

# CAMBRIDGE INVESTMENT RESEARCH - Held NMS Stocks and Options Order Routing Public Report

Generated on Wed Mar 10 2021 01:56:03 GMT-0600 (Central Standard Time)

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	75.94	1.77	15.97	6.31

### 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 (CDRG)	33.20	51.74	42.86	8.77	4.79	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	20.96	32.58	30.08	5.47	3.13	0	0.0000	0	0.0000	0	0.0000	0	0.0000
National Financial Services LLC (XSTM)	18.15	0.00	0.00	0.00	91.42	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	9.33	0.00	7.14	44.24	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	7.61	0.00	6.77	36.04	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.10	6.49	7.14	1.23	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	3.91	6.06	3.76	1.55	0.21	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.50	2.35	1.50	0.39	0.21	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities, LLC (UBSS)	0.53	0.79	0.75	0.10	0.23	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US	0.46	0.00	0.00	2.19	0.00	0	0.0000	0	0.0000	0	0.0000	0	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)
Equities Exchange (EDGX)													

#### Material Aspects:

Citadel Securities LLC (CDRG):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

VIRTU Americas LLC (NITE):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

National Financial Services LLC (XSTM):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

NASDAQ Execution Services, LLC (NSDQ):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

New York Stock Exchange (NYSE):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

JANE STREET CAPITAL, LLC (JNST):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

G1 Execution Services, LLC (ETMM):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Two Sigma Securities, LLC (SOHO):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

UBS Securities, LLC (UBSS):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Cboe EDGX US Equities Exchange (EDGX):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

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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	75.39	1.43	8.21	14.97

#### 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 (CDRG)	34.06	53.11	48.53	8.10	2.99	0	0.0000	0	0.0000	0	0.0000	0	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)
National Financial Services LLC (XSTM)	25.07	0.00	0.00	0.00	94.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	20.97	32.14	31.38	5.83	2.71	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.02	6.43	5.42	0.95	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	3.83	6.08	4.29	0.98	0.11	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NYSE Arca (ARCA)	2.79	0.00	3.84	27.26	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	2.57	0.00	2.26	25.16	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	1.93	0.00	2.71	18.80	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.46	2.24	1.58	0.51	0.18	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	1.25	0.00	0.00	12.41	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

**Material Aspects:**

Citadel Securities LLC (CDRG):

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National Financial Services LLC (XSTM):

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VIRTU Americas LLC (NITE):

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G1 Execution Services, LLC (ETMM):

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NYSE Arca (ARCA):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

NASDAQ Execution Services, LLC (NSDQ):

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New York Stock Exchange (NYSE):

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Two Sigma Securities, LLC (SOHO):

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Cboe EDGX US Equities Exchange (EDGX):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

## October 2020

### Option Contracts

#### 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	78.02	3.03	18.71	0.24

#### 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)
Citadel Securities LLC (CDRG)	49.57	48.62	52.31	51.54	20.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group (SUSQ)	27.87	34.04	24.62	14.59	80.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Dash Financial Technologies LLC (DASH)	10.77	10.45	12.31	11.38	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Services LLC (WEXX)	7.66	2.57	1.54	19.14	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	4.02	4.32	4.62	3.35	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Interactive Brokers LLC (IBKR)	0.12	0.00	4.62	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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Susquehanna Capital Group (SUSQ):  
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Dash Financial Technologies LLC (DASH):  
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Wolverine Execution Services LLC (WEXX):  
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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	84.72	0.98	11.23	3.07

### 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 (CDRG)	34.97	52.93	44.29	10.25	5.30	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	20.96	31.31	27.86	6.62	3.89	0	0.0000	0	0.0000	0	0.0000	0	0.0000
National Financial Services LLC (XSTM)	20.85	0.00	0.00	0.00	89.35	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	7.04	0.01	5.71	45.25	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	5.33	0.00	8.57	34.06	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.37	6.69	7.14	1.91	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	4.06	6.24	5.00	1.35	0.27	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.27	1.89	1.43	0.37	0.27	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities, LLC (UBSS)	0.46	0.65	0.00	0.19	0.17	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Instinet BlockCross (BLXX)	0.35	0.29	0.00	0.00	0.74	0	0.0000	0	0.0000	0	0.0000	0	0.0000

### Material Aspects:

Citadel Securities LLC (CDRG):

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VIRTU Americas LLC (NITE):

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National Financial Services LLC (XSTM):  
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NASDAQ Execution Services, LLC (NSDQ):  
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New York Stock Exchange (NYSE):  
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JANE STREET CAPITAL, LLC (JNST):  
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G1 Execution Services, LLC (ETMM):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Two Sigma Securities, LLC (SOHO):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

UBS Securities, LLC (UBSS):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Instinet BlockCross (BLKX):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

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## November 2020

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### 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	87.79	1.57	8.82	1.83

#### 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 (CDRG)	33.72	52.77	51.73	7.39	2.76	0	0.0000	0	0.0000	0	0.0000	0	0.0000
National Financial Services LLC (XSTM)	25.29	0.00	0.00	0.00	95.38	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	20.24	31.71	29.00	4.80	1.52	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.26	6.82	6.06	0.92	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	4.10	6.50	5.84	0.95	0.14	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution	3.29	0.00	0.87	31.06	0.00	0	0.0000	0	0.0000	0	0.0000	0	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)
Services, LLC (NSDQ)													
NYSE Arca (ARCA)	2.90	0.00	3.46	27.14	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	1.83	0.00	1.08	17.18	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.42	2.20	1.95	0.24	0.20	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	1.09	0.00	0.00	10.32	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

#### Material Aspects:

Citadel Securities LLC (CDRG):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

National Financial Services LLC (XSTM):

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JANE STREET CAPITAL, LLC (JNST):

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G1 Execution Services, LLC (ETMM):

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NASDAQ Execution Services, LLC (NSDQ):

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NYSE Arca (ARCA):

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New York Stock Exchange (NYSE):

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Two Sigma Securities, LLC (SOHO):

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Cboe EDGX US Equities Exchange (EDGX):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

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## November 2020

### Option Contracts

#### 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	79.59	2.29	17.69	0.44

#### 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 (CDRG)	49.60	49.44	42.31	50.78	40.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group (SUSQ)	29.45	34.04	40.38	15.31	60.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Dash Financial Technologies LLC (DASH)	10.72	10.84	7.69	10.78	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Services LLC (WEXX)	5.68	1.29	0.00	18.44	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	4.55	4.38	9.62	4.69	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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## December 2020

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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
100.00	86.28	1.10	9.02	3.59

#### 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 (CDRG)	35.58	52.75	45.51	7.34	6.34	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	20.39	29.94	26.92	4.57	4.18	0	0.0000	0	0.0000	0	0.0000	0	0.0000
National Financial Services LLC (XSTM)	18.86	0.00	0.00	0.00	86.69	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	6.61	0.00	5.77	42.47	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	5.86	0.00	4.49	37.68	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.93	7.63	5.13	1.06	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	4.34	6.44	8.97	1.10	0.48	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.69	2.44	1.92	0.32	0.50	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	0.84	0.00	0.00	5.42	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities, LLC (UBSS)	0.77	0.80	1.28	0.04	1.18	0	0.0000	0	0.0000	0	0.0000	0	0.0000

**Material Aspects:**

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NASDAQ Execution Services, LLC (NSDQ):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

JANE STREET CAPITAL, LLC (JNST):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

G1 Execution Services, LLC (ETMM):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Two Sigma Securities, LLC (SOHO):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Cboe EDGX US Equities Exchange (EDGX):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

UBS Securities, LLC (UBSS):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

## December 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	85.43	2.54	8.92	3.12

#### 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 (CDRG)	33.03	52.42	50.53	6.10	3.86	0	0.0000	0	0.0000	0	0.0000	0	0.0000
National Financial Services LLC (XSTM)	25.72	0.00	0.00	0.00	89.72	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas LLC (NITE)	18.87	29.75	29.00	4.20	2.31	0	0.0000	0	0.0000	0	0.0000	0	0.0000
JANE STREET CAPITAL, LLC (JNST)	4.72	7.74	7.46	0.90	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	4.05	6.57	6.93	0.53	0.22	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	3.80	0.00	0.96	32.21	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NYSE Arca (ARCA)	3.31	0.00	1.81	27.91	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	1.83	0.00	1.07	15.44	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	1.40	2.19	1.71	0.18	0.30	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange	1.10	0.00	0.00	9.37	0.00	0	0.0000	0	0.0000	0	0.0000	0	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)
(EDGX)													

### Material Aspects:

Citadel Securities LLC (CDRG):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

National Financial Services LLC (XSTM):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

VIRTU Americas LLC (NITE):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

JANE STREET CAPITAL, LLC (JNST):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

G1 Execution Services, LLC (ETMM):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

NASDAQ Execution Services, LLC (NSDQ):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

NYSE Arca (ARCA):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

New York Stock Exchange (NYSE):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Two Sigma Securities, LLC (SOHO):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Cboe EDGX US Equities Exchange (EDGX):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

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## December 2020

### Option Contracts

#### 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	67.97	11.71	20.18	0.13

#### 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 (CDRG)	48.95	49.21	48.11	48.63	66.67	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group	28.56	34.14	34.85	14.56	33.33	0	0.0000	0	0.0000	0	0.0000	0	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)
(SUSQ)													
Dash Financial Technologies LLC (DASH)	10.51	9.57	9.85	12.77	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Services LLC (WEXX)	7.02	1.77	2.65	19.64	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	4.84	5.31	3.41	4.40	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Interactive Brokers LLC (IBKR)	0.12	0.00	1.14	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

**Material Aspects:**

Citadel Securities LLC (CDRG):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Susquehanna Capital Group (SUSQ):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Dash Financial Technologies LLC (DASH):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Wolverine Execution Services LLC (WEXX):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Morgan Stanley & Company LLC (MSCO):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Interactive Brokers LLC (IBKR):

[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]