

March 2020

US Market Structure Monthly



Market Microstructure Observations

- The average daily volume in US equities was 15.6b shares in March 2020, nearly twice that of the same month last year and the highest monthly ADV in the past decade.
- Market share of inverted (taker-maker) priced venues dropped to 6.9% in March 2020 from 10% in the same month last year, primarily driven by a decrease in BYX Equities (Y) resulting from a November 2019 increase in fee for adding liquidity. Market share of BZX Equities (Z) (maker-taker) increased from 5.8% in January 2020 to 7.7% in March 2020 as a result of a fee schedule change in February 2020 that raised rebates for adding liquidity.
- Median quote size during the first 30 minutes of the trading day saw a slight increase in March 2020 versus prior months, while median quote size after the first 30 minutes of trading decreased versus prior periods. S&P 500 symbols saw median quote size in the last half hour of trading dropping to levels that were half of those observed during 1Q 2019.
- Spreads more than tripled for S&P 500 symbols in March 2020 vs. the same period last year.
- Intraday volatility in March 2020 more than tripled for S&P 500 symbols during the first half hour of trading and surged more than fivefold and sevenfold for mid-day and the last 30 minutes of trading respectively, compared to last year.
- No significant deviation in the continuous session volume curve was observed in March 2020, but close auction volume for S&P 500 symbols, as a proportion of the day's volume, dropped to 9.9% vs 12% in the prior month, and 10.7% in March 2019.

Market Structure News

• **The New York Stock Exchange temporarily closes its trading floor**

Beginning on March 23rd, the NYSE temporarily closed its trading floor, moving to a fully electronic trading model, in response to COVID-19 health concerns. While most NYSE operations will remain the same, certain floor broker activities and order types, including d-quote orders, will not be available during the floor's closure.

<https://ir.theice.com/press/news-details/2020/New-York-Stock-Exchange-to-Move-Temporarily-to-Fully-Electronic-Trading/default.aspx>

• **The SEC delays decision on NYSE's plan to offer a new high-speed wireless connection to the exchange**

A SEC decision had been expected in early April, but the regulator moved the deadline to May 18 after it received several letters objecting to the proposal. The new high-speed connection would be offered via a new antenna built on top of NYSE's data center in Mahwah, NJ, and would only be available to an affiliate of NYSE's parent company ICE. Virtu's comment letter can be found in item four of the next section.

<https://www.reuters.com/article/us-sec-nyse/u-s-sec-delays-ruling-on-controversial-nyse-high-speed-data-plan-idUSKBN21K3BB>

• **Regulators give firms extra time to comply with Rule 606**

The SEC announced in mid-March a delay in complying with certain aspects of Rule 606 due to the disruption caused by COVID-19. The relief offers a one-month delay in the requirement for broker dealers to provide a public report for the first quarter of 2020, as prescribed by Rule 606(a) and a two-month delay for broker dealers who engage in outsourced routing activity to collect monthly customer specific data as required by Rule 606(b)(3).

<https://www.tradersmagazine.com/flashback/flash-friday-delay-in-long-awaited-rule-606-compliance/>



Virtu Comment Letters on Market Structure Proposals

1. SEC Proposal to Amend SEC Rule 15c2-11

September 25, 2019

The SEC is proposing amendments to 15c2-11 under the Securities Exchange Act of 1934. The rule governs the publication of quotations for securities in a quotation medium other than national securities exchange, i.e.: over-the-counter (OTC) securities. The Commission is proposing inter alia to provide enhanced transparency to investors and other market participants by requiring that information about the issuer and the security be current and publicly available.

Virtu filed its comment letter on February 7, 2020. The letter can be found here:

<https://www.sec.gov/comments/s7-14-19/s71419-6788704-208239.pdf>

2. IEX Request to Add a Discretionary Limit Order Type

December 20, 2019

The proposed Discretionary Limit or “D-Limit” order is designed to protect resting orders from potential adverse selection by latency arbitrage trading strategies.

Virtu filed a letter in support on January 16, 2020. It can be found here:

<https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-6670178-203870.pdf>

3. NMS Proposed Order on SIP Governance

January 8, 2020

The proposed order would direct the equities exchanges and FINRA to file with the Commission a new NMS plan designed to increase transparency and address conflicts of interest and other issues presented by the current governance structure of the existing NMS plans. The proposed order describes the specific proposed governance provisions that the Commission preliminarily believes would address these issues. If the Commission decides to issue an order after considering public input, the NMS plan participants would be required to submit a new plan, which would then be published for public comment before the Commission takes any definitive action on a new plan. Update: The SEC announced in mid-March that the comment period will be extended to April 24 due to the COVID-19 pandemic.

Virtu filed a letter in support on February 25, 2020. The letter can be found here:

<https://www.sec.gov/comments/4-757/4757-6865359-210617.pdf>

SIFMA also filed a letter in support which can be retrieved here:

<https://www.sec.gov/comments/4-757/4757-6891502-210885.pdf>

4. NYSE Rule Filings Seeking SEC Approval to Establish Fee Schedules for the Provision of Wireless Connections

February 11 and 20, 2020

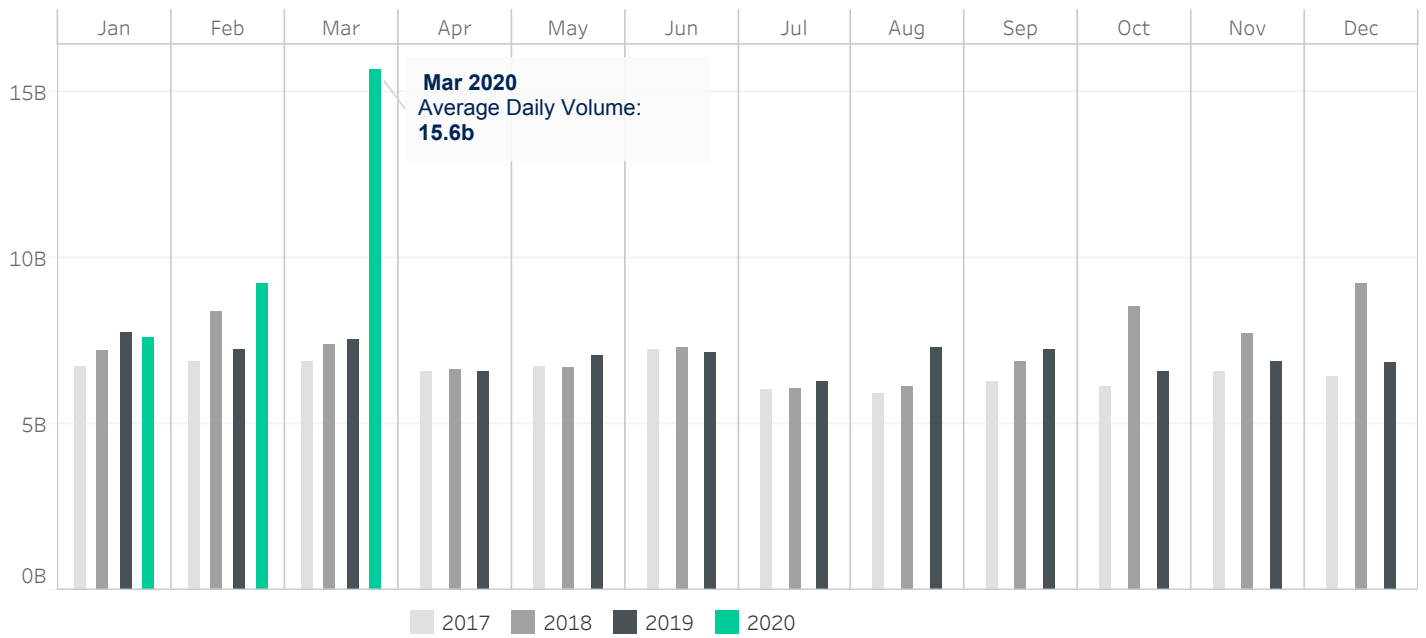
The NYSE filed a set of ten rule filings seeking The SEC's approval to establish fee schedules for the establishment of (i) wireless connectivity services that transport market data, and (ii) private wireless bandwidth connection services, that can be purchased by market participants to connect to NYSE's Mahwah, New Jersey data center and three data centers located in Carteret, New Jersey, Secaucus, New Jersey, and Markham, Ontario, Canada.

Virtu filed a comment letter on March 10, 2020 objecting to the filings. The comment letter can be found here:

<https://www.sec.gov/comments/sr-nyse-2020-05/srnyse202005-6931591-211589.pdf>

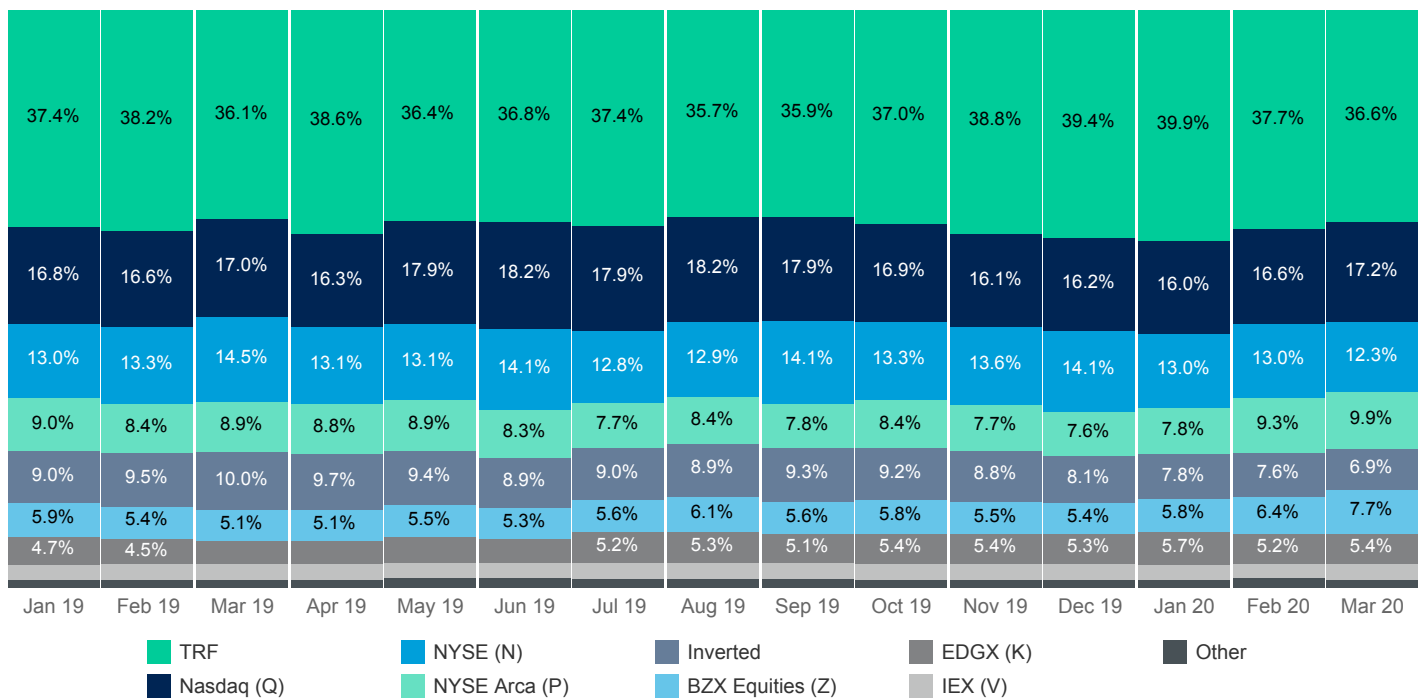


Average Daily Market Volume



Source data: Cboe Global Markets

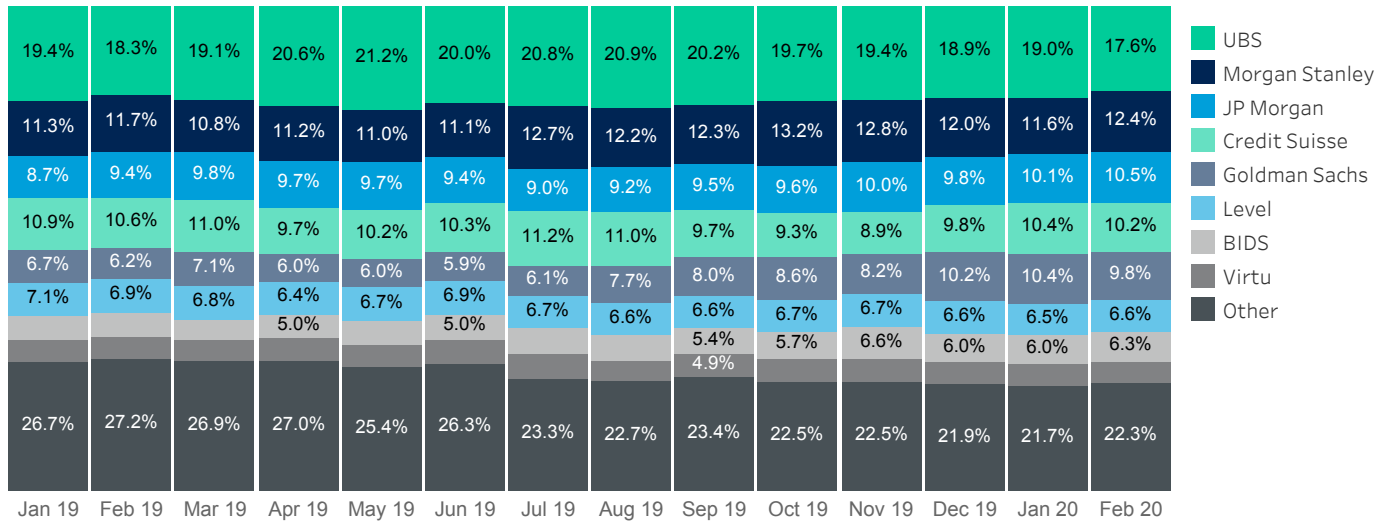
Venue Market Share



Source data: Cboe Global Markets

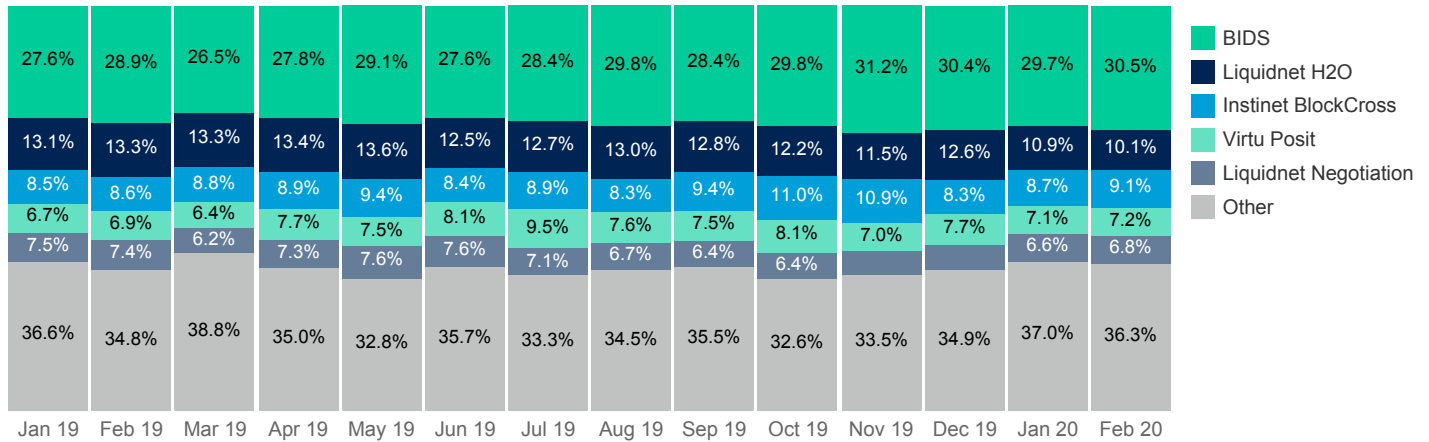


ATS Market Share



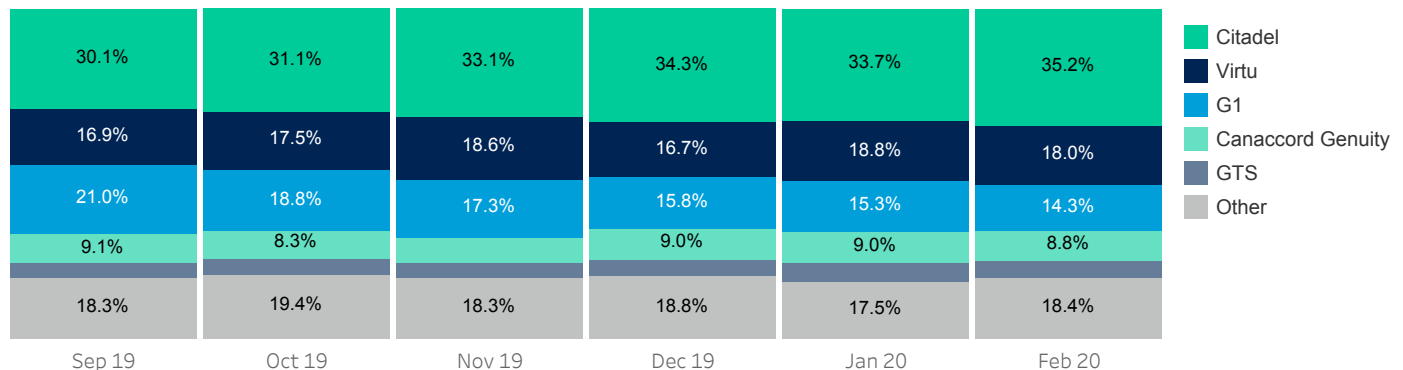
Excludes Dealerweb, OTC; Venues rolled up to firm level; Source data: FINRA

ATS Block Volume Market Share



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

OTC Non-ATS Market Share



Source data: FINRA



Quote size in Shares

	1Q 19			2Q 19			3Q 19			4Q 19			1Q 20		
	Jan 19	Feb 19	Mar 19	Apr 19	May ..	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20
First 30 Min SP500	177	184	180	173	170	178	179	174	173	175	178	178	176	185	185
RUS2000	186	197	190	183	194	192	200	200	192	200	200	195	193	204	200
Mid Day SP500	218	245	235	228	208	215	219	201	202	201	210	212	199	194	174
RUS2000	206	219	212	206	213	213	224	227	219	219	224	219	210	216	200
Last 30 Min SP500	362	447	400	397	313	329	331	266	296	277	302	290	254	240	193
RUS2000	263	288	275	275	264	273	285	281	272	268	279	266	250	264	233

Spread Bps

First 30 Min SP500	8.9	7.1	6.6	6.7	7.9	8.2	7.4	9.5	8.6	8.9	8.2	7.5	7.7	9.8	28.1
RUS2000	47.2	38.9	38.1	38.0	43.2	42.8	39.5	48.3	45.7	44.3	41.0	36.4	36.3	43.7	108.1
Mid Day SP500	3.9	3.1	3.1	2.9	3.7	3.5	3.0	4.1	3.7	3.7	3.2	3.1	3.4	4.1	13.1
RUS2000	18.7	14.5	14.8	13.8	16.9	16.0	14.3	17.3	17.2	16.5	15.3	14.0	14.5	16.4	42.5
Last 30 Min SP500	2.4	2.0	2.1	2.0	2.4	2.3	2.0	2.6	2.2	2.4	2.1	2.1	2.3	2.5	9.7
RUS2000	11.6	9.5	9.6	9.4	11.5	11.6	10.4	12.5	12.0	11.7	11.1	10.8	10.9	11.2	33.2

One Minute Volatility Bps

First 30 Min SP500	16.0	12.4	12.3	11.9	14.0	13.2	11.8	15.7	13.3	12.5	11.6	10.6	11.2	14.6	53.4
RUS2000	17.8	14.0	15.3	14.4	14.8	14.8	13.6	17.5	16.6	15.2	16.1	14.8	15.4	16.9	45.1
Mid Day SP500	6.5	4.4	4.7	3.9	5.6	4.7	4.1	6.0	4.8	4.6	3.9	3.4	4.3	5.6	27.7
RUS2000	6.3	4.1	5.2	4.4	5.5	4.9	4.2	5.2	5.3	4.8	4.2	3.8	4.7	5.7	21.8
Last 30 Min SP500	6.2	4.2	5.1	4.0	6.1	5.3	4.6	6.7	4.7	5.1	4.1	4.0	5.1	6.1	36.1
RUS2000	5.6	3.9	5.2	4.2	6.1	5.3	4.5	5.8	5.0	5.1	4.3	4.4	5.3	5.8	28.0

Percent ADV by Time of Day

Value SP500	0.9%	0.9%	0.8%	1.0%	0.9%	0.9%	1.0%	1.0%	0.9%	1.0%	1.0%	1.1%	1.1%	1.1%	1.0%
RUS2000	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.8%
First 30 Min SP500	7.9%	8.4%	8.1%	8.9%	8.7%	8.2%	8.4%	8.0%	8.0%	7.6%	8.0%	7.7%	7.9%	8.6%	8.2%
RUS2000	6.3%	6.9%	6.5%	6.8%	7.0%	6.7%	6.7%	6.9%	6.8%	6.6%	7.2%	7.1%	7.3%	7.2%	6.3%
Last 30 Min SP500	17.8%	18.2%	18.6%	18.8%	18.8%	18.8%	18.9%	18.4%	18.3%	18.7%	18.8%	18.4%	18.0%	17.9%	18.3%
RUS2000	19.8%	20.2%	20.2%	19.9%	20.2%	19.6%	19.7%	19.4%	18.9%	19.5%	19.5%	19.3%	18.8%	18.6%	19.9%
Close SP500	9.9%	10.3%	10.7%	9.5%	9.7%	11.0%	9.9%	11.4%	11.6%	10.4%	11.4%	13.5%	13.8%	12.0%	9.9%
RUS2000	8.6%	7.7%	8.3%	7.3%	7.3%	8.1%	7.8%	8.8%	9.0%	8.0%	7.8%	10.0%	9.4%	8.1%	9.0%

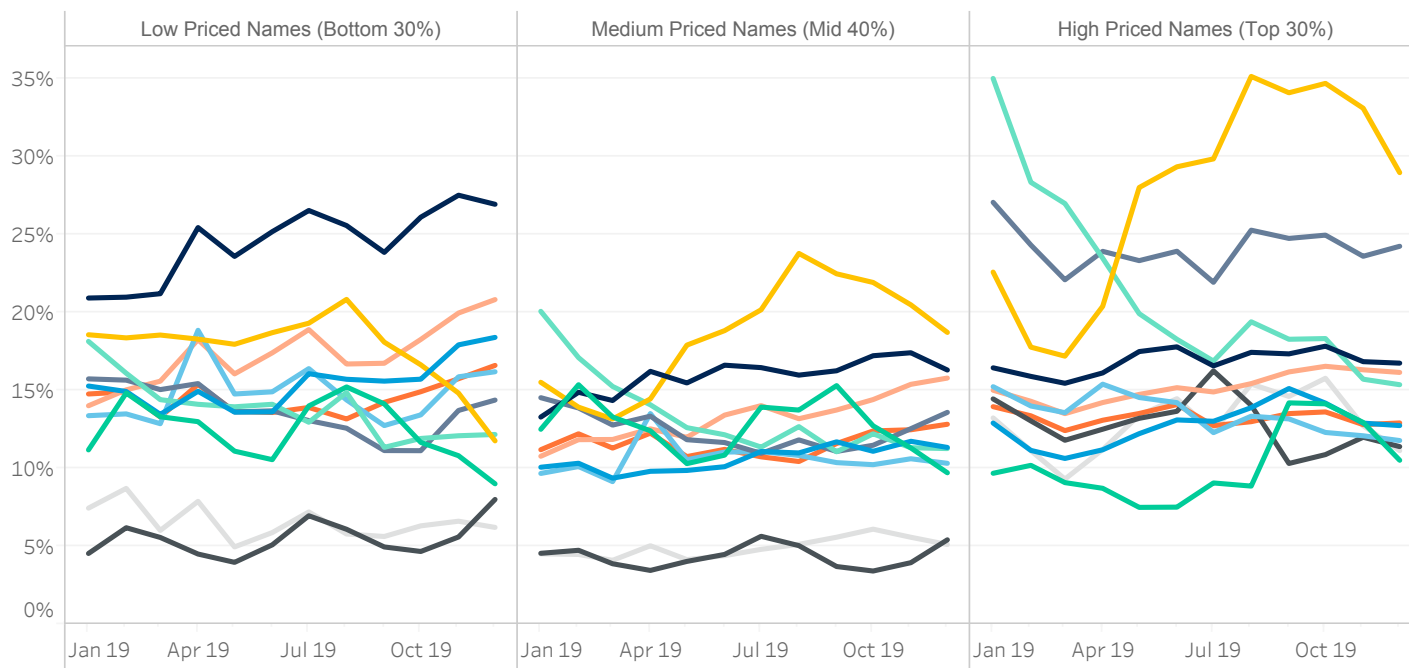
Median used for all metrics

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

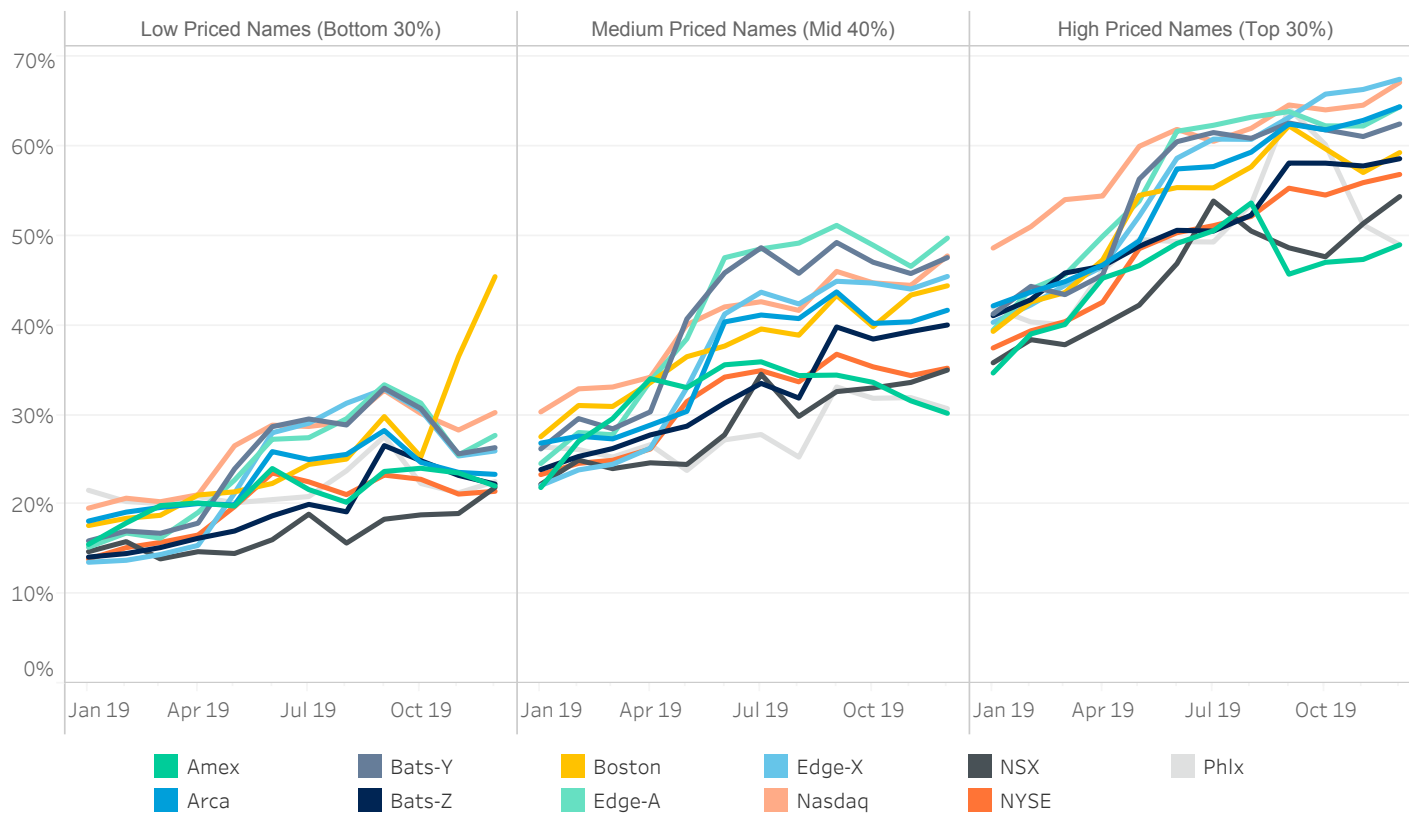
Source data: Virtu Financial



Hidden Trades Proportion by Price and Venue



Oddlot Trades Proportion by Price and Venue



Source data: SEC



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