

April 2022

US Market Structure Monthly



US Market Microstructure Observations

- The average daily volume in US equities was 11.7B shares in April 2022, down 15.8% month over month (MoM) and up 18.2% year over year.
- Trade reporting facility (TRF) market share increased 1.2% MoM to 42.2%.
- Excluding the first and last half hour of the day, median spreads narrowed 14.8% and 9.1% MoM for S&P 500 and RUS 2000 symbols, respectively, in April 2022.
- Excluding the first and last half hour of the day, intraday volatility decreased 10.7% and 7.0% MoM for S&P 500 and RUS 2000 symbols, respectively.
- The proportion of volume traded in the closing auction increased from 10.2% to 13.2% for RUS 2000 symbols.

Market Structure News

SEC Proposes Rules to Regulate Security-Based Swap Execution Facilities

On 6 April, the SEC proposed a new regulatory regime for the registration and regulation of security-based swap execution facilities (SBSEFs). SBSEF regulation was one of the major reforms required by the Dodd-Frank Act of 2010, but it was never implemented. According to the SEC, the proposal closely aligns with the rules that govern swap execution facilities, regulated by the Commodity Futures Trading Commission (CFTC)..

<https://www.cnbc.com/2022/04/06/the-sec-wants-to-regulate-an-obscure-derivative-product-known-as-a-swap-heres-why.html>

<https://www.sec.gov/news/press-release/2022-59>

Industry Groups Request Longer Comment Periods for SEC Proposals

Over twenty financial services trade groups representing banks, private equity firms, and other financial institutions wrote to the SEC, asking for more time to comment on SEC proposals. Among the issues raised in the letter were the number of proposals the Commission is currently considering and the lack of time the industry has been given to analyze and respond to the proposals.

<https://finance.yahoo.com/news/gensler-pushed-industry-more-time-214059208.html> https://www.sifma.org/wp-content/uploads/2022/02/SEC_Joint-Trades_Comment-Period-Letter_4-5-2022.pdf

Biden Preparing to Announce Nominees for SEC Commission

Under the Biden administration, Jaime Lazarraga and Mark Uyeda will be nominated to be two of the five commissioners of the SEC, subject to Senate confirmation. Mr. Lazarraga, an aide to House Speaker Nancy Pelosi, played a role in the passage of the \$700B Troubled Asset Relief Program in 2008 as well as the 2010 Dodd-Frank Act. Mr. Uyeda is an attorney with the SEC and he previously served as an aide to the former SEC commissioner Michael Piwowar.

<https://www.wsj.com/articles/biden-preparing-to-announce-pair-of-sec-nominees-11649261233?reflink=e2twmkt>



Virtu Comment Letters

Virtu Supports SEC's Proposal to Shorten the Settlement Cycle

In a comment letter to the SEC, Virtu expressed general support for the proposal to shorten the standard settlement cycle for most broker-dealer transactions in securities from two business days after the trade date (T+2) to one business day after the trade date (T+1). The Comment letter did highlight certain areas the SEC should consider in its final rulemaking, including:

1. The misalignment of US and foreign settlement cycles;
2. The difficulties associated with the requirement for a broker-dealer and customer to enter into a written contract as part of the allocation, confirmation, and affirmation process; and
3. Challenges associated with Regulation SHO

<https://virtu-www.s3.amazonaws.com/uploads/documents/Virtu-Financial-Shortened-Settlement-20220411.pdf>

Virtu Supports the Application by NYSE Arca to List Shares of Grayscale Bitcoin Trust (GBTC)

In a comment letter to the SEC, Virtu shares observations to demonstrate that the investing public would benefit from additional choice and market competition in the form of one or several spot Bitcoin exchange-traded products (ETPs) .

<https://virtu-www.s3.amazonaws.com/uploads/documents/Virtu-Financial-Regulation-GBTC-Comment-Letter-20220404.pdf>

Virtu Comment Letter on SEC's Proposal to Amend the Definition of "Exchange" under Exchange Rule 3b-16, Reg ATS, and Reg ATS-N

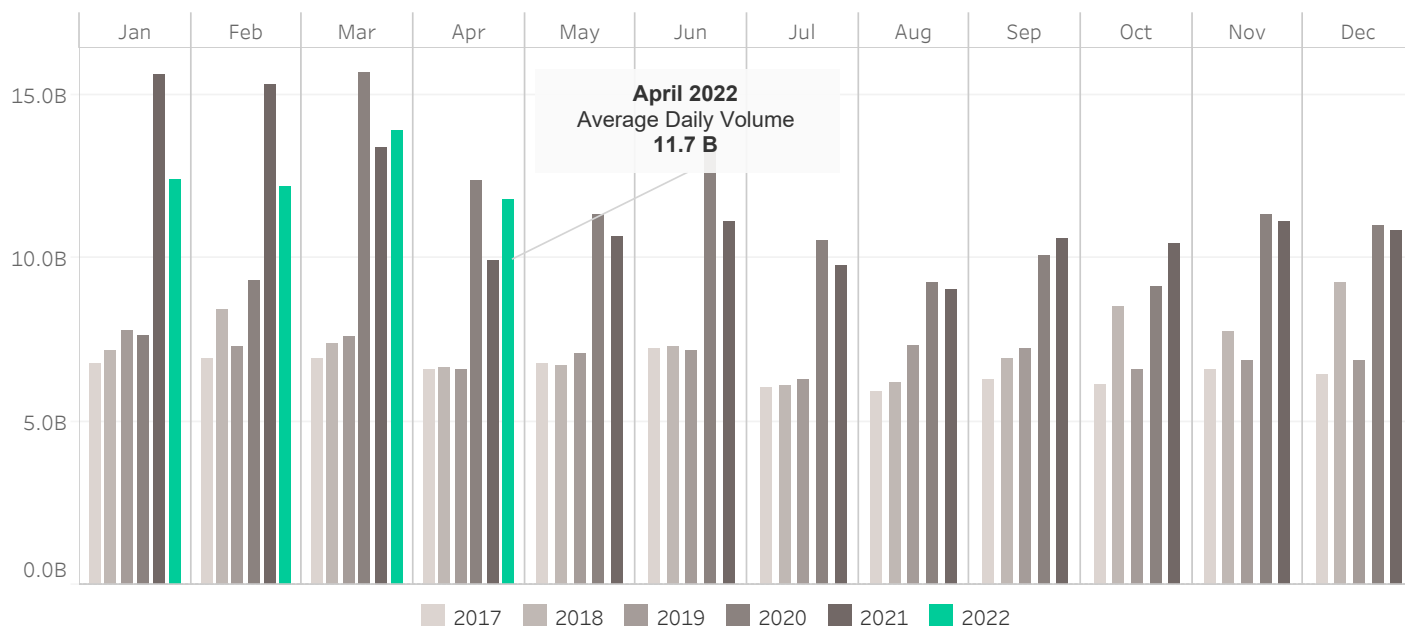
In the comment letter, Virtu highlights that:

1. The Commission has exceeded its statutory authority by failing to conduct an adequate economic analysis in recommending the Proposal. Specifically, the Proposal:
 - a. Fails to Clearly Identify the Justification for the Proposed Rule
 - b. Fails to Calculate a Baseline
 - c. Fails to Consider Alternatives
 - d. Fails to Consider Economic Consequences of the Proposal (Both Benefits and Costs)
2. The Commission has exceeded its statutory authority in expanding the definition of "exchange" to include marketplaces that "make available" non-discretionary methods for buyers and sellers to agree to the terms of a trade [including so-called "Communication Protocol Systems" ("CPS") that utilize investors' trading interest]
3. The proposed amendments to Reg ATS and Reg ATS-N are unwarranted, will harm the marketplace, and will result in unnecessary costs and burdens that are harmful to investors

<https://virtu-www.s3.amazonaws.com/uploads/documents/Virtu-Financial-Regulation-ATS-Comment-Letter-20220418.pdf>

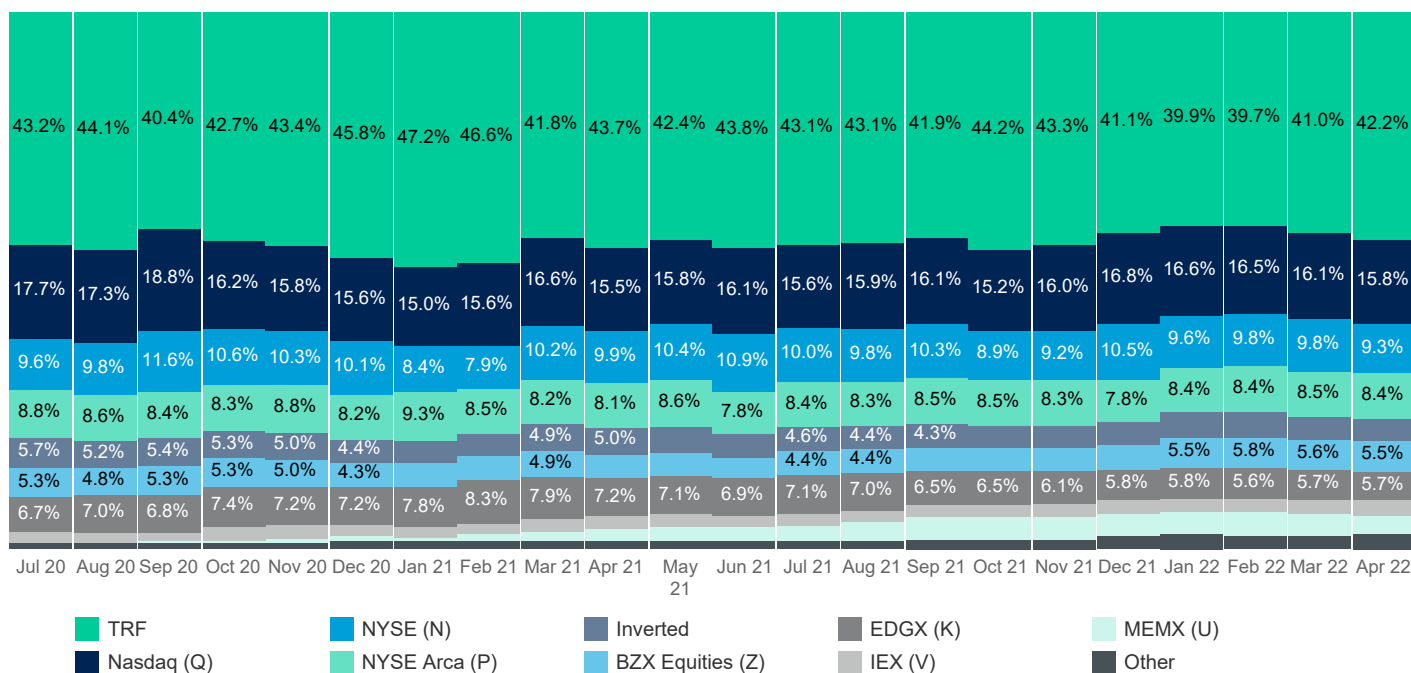


Average Daily Market Volume



Source data: Cboe Global Markets

Venue Market Share

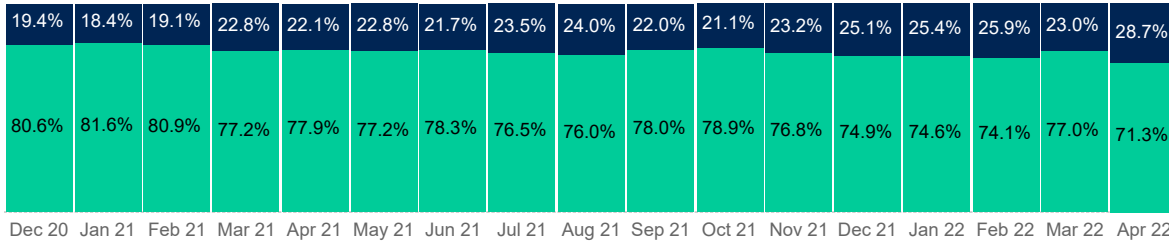


Source data: Cboe Global Markets



TRF Volume Breakdown

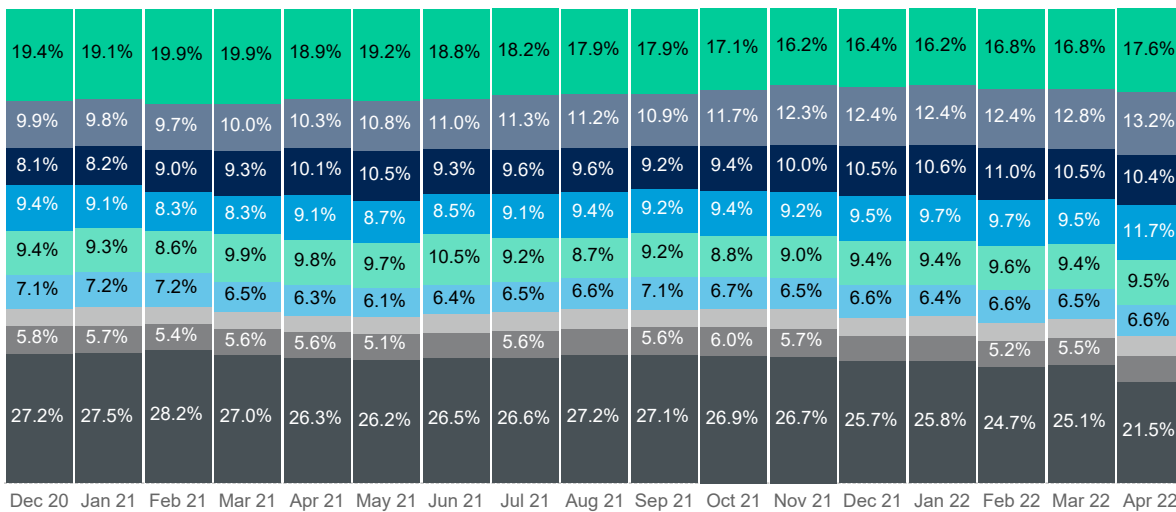
■ ATS
■ OTC Non ATS



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

ATS Market Share

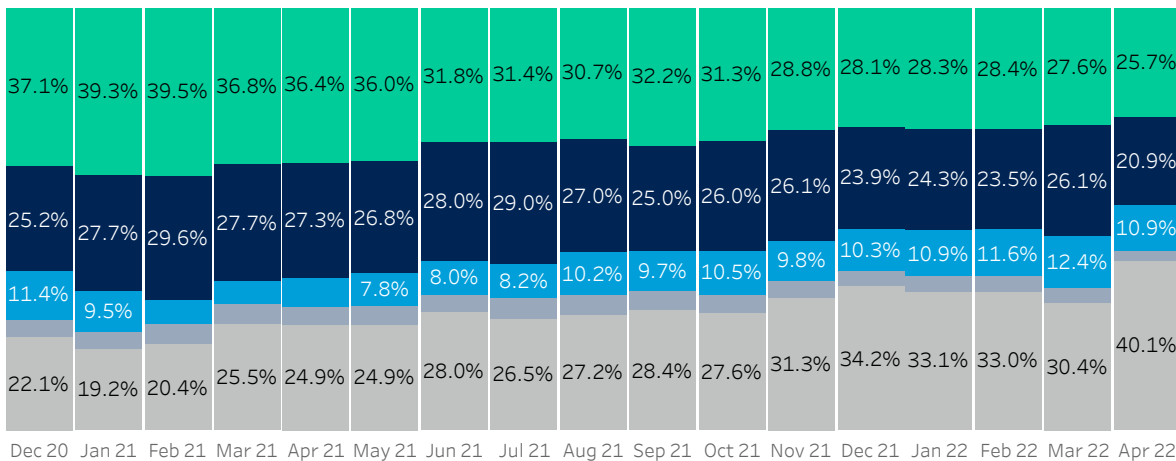
■ UBS
■ Goldman Sachs
■ Morgan Stanley
■ JP Morgan
■ Credit Suisse
■ Level
■ BIDS
■ Virtu
■ Other



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

OTC Non-ATS Market Share

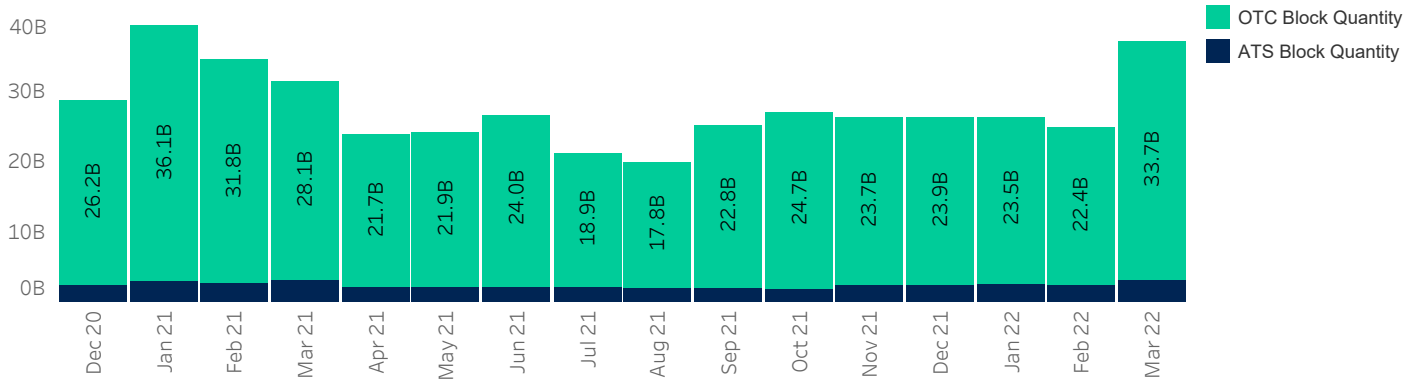
■ Citadel
■ Virtu
■ G1
■ Two Sigma
■ Other



Source: FINRA, NMS Tier 1 & 2 Securities

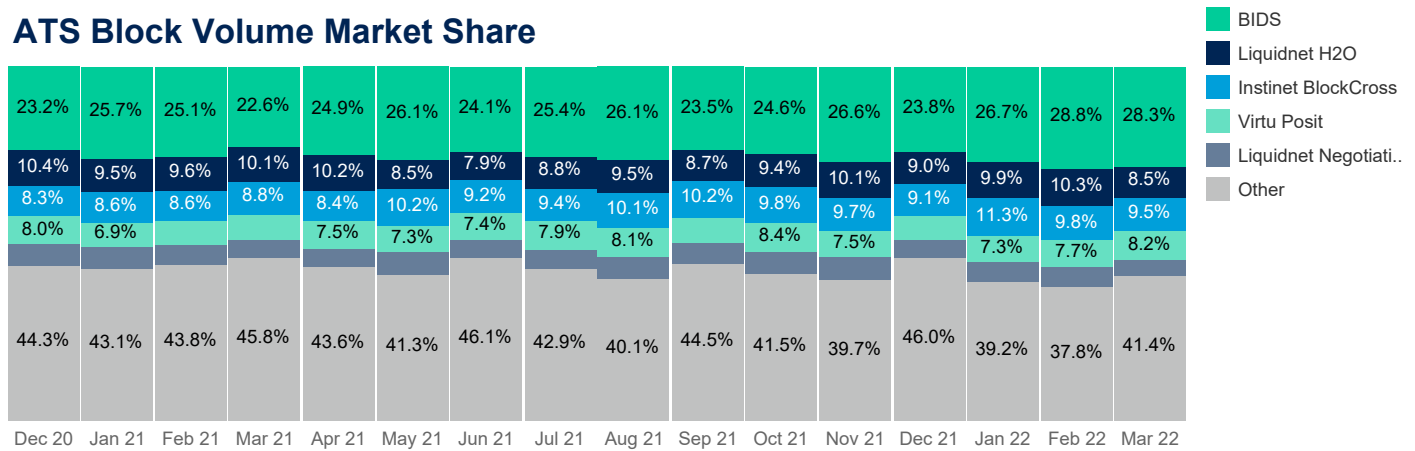


TRF Block Volume Breakdown (Shares)



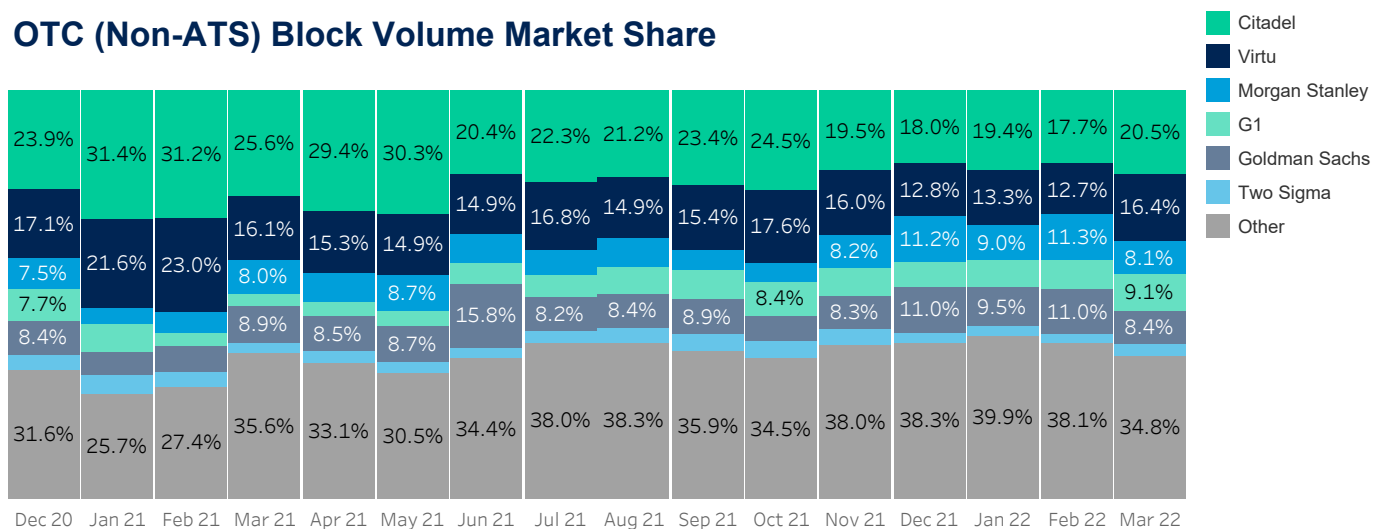
Source: FINRA

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

		2Q 21			3Q 21			4Q 21			1Q 22			2Q 22
		Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22
First 30 Min	SP500	188	184	178	177	176	171	170	172	187	184	187	186	184
	RUS2000	231	225	217	222	221	214	207	201	220	224	225	230	236
Mid Day	SP500	198	193	197	190	193	184	181	183	192	188	193	185	179
	RUS2000	216	211	213	210	215	208	205	209	219	225	230	234	236
Last 30 Min	SP500	225	224	239	232	238	219	210	213	208	200	199	195	192
	RUS2000	238	235	243	240	249	236	232	238	242	244	246	254	256

Spread Bps

First 30 Min	SP500	10.3	10.2	8.1	9.7	9.9	9.3	11.1	12.3	13.9	14.2	13.6	13.9	12.3
	RUS2000	57.7	56.8	45.0	52.7	51.5	45.7	47.3	50.2	58.4	57.4	56.9	53.8	48.3
Mid Day	SP500	4.4	4.3	3.5	4.1	4.0	4.1	4.3	4.7	5.6	5.7	5.9	6.1	5.2
	RUS2000	23.1	22.6	18.0	19.9	18.8	18.2	18.7	21.0	24.2	24.9	25.0	23.2	21.1
Last 30 Min	SP500	3.1	3.1	2.6	2.9	2.7	2.8	3.0	3.1	3.7	3.8	4.1	3.9	3.7
	RUS2000	17.5	16.9	14.1	14.4	14.2	14.3	14.8	15.6	18.0	18.6	19.1	17.1	15.7

One Minute Volatility Bps

First 30 Min	SP500	14.5	16.4	12.8	14.5	14.2	14.8	15.3	15.9	17.3	20.0	19.6	20.0	16.9
	RUS2000	18.4	21.6	15.9	19.3	18.8	18.6	17.7	18.9	22.2	23.2	23.6	22.6	19.4
Mid Day	SP500	5.4	6.1	4.5	5.3	4.8	5.4	5.2	5.0	6.1	7.6	8.1	8.4	7.5
	RUS2000	5.9	6.5	4.9	6.2	5.3	5.7	5.2	5.2	5.9	7.1	7.7	7.1	6.6
Last 30 Min	SP500	6.2	7.1	5.2	5.7	5.3	6.2	6.1	5.5	7.2	9.0	10.1	9.0	8.5
	RUS2000	7.5	8.6	6.5	7.2	6.6	7.7	7.2	7.3	9.1	10.0	10.8	8.6	7.8

Percent ADV by Time of Day

Open	SP500	1.3%	1.2%	1.1%	1.2%	1.1%	1.0%	1.1%	1.1%	1.0%	1.0%	1.0%	0.9%	1.1%
	RUS2000	0.9%	0.9%	0.8%	1.0%	0.9%	0.9%	0.9%	0.9%	0.8%	0.7%	0.8%	0.8%	0.6%
First 30 Min	SP500	9.6%	9.7%	9.5%	10.0%	9.7%	9.7%	9.5%	9.7%	9.2%	9.2%	9.3%	9.1%	9.3%
	RUS2000	8.1%	8.4%	7.9%	8.9%	8.8%	8.5%	8.3%	8.5%	8.2%	7.5%	8.1%	8.0%	7.1%
Last 30 Min	SP500	17.8%	18.4%	18.5%	18.3%	18.3%	18.2%	18.8%	18.3%	18.4%	18.7%	19.1%	19.0%	19.4%
	RUS2000	19.3%	19.3%	19.4%	19.8%	19.5%	19.6%	19.1%	19.4%	19.8%	20.3%	21.0%	20.1%	19.0%
Close	SP500	13.2%	11.1%	12.3%	12.5%	10.7%	11.7%	12.1%	11.5%	13.9%	11.5%	11.1%	12.6%	12.9%
	RUS2000	9.5%	8.7%	10.0%	9.9%	8.9%	9.7%	10.1%	8.8%	10.7%	8.9%	9.7%	10.2%	13.2%

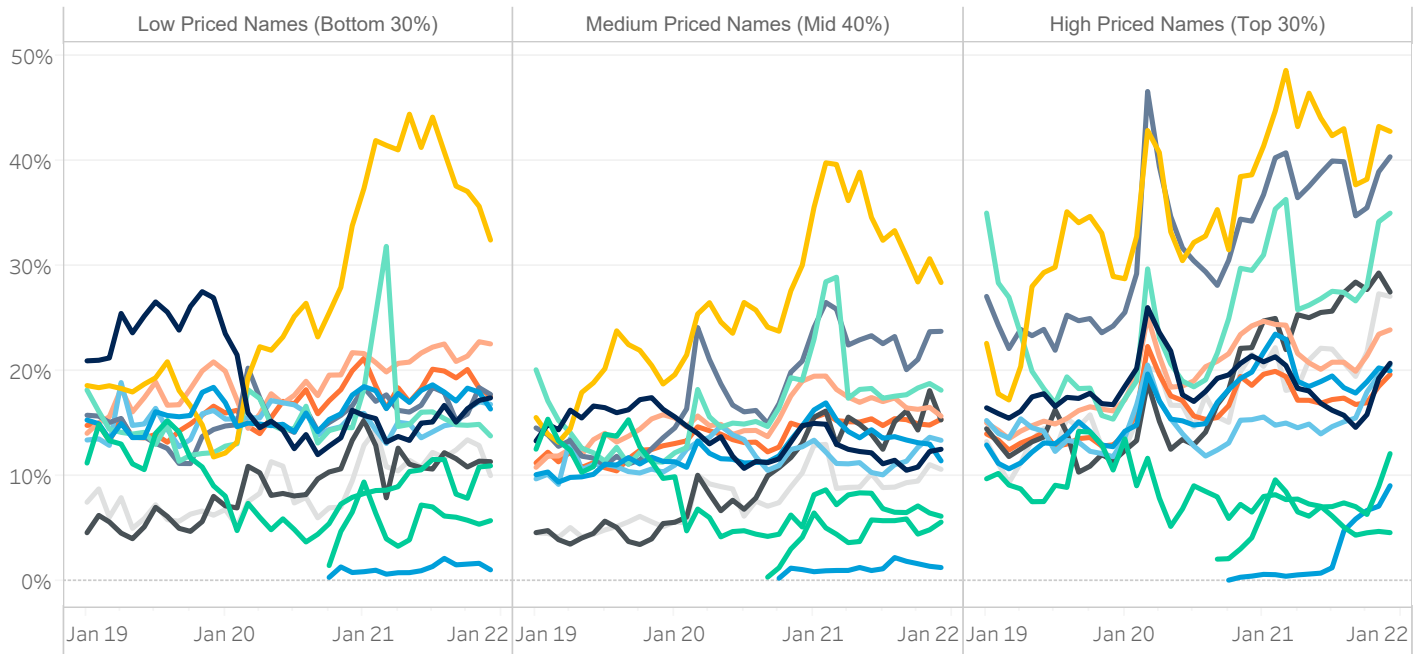
Median used for all metrics

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

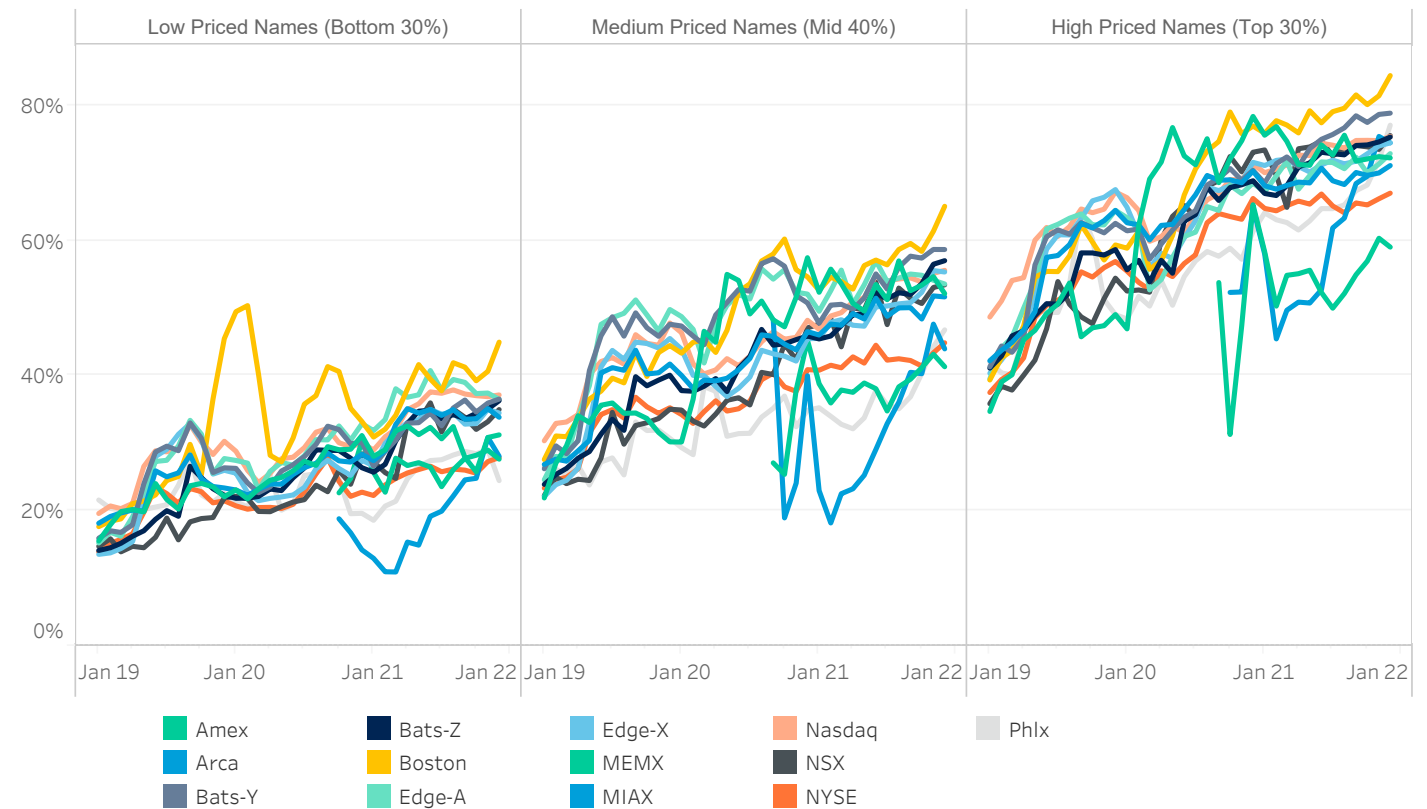
Source data: Virtu Financial



Hidden Trades Proportion by Price and Venue



Oddlot Trades Proportion by Price and Venue



- | | | | | |
|--|--|---|--|--|
| ■ Amex | ■ Bats-Z | ■ Edge-X | ■ Nasdaq | ■ Phlx |
| ■ Arca | ■ Boston | ■ MEMX | ■ NSX | |
| ■ Bats-Y | ■ Edge-A | ■ MIAx | ■ NYSE | |



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