

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

Generated on Wed Oct 27 2021 12:59:07 GMT-0400 (Eastern Daylight Time)

3rd Quarter, 2021

July 2021

## 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	94.76	0.67	3.15	1.42

### 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 Limit 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	34.07	33.64	40.58	44.30	37.27	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	34.06	35.23	26.30	12.39	7.81	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	27.87	27.11	31.24	40.12	50.02	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	3.99	4.02	1.88	3.19	4.90	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

### Material Aspects:

#### 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.

#### Virtu Americas, LLC:

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## July 2021

### 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	88.25	3.61	6.43	1.71

#### 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	49.07	46.78	62.99	69.31	61.48	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	25.07	26.74	17.92	10.57	8.46	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	17.94	18.36	10.08	14.72	24.90	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	7.92	8.11	9.01	5.41	5.16	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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## July 2021

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### 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	24.45	8.18	35.55	31.82

#### 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)
Wolverine Execution Services, LLC	46.40	54.19	43.19	34.20	54.88	12,328.00	29.1960	16,696.75	32.6517	17,805.00	35.5099	9,038.00	29.1906
CITADEL SECURITIES LLC	39.60	45.81	56.81	65.78	1.13	4,984.00	12.4541	11,083.00	19.8574	21,918.00	45.8344	390.00	25.0482
Matrix Executions, LLC / Simplex Trading, LLC	11.87	0.00	0.00	0.02	37.28	0.00	0.0000	0.00	0.0000	2.25	15.0000	1,531.80	20.8806
DASH/IMC	2.14	0.00	0.00	0.00	6.71	0.00	0.0000	0.00	0.0000	0.00	0.0000	865.42	5.8804

#### 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 SECURITIES LLC:

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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.

DASH/IMC:

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.

## August 2021

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### 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

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	94.89	0.65	2.93	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)
CITADEL SECURITIES LLC	33.44	33.19	38.62	40.39	32.92	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	33.07	34.12	23.86	14.82	6.76	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	29.28	28.45	31.40	41.94	55.73	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	4.22	4.24	6.12	2.85	4.59	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:

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## August 2021

## 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	88.44	3.14	6.62	1.80

## 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	51.44	48.97	67.82	71.46	70.78	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	24.08	25.74	15.08	10.84	7.05	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	17.05	17.53	10.34	13.32	18.84	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	7.43	7.76	6.76	4.37	3.33	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

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## August 2021

## 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	29.72	7.28	35.89	27.11

## 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 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	45.54	52.20	40.15	33.54	55.56	13,856.00	29.4108	15,369.75	36.6444	16,430.50	33.6911	9,113.25	31.9864
CITADEL SECURITIES LLC	42.83	47.80	59.77	66.36	1.70	5,622.00	10.5328	9,929.00	17.2868	28,072.00	45.5914	386.00	22.2350
Matrix Executions, LLC / Simplex Trading, LLC	9.03	0.00	0.08	0.09	33.15	0.00	0.0000	52.05	17.3500	22.05	21.4078	3,909.30	20.2240
DASH/IMC	2.60	0.00	0.00	0.00	9.59	0.00	0.0000	0.00	0.0000	0.00	0.0000	862.92	8.9515

### Material Aspects:

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## September 2021

### 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	95.55	0.66	2.51	1.28

#### 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	32.86	33.62	24.90	17.35	10.42	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
CITADEL SECURITIES LLC	29.20	29.01	33.31	32.78	34.12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
Virtu Americas, LLC	25.76	25.05	27.37	42.55	44.85	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	12.18	12.32	14.42	7.33	10.61	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000

#### Material Aspects:

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## September 2021

### 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	87.61	4.00	6.74	1.65

#### 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	40.08	38.14	47.09	56.21	60.36	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
G1 Execution Services, LLC	24.56	26.07	17.22	13.71	7.03	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)
CITADEL SECURITIES LLC	20.10	20.56	13.77	17.81	20.26	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
UBS Securities, LLC	15.26	15.24	21.93	12.27	12.36	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.

G1X 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 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.

UBS 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.

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## September 2021

### 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	21.85	6.70	30.64	40.80

#### 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	46.90	50.92	39.47	37.20	53.24	13,683.50	33.8165	35,689.25	52.1712	22,307.25	40.9240	9,179.00	32.0339



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	34.37	49.08	60.45	62.74	0.91	7,078.00	13.9978	9,707.00	18.8434	24,270.00	45.3382	311.00	41.3015
Matrix Executions, LLC / Simplex Trading, LLC	18.08	0.00	0.09	0.07	44.24	0.00	0.0000	8.25	15.0000	7.05	15.3261	3,922.50	20.3787
DASH/IMC	0.66	0.00	0.00	0.00	1.61	0.00	0.0000	0.00	0.0000	0.00	0.0000	183.45	6.1872

**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 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.

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.

DASH/IMC:

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.