

August 2022

US Market Structure Monthly



US Market Microstructure Observations

- The average daily volume in US equities was 10.6B shares in August 2022, down 9% month over month (MoM) but up 18% year over year (YoY).
- Trade reporting facility (TRF) market share increased 1.1% MoM to 45.1% in August 2022, its highest monthly level since February 2021.
- Spreads narrowed to their lowest levels of the year in August 2022. Excluding the first and last half hour of the day, median spreads declined 10% and 6% MoM for S&P 500 and RUS 2000 symbols, respectively, in August 2022. The median spread for an S&P500 spread (excluding the first and last half hour of the day) in August was 4.7bps, and for the Russell 2000 was 14.1bps.

Market Structure News

Charles Schwab and Academics Raise Concern on SEC Proposals for Retail Trading

Charles Schwab released a white paper detailing the benefits their retail customers receive from the current market structure and warned against potential market structure proposals that could put these benefits at risk. Schwab advocated for increased trade by trade disclosure on price improvement and order routing revenue, Rule 605 reporting enhancements, and caps on order routing revenue rates. In addition to Schwab's paper, University of California academics released a paper on execution performance for orders executed at different retail brokers and determined that trades through these retail platforms received meaningful price improvement relative to the national best bid and offer, and that price improvement was not correlated with the level of payment for order flow received by the retail brokers dealers.

https://www.capitolaccountdc.com/p/is-the-secs-market-rules-overhaul?r=9nqdp&s=r&utm_campaign=post&utm_medium=web&triedSigningIn=true

<https://www.bloomberg.com/opinion/articles/2022-08-25/some-free-brokers-are-cheaper-than-others>

SEC Proposes Rules to Expand Hedge and Private Fund Leverage and Crypto Disclosures

In conjunction with the Commodity Futures Trading Commission (CFTC), the SEC proposed a new rule that would increase the disclosure requirements for large hedge and private funds about their investment strategies and leverage. The rule would expand the amount of information required in Form PF, a confidential filing that funds submit to the SEC on their operations. The new disclosures would include more detail on borrowing and financing arrangements, open positions and certain large positions, and cryptocurrency exposure. The new rule would apply to funds with net assets greater than \$500MM.

<https://www.reuters.com/markets/us/wall-street-watchdog-unveils-rule-improve-quality-private-hedge-fund-disclosures-2022-08-10/>

https://www.wsj.com/articles/regulators-weigh-asking-hedge-funds-to-report-crypto-exposure-11660140000?mod=hp_lead_pos6

SEC Approves MEMX to Trade Options

The MEMX stock exchange received SEC approval to launch an exchange for trading listed options. The new options exchange, called MEMX Options, will use a price/time priority structure and plans to launch in early 2023.

<https://www.businesswire.com/news/home/20220809005382/en/MEMX-Gains-SEC-Approval-to-Trade-Options>



SEC Proposes Conflict of Interest Rules for Clearing Houses

The SEC proposed new rules directed at providing more disclosures around conflicts of interest in the management and governance of clearing houses. Under the new rules, clearing houses would be required to disclose more details on board composition, independent directors, and nominating and risk management committees. Additionally, clearing houses would need to implement policies and procedures to report and mitigate conflicts of interest involving senior managers.

<https://www.reuters.com/business/us-sec-proposes-rules-mitigate-clearing-agency-governance-arrangement-conflicts-2022-08-08>

Cboe Announces Equity Partners for Its Digital Asset Business

Cboe announced the initial group of firms that intend to become equity investors in its Cboe Digital business, which includes ErisX, a digital asset spot marketplace. The roster of firms includes Virtu Financial, Robinhood, Jane Street, Jump Crypto, and Interactive Brokers. The firms will receive a minority stake in Cboe Digital and collaborate with Cboe on client-driven solutions to help increase the adoption of digital assets.

<https://www.prnewswire.com/news-releases/cboe-global-markets-announces-planned-equity-partners-for-cboe-digital-business-301612429.html>



Virtu Comment Letters

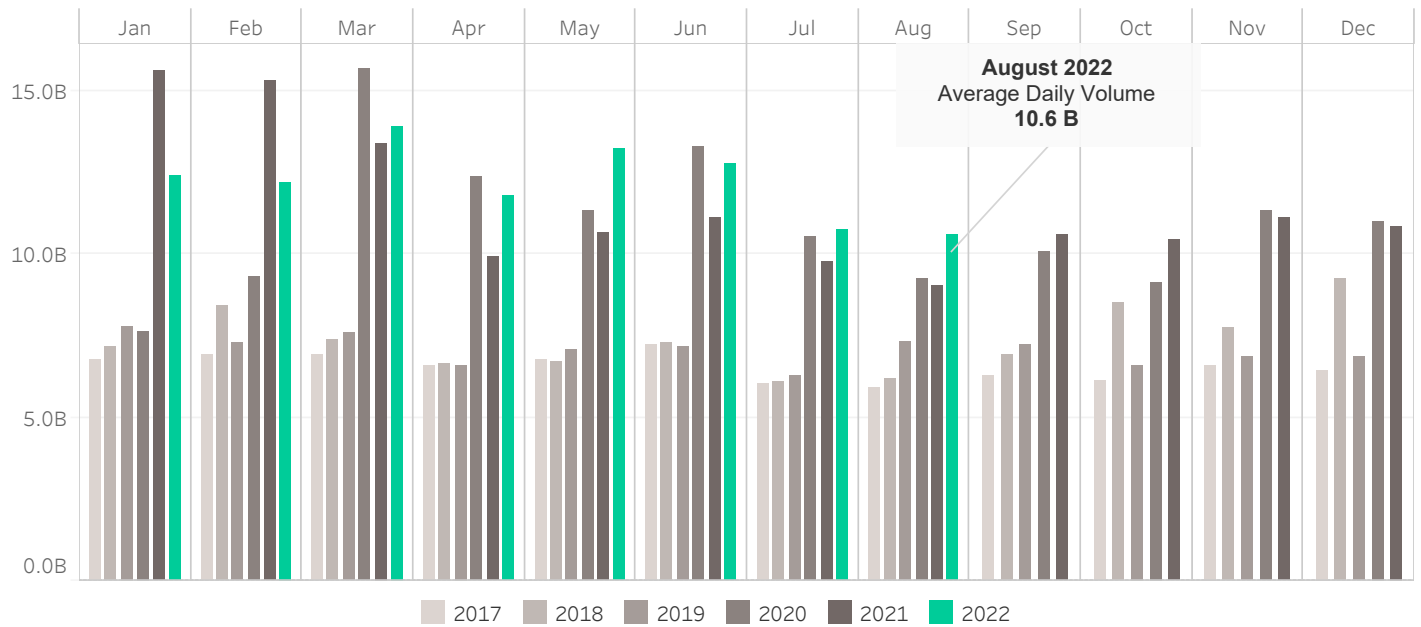
Virtu's Comment Letter on Additional Transparency for Treasury Security Secondary Trading

In a comment letter to the US Department of the Treasury, Virtu commends the US Department of Treasury for soliciting feedback on ways to enhance transparency in the Treasury securities markets. Virtu recommends that an approach like corporate bond trade dissemination be adopted for the Treasury market, where information on trades below a certain size are reported in real-time, where trades above a certain size have delayed reporting.

<https://virtu-www.s3.amazonaws.com/uploads/documents/Virtu-Financial-Treasury-RFI-Comment-Letter-08252022.pdf>

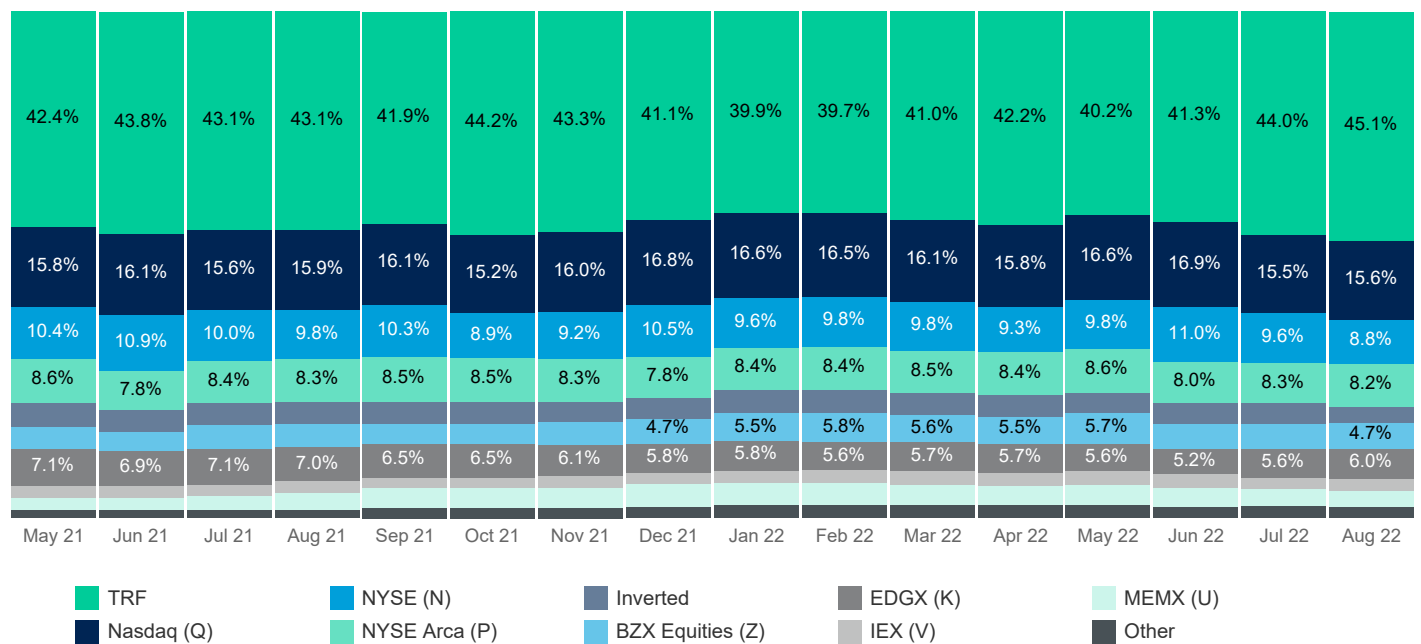


Average Daily Market Volume



Source data: Cboe Global Markets

Venue Market Share



Source data: Cboe Global Markets



TRF Volume Breakdown

■ ATS
■ OTC Non ATS

22.8%	21.7%	23.5%	24.0%	22.0%	21.1%	23.2%	25.1%	25.4%	25.9%	23.0%	23.0%	25.4%	23.8%	23.3%
77.2%	78.3%	76.5%	76.0%	78.0%	78.9%	76.8%	74.9%	74.6%	74.1%	77.0%	77.0%	74.6%	76.2%	76.7%
May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22

Tier1 and Tier2 only; Excludes Dealerweb, Source data: FINRA

ATS Market Share

■ UBS
■ Goldman Sachs
■ Morgan Stanley
■ JP Morgan
■ Credit Suisse
■ Level
■ BIDS
■ Virtu
■ Other

19.2%	18.8%	18.2%	17.9%	17.9%	17.1%	16.2%	16.4%	16.2%	16.8%	16.8%	16.6%	16.0%	16.0%	15.3%
10.8%	11.0%	11.3%	11.2%	10.9%	11.7%	12.3%	12.4%	12.4%	12.4%	12.8%	12.4%	12.8%	13.1%	12.2%
10.5%	9.3%	9.6%	9.6%	9.2%	9.4%	10.0%	10.5%	10.6%	11.0%	10.5%	11.2%	11.3%	10.8%	11.6%
8.7%	8.5%	9.1%	9.4%	9.2%	9.4%	9.2%	9.5%	9.7%	9.7%	9.5%	10.3%	9.3%	9.6%	10.4%
9.7%	10.5%	9.2%	8.7%	9.2%	8.8%	9.0%	9.4%	9.4%	9.6%	9.4%	9.1%	9.5%	9.0%	8.2%
6.1%	6.4%	6.5%	6.6%	7.1%	6.7%	6.5%	6.6%	6.4%	6.6%	6.5%	6.5%	6.6%	6.7%	6.7%
5.1%		5.6%		5.6%	6.0%	5.7%			5.2%	5.5%	5.6%	5.7%	6.0%	5.8%
26.2%	26.5%	26.6%	27.2%	27.1%	26.9%	26.7%	25.7%	25.8%	24.7%	25.1%	24.3%	25.0%	25.4%	26.1%
May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22

Excludes Dealerweb, OTC; Venues rolled up to firm level; Source data: FINRA

OTC Non-ATS Market Share

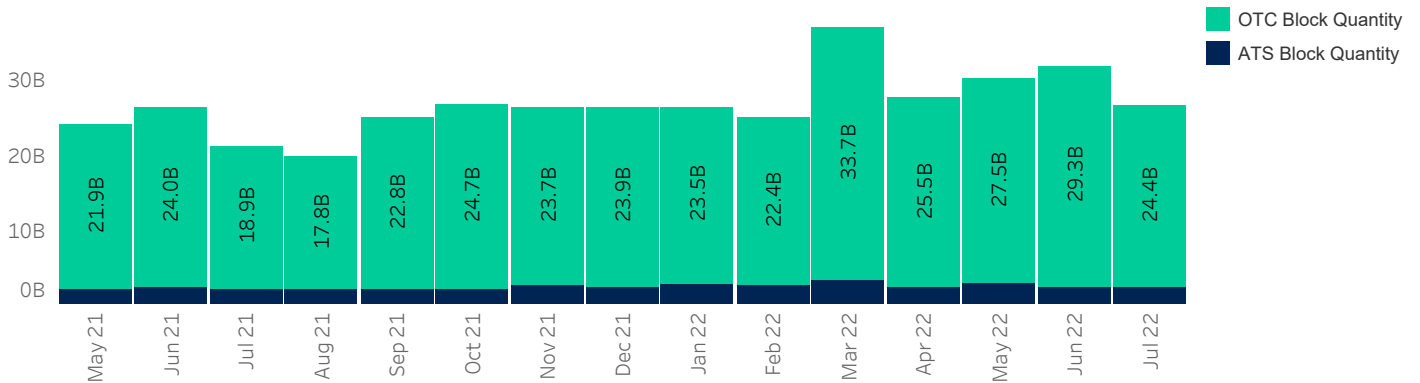
■ Citadel
■ Virtu
■ G1
■ Two Sigma
■ Jane Street
■ Other

36.0%	31.8%	31.4%	30.7%	32.2%	31.3%	28.8%	28.1%	28.3%	28.4%	27.6%	28.6%	31.0%	28.6%	30.3%
26.8%	28.0%	29.0%	27.0%	25.0%	26.0%	26.1%	23.9%	24.3%	23.5%	26.1%	23.6%	22.9%	23.3%	24.6%
7.8%	8.0%	8.2%	10.2%	9.7%	10.5%	9.8%	10.3%	10.9%	11.6%	12.4%	11.9%	12.5%	12.6%	12.7%
					8.8%	9.5%	9.3%	9.7%	10.4%	10.6%	11.0%	10.6%	10.7%	11.4%
20.1%	23.2%	20.8%	20.7%	20.9%	18.8%	21.8%	24.9%	23.4%	22.6%	19.8%	21.8%	20.2%	22.2%	18.4%
May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22

Source: FINRA, NMS Tier 1 & 2 Securities

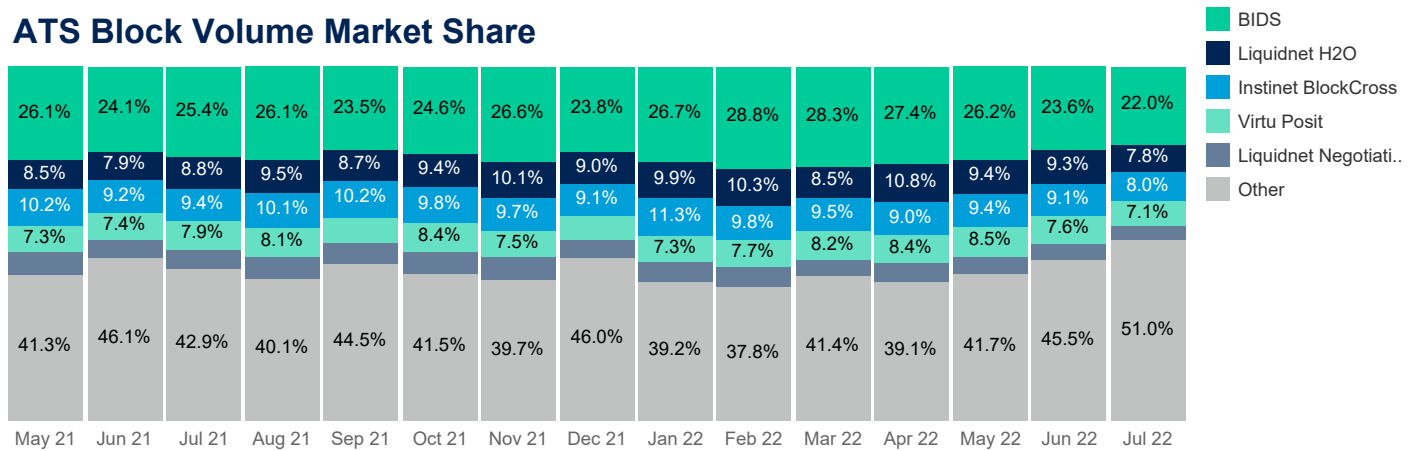


TRF Block Volume Breakdown (Shares)



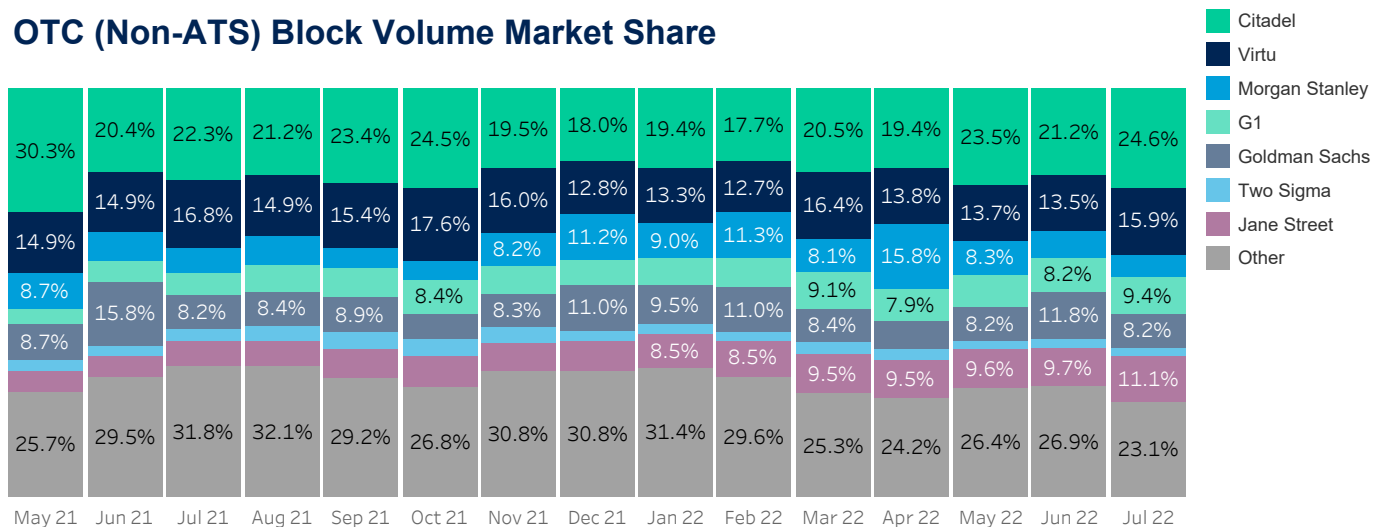
Source: FINRA

ATS Block Volume Market Share



Excludes Dealerweb; Blocks defined as >10K shares; Source data: FINRA

OTC (Non-ATS) Block Volume Market Share



Blocks defined as >10K shares; Source data: FINRA



Quotesize in Shares

		3Q 21		4Q 21			1Q 22			2Q 22			3Q 22	
		Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22
First 30 Min	SP500	176	171	170	172	187	184	187	186	180	196	195	188	185
	RUS2000	221	214	207	201	220	224	225	230	236	250	243	232	228
Mid Day	SP500	193	184	181	183	192	188	193	185	176	186	190	181	179
	RUS2000	215	208	205	209	219	225	230	234	232	234	246	237	234
Last 30 Min	SP500	238	219	210	213	208	200	199	195	190	190	198	197	201
	RUS2000	249	236	232	238	242	244	246	254	255	259	276	267	265

Spread Bps

First 30 Min	SP500	9.9	9.3	11.1	12.3	13.9	14.2	13.6	13.9	13.4	15.1	13.5	13.2	11.8
	RUS2000	51.5	45.7	47.3	50.2	58.4	57.4	56.9	53.8	51.3	57.0	50.4	48.1	45.3
Mid Day	SP500	4.0	4.1	4.3	4.7	5.6	5.7	5.9	6.1	5.5	6.5	5.7	5.2	4.7
	RUS2000	18.8	18.2	18.7	21.0	24.2	24.9	25.0	23.2	22.5	25.0	21.6	20.4	19.1
Last 30 Min	SP500	2.7	2.8	3.0	3.1	3.7	3.8	4.1	3.9	3.6	3.9	3.5	3.2	2.9
	RUS2000	14.2	14.3	14.8	15.6	18.0	18.6	19.1	17.1	16.6	18.1	16.2	15.4	14.1

One Minute Volatility Bps

First 30 Min	SP500	14.2	14.8	15.3	15.9	17.3	20.0	19.6	20.0	20.2	24.0	21.4	20.7	15.6
	RUS2000	18.8	18.6	17.7	18.9	22.2	23.2	23.6	22.6	21.7	26.9	24.1	26.6	21.0
Mid Day	SP500	4.8	5.4	5.2	5.0	6.1	7.6	8.1	8.4	8.2	9.9	8.3	7.5	6.2
	RUS2000	5.3	5.7	5.2	5.2	5.9	7.1	7.7	7.1	6.8	9.0	6.8	6.1	5.5
Last 30 Min	SP500	5.3	6.2	6.1	5.5	7.2	9.0	10.1	9.0	9.1	10.8	9.0	7.9	6.2
	RUS2000	6.6	7.7	7.2	7.3	9.1	10.0	10.8	8.6	8.8	9.8	8.1	6.9	6.2

Percent ADV by Time of Day

Open	SP500	1.1%	1.0%	1.1%	1.1%	1.0%	1.0%	1.0%	0.9%	1.1%	1.0%	1.0%	1.1%	1.0%
	RUS2000	0.9%	0.9%	0.9%	0.9%	0.8%	0.7%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.8%
First 30 Min	SP500	9.7%	9.7%	9.5%	9.7%	9.2%	9.2%	9.3%	9.1%	9.3%	9.3%	9.4%	9.8%	9.6%
	RUS2000	8.8%	8.5%	8.3%	8.5%	8.2%	7.5%	8.1%	8.0%	7.6%	8.2%	7.6%	8.1%	8.2%
Last 30 Min	SP500	18.3%	18.2%	18.8%	18.3%	18.4%	18.7%	19.1%	19.0%	19.0%	18.6%	19.2%	18.6%	18.8%
	RUS2000	19.5%	19.6%	19.1%	19.4%	19.8%	20.3%	21.0%	20.1%	19.6%	19.7%	19.8%	20.3%	20.4%
Close	SP500	10.7%	11.7%	12.1%	11.5%	13.9%	11.5%	11.1%	12.6%	11.8%	10.9%	13.1%	12.5%	11.9%
	RUS2000	8.9%	9.7%	10.1%	8.8%	10.7%	8.9%	9.7%	10.2%	10.6%	9.1%	10.8%	11.8%	10.4%

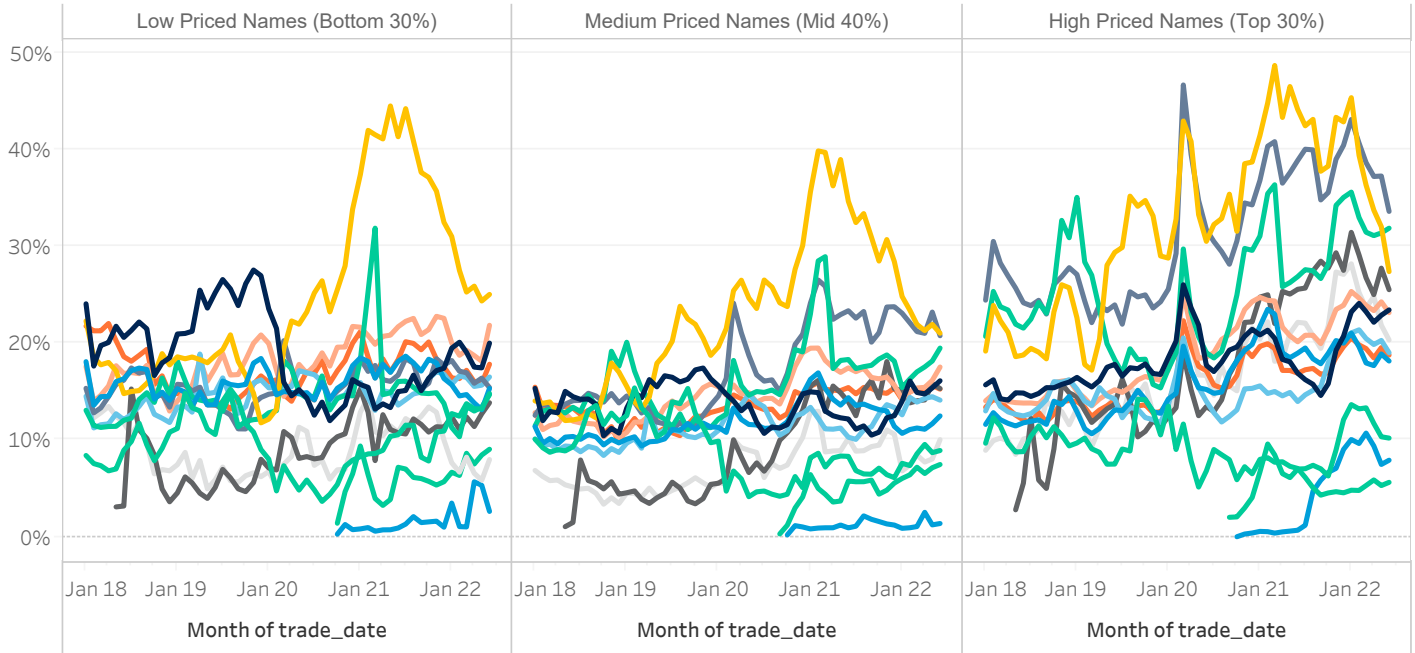
Median used for all metrics

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

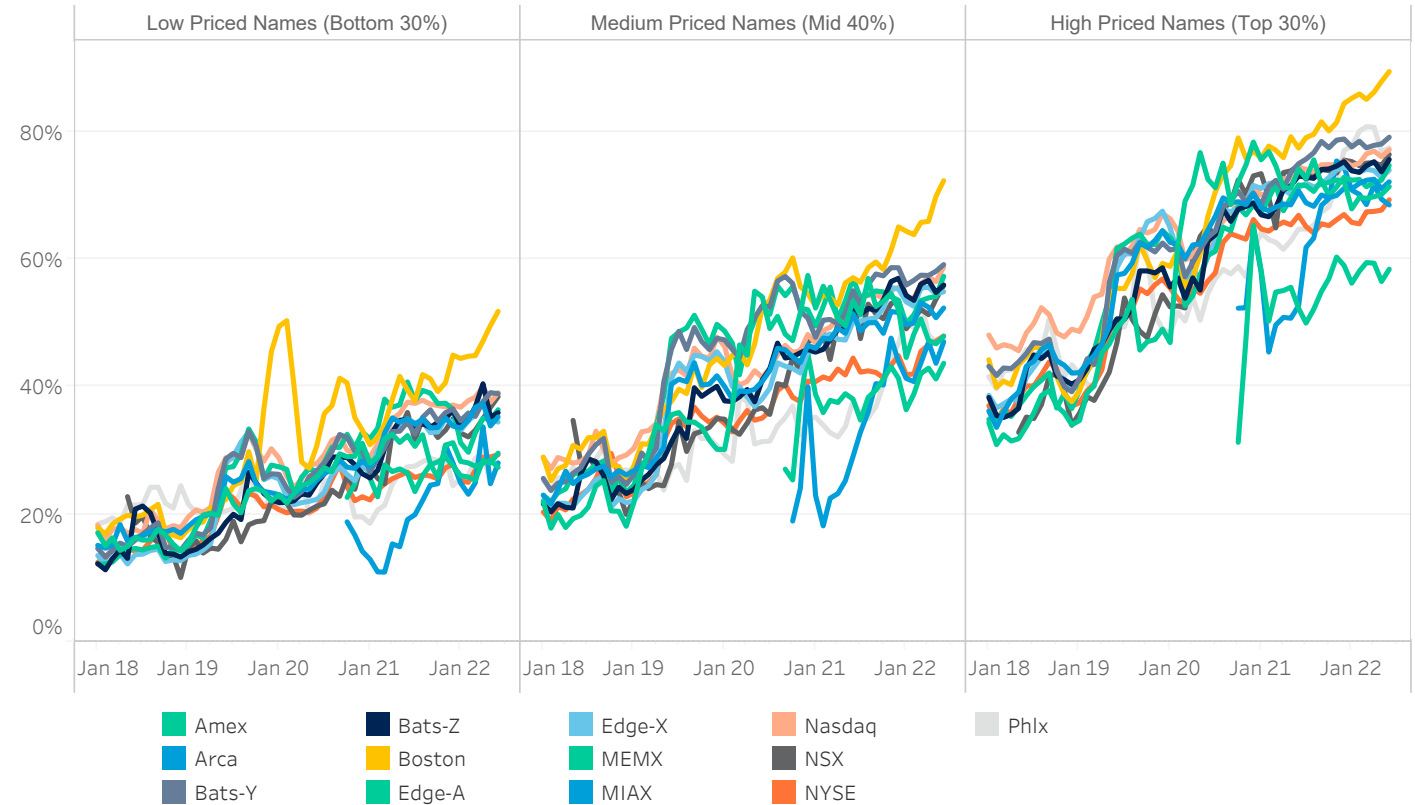
Source data: Virtu Financial



Hidden Trades Proportion by Price and Venue



Oddlot Trades Proportion by Price and Venue





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