

RBCWM - Held NMS Stocks and Options Order Routing Public Report

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3rd Quarter, 2020

July 2020

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
100.00	93.69	0.91	3.48	1.91

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)
Virtu Americas, LLC	35.53	35.52	37.07	35.97	34.74	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	30.69	30.57	35.63	33.31	29.38	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	28.76	28.88	20.43	26.98	30.09	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	5.01	5.03	6.88	3.75	5.79	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

Virtu Americas, LLC:

RBC Capital Markets LLC, does not receive compensation, rebates nor pay transaction fees for the routing of its equity order flow. RBC Capital Markets LLC does not receive incentives for equaling or exceeding an agreed upon volume threshold; RBC Capital Markets LLC is not penalized for failing to meet an agreed upon minimum order flow threshold; nor does RBC Capital Markets LLC have agreements regarding minimum amount of order flow. RBC Capital Markets LLC contracts with third party vendor, S3 Matching Technologies, LP to provide execution metrics that RBC Capital Markets LLC uses to evaluate execution quality among various markets and firms. RBC Capital Markets LLC has arranged for its market centers to remit payment for a portion of this service based on the previous year's volumes routed to each destination.

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G1 Execution Services, LLC:

G1X Execution Services, LLC: RBC Capital Markets LLC, does not receive compensation, rebates nor pay transaction fees for the routing of its equity order flow. RBC Capital Markets LLC does not receive incentives for equaling or exceeding an agreed upon volume threshold; RBC Capital Markets LLC is not penalized for failing to meet an agreed upon minimum order flow threshold; nor does RBC Capital Markets LLC have agreements regarding minimum amount of order flow. RBC Capital Markets LLC contracts with third party vendor, S3 Matching Technologies, LP to provide execution metrics that RBC Capital Markets LLC uses to evaluate execution quality among various markets and firms. RBC Capital Markets LLC has arranged for its market centers to remit payment for a portion of this service based on the previous year's volumes routed to each destination.

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July 2020

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
100.00	86.70	3.82	7.28	2.20

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)
Virtu Americas, LLC	40.06	37.74	58.42	55.62	48.15	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	30.59	31.89	17.35	23.69	25.44	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	18.55	19.22	12.87	14.36	15.98	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	10.80	11.16	11.35	6.34	10.43	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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July 2020

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	21.93	17.35	39.21	21.51

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)
Wolverine Execution Services, LLC	50.44	73.21	48.30	24.54	76.17	6,528.75	29.1150	7,803.25	34.5261	14,151.75	40.3955	7,157.50	30.1394
Citigroup Global Markets Inc.	37.33	16.22	46.05	64.66	2.01	5,964.87	33.4673	8,720.64	13.9203	12,659.74	8.0666	254.75	8.0694
Citadel Execution Services	7.62	10.57	5.65	10.80	0.39	1,297.35	9.2457	1,114.00	7.0129	4,632.90	32.1640	39.35	22.3580
Dash Financial Technologies LLC	4.61	0.00	0.00	0.00	21.42	0.00	0.0000	0.00	0.0000	0.00	0.0000	1,219.07	6.4823

Material Aspects:

Wolverine Execution Services, LLC:

For exchange-listed equity and index options, RBC is assessed fees and receives credits from the option market centers that may exceed the amount we are charged. RBC may receive the benefit of these credits and such payments constitute payment for order flow.

Citigroup Global Markets Inc.:

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August 2020

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
100.00	93.86	0.90	3.13	2.11

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 Marketable 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)
Virtu Americas, LLC	38.25	38.54	34.40	31.46	37.10	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	35.79	35.45	46.29	43.92	34.43	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	20.91	20.92	14.72	20.93	22.96	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	5.05	5.09	4.59	3.69	5.52	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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G1 Execution Services, LLC:

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August 2020

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
100.00	85.52	4.51	7.77	2.20

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 Marketable 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)
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Virtu Americas, LLC	44.15	41.55	59.24	62.52	49.08	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	24.28	25.48	13.27	17.88	22.49	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	20.53	21.37	15.87	14.01	20.27	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	11.05	11.59	11.63	5.60	8.17	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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August 2020

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	37.93	14.54	32.92	14.62

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)
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Wolverine Execution Services, LLC	56.64	77.25	60.65	31.27	56.31	8,035.50	29.5716	10,624.50	40.9406	15,953.50	41.7642	5,929.75	33.1734
Citadel Execution Services	23.13	19.10	17.11	40.15	1.24	4,304.40	12.4968	5,342.95	17.4265	20,003.70	46.7824	137.30	33.1643
Citigroup Global Markets Inc.	14.18	3.65	22.24	28.58	1.02	2,149.38	24.8483	2,995.28	10.7876	4,264.06	8.0286	75.15	15.3681
Dash Financial Technologies LLC	6.06	0.00	0.00	0.00	41.44	0.00	0.0000	0.00	0.0000	0.00	0.0000	1,653.61	7.3510

Material Aspects:

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September 2020

S&P 500 Stocks

Summary

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100.00	93.65	0.86	3.67	1.82

Venues

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Citadel Execution Services	34.29	33.95	39.53	41.59	34.62	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	31.06	31.24	29.35	26.42	31.75	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	22.56	22.69	15.99	19.73	24.28	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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UBS Securities, LLC	12.10	12.12	15.13	12.26	9.35	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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100.00	86.10	4.17	7.79	1.95

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)
Virtu Americas, LLC	36.49	35.03	44.87	47.38	39.92	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	23.75	24.20	15.88	22.23	26.45	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	23.10	23.84	16.90	19.04	20.12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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)
UBS Securities, LLC	16.66	16.94	22.35	11.35	13.51	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

Virtu Americas, LLC:

RBC Capital Markets LLC, does not receive compensation, rebates nor pay transaction fees for the routing of its equity order flow. RBC Capital Markets LLC does not receive incentives for equaling or exceeding an agreed upon volume threshold; RBC Capital Markets LLC is not penalized for failing to meet an agreed upon minimum order flow threshold; nor does RBC Capital Markets LLC have agreements regarding minimum amount of order flow. RBC Capital Markets LLC contracts with third party vendor, S3 Matching Technologies, LP to provide execution metrics that RBC Capital Markets LLC uses to evaluate execution quality among various markets and firms. RBC Capital Markets LLC has arranged for its market centers to remit payment for a portion of this service based on the previous year's volumes routed to each destination.

G1 Execution Services, LLC:

G1X Execution Services, LLC: RBC Capital Markets LLC, does not receive compensation, rebates nor pay transaction fees for the routing of its equity order flow. RBC Capital Markets LLC does not receive incentives for equaling or exceeding an agreed upon volume threshold; RBC Capital Markets LLC is not penalized for failing to meet an agreed upon minimum order flow threshold; nor does RBC Capital Markets LLC have agreements regarding minimum amount of order flow. RBC Capital Markets LLC contracts with third party vendor, S3 Matching Technologies, LP to provide execution metrics that RBC Capital Markets LLC uses to evaluate execution quality among various markets and firms. RBC Capital Markets LLC has arranged for its market centers to remit payment for a portion of this service based on the previous year's volumes routed to each destination.

Citadel Execution Services:

RBC Capital Markets LLC, does not receive compensation, rebates nor pay transaction fees for the routing of its equity order flow. RBC Capital Markets LLC does not receive incentives for equaling or exceeding an agreed upon volume threshold; RBC Capital Markets LLC is not penalized for failing to meet an agreed upon minimum order flow threshold; nor does RBC Capital Markets LLC have agreements regarding minimum amount of order flow. RBC Capital Markets LLC contracts with third party vendor, S3 Matching Technologies, LP to provide execution metrics that RBC Capital Markets LLC uses to evaluate execution quality among various markets and firms. RBC Capital Markets LLC has arranged for its market centers to remit payment for a portion of this service based on the previous year's volumes routed to each destination.

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September 2020

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	32.65	14.80	31.57	20.98

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)
Wolverine Execution Services, LLC	63.88	75.45	80.49	47.51	58.77	9,581.75	32.0868	9,452.25	34.1557	15,742.50	39.7608	5,951.50	30.5707
Citadel Execution Services	27.69	24.55	19.48	52.21	1.50	4,111.55	11.0523	6,017.50	17.4228	24,249.90	46.8262	180.55	28.2994
Dash Financial Technologies LLC	8.43	0.00	0.03	0.28	39.73	0.00	0.0000	0.00	0.0000	0.00	0.0000	2,038.16	7.2422

Material Aspects:

Wolverine Execution Services, LLC:

For exchange-listed equity and index options, RBC is assessed fees and receives credits from the option market centers that may exceed the amount we are charged. RBC may receive the benefit of these credits and such payments constitute payment for order flow.

Citadel Execution Services:

For exchange-listed equity and index options, RBC is assessed fees and receives credits from the option market centers that may exceed the amount we are charged. RBC may receive the benefit of these credits and such payments constitute payment for order flow.

Dash Financial Technologies LLC:

For exchange-listed equity and index options, RBC is assessed fees and receives credits from the option market centers that may exceed the amount we are charged. RBC may receive the benefit of these credits and such payments constitute payment for order flow.