

# OBERWEIS SECURITIES, INC. - 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	88.89	2.78	8.33	0.00

### 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)	41.67	40.63	100.00	33.33	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas, LLC (NITE)	25.00	28.13	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	16.67	15.63	0.00	33.33	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	13.89	15.63	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	2.78	0.00	0.00	33.33	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).]

VIRTU Americas, LLC (NITE):

[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).]

Jane Street Capital, LLC (JNST):

[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).]

## 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	64.80	3.20	32.00	0.00

#### 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)	27.15	40.74	25.00	11.29	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	17.22	0.00	0.00	41.94	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas, LLC (NITE)	13.91	22.22	75.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	12.58	22.22	0.00	1.61	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	9.93	0.00	0.00	24.19	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	7.28	12.35	0.00	1.61	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Members Exchange (MEMX)	5.30	0.00	0.00	12.90	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Instinet BlockCross (BLKX)	2.65	0.00	0.00	0.00	100.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	2.65	0.00	0.00	6.45	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	0.66	1.23	0.00	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).]

NASDAQ Execution Services, LLC (NSDQ):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

VIRTU Americas, LLC (NITE):  
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G1 Execution Services, LLC (ETMM):  
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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).]

Jane Street Capital, LLC (JNST):  
 [Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

Members Exchange (MEMX):  
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Instinet BlockCross (BLKX):  
 [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).]

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## 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	23.83	2.80	72.90	0.47

#### 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)	45.29	50.98	57.14	43.29	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Services LLC (WEXX)	27.80	7.84	0.00	35.37	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group (SUSQ)	15.70	35.29	42.86	7.93	100.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Dash Financial Technologies LLC (DASH)	8.97	1.96	0.00	11.59	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	2.24	3.92	0.00	1.83	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

**Material Aspects:**

Citadel Securities LLC (CDRG):

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Wolverine Execution Services LLC (WEXX):

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

Susquehanna Capital Group (SUSQ):

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Dash Financial Technologies LLC (DASH):

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Morgan Stanley &amp; Company LLC (MSCO):

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

## 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	86.21	0.00	13.79	0.00

**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)	37.93	40.00	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	27.59	32.00	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas, LLC (NITE)	24.14	24.00	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	6.90	4.00	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	3.45	0.00	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

**Material Aspects:**

Citadel Securities LLC (CDRG):

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G1 Execution Services, LLC (ETMM):

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VIRTU Americas, LLC (NITE):

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Jane Street Capital, LLC (JNST):

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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).]

## 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	48.67	13.27	38.05	0.00

#### 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 (NITE)	22.73	30.91	46.67	10.53	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	18.18	32.73	33.33	1.75	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	15.91	0.00	0.00	36.84	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Citadel Securities LLC (CDRG)	14.39	27.27	6.67	5.26	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	7.58	0.00	0.00	17.54	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	6.06	7.27	0.00	7.02	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Members Exchange (MEMX)	4.55	0.00	0.00	10.53	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Instinet BlockCross (BLKX)	3.79	0.00	0.00	0.00	100.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	3.79	0.00	0.00	8.77	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma	1.52	0.00	6.67	1.75	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)
Securities, LLC (SOHO)													

### Material Aspects:

VIRTU Americas, LLC (NITE):

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G1 Execution Services, LLC (ETMM):

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Cboe EDGX US Equities Exchange (EDGX):

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Citadel Securities LLC (CDRG):

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NASDAQ Execution Services, LLC (NSDQ):

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Jane Street Capital, LLC (JNST):

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

Members Exchange (MEMX):

[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).]

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).]

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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	27.50	4.58	66.25	1.67

#### 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)	39.15	51.52	50.00	35.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine	29.46	0.00	12.50	41.67	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)
Execution Services LLC (WEXX)													
Dash Financial Technologies LLC (DASH)	13.95	12.12	12.50	15.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group (SUSQ)	12.02	27.27	25.00	3.89	100.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	5.43	9.09	0.00	4.44	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

#### Material Aspects:

Citadel Securities LLC (CDRG):

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Wolverine Execution Services LLC (WEXX):

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Morgan Stanley & Company LLC (MSCO):

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## December 2022

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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	89.36	2.13	8.51	0.00

#### 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)	42.55	45.24	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	27.66	28.57	0.00	25.00	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)
VIRTU Americas, LLC (NITE)	19.15	16.67	100.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	4.26	4.76	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
INTL Trading, Inc. (INTL)	2.13	2.38	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	2.13	0.00	0.00	25.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities, LLC (SOHO)	2.13	2.38	0.00	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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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	66.27	13.86	18.67	1.20

#### 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)
Citadel Securities LLC (CDRG)	32.07	40.91	30.43	15.22	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	19.57	28.18	17.39	2.17	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
VIRTU Americas, LLC (NITE)	16.30	21.82	26.09	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Cboe EDGX US Equities Exchange (EDGX)	7.61	0.00	0.00	30.43	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	7.61	7.27	26.09	0.00	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
New York Stock Exchange (NYSE)	7.07	0.00	0.00	28.26	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
NASDAQ Execution Services, LLC (NSDQ)	3.26	0.00	0.00	13.04	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Members Exchange (MEMX)	2.72	0.00	0.00	10.87	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities, LLC (UBSS)	2.17	1.82	0.00	0.00	40.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Instinet BlockCross (BLKX)	1.63	0.00	0.00	0.00	60.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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

Members Exchange (MEMX):

[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).]

## 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	31.25	4.38	61.25	3.13

#### 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)	45.03	52.00	57.14	41.28	40.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Services LLC (WEXX)	26.90	2.00	0.00	41.28	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna Capital Group (SUSQ)	14.62	36.00	42.86	3.67	0.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Dash Financial Technologies LLC (DASH)	11.11	6.00	0.00	11.93	60.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Morgan Stanley & Company LLC (MSCO)	2.34	4.00	0.00	1.83	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).]

Wolverine Execution Services LLC (WEXX):

[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).]

Morgan Stanley & Company LLC (MSCO):

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