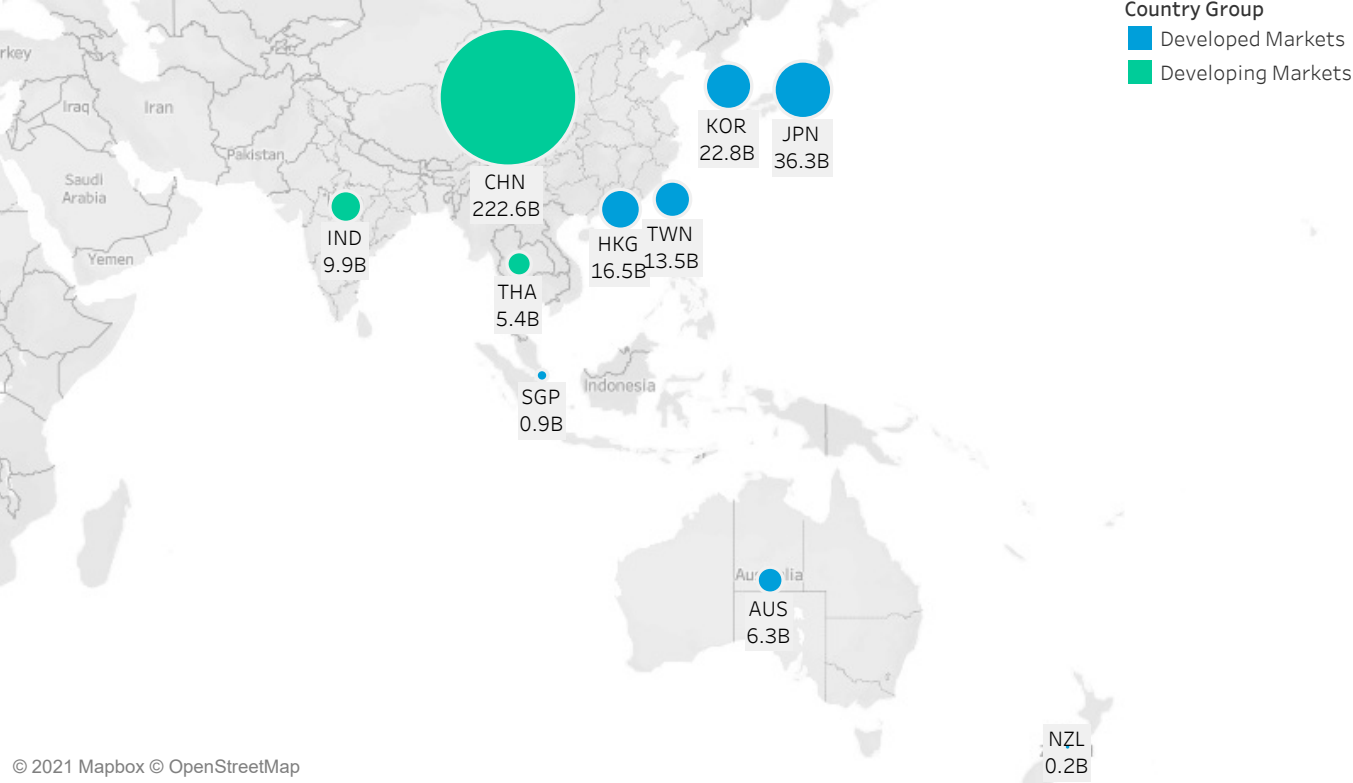


# September 2021 APAC Market Structure Monthly

## Average Daily Turnover (Notional USD)



© 2021 Mapbox © OpenStreetMap

## Country Breakdowns

Hong Kong

China

Japan

Australia

South Korea

Taiwan

India

Thailand

New Zealand

Singapore

# September 2021

## APAC Market Structure Monthly

### MICROSTRUCTURE OBSERVATIONS

- Australia, China, India, Japan, New Zealand and Thailand saw higher turnover in September, whereas Hong Kong and Taiwan's turnover decreased by 7% and 17% MoM respectively.
- Turnover in Japan and Shanghai increased 40% and 12% MoM, reaching highest-levels year to date. The close auction in Japan represented 15% of intraday flow, up 2% compared to the 12-month average.
- Intraday spreads and volatility across most APAC-based countries remained consistent MoM. One-minute volatility in the first half hour of trading increased 10% in Australia while decreasing 14% in Taiwan.

### APAC MARKET STRUCTURE NEWS

#### **Hong Kong Monetary Authority and People's Bank of China Announce Joint Launch of Southbound Bond Connect**

On 24 September, to help promote the development of their respective bond markets the Hong Kong Monetary Authority and the People's Bank of China announced the launch of Southbound Trading Bond Connect. Southbound Bond Connect will enable China's Mainland institutional investors to access the Hong Kong bond market. This announcement is viewed as conducive to the diversification of investment channels for Mainland investors, bilateral access to Mainland financial markets and as an enhancement to Hong Kong's status as an international financial centre

<https://www.hkma.gov.hk/eng/news-and-media/press-releases/2021/09/20210915-3/>

#### **Hong Kong Exchanges and Clearing Limited Publishes Consultation on SPACs and Launches Orion Central Gateway**

On 17 September, Hong Kong Exchanges and Clearing Limited published a consultation paper seeking market participant feedback on proposals to create a listing framework for Special Purpose Acquisition Companies, the consultation period is 45 days.

On 27 September, HKEX announced the launch of Orion Central Gateway-Securities Market (OCG-C) a new market access platform fully integrated with HKEX's securities trading platform (the Orion Trading Platform - Securities Market, or OTP-C). According to HKEX, the new gateway offers improved performance and reduced latency compared with its legacy vendor-supplied platform

[https://www.hkex.com.hk/News/Regulatory-Announcements/2021/210917news?sc\\_lang=en](https://www.hkex.com.hk/News/Regulatory-Announcements/2021/210917news?sc_lang=en)

<https://www.finextra.com/pressarticle/89472/hkex-opens-orion-central-gateway>

## **Securities and Exchange Board of India Introduces T+1 Settlement on an Optional Basis effective on 1 January 2022**

The Securities and Exchange Board of India announced that an optional T+1 settlement cycle for exchanges will be offered starting on 1 January 2022.

[https://www.sebi.gov.in/legal/circulars/sep-2021/introduction-of-t-1-rolling-settlement-on-an-optional-basis\\_52462.html](https://www.sebi.gov.in/legal/circulars/sep-2021/introduction-of-t-1-rolling-settlement-on-an-optional-basis_52462.html)

## **Thailand's Securities and Exchange Commission Targets a 2021 Launch for New Small and Medium Enterprise Board**

Thailand's Securities and Exchange Commission (SEC) will allow Small and Medium Enterprises (SMEs) and start-ups to raise funds via public offerings (SME-PO). In addition, the SEC is seeking to establish a dedicated secondary market to trade SME shares before the end of 2021.

SME participation in primary and secondary markets is limited to experienced investors with knowledge of investment products and a high level of assets. The new board's trading will be 90-minute auction-based, match once a day with trade date settlement and delivery.

<https://www.regulationasia.com/sec-thailand-targets-2021-launch-for-new-sme-board/>

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

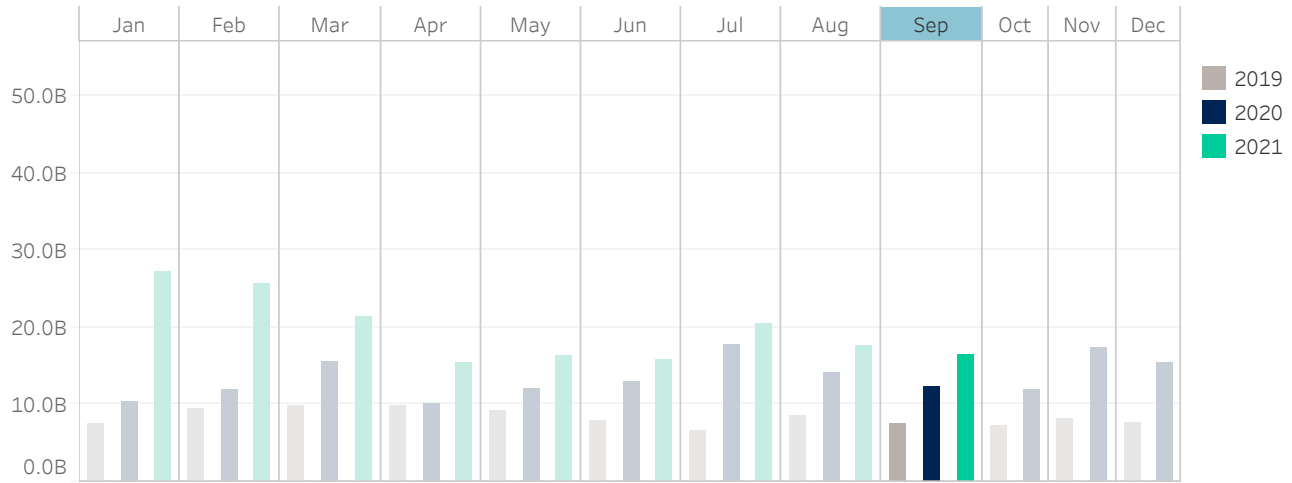
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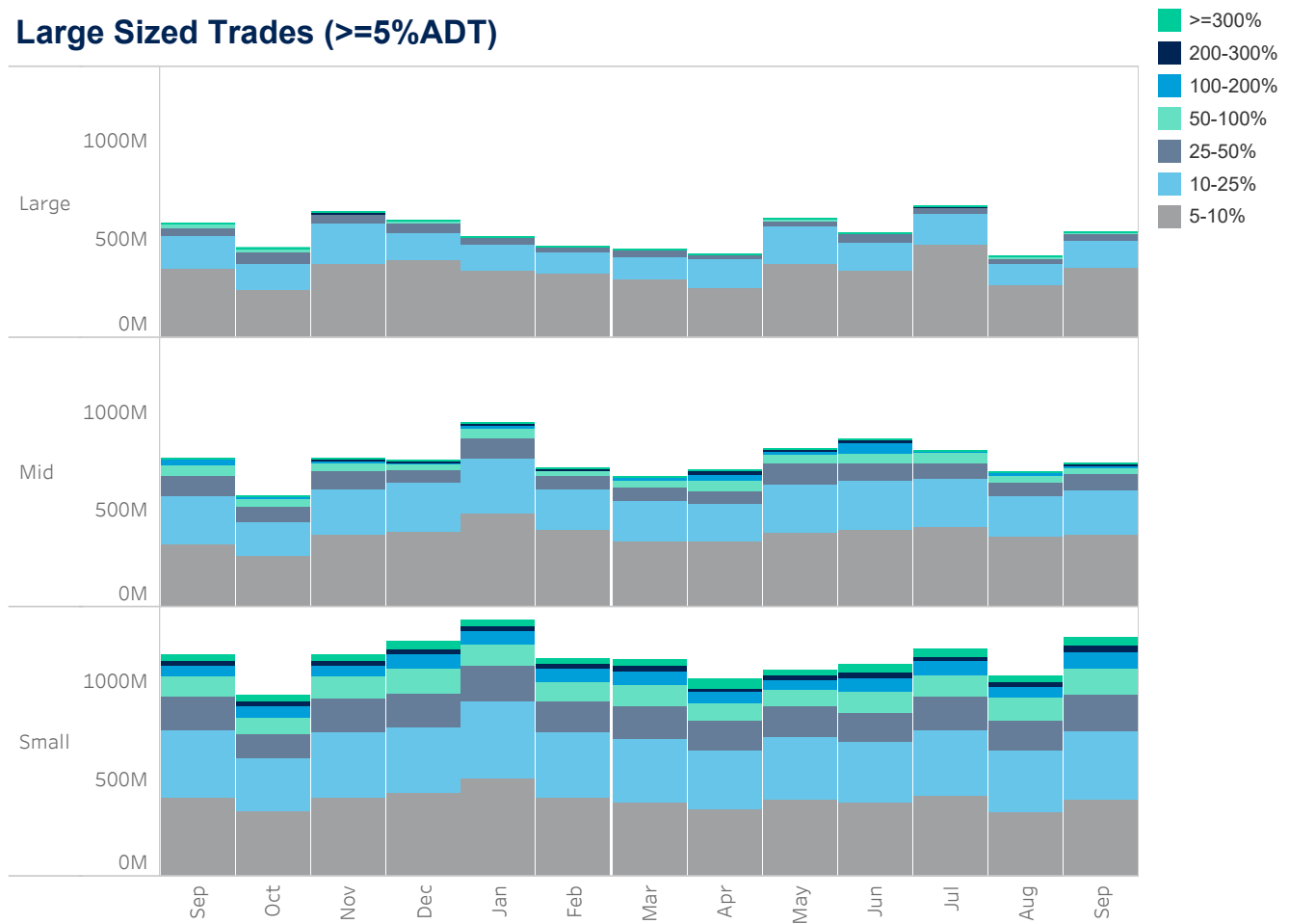
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# Hong Kong

## Average Daily Turnover (Notional USD)



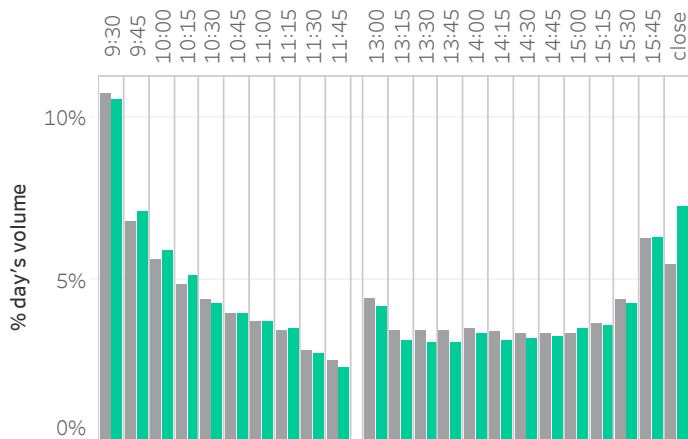
## Large Sized Trades (>=5%ADT)



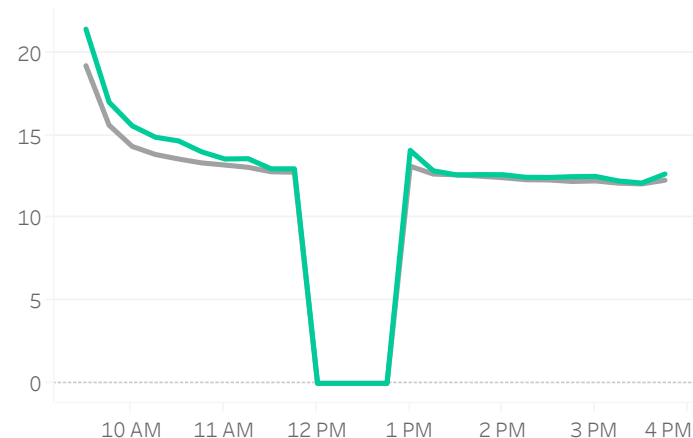
Source data: Virtu Financial

# Hong Kong

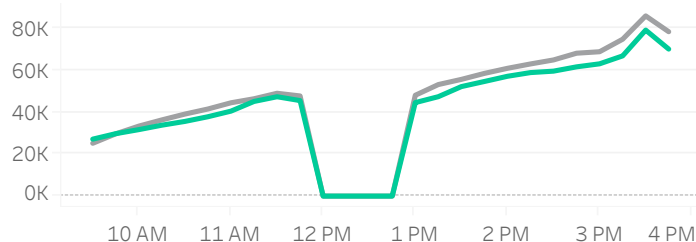
## Volume Curve



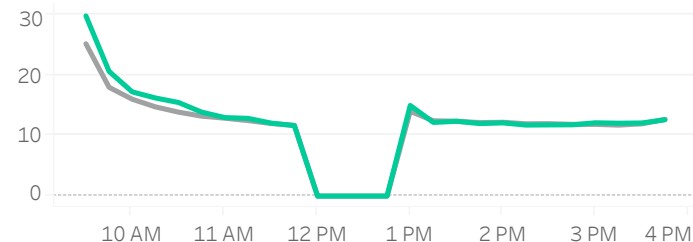
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	16.9	16.6	16.9	15.8	15.4	15.6	16.9	18.4	18.1
midday	13.4	13.0	12.5	12.4	11.7	11.9	13.1	13.7	12.9
lastHalfHour	12.5	12.1	11.7	11.7	11.3	11.5	12.3	12.6	12.3

## One Minute Volatility Bps

firstHalfHour	17.6	16.8	18.5	12.2	11.8	11.6	15.8	16.7	17.5
midday	8.1	8.8	8.7	6.0	6.0	5.8	7.8	7.0	7.5
lastHalfHour	6.9	6.9	7.3	6.5	6.6	6.1	8.1	6.7	6.5

## Quotesize in Shares

firstHalfHour	29,369	28,259	24,138	24,880	28,539	27,890	26,823	27,946	28,697
midday	52,420	49,671	39,835	49,281	59,450	57,843	49,961	47,200	49,020
lastHalfHour	80,787	82,321	70,652	79,757	92,195	85,221	76,912	80,882	77,790

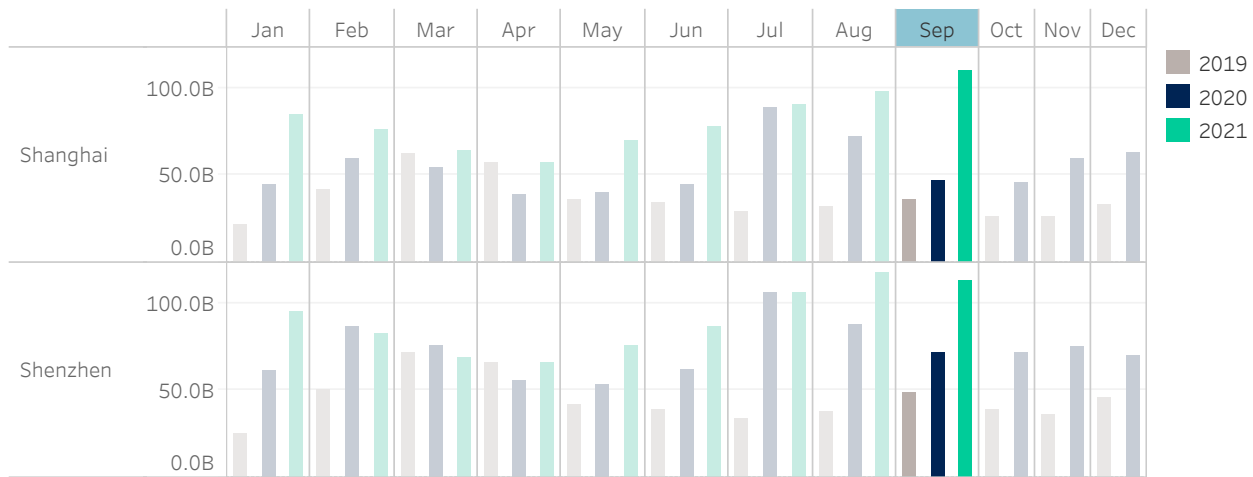
Median used for all metrics

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

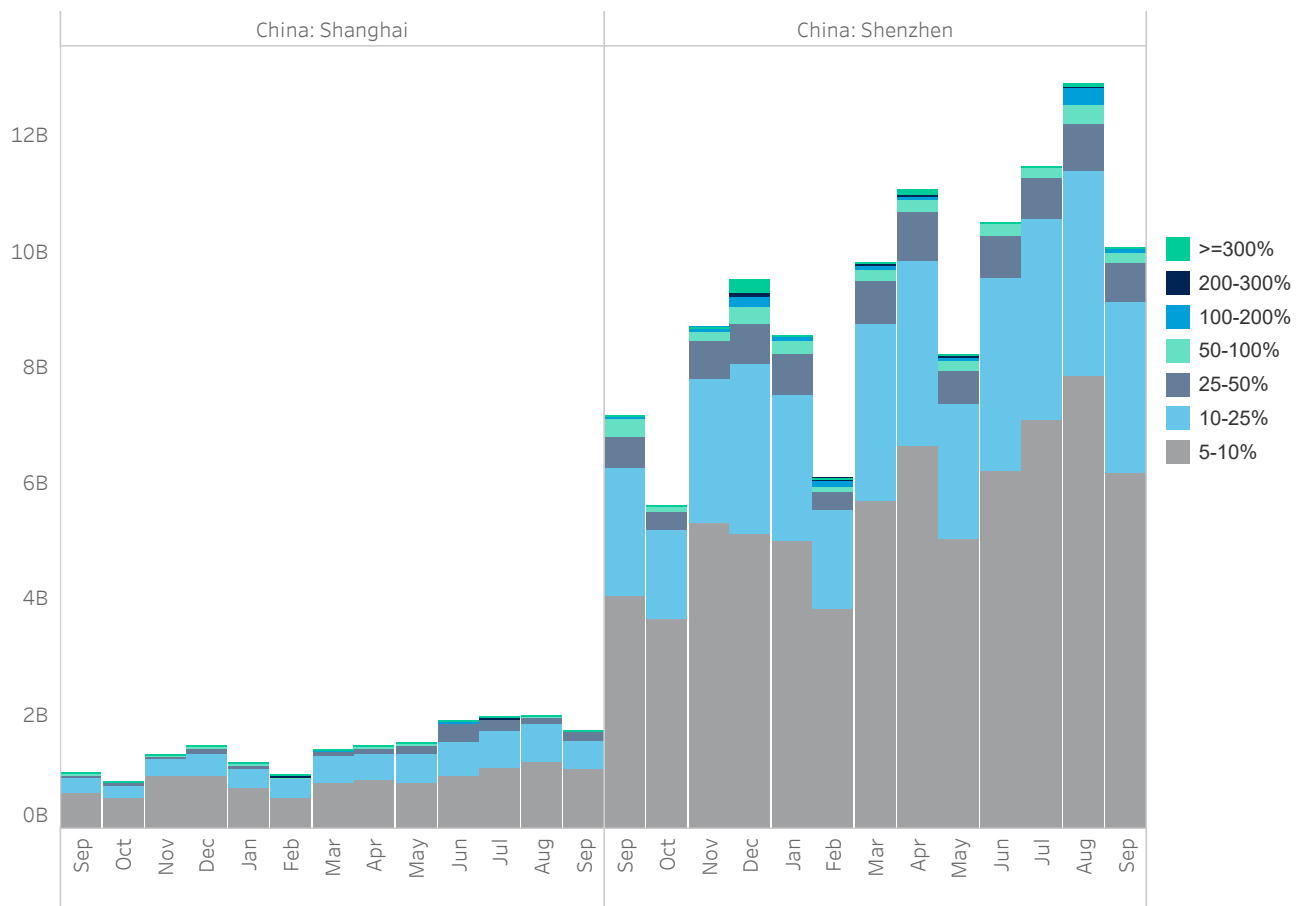
Source data: Virtu Financial

# China

## Average Daily Turnover (Notional USD)



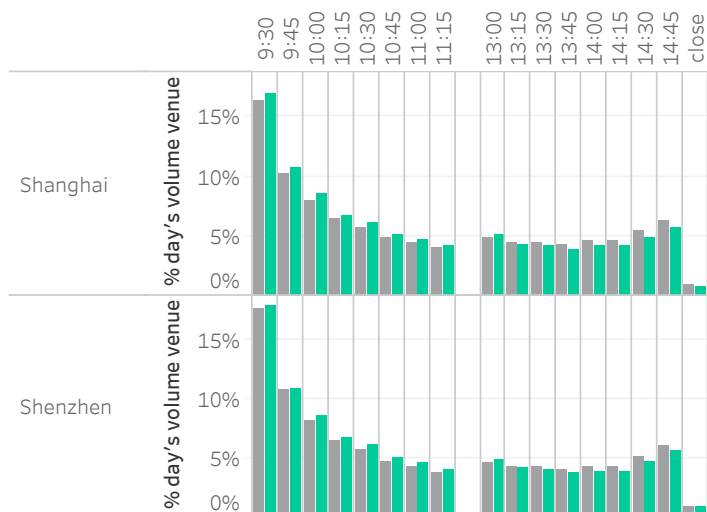
## Large Sized Trades (>=5%ADT)



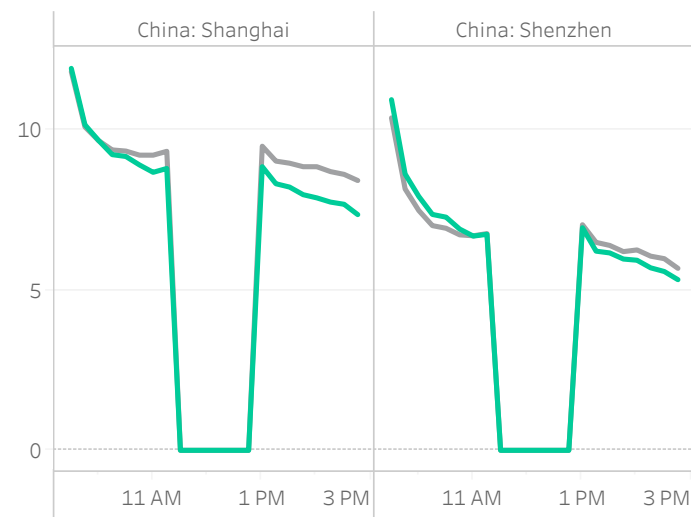
Source data: Virtu Financial

# China

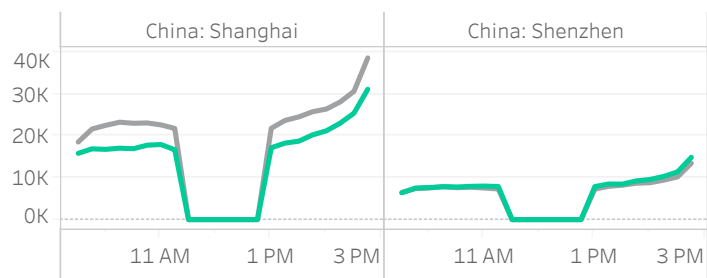
## Volume Curve



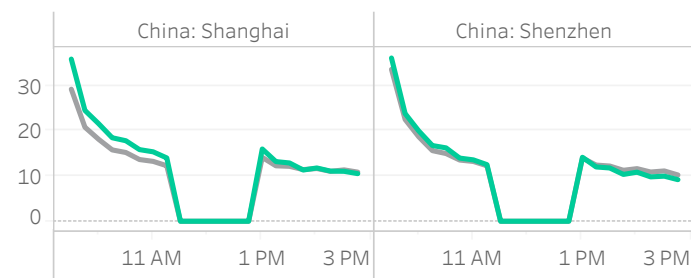
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	China: Shanghai									China: Shenzhen								
	21 Q1			21 Q2			21 Q3			21 Q1			21 Q2			21 Q3		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
firstHalfHour	10.6	10.8	10.2	10.1	10.3	9.9	10.5	10.8	10.7	9.3	9.3	8.8	8.1	8.4	8.3	8.8	9.3	9.3
midday	9.2	9.5	9.1	9.0	9.1	8.5	8.6	8.7	8.5	7.0	7.1	6.7	6.4	6.5	6.1	6.4	6.6	6.5
lastHalfHour	8.6	8.9	8.5	8.5	8.6	8.0	7.8	7.7	7.4	6.1	6.2	5.9	5.6	5.6	5.3	5.4	5.5	5.4

## One Minute Volatility Bps

firstHalfHour	23.2	23.2	20.9	17.1	17.8	18.4	21.6	23.3	31.4	31.0	26.7	21.3	21.4	21.6	25.1	26.6
midday	11.6	11.4	9.5	7.0	7.8	8.0	9.2	10.0	15.0	14.7	12.2	9.1	9.5	9.5	11.1	11.7
lastHalfHour	9.7	9.6	7.9	6.3	6.3	6.5	7.7	7.5	12.0	12.2	9.5	7.5	7.5	7.5	8.2	8.2

## Quotesize in Shares

firstHalfHour	19K	18K	18K	20K	22K	19K	17K	17K	17K	7K	7K	6K	7K	8K	7K	7K	7K	7K
midday	21K	20K	21K	25K	27K	23K	21K	21K	18K	8K	7K	7K	8K	9K	8K	8K	8K	8K
lastHalfHour	31K	29K	31K	37K	40K	34K	31K	33K	29K	11K	10K	10K	13K	13K	12K	12K	13K	13K

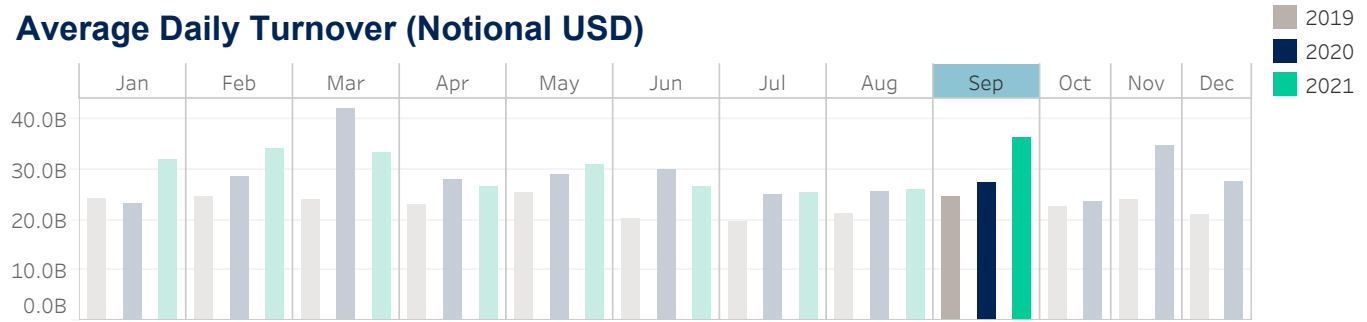
Median used for all metrics

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

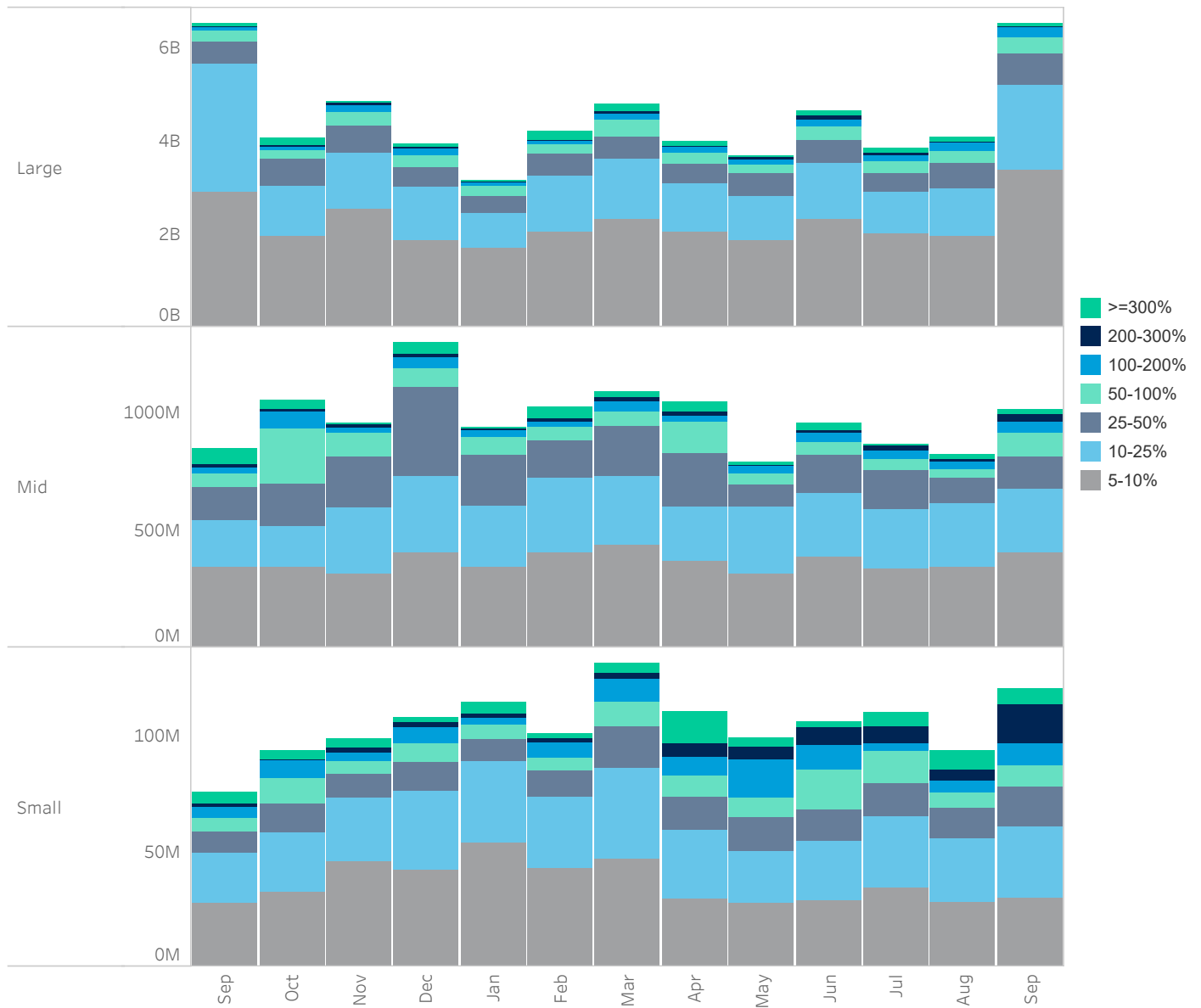
Source data: Virtu Financial

# Japan

## Average Daily Turnover (Notional USD)



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

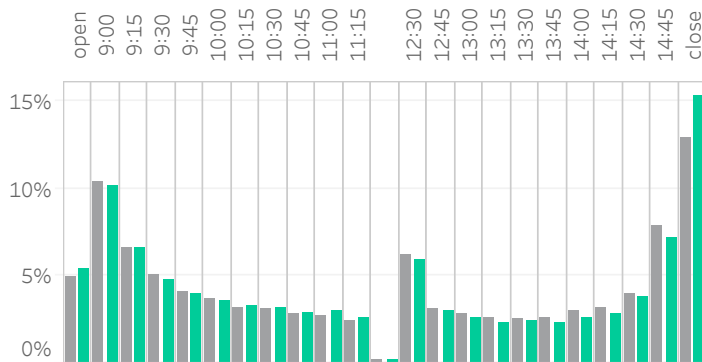


Source data: Virtu Financial

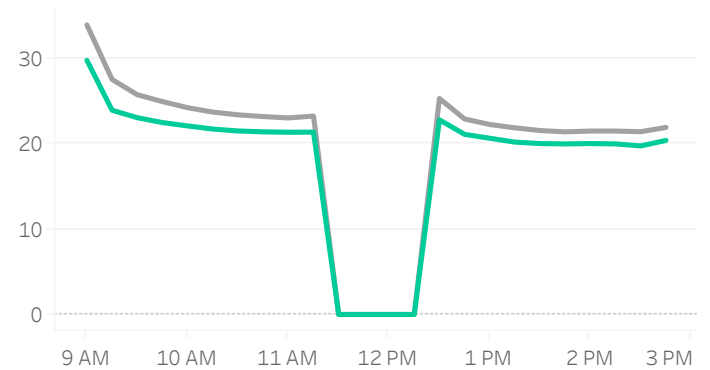


# Japan

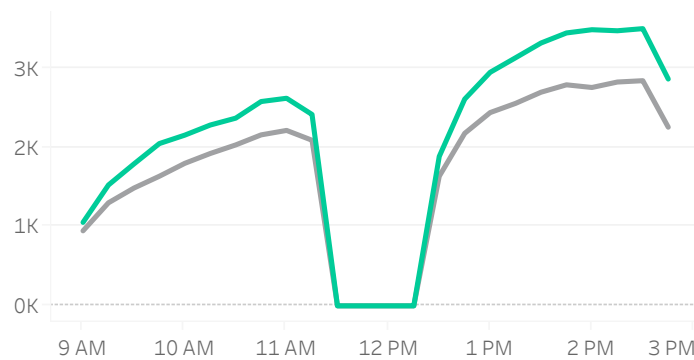
## Volume Curve



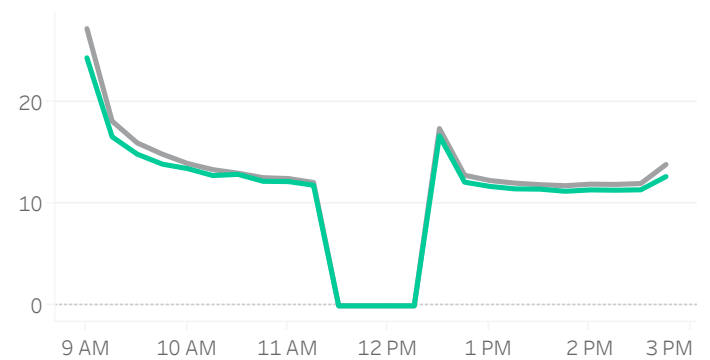
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg   ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	29.3	33.1	32.7	29.4	28.2	26.6	25.6	27.3	25.8
midday	22.9	24.6	24.8	22.9	21.7	21.0	20.7	21.4	21.1
lastHalfHour	21.7	22.6	22.5	21.1	20.5	19.8	19.6	19.9	19.8

## One Minute Volatility Bps

firstHalfHour	15.1	15.7	15.9	14.7	15.9	13.0	12.1	12.6	12.4
midday	6.8	6.5	6.9	6.3	6.8	5.9	6.2	5.9	6.0
lastHalfHour	7.3	6.7	6.6	6.5	7.0	6.5	11.5	7.9	7.9

## Quotesize in Shares

firstHalfHour	1,202	1,248	1,170	1,198	1,120	1,295	1,334	1,280	1,380
midday	2,260	2,167	1,921	2,163	2,147	2,573	2,700	2,525	2,630
lastHalfHour	2,814	2,559	2,177	2,622	2,582	3,165	3,218	3,328	3,397

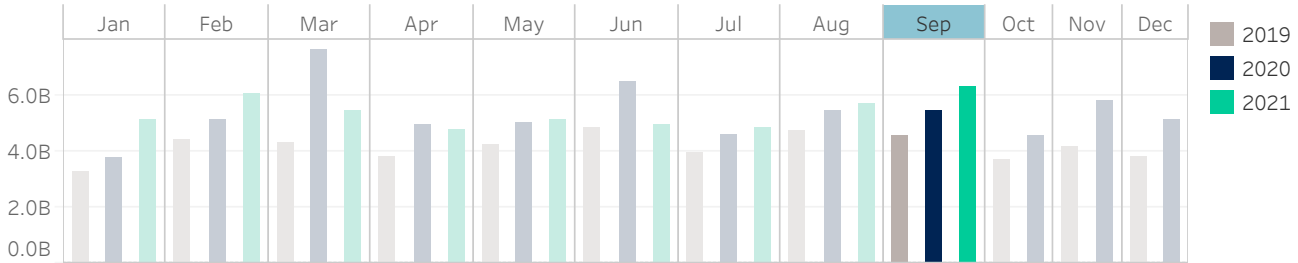
Median used for all metrics

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

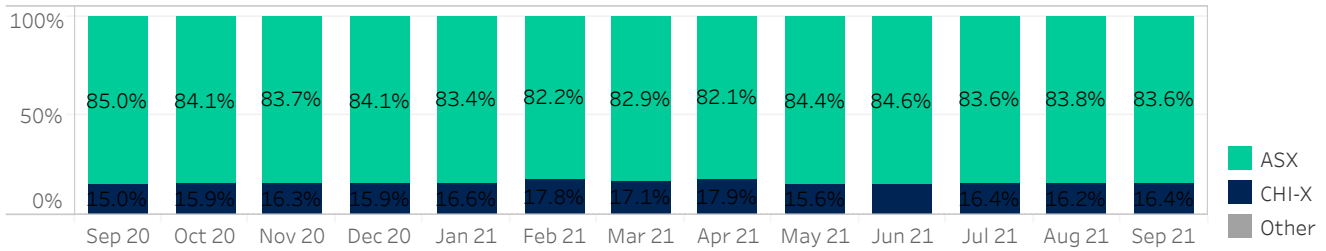
Source data: Virtu Financial

# Australia

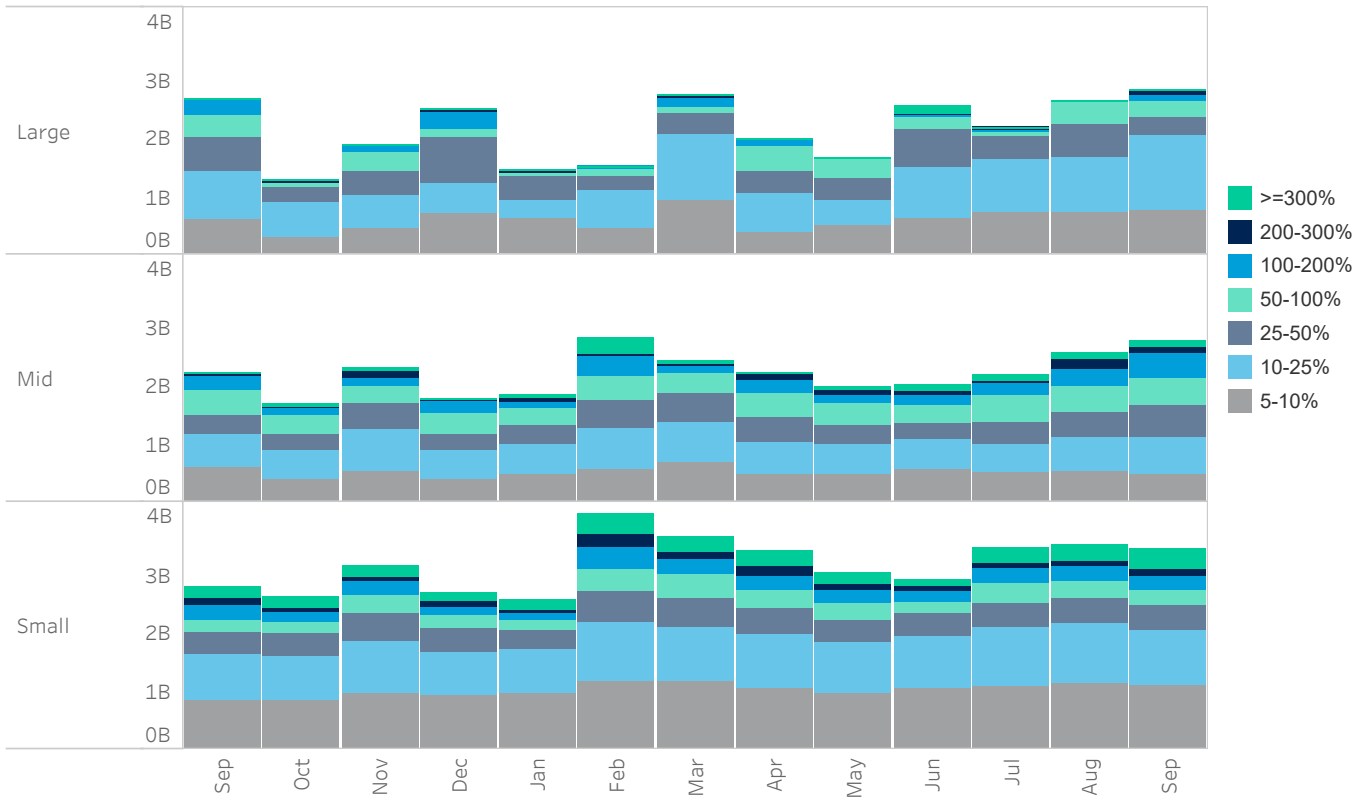
## Average Daily Turnover (Notional USD)



## Venue Market Share (Notional USD)



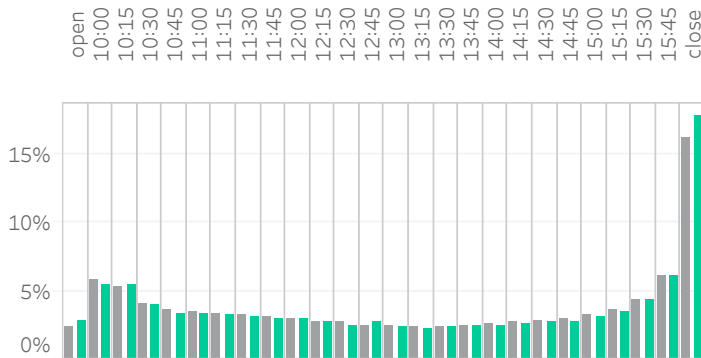
## Large Sized Trades (>=5%ADT)



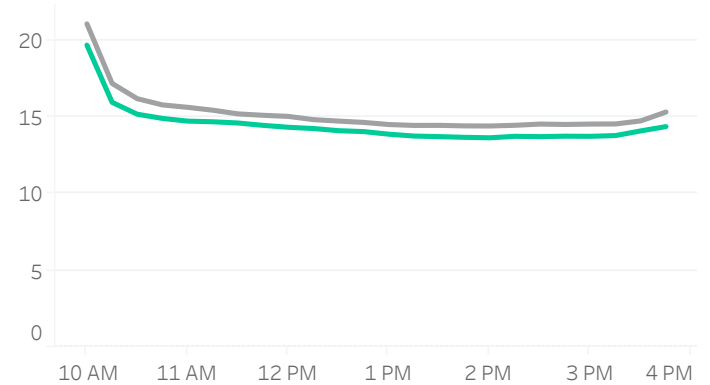
Source data: Virtu Financial

# Australia

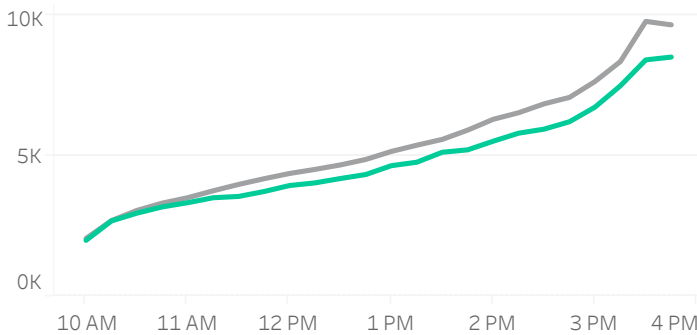
## Volume Curve



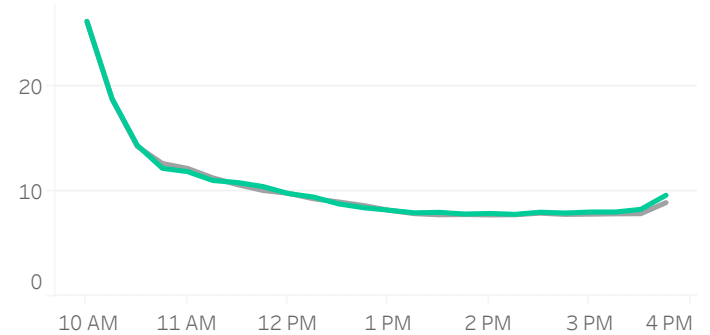
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	19.8	20.2	20.0	18.3	18.9	17.5	17.1	16.5	16.9
midday	15.0	15.5	15.6	14.7	14.9	14.1	13.8	13.7	14.1
lastHalfHour	15.0	15.5	15.6	14.9	14.9	14.3	13.9	13.8	14.2

## One Minute Volatility Bps

firstHalfHour	14.4	16.6	16.8	16.0	17.5	17.4	15.5	15.5	17.0
midday	4.1	4.6	4.8	3.7	3.9	3.8	3.6	3.6	4.0
lastHalfHour	3.7	3.4	3.7	3.4	3.6	3.2	3.3	2.6	3.6

## Quotesize in Shares

firstHalfHour	2,583	2,326	2,194	2,218	2,190	2,320	2,426	2,388	2,351
midday	5,358	4,931	4,686	4,526	4,489	4,747	4,584	4,807	4,549
lastHalfHour	11,014	9,734	9,100	8,141	8,231	9,230	8,943	9,020	8,495

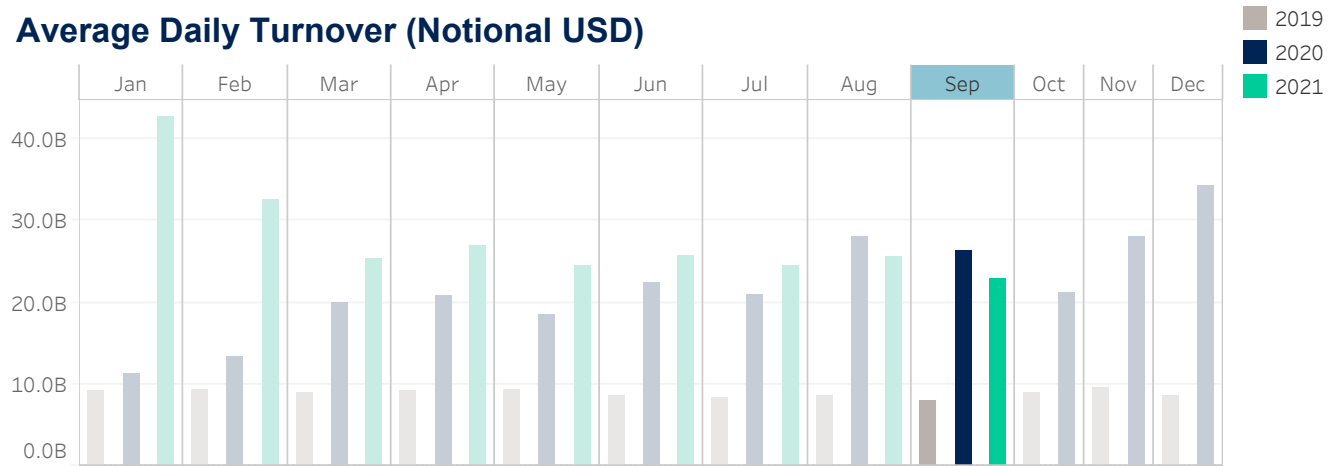
Median used for all metrics

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

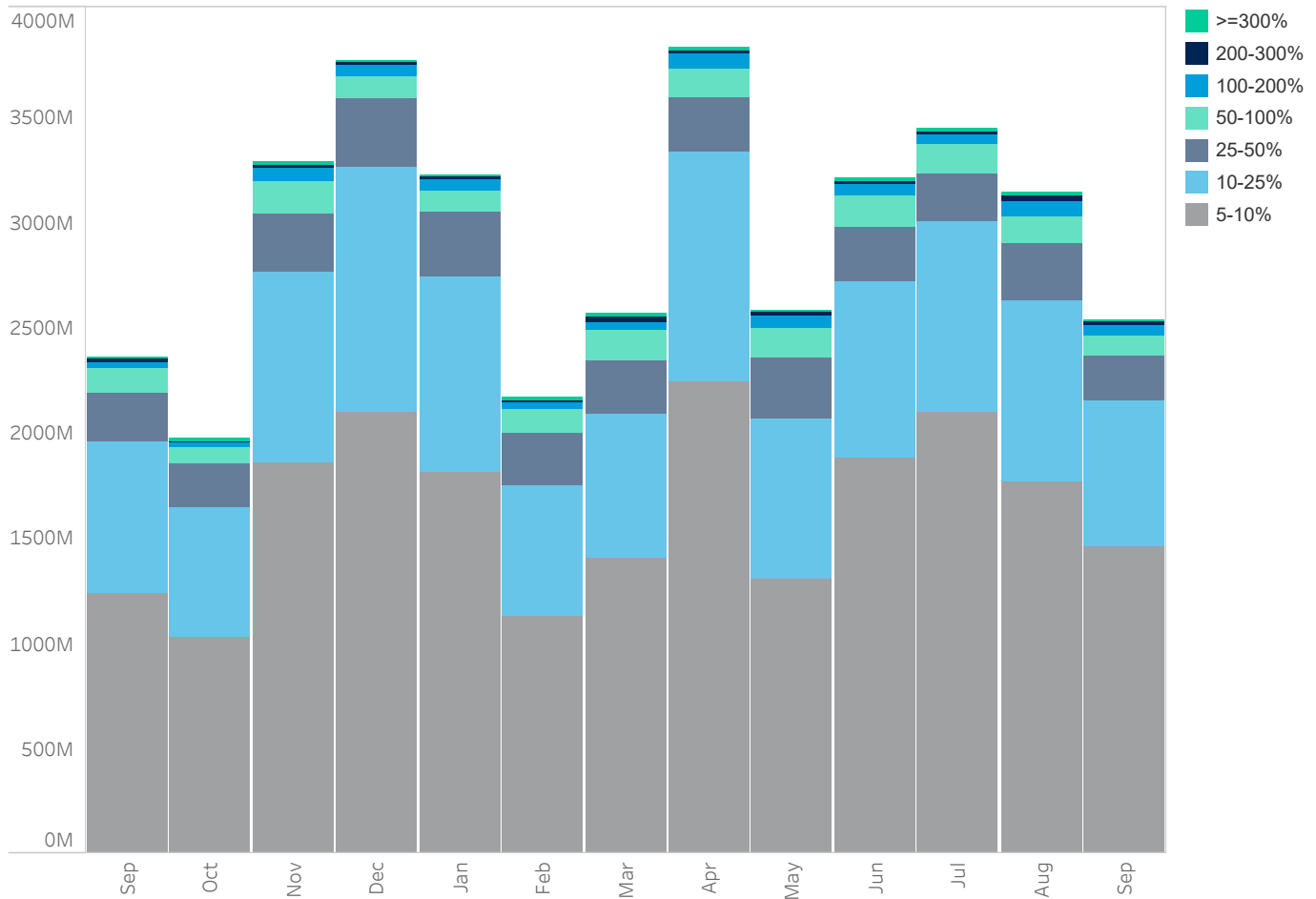
Source data: Virtu Financial

# South Korea

## Average Daily Turnover (Notional USD)



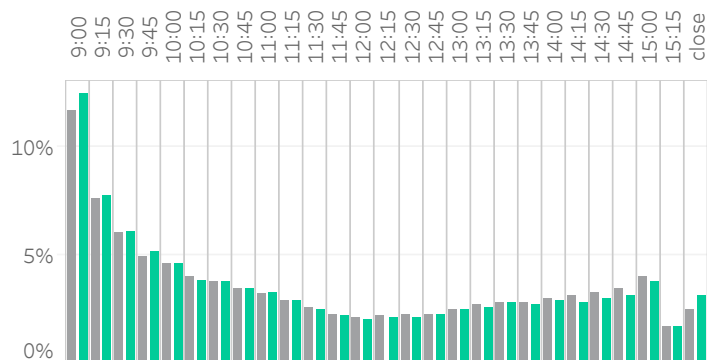
## Large Sized Trades (>=5%ADT)



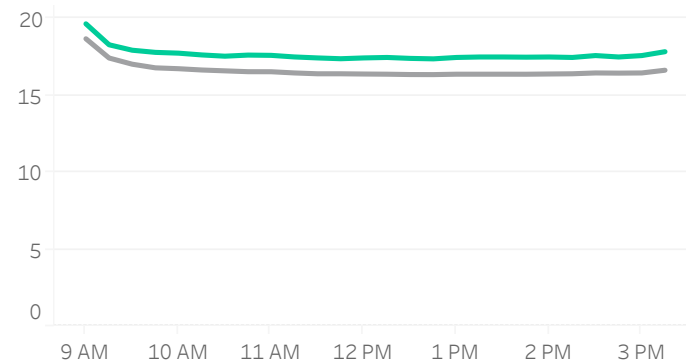
Source data: Virtu Financial

# South Korea

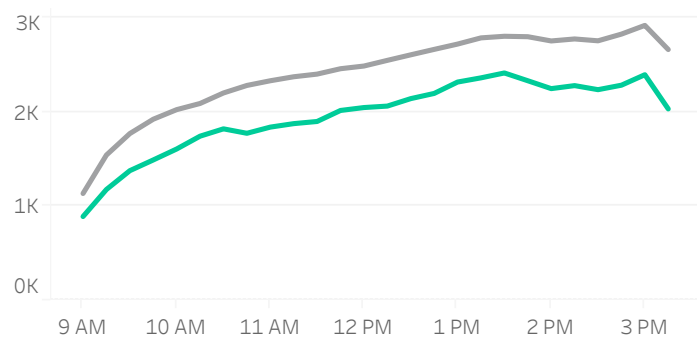
## Volume Curve



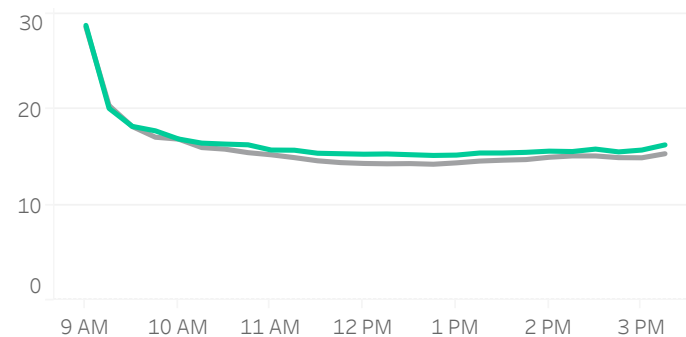
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	18.0	17.4	17.1	17.1	18.3	18.3	18.3	18.5	18.7
midday	15.9	15.6	15.8	16.2	17.2	17.6	17.7	17.3	17.6
lastHalfHour	15.8	15.6	15.8	16.3	17.2	17.6	17.8	17.3	17.6

## One Minute Volatility Bps

firstHalfHour	20.9	18.0	15.1	12.7	15.6	13.2	13.0	15.8	15.1
midday	11.4	11.1	11.0	10.5	10.9	10.5	10.5	11.1	10.1
lastHalfHour	11.3	11.2	14.2	19.7	16.7	26.5	22.9	15.0	19.0

## Quotesize in Shares

firstHalfHour	1,352	1,140	1,138	1,384	1,302	1,675	1,526	1,053	1,012
midday	2,400	1,995	1,986	2,504	2,462	3,161	2,812	2,004	2,023
lastHalfHour	2,905	2,454	2,358	2,702	2,864	3,744	3,230	2,336	2,362

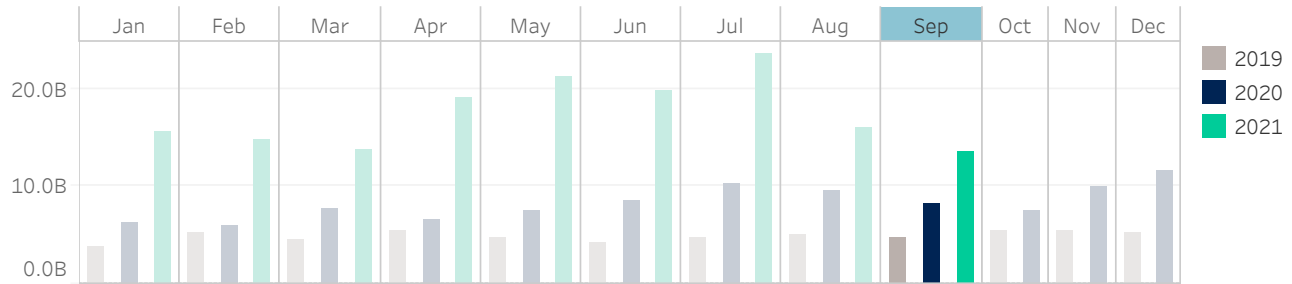
Median used for all metrics

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

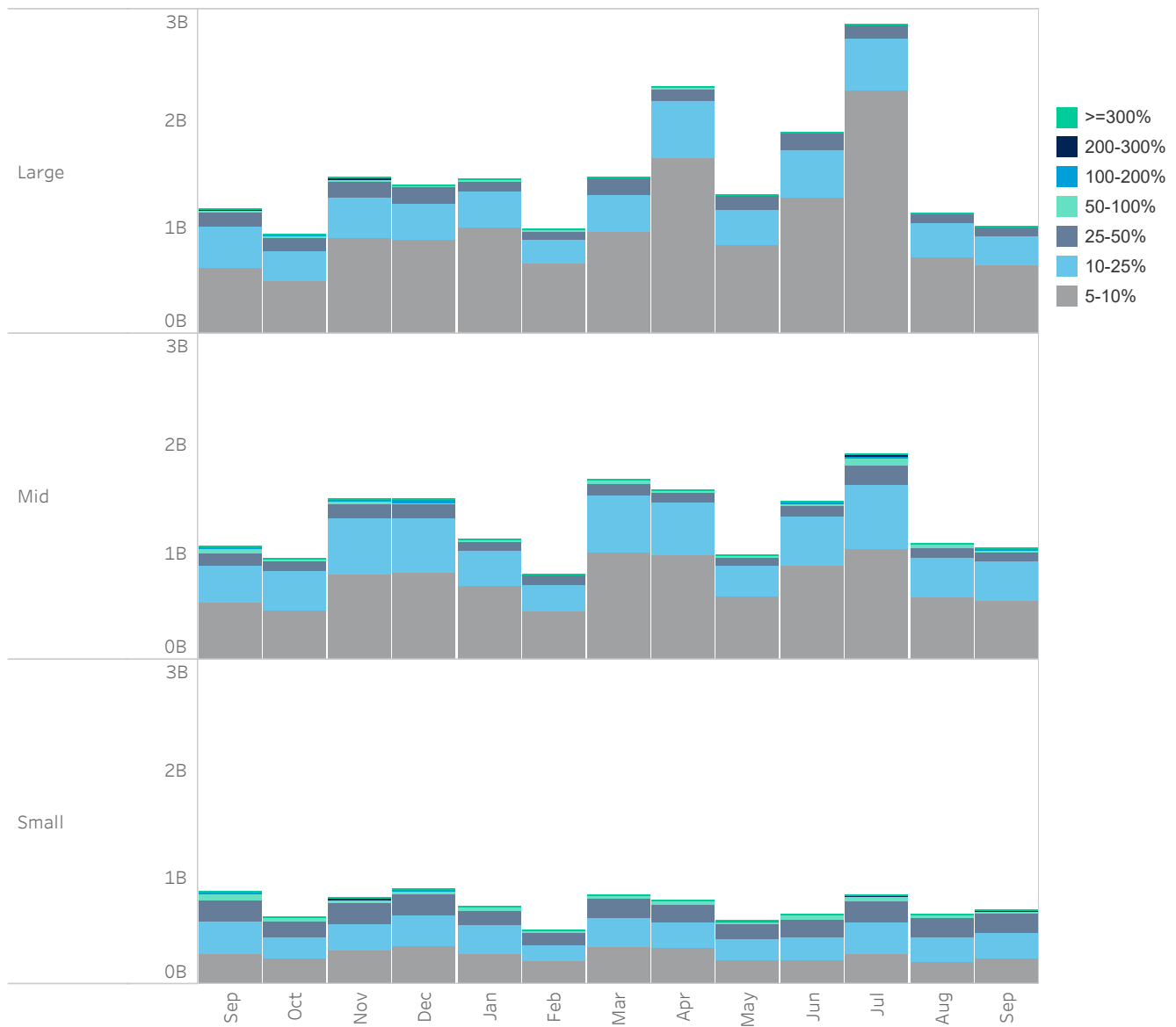
Source data: Virtu Financial

# Taiwan

## Average Daily Turnover (Notional USD)



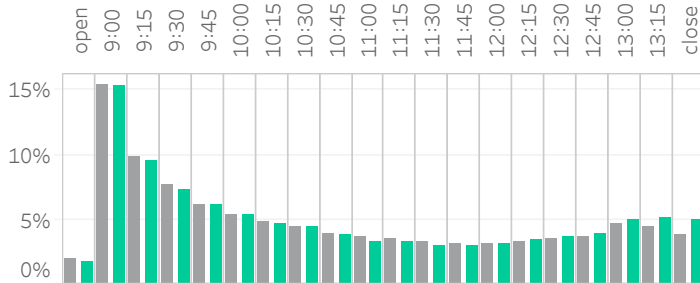
## Large Sized Trades (>=5%ADT)



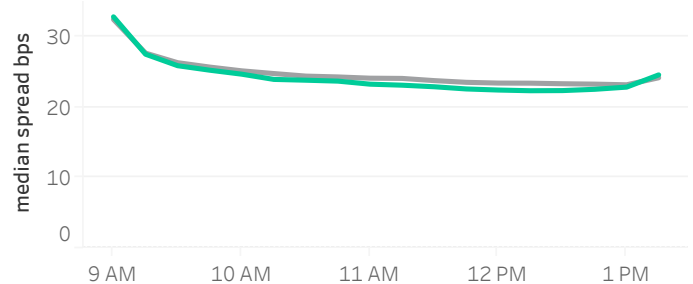
Source data: Virtu Financial

# Taiwan

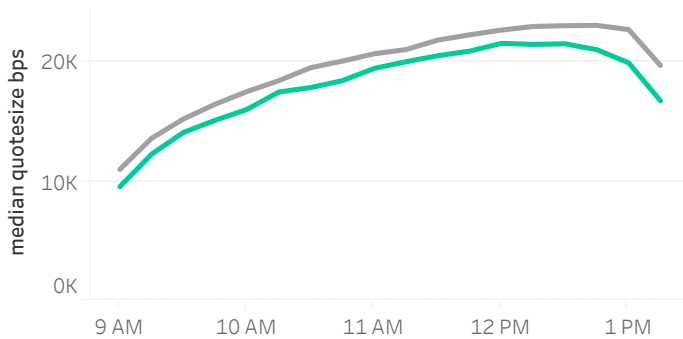
## Volume Curve



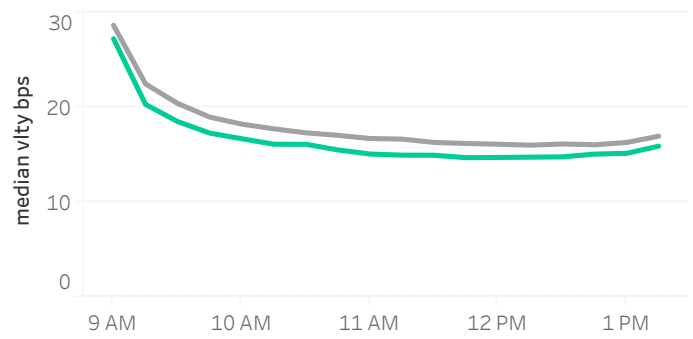
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg    ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	28.5	28.3	26.1	27.4	35.2	28.7	29.0	30.1	29.1
midday	24.0	23.3	22.2	22.9	27.8	23.4	23.6	24.1	23.2
lastHalfHour	24.1	23.1	22.0	22.3	27.0	23.2	22.7	23.8	23.4

## One Minute Volatility Bps

firstHalfHour	15.5	15.7	12.5	16.2	27.1	15.6	17.1	17.1	14.7
midday	7.2	6.8	6.6	8.2	11.2	7.6	7.5	7.6	6.8
lastHalfHour	7.7	8.4	8.4	9.0	10.4	6.7	7.9	7.8	7.9

## Quotesize in Shares

firstHalfHour	12,798	12,216	14,419	14,883	9,069	12,568	12,027	10,553	11,061
midday	20,042	21,454	25,453	24,145	13,090	21,194	18,860	17,088	19,152
lastHalfHour	20,321	22,767	26,000	24,740	13,874	21,503	20,270	17,592	18,484

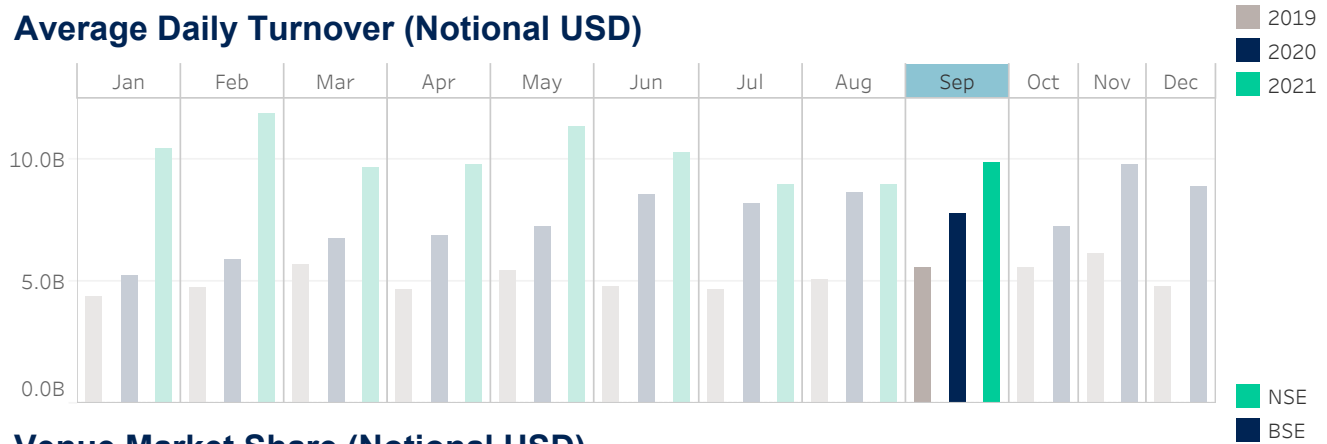
Median used for all metrics

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

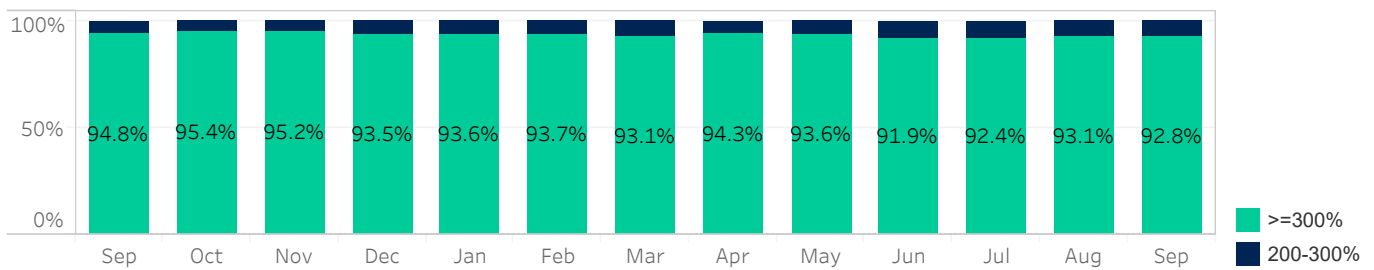
Source data: Virtu Financial

# India

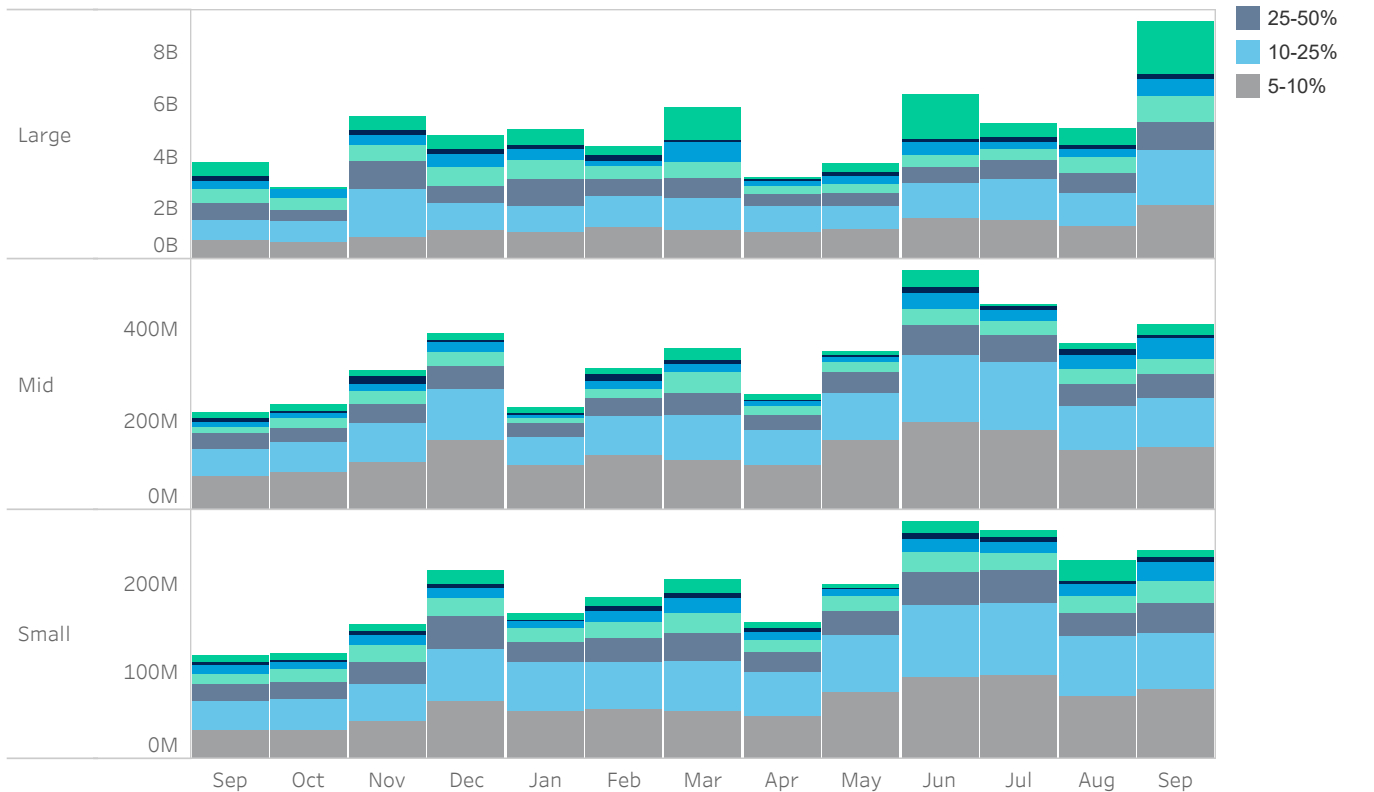
## Average Daily Turnover (Notional USD)



## Venue Market Share (Notional USD)



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

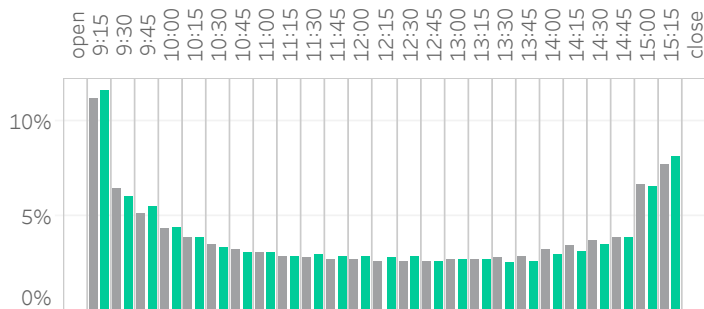


Source data: Virtu Financial

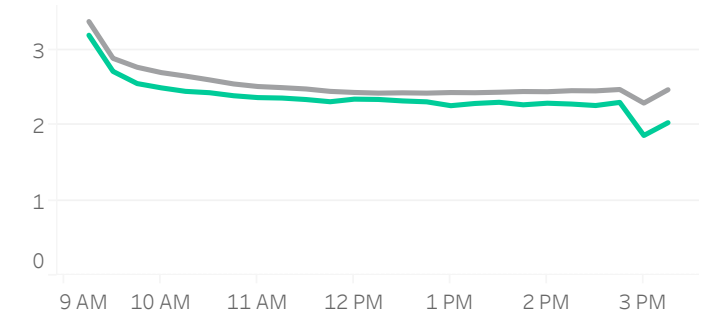


# India

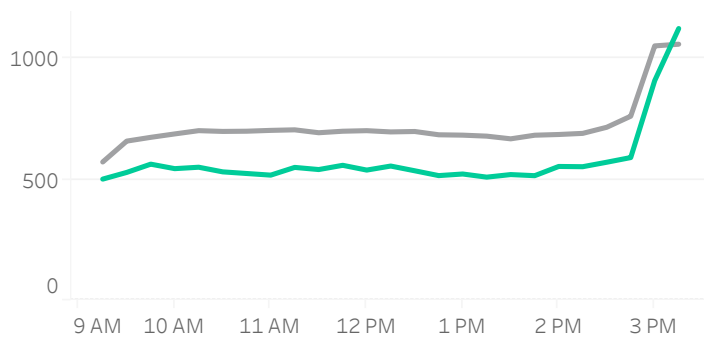
## Volume Curve



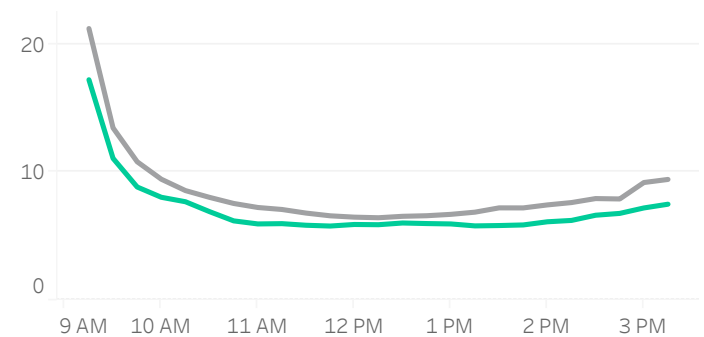
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	3.1	3.2	3.0	3.1	2.9	2.8	2.6	2.8	2.8
midday	2.7	2.6	2.5	2.5	2.3	2.2	2.2	2.4	2.3
lastHalfHour	2.5	2.6	2.3	2.3	2.2	2.1	2.0	2.1	1.9

## One Minute Volatility Bps

firstHalfHour	17.3	19.8	17.6	17.7	16.1	12.5	10.5	12.6	12.7
midday	7.8	8.8	8.2	7.6	6.4	5.3	4.7	5.5	5.8
lastHalfHour	10.1	11.0	10.6	8.9	8.2	7.1	6.1	6.8	6.4

## Quotesize in Shares

firstHalfHour	684	626	680	559	541	548	533	527	526
midday	781	757	695	650	630	584	593	583	540
lastHalfHour	1,080	1,041	1,074	974	918	903	952	929	946

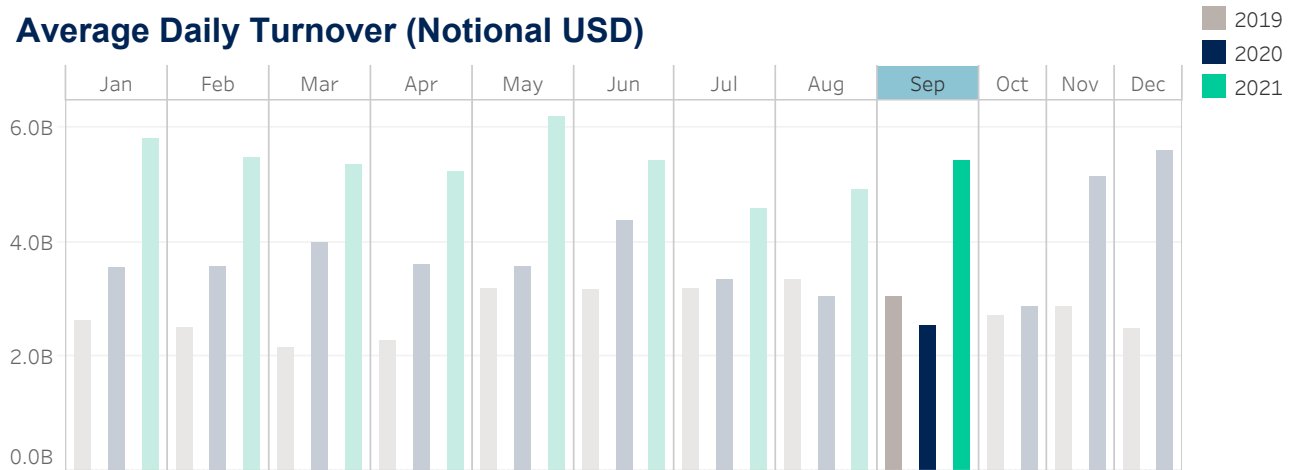
Median used for all metrics

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

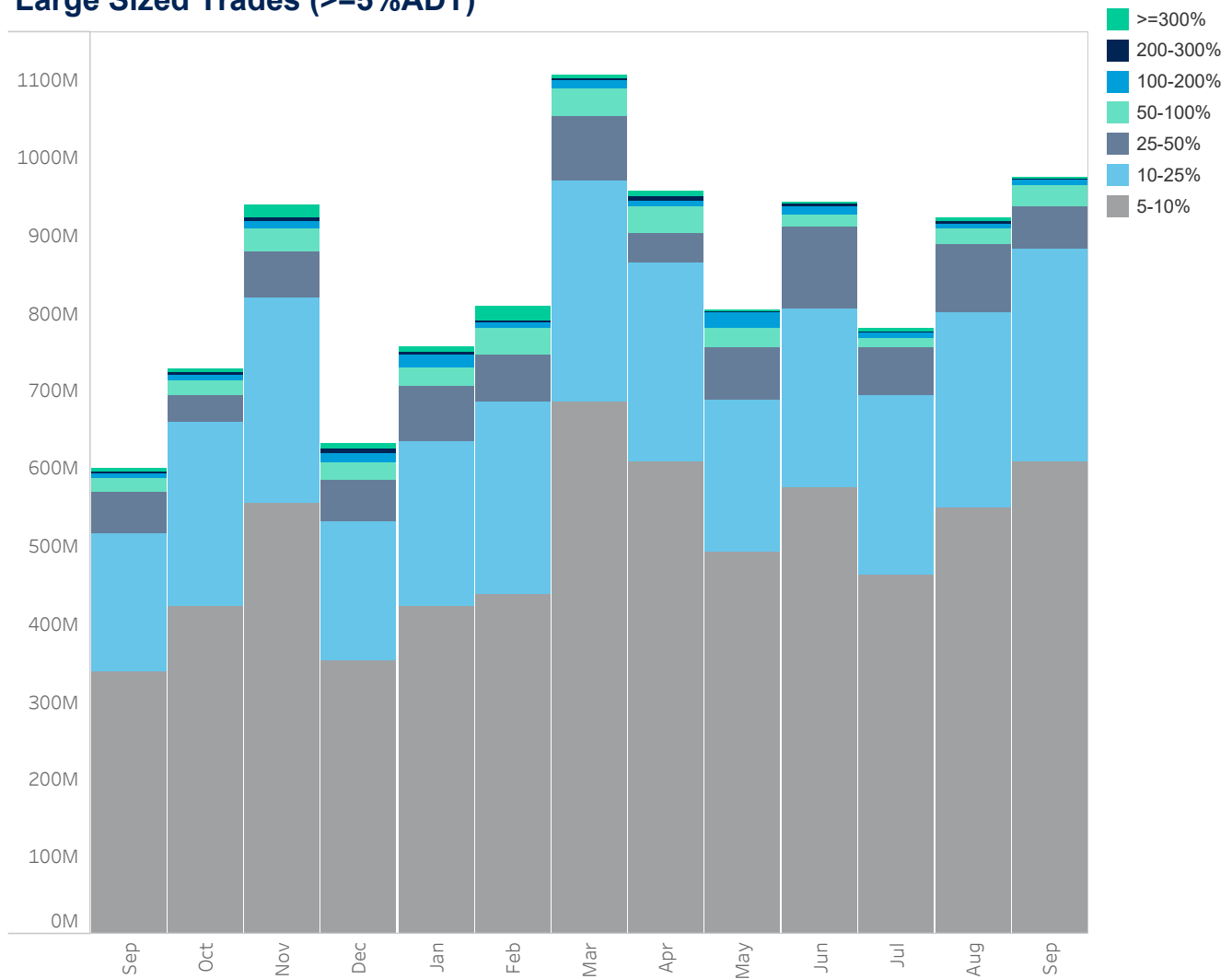
Source data: Virtu Financial

# Thailand

## Average Daily Turnover (Notional USD)



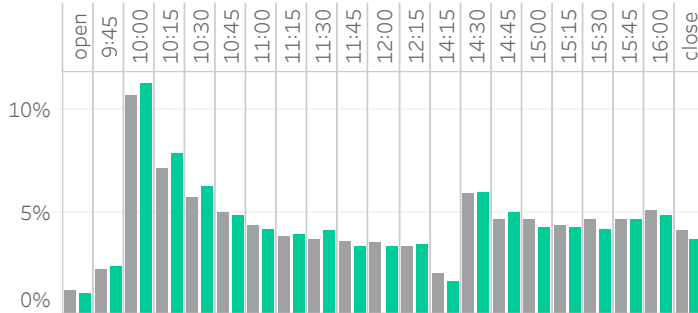
## Large Sized Trades (>=5%ADT)



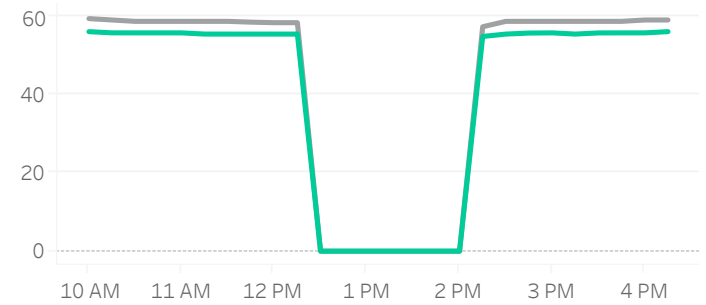
Source data: Virtu Financial

# Thailand

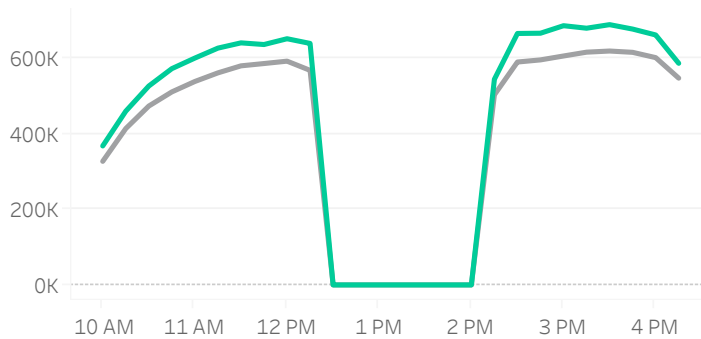
## Volume Curve



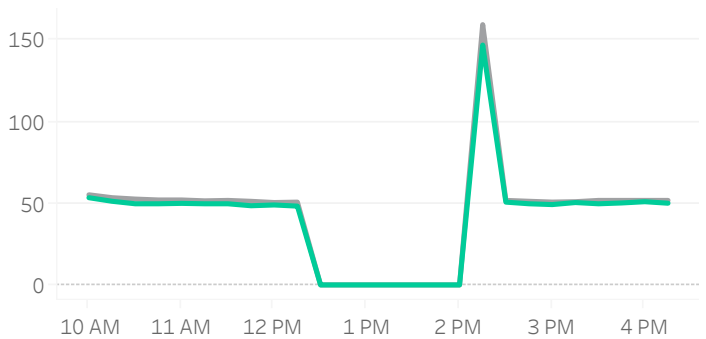
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	59.5	61.8	58.7	57.6	58.1	57.0	58.5	57.3	55.9
midday	58.8	61.3	58.4	57.5	57.4	56.5	58.0	56.8	55.6
lastHalfHour	59.5	61.5	58.6	57.8	57.6	56.9	58.7	57.1	55.9

## One Minute Volatility Bps

firstHalfHour	163.6	249.4	233.7	232.1	230.9	177.0	159.4	162.4	168.7
midday	229.8	231.9	224.9	223.9	223.2	164.5	130.5	159.5	164.4
lastHalfHour					11.0				

## Quotesize in Shares

firstHalfHour	329,239	333,863	415,974	396,954	369,050	405,115	327,728	343,555	393,145
midday	511,597	531,652	673,700	702,142	632,652	659,585	550,461	566,015	644,261
lastHalfHour	524,220	541,490	680,594	713,523	624,167	686,033	542,139	571,302	629,320

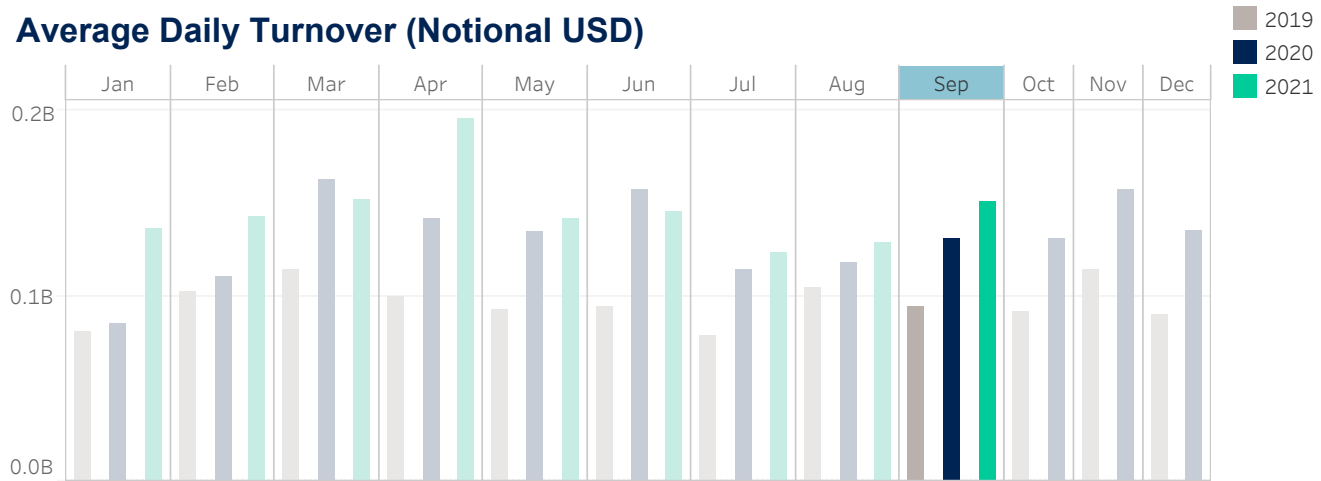
Median used for all metrics

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

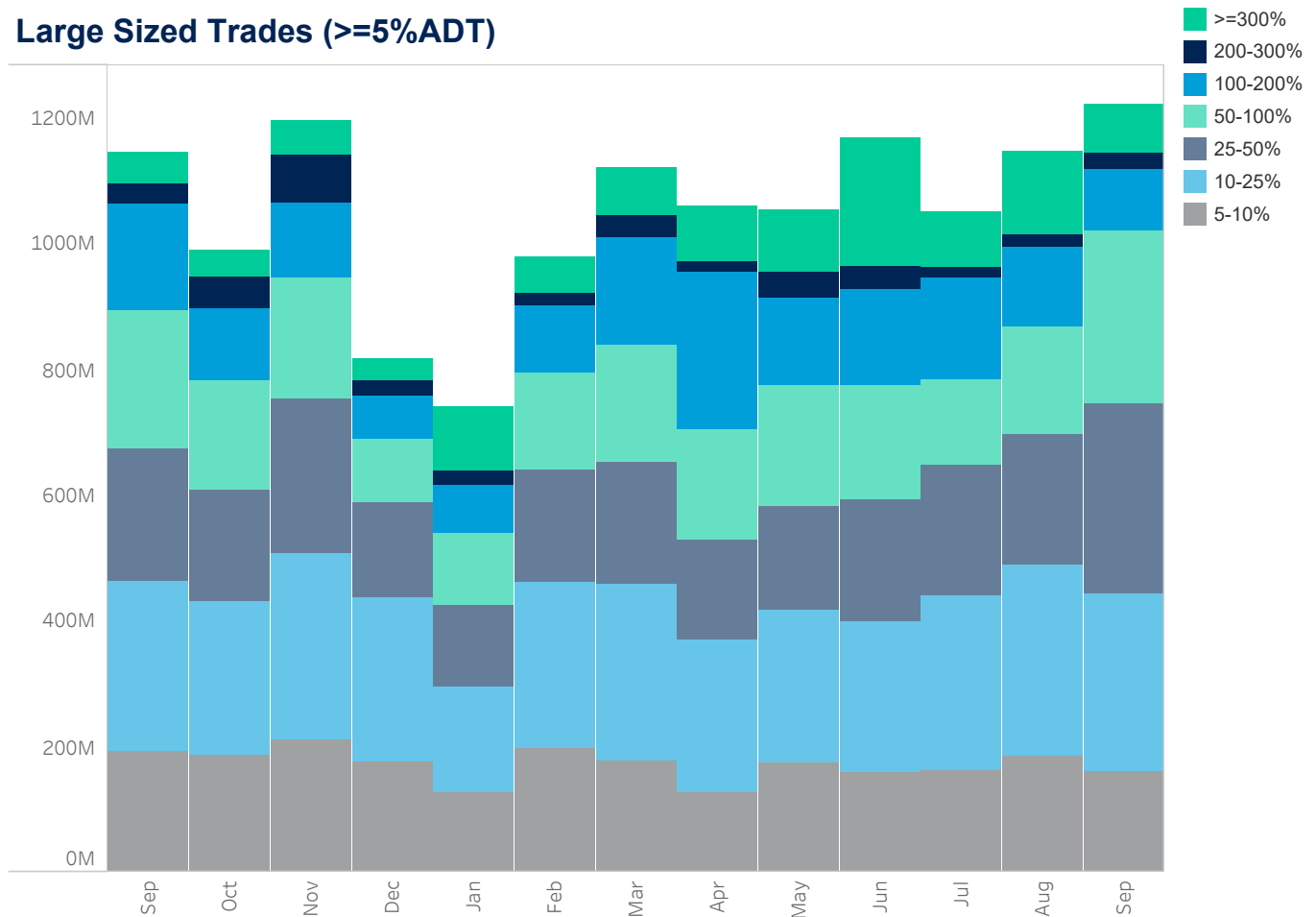
Source data: Virtu Financial

# New Zealand

## Average Daily Turnover (Notional USD)



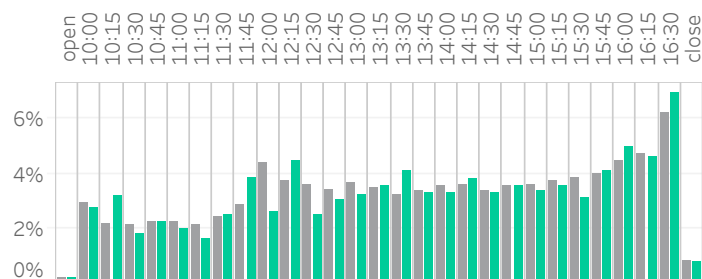
## Large Sized Trades (>=5%ADT)



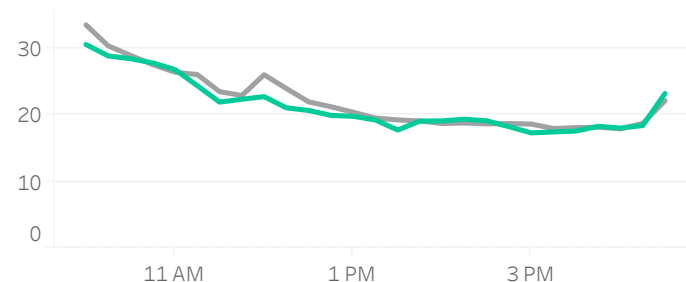
Source data: Virtu Financial

# New Zealand

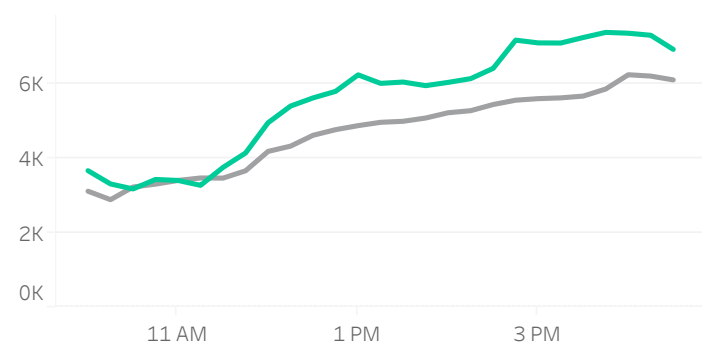
## Volume Curve



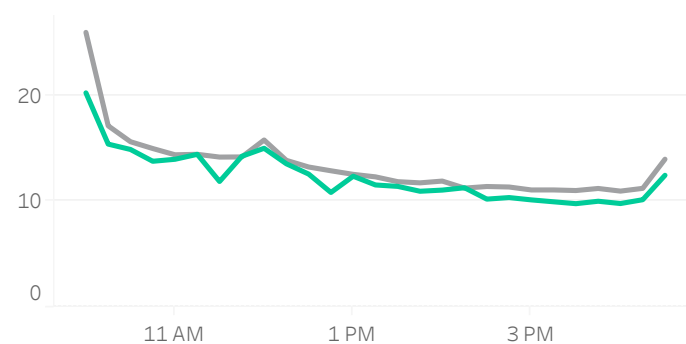
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	33.6	32.4	32.9	29.1	30.1	29.9	30.8	31.6	29.0
midday	22.0	22.2	21.3	19.3	20.5	18.4	19.0	21.0	19.5
lastHalfHour	22.0	22.2	21.1	21.1	19.6	17.7	19.0	20.0	19.7

## One Minute Volatility Bps

firstHalfHour	6.0	7.4	7.2	5.7	6.8	5.7	6.1	7.0	6.0
midday	3.7	3.6	3.5	3.6	3.5	3.5	3.4	3.6	3.3
lastHalfHour	4.7	4.4	6.7	4.0	5.3	4.4	4.0	3.8	3.6

## Quotesize in Shares

firstHalfHour	2,934	2,863	3,226	3,083	2,848	2,985	2,792	3,149	3,533
midday	4,261	4,306	4,708	5,232	5,145	5,287	5,453	5,494	5,752
lastHalfHour	5,198	5,319	6,011	6,862	6,538	6,859	7,213	6,762	7,042

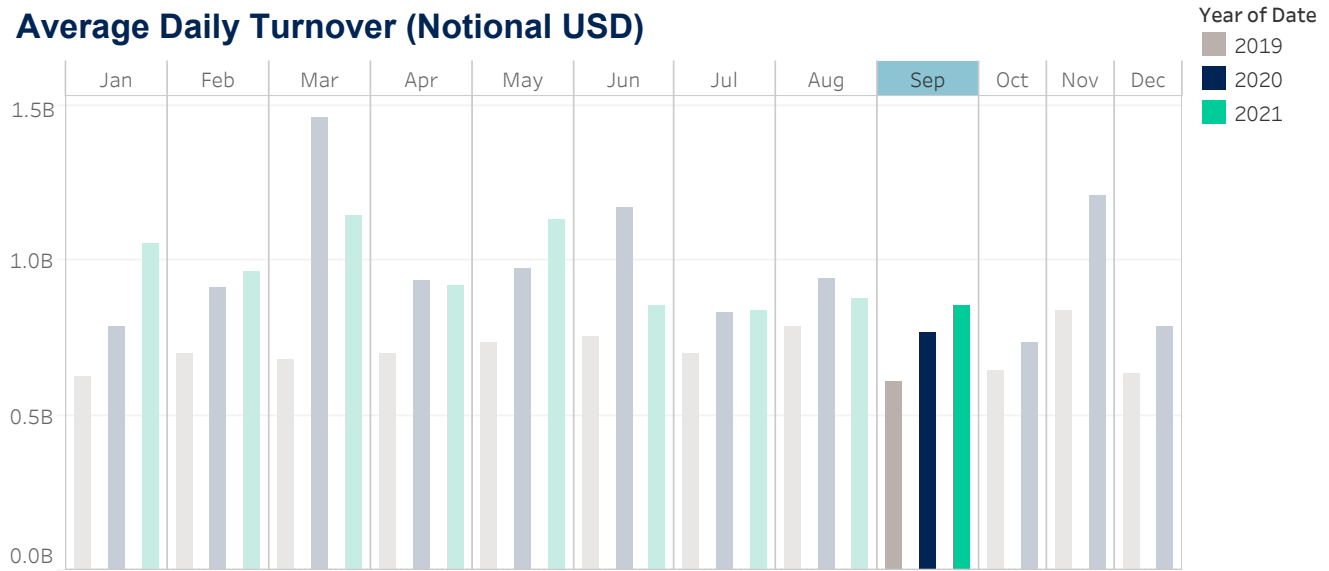
Median used for all metrics

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

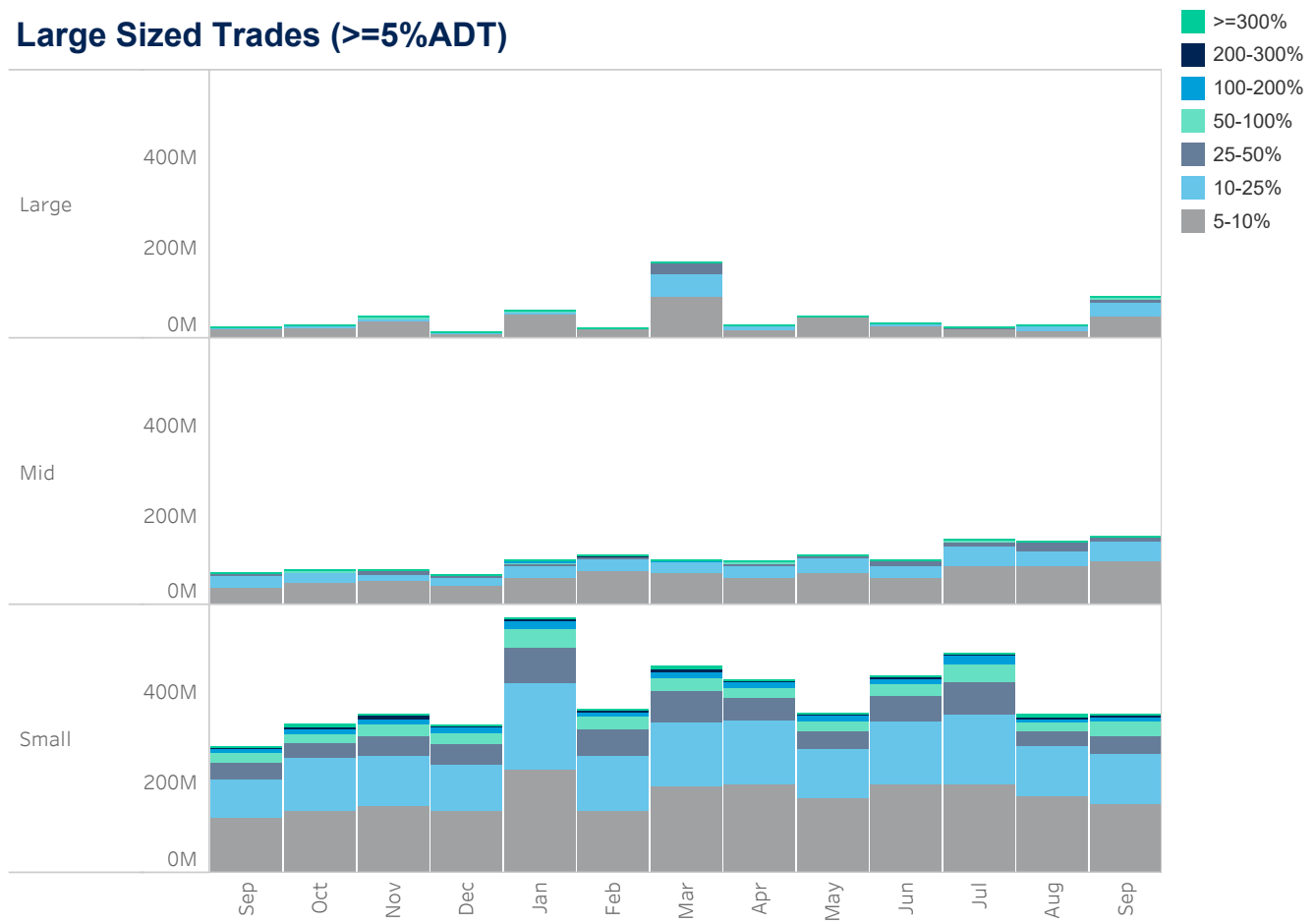
Source data: Virtu Financial

# Singapore

## Average Daily Turnover (Notional USD)



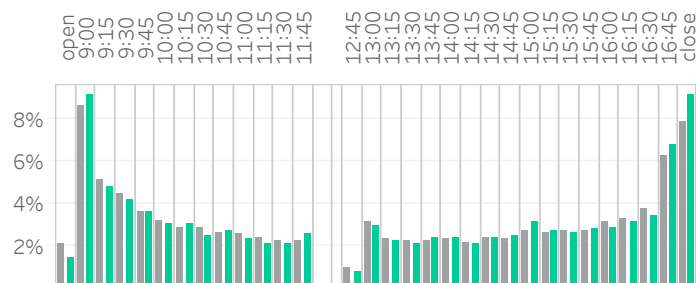
## Large Sized Trades (>=5%ADT)



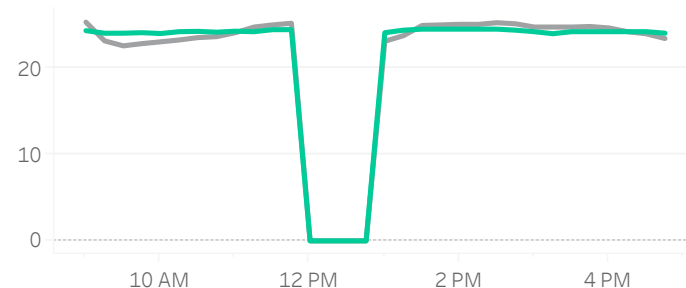
Source data: Virtu Financial

# Singapore

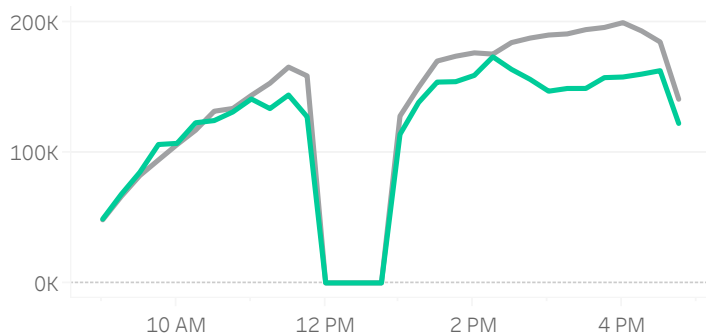
## Volume Curve



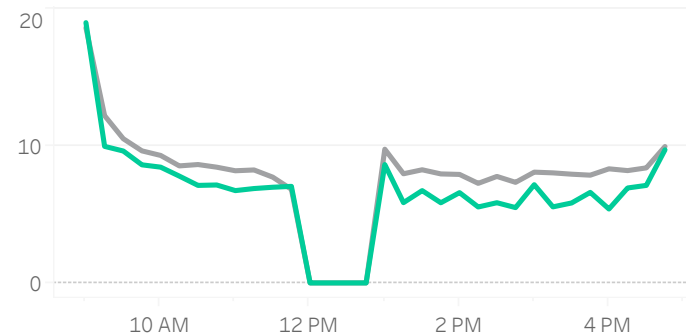
## Intraday Spread (bps)



## Intraday Quotesize (Shares)



## Intraday Volatility (bps)



■ Rolling 12 Months Avg ■ September 2021

## Spread Bps

	21 Q1			21 Q2			21 Q3		
	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
firstHalfHour	23.4	24.7	22.2	21.8	24.1	23.0	22.9	21.6	23.3
midday	24.4	25.3	22.6	22.5	24.5	22.5	22.7	22.4	24.1
lastHalfHour	24.3	24.0	22.2	21.0	23.3	21.4	22.3	22.5	23.1

## One Minute Volatility Bps

firstHalfHour	7.1	7.7	6.1	5.1	7.2	6.7	6.6	7.7	6.6
midday	5.4	5.7	4.5	5.6	6.6	4.1	4.5	3.9	3.3
lastHalfHour	5.7	3.9	5.2	5.3	6.6	3.8	4.9	1.6	3.4

## Quotesize in Shares

firstHalfHour	59,630	65,948	58,395	76,129	61,752	55,719	51,982	58,984	61,969
midday	161,583	189,564	171,200	197,195	181,346	141,942	122,557	127,510	145,217
lastHalfHour	180,964	195,173	162,162	180,880	165,147	134,075	118,307	142,612	146,413

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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