

RBC Wealth Management - Held NMS Stocks and Options Order Routing Public Report

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4th Quarter, 2022

October 2022

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	96.52	0.58	1.99	0.92

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	36.08	35.04	45.68	63.74	79.86	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	35.04	35.52	31.70	22.34	13.50	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	20.69	21.10	15.85	10.09	3.60	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	8.19	8.34	6.77	3.83	3.04	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.

CITADEL SECURITIES 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:

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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October 2022

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	92.72	2.47	3.75	1.05

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	47.35	45.95	69.60	63.34	61.35	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	27.07	27.74	17.42	19.46	17.65	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	22.50	23.21	10.22	14.74	15.96	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	3.08	3.09	2.76	2.45	5.04	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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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.

October 2022

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	28.69	8.47	34.96	27.88

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)
CITADEL SECURITIES LLC	47.01	62.32	60.75	64.98	4.53	10,500.65	14.9505	12,557.20	25.3384	20,166.75	43.9899	985.50	25.4191
Wolverine Execution Services, LLC	42.14	37.68	39.11	34.40	57.36	10,080.50	31.4397	23,792.00	34.2001	18,840.50	35.0085	4,385.00	29.2763
Dash/IMC Financial Markets	10.01	0.00	0.00	0.26	35.59	0.00	0.0000	0.00	0.0000	0.00	0.0000	507.27	0.5914
Matrix Executions, LLC / Simplex Trading, LLC	0.84	0.00	0.14	0.35	2.52	0.00	0.0000	0.00	0.0000	69.45	19.3454	4,581.30	19.6774

Material Aspects:

CITADEL SECURITIES 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.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.25 per contract.

For non-penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.70 per contract.

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.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders remuneration is paid at a rate of no more than \$0.25 per contract.

For non-penny stock options orders remuneration is paid at a rate of no more than \$0.75 per contract.

Dash/IMC Financial Markets:

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.

RBC Wealth is a brokerage client of Dash Financial Technologies; while Dash Financial does maintain a relationship with IMC, that relationship is not pertinent to the execution agreement between RBC Wealth and Dash.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For options orders without price improvement remuneration is paid at a rate of no more than \$0.90 per contract.

Matrix Executions, LLC / Simplex Trading, 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.

Matrix has an arrangement with an affiliated liquidity provider, Simplex Trading, LLC. The arrangement is designed to facilitate liquidity and price improvement opportunities for customers. Pursuant to these arrangements, Matrix routes listed option orders to exchanges and preferences the liquidity providers - including Simplex Trading, LLC.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders remuneration is paid at a rate of no more than \$0.15 per contract.

For non-penny stock options orders remuneration is paid at a rate of no more than \$0.30 per contract.

November 2022

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	96.42	0.50	1.84	1.24

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	36.16	34.98	44.48	66.19	80.16	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	35.29	35.93	27.21	18.75	12.97	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	19.99	20.38	15.00	11.67	3.65	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	8.56	8.70	13.31	3.39	3.21	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.

CITADEL SECURITIES LLC:

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G1 Execution Services, LLC:

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UBS Securities, LLC:

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November 2022

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	91.96	2.78	4.25	1.01

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	49.37	47.91	72.07	65.11	54.31	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	26.80	27.69	13.60	17.16	23.47	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	21.58	22.20	10.02	16.26	19.45	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	2.24	2.21	4.32	1.47	2.76	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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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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November 2022

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	32.31	8.01	34.80	24.89

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)
CITADEL SECURITIES LLC	46.81	58.80	58.55	64.27	3.05	9,757.00	13.2862	9,728.00	21.7936	23,537.05	47.3630	892.10	28.8986
Wolverine Execution Services, LLC	46.10	41.20	41.45	35.38	68.96	11,698.00	31.9303	19,757.25	33.6592	25,858.50	33.1146	17,632.50	48.7517
Dash/IMC Financial Markets	7.09	0.00	0.00	0.35	27.99	0.00	0.0000	0.00	0.0000	0.00	0.0000	3,545.59	7.1557

Material Aspects:

CITADEL SECURITIES 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.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.25 per contract.

For non-penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.70 per contract.

Wolverine Execution Services, LLC:

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- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders remuneration is paid at a rate of no more than \$0.25 per contract.
For non-penny stock options orders remuneration is paid at a rate of no more than \$0.75 per contract.

Dash/IMC Financial Markets:

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- D. for minimum amount of orders

For options orders without price improvement remuneration is paid at a rate of no more than \$0.90 per contract.

December 2022

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	96.82	0.52	1.77	0.89

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)
Virtu Americas, LLC	35.67	34.66	47.48	65.73	79.26	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	35.03	35.57	25.47	18.44	15.61	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	20.74	21.10	15.97	11.86	2.44	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	8.55	8.67	11.08	3.97	2.69	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

Material Aspects:

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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:

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.

UBS Securities, LLC:

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December 2022

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	92.04	2.98	4.16	0.82

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	48.89	47.41	68.95	66.04	55.01	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	26.22	27.12	14.99	15.23	22.44	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	22.45	23.18	9.99	16.08	18.22	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	2.43	2.28	6.07	2.66	4.33	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.

CITADEL SECURITIES LLC:

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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.

UBS Securities, LLC:

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December 2022

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	31.21	8.32	33.27	27.20

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)
Wolverine Execution Services, LLC	45.55	44.76	43.91	36.09	58.54	10,687.75	30.8823	19,504.25	33.1829	18,700.25	36.8899	8,664.75	37.6385
CITADEL SECURITIES LLC	43.66	55.24	54.30	63.36	3.01	7,713.20	14.6616	7,071.55	19.2980	17,884.95	44.0061	533.95	29.9467
Dash/IMC Financial Markets	10.79	0.00	1.79	0.55	38.45	0.00	0.0000	-63.45	-5.0000	0.00	0.0000	1,496.50	1.7830

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.

The Firm and this venue do not have any arrangements:

- that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- for volume-based tiered payment schedules; or
- for minimum amount of orders

For penny stock options orders remuneration is paid at a rate of no more than \$0.25 per contract.

For non-penny stock options orders remuneration is paid at a rate of no more than \$0.75 per contract.

CITADEL SECURITIES 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.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.25 per contract.

For non-penny stock options orders without price improvement remuneration is paid at a rate of no more than \$0.70 per contract.

Dash/IMC Financial Markets:

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.

RBC Wealth is a brokerage client of Dash Financial Technologies; while Dash Financial does maintain a relationship with IMC, that relationship is not pertinent to the execution agreement between RBC Wealth and Dash.

The Firm and this venue do not have any arrangements:

- A. that provide incentives to the Firm for meeting or exceeding certain volume thresholds;
- B. that provide disincentives to the Firm for failing to meet certain minimum volume thresholds;
- C. for volume-based tiered payment schedules; or
- D. for minimum amount of orders

For options orders without price improvement remuneration is paid at a rate of no more than \$0.90 per contract.