

RBCWM - Held NMS Stocks and Options Order Routing Public Report

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4th Quarter, 2020

October 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	94.11	0.87	3.49	1.52

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)
G1 Execution Services, LLC	37.99	38.17	33.71	34.26	37.59	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	28.43	28.56	23.48	26.22	28.75	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	28.23	27.96	32.80	34.16	28.93	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	5.34	5.31	10.01	5.36	4.72	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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.

Virtu Americas, LLC:

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October 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	85.87	4.47	7.73	1.92

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	45.69	43.70	57.91	59.82	49.12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	27.39	28.00	26.33	20.97	28.35	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	18.79	19.78	9.64	13.87	16.06	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	8.13	8.52	6.12	5.34	6.47	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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October 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	24.15	9.35	41.48	25.02

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)
Citadel Execution Services	50.58	59.42	62.25	72.99	0.53	5,507.05	13.1924	8,116.30	18.4701	24,441.85	44.4559	417.35	35.8856
Wolverine Execution Services, LLC	43.59	40.58	37.75	27.01	76.16	7,605.75	33.2288	12,805.50	26.7948	17,954.25	23.3187	5,832.75	30.3789
Dash Financial Technologies LLC	5.83	0.00	0.00	0.00	23.31	0.00	0.0000	0.00	0.0000	0.00	0.0000	2,554.60	8.7980

Material Aspects:

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.

Wolverine Execution Services, LLC:

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Dash Financial Technologies LLC:

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November 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	94.07	0.98	3.42	1.53

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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G1 Execution Services, LLC	38.88	38.91	37.88	37.32	41.51	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	28.17	28.42	20.83	24.75	24.98	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	27.38	27.18	31.44	31.31	28.66	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	5.57	5.50	9.85	6.62	4.86	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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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November 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	85.37	4.75	7.73	2.15

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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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	47.01	44.48	65.84	61.12	55.11	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	26.92	28.11	15.79	21.58	23.21	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	18.40	19.46	9.60	12.46	16.92	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	7.68	7.94	8.77	4.84	4.76	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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November 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	31.01	9.45	41.68	17.88

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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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)
Citadel Execution Services	52.35	49.54	67.89	73.14	0.49	6,692.55	13.6033	11,568.60	21.3980	28,854.10	44.2114	550.80	32.8248
Wolverine Execution Services, LLC	41.01	50.46	32.11	26.81	62.36	8,735.25	34.9214	12,644.00	30.0482	15,101.75	28.5413	8,597.00	25.9948
Dash Financial Technologies LLC	6.64	0.00	0.00	0.05	37.15	0.00	0.0000	-1.36	-4.5333	0.00	0.0000	2,570.00	6.8590

Material Aspects:

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December 2020

S&P 500 Stocks

Summary

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100.00	94.16	1.10	3.12	1.62

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)
G1 Execution Services, LLC	28.21	28.11	25.18	28.28	35.92	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	27.72	27.57	26.62	33.61	26.12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	26.04	26.07	24.28	24.63	28.18	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	18.03	18.25	23.91	13.48	9.77	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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100.00	85.05	5.14	7.88	1.93

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	37.61	36.26	42.15	47.55	44.28	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	21.54	22.09	15.20	19.64	22.29	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Citadel Execution Services	21.08	21.71	15.58	18.17	19.87	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	19.77	19.95	27.07	14.64	13.57	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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December 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	27.81	11.45	44.38	16.36

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)
Citadel Execution Services	55.94	60.03	65.69	71.43	0.15	10,915.20	18.3322	17,870.85	22.7817	28,337.35	41.9719	814.55	37.3647
Wolverine Execution Services, LLC	36.94	39.97	34.31	28.57	56.32	10,086.25	29.2330	18,131.50	23.7001	26,830.75	20.9252	10,348.00	24.6363
Dash Financial Technologies LLC	7.12	0.00	0.00	0.00	43.53	0.00	0.0000	0.00	0.0000	0.00	0.0000	2,591.85	9.0223

Material Aspects:

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.

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.

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.