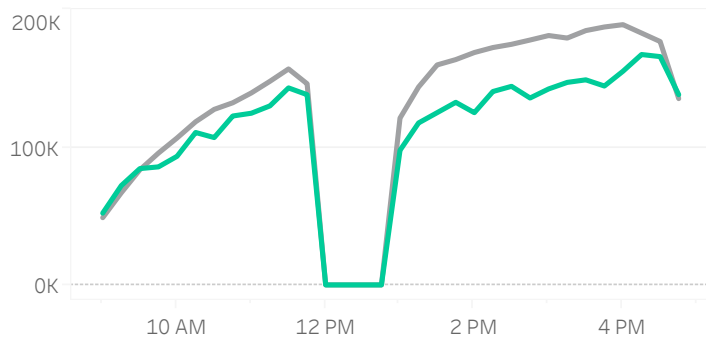
Volume Curve



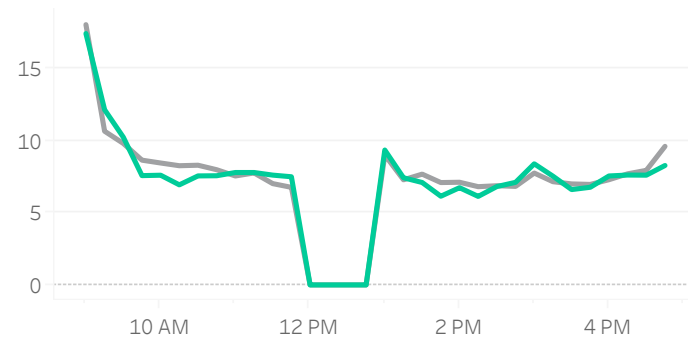
Intraday Spread (bps)



Intraday Quotesize (Shares)



Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ February 2022

Spread Bps

	21 Q3			21 Q4			22 Q1	
	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
firstHalfHour	22.9	21.6	23.3	22.7	21.6	23.6	22.5	21.3
midday	22.7	22.4	24.1	22.8	22.2	24.2	23.4	21.9
lastHalfHour	22.3	22.5	23.1	22.0	22.1	22.7	21.9	21.2

One Minute Volatility Bps

firstHalfHour	6.6	7.7	6.6	7.3	6.4	5.3	5.5	7.0
midday	4.5	3.9	3.3	3.3	5.5	3.7	4.1	5.4
lastHalfHour	4.9	1.6	3.4	4.8	4.0	2.9	4.6	2.5

Quotesize in Shares

firstHalfHour	51,982	58,984	61,969	54,873	78,883	58,696	57,597	63,301
midday	122,557	127,510	145,217	150,127	165,639	146,991	140,047	131,943
lastHalfHour	118,307	142,612	146,413	158,656	183,894	150,357	134,260	159,495

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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