

RBCM - Held NMS Stocks and Options Order Routing Public Report

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1st Quarter, 2023

January 2023

S&P 500 Stocks

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
19.67	5.56	0.00	5.56	88.89

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
RBC Capital Markets (RBCM)	61.11	100.00	0.00	100.00	56.25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cboe BZX Exchange (BATS)	13.89	0.00	0.00	0.00	15.62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.8368	16.0000
Dash Financial (DFIN)	8.33	0.00	0.00	0.00	9.38	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NYSE Arca (ARCX)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cboe EDGA Exchange, Inc. (EDGA)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.8370	-30.0000
IEX SERVICES LLC (IEXG)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.8442	-0.9328
Level ATS (LEVL)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Virtu Americas LLC (VALR)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
New York Stock Exch (XNYS)	2.78	0.00	0.00	0.00	3.12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.4024	3.5977
Nasdaq (XNAS)	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Material Aspects:

RBC Capital Markets (RBCM):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe BZX Exchange (BATS):

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NYSE Arca (ARCX):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe EDGA Exchange, Inc. (EDGA):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

IEX SERVICES LLC (IEXG):

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Level ATS (LEVL):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

New York Stock Exch (XNYS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

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January 2023

Non-S&P 500 Stocks

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
99.95	0.02	0.00	0.02	99.96

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
NYSE Arca (ARCX)	22.96	0.00	0.00	7.69	22.97	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	28.9560	1.3308
Nasdaq BX (XBOS)	22.62	0.00	0.00	0.00	22.63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-133.9965	-14.7110
	14.13	0.00	0.00	7.69	14.14	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	37.1804	2.0106

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
Cboe BZX Exchange (BATS)													
IEX SERVICES LLC (IEXG)	13.43	0.00	0.00	7.69	13.44	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-4.6040	-0.5795
NYSE Mkt Lic (XASE)	6.85	0.00	0.00	0.00	6.85	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	59.3623	6.7599
Nasdaq (XNAS)	5.74	6.25	0.00	15.38	5.74	-8.7000	-30.0000	0.0000	0.0000	0.0000	0.0000	-199.0755	-4.5895
National Stock Exchange (XCIS)	5.44	0.00	33.33	7.69	5.44	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-350.0945	-9.9255
Cboe EDGA Exchange, Inc. (EDGA)	4.16	0.00	0.00	15.38	4.16	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-199.3320	-8.9624
Cboe BYX Exchange, Inc. (BATY)	3.08	0.00	0.00	0.00	3.08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-63.6040	-6.7550
New York Stock Exch (XNYS)	0.61	0.00	0.00	0.00	0.61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.1260	0.3291

Material Aspects:

NYSE Arca (ARCX):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Nasdaq BX (XBOS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe BZX Exchange (BATS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

IEX SERVICES LLC (IEXG):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

NYSE Mkt Lic (XASE):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Nasdaq (XNAS):

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National Stock Exchange (XCIS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe EDGA Exchange, Inc. (EDGA):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe BYX Exchange, Inc. (BATY):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

New York Stock Exch (XNYS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

January 2023

Options

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
100.00	8.50	0.00	60.24	31.25

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
RBC Capital Markets (RBCM)	69.03	100.00	0.00	97.53	5.67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dash Financial (DFIN)	29.48	0.00	0.00	0.00	94.33	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BAY CREST PARTNERS, LLC (BAYC)	0.99	0.00	0.00	1.65	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chicago Stock Exchange (CHXE)	0.50	0.00	0.00	0.82	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Material Aspects:

RBC Capital Markets (RBCM):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

BAY CREST PARTNERS, LLC (BAYC):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Chicago Stock Exchange (CHXE):

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BofA Securities Inc (BAML):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Barclay's LX (BARX):

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February 2023

Non-S&P 500 Stocks

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
99.99	0.02	0.23	0.06	99.69

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
NYSE Arca (ARCX)	24.63	0.00	4.63	9.09	24.69	0.0000	0.0000	-2.3012	-3.7986	0.3360	0.2667	-42.9655	-1.0468
Nasdaq BX (XBOS)	18.51	0.00	5.41	4.55	18.55	0.0000	0.0000	-0.6400	-1.3061	0.0000	0.0000	-238.4390	-9.0382
IEX SERVICES LLC (IEXG)	15.44	0.00	6.56	6.06	15.47	0.0000	0.0000	-0.8805	-1.7292	0.0000	0.0000	-15.9909	-0.8455
Cboe BZX Exchange (BATS)	14.85	0.00	6.95	10.61	14.87	0.0000	0.0000	-3.1368	-3.3509	0.0000	0.0000	46.5146	1.9120
Nasdaq (XNAS)	8.07	0.00	3.86	7.58	8.08	0.0000	0.0000	-0.8400	-3.9886	0.0000	0.0000	-268.3824	-5.2866
National Stock Exchange (XCIS)	4.56	0.00	4.63	6.06	4.56	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-334.9958	-7.5414
NYSE Mkt Llc (XASE)	4.42	0.00	5.41	0.00	4.42	0.0000	0.0000	-3.2915	-4.5089	0.0000	0.0000	79.4808	5.7331
Cboe EDGA Exchange, Inc. (EDGA)	3.70	0.00	6.95	7.58	3.69	0.0000	0.0000	-0.6925	-1.0451	0.0000	0.0000	-305.4630	-8.2892
Cboe BYX Exchange, Inc. (BATY)	2.66	0.00	10.81	18.18	2.64	0.0000	0.0000	-1.4831	-2.9444	0.0000	0.0000	-83.5025	-3.1236
	1.15	0.00	1.16	4.55	1.15	0.0000	0.0000	-0.4033	-1.5399	0.0000	0.0000	-90.3361	-3.7635

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
100.00	8.76	25.45	59.49	6.29

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
Dash Financial (DFIN)	55.67	0.00	100.00	42.59	77.68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RBC Capital Markets (RBCM)	43.99	100.00	0.00	56.85	22.32	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chicago Stock Exchange (CHXE)	0.28	0.00	0.00	0.47	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BAY CREST PARTNERS, LLC (BAYC)	0.06	0.00	0.00	0.09	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Material Aspects:

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Chicago Stock Exchange (CHXE):

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March 2023

S&P 500 Stocks

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
90.17	0.64	0.64	0.00	98.72

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
Nasdaq (XNAS)	28.21	0.00	0.00	0.00	28.57	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	11.5131	3.4490
RBC Capital Markets (RBCM)	14.10	100.00	100.00	0.00	12.99	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NYSE Arca (ARCX)	12.18	0.00	0.00	0.00	12.34	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	37.6040	11.0418
Dash Financial (DFIN)	7.69	0.00	0.00	0.00	7.79	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
New York Stock Exch (XNYS)	5.77	0.00	0.00	0.00	5.84	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.2336	0.7702
Cboe BZX Exchange (BATS)	3.85	0.00	0.00	0.00	3.90	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Citadel Connect (CDED)	2.56	0.00	0.00	0.00	2.60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CBOE EDGX (EDGX)	2.56	0.00	0.00	0.00	2.60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2192	1.4169
IEX SERVICES LLC (IEXG)	2.56	0.00	0.00	0.00	2.60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MEMX (MEMX)	1.92	0.00	0.00	0.00	1.95	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nasdaq OMX PHLX (XPHL)	1.92	0.00	0.00	0.00	1.95	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cboe EDGA Exchange, Inc. (EDGA)	1.92	0.00	0.00	0.00	1.95	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cboe BYX Exchange, Inc. (BATY)	1.92	0.00	0.00	0.00	1.95	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
JP Morgan Securities LLC (JPMX)	1.28	0.00	0.00	0.00	1.30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Level ATS (LEVL)	1.28	0.00	0.00	0.00	1.30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UBS ATS (UBSA)	1.28	0.00	0.00	0.00	1.30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Material Aspects:

Nasdaq (XNAS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

RBC Capital Markets (RBCM):

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NYSE Arca (ARCX):

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
99.93	0.18	0.18	0.04	99.61

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
NYSE Arca (ARCX)	22.26	5.95	1.12	8.33	22.33	0.0000	0.0000	-1.0216	-3.6486	0.0000	0.0000	301.8526	5.2049
Nasdaq BX (XBOS)	18.85	2.16	3.35	0.00	18.92	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-531.8120	-15.9149
IEX SERVICES LLC (IEXG)	14.56	6.49	4.47	8.33	14.59	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-8.6174	-0.3436
Cboe BZX Exchange (BATS)	13.49	6.49	6.15	8.33	13.52	0.0000	0.0000	-0.9731	-1.2302	0.0000	0.0000	218.9114	6.0490
Nasdaq (XNAS)	8.36	8.11	0.00	8.33	8.38	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-231.8823	-3.7915
National Stock Exchange (XCIS)	4.83	2.70	5.59	2.78	4.83	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-596.9837	-11.9996
NYSE Mkt Llc (XASE)	4.27	0.54	0.56	5.56	4.29	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	112.1373	7.6544
Cboe EDGA Exchange, Inc. (EDGA)	3.77	2.70	6.15	8.33	3.77	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-350.2201	-11.5423
Cboe BYX Exchange, Inc. (BATY)	2.76	2.16	6.15	13.89	2.75	0.0000	0.0000	-0.1000	-0.6667	0.0000	0.0000	-141.1630	-8.6819
New York Stock Exch (XNYS)	2.45	7.57	5.59	8.33	2.43	0.0000	0.0000	-1.5782	-5.5492	0.0000	0.0000	-18.5182	-1.1804

Material Aspects:

NYSE Arca (ARCX):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Nasdaq BX (XBOS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

IEX SERVICES LLC (IEXG):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe BZX Exchange (BATS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Nasdaq (XNAS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

National Stock Exchange (XCIS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

NYSE Mkt Llc (XASE):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe EDGA Exchange, Inc. (EDGA):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

Cboe BYX Exchange, Inc. (BATY):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

New York Stock Exch (XNYS):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

March 2023

Options

Summary

Non-Directed Orders as % of All Orders	Market Orders as % of Non-Directed Orders	Marketable Limit Orders as % of Non-Directed Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Other Orders as % of Non-Directed Orders
100.00	11.83	24.20	62.81	1.16

Venues

Venue - Non-directed Order Flow	Non-Directed Orders (%)	Market Orders (%)	Marketable Limit Orders (%)	Non-Marketable Limit Orders (%)	Other Orders (%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	Net Payment Paid/Received for Marketable Limit Orders(USD)	Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Non-Marketable Limit Orders(USD)	Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/Received for Other Orders(cents per hundred shares)
Dash Financial (DFIN)	50.98	0.00	100.00	42.15	26.32	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RBC Capital Markets (RBCM)	48.90	100.00	0.00	57.66	73.68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BAY CREST PARTNERS, LLC (BAYC)	0.12	0.00	0.00	0.20	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Material Aspects:

RBC Capital Markets (RBCM):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.

BAY CREST PARTNERS, LLC (BAYC):

RBCM routes orders to market centers, such as exchanges and alternative trading systems, that may provide rebates or charge execution fees depending on whether routed orders provide liquidity, or take liquidity from, such market center. In some cases, RBCM may receive rebates from a market center that exceed the amount of fees charged by such market center. Certain market centers may provide volume-based tiered pricing/payment schedules pursuant to which RBCM may receive incremental pricing benefits based upon the aggregate trading volume routed to the market center (including trading volume not associated with customer orders), in accordance with that market center's published fee schedule.