

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

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2nd Quarter, 2022

April 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                                 | 87.50                                     | 4.16  | 7.00  | 1.34                                     |

### 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)          | 26.83                   | 37.12             | 33.85                       | 7.48                            | 2.22             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 16.52                   | 22.45             | 19.32                       | 4.19                            | 4.08             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 15.67                   | 22.02             | 23.41                       | 3.48                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| National Financial Services LLC (XSTM) | 13.15                   | 0.03              | 0.00                        | 0.00                            | 92.69            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 11.24                   | 15.49             | 15.09                       | 3.66                            | 0.29             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| New York Stock Exchange (NYSE)         | 7.82                    | 0.00              | 2.40                        | 43.81                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution Services, LLC (NSDQ)  | 5.22                    | 0.00              | 3.24                        | 28.97                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Cboe EDGX US Equities Exchange (EDGX)  | 1.06                    | 0.00              | 0.00                        | 6.02                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Two Sigma Securities, LLC (SOHO)       | 1.05                    | 1.45              | 1.55                        | 0.37                            | 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) |
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| UBS Securities, LLC (UBSS)      | 1.01                    | 1.45              | 1.13                        | 0.08                            | 0.13             | 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).]

Jane Street Capital, LLC (JNST):

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Cboe EDGX US Equities Exchange (EDGX):

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## April 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                                 | 94.95                                     | 1.36  | 3.21  | 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)   | 25.63                   | 37.54             | 36.92                       | 5.40                            | 0.33             | 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) |
|--|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| National Financial Services LLC (XSTM) | 25.59                   | 0.01              | 0.00                        | 0.00                            | 96.04            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 15.24                   | 22.08             | 20.38                       | 3.40                            | 0.83             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 14.96                   | 22.08             | 20.38                       | 2.44                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 10.63                   | 15.70             | 13.65                       | 1.67                            | 0.02             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| New York Stock Exchange (NYSE)         | 2.05                    | 0.00              | 3.46                        | 32.41                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution Services, LLC (NSDQ)  | 1.33                    | 0.00              | 2.12                        | 21.05                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Cboe EDGX US Equities Exchange (EDGX)  | 0.98                    | 0.00              | 0.00                        | 15.83                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Two Sigma Securities, LLC (SOHO)       | 0.92                    | 1.35              | 1.15                        | 0.24                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| UBS Securities, LLC (UBSS)             | 0.85                    | 1.24              | 0.96                        | 0.18                            | 0.05             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

**Material Aspects:**

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## April 2022

### 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                                 | 79.77                                     | 2.83  | 15.68   | 1.72                                     |

#### 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)           | 48.90                   | 50.14             | 49.06                       | 41.35                           | 87.10            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Susquehanna Capital Group (SUSQ)        | 22.49                   | 27.80             | 26.42                       | 3.31                            | 12.90            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Dash Financial Technologies LLC (DASH)  | 14.98                   | 14.49             | 15.09                       | 17.94                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Wolverine Execution Services LLC (WEXX) | 8.55                    | 1.99              | 3.77                        | 33.84                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Morgan Stanley & Company LLC (MSCO)     | 5.07                    | 5.57              | 5.66                        | 3.56                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

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Dash Financial Technologies LLC (DASH):  
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Wolverine Execution Services LLC (WEXX):  
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## May 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                                 | 90.63                                     | 2.47  | 6.31  | 0.60                                     |

### 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)          | 27.10                   | 37.44             | 36.36                       | 6.31                            | 0.89             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 17.91                   | 24.62             | 21.34                       | 4.33                            | 1.42             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 13.47                   | 18.55             | 18.38                       | 3.50                            | 0.24             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 12.73                   | 17.68             | 16.01                       | 3.07                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| National Financial Services LLC (XSTM) | 12.53                   | 0.00              | 0.00                        | 0.00                            | 96.65            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| New York Stock Exchange (NYSE)         | 7.80                    | 0.00              | 2.57                        | 43.22                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution Services, LLC (NSDQ)  | 5.75                    | 0.00              | 3.56                        | 31.67                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Cboe EDGX US Equities Exchange (EDGX)  | 1.02                    | 0.00              | 0.00                        | 5.71                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Two Sigma Securities, LLC (SOHO)       | 0.71                    | 0.95              | 1.58                        | 0.24                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| UBS Securities, LLC (UBSS)             | 0.58                    | 0.77              | 0.20                        | 0.09                            | 0.33             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

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## May 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                                 | 95.33                                     | 1.40  | 2.91  | 0.36                                     |

#### Venues

| Venue - Non-directed Order Flow        | Non-Directed Orders (%) | Market Orders (%) | Marketable Limit Orders (%) | Non-Marketable Limit Orders (%) | Other Orders (%) | Net Payment Paid/Received for Market Orders(USD) | Net Payment Paid/Received for Market Orders(cents per hundred shares) | Net Payment Paid/Received for Marketable Limit Orders(USD) | Net Payment Paid/Received for Marketable Limit Orders(cents per hundred shares) | Net Payment Paid/Received for Non-Marketable Limit Orders(USD) | Net Payment Paid/Received for Non-Marketable Limit Orders(cents per hundred shares) | Net Payment Paid/Received for Other Orders(USD) | Net Payment Paid/Received for Other Orders(cents per hundred shares) |
|--|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| National Financial Services LLC (XSTM) | 26.82                   | 0.00              | 0.00                        | 0.00                            | 96.44            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Citadel Securities LLC (CDRG)          | 25.40                   | 36.85             | 37.52                       | 8.30                            | 0.27             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 16.69                   | 24.15             | 22.20                       | 5.19                            | 0.45             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 12.99                   | 18.93             | 18.76                       | 3.15                            | 0.10             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 12.31                   | 17.96             | 18.24                       | 3.34                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NYSE Arca (ARCA)                       | 1.07                    | 0.00              | 0.00                        | 24.03                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution                       | 0.86                    | 0.00              | 1.20                        | 18.88                           | 0.01             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

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|----------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| Services, LLC (NSDQ)             |                         |                   |                             |                                 |                  |  |   |  |   |  |   |   |  |
| UBS Securities, LLC (UBSS)       | 0.74                    | 1.07              | 0.34                        | 0.19                            | 0.06             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Instinet BlockCross (BLKX)       | 0.74                    | 0.00              | 0.00                        | 0.00                            | 2.65             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Two Sigma Securities, LLC (SOHO) | 0.71                    | 1.05              | 0.69                        | 0.15                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

### Material Aspects:

National Financial Services LLC (XSTM):

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NYSE Arca (ARCA):

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UBS Securities, LLC (UBSS):

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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).]

Two Sigma Securities, LLC (SOHO):

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## May 2022

### Option Contracts

#### Summary

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|--|---|---|---|--|
| 100.00                                 | 83.37                                     | 3.66  | 11.79   | 1.18                                     |

#### Venues

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|---|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| Citadel Securities LLC (CDRG)           | 47.66                   | 48.69             | 53.01                       | 39.61                           | 60.38            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Susquehanna Capital Group (SUSQ)        | 24.81                   | 28.76             | 26.51                       | 1.48                            | 37.74            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Dash Financial Technologies LLC (DASH)  | 16.97                   | 17.41             | 13.86                       | 16.47                           | 1.89             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Wolverine Execution Services LLC (WEXX) | 7.20                    | 1.71              | 3.61                        | 39.02                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Morgan Stanley & Company LLC (MSCO)     | 3.29                    | 3.35              | 2.41                        | 3.41                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Interactive Brokers LLC (IBKR)          | 0.09                    | 0.08              | 0.60                        | 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).]

## June 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                                 | 91.09                                     | 1.21  | 6.37  | 1.32                                     |

#### 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)          | 24.59                   | 35.07             | 24.81                       | 5.98                            | 3.99             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 15.68                   | 22.92             | 12.03                       | 3.72                            | 0.23             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 14.68                   | 20.75             | 15.79                       | 4.17                            | 2.21             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 13.36                   | 19.42             | 17.67                       | 3.28                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| National Financial Services LLC (XSTM) | 12.29                   | 0.00              | 0.00                        | 0.00                            | 92.87            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| New York Stock Exchange (NYSE)         | 9.01                    | 0.00              | 11.65                       | 41.31                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution Services, LLC (NSDQ)  | 8.42                    | 0.00              | 16.17                       | 38.35                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Two Sigma Securities, LLC (SOHO)       | 0.67                    | 1.01              | 0.00                        | 0.13                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| UBS Securities, LLC (UBSS)             | 0.60                    | 0.83              | 1.88                        | 0.13                            | 0.15             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Cboe EDGX US Equities Exchange (EDGX)  | 0.46                    | 0.00              | 0.00                        | 2.15                            | 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).]

G1 Execution Services, LLC (ETMM):

[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).]

National Financial Services LLC (XSTM):

[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).]

NASDAQ Execution Services, LLC (NSDQ):

[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).]

## June 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                                 | 95.03                                     | 1.29  | 3.08  | 0.60                                     |

#### 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) |
|--|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| National Financial Services LLC (XSTM) | 25.54                   | 0.00              | 0.22                        | 0.00                            | 95.24            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Citadel Securities LLC (CDRG)          | 23.99                   | 34.67             | 33.48                       | 9.22                            | 0.45             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| G1 Execution Services, LLC (ETMM)      | 15.60                   | 22.70             | 22.02                       | 5.11                            | 0.09             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| VIRTU Americas, LLC (NITE)             | 14.66                   | 20.91             | 21.12                       | 5.81                            | 0.88             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Jane Street Capital, LLC (JNST)        | 13.35                   | 19.57             | 16.18                       | 3.62                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NASDAQ Execution Services, LLC (NSDQ)  | 1.61                    | 0.00              | 0.90                        | 27.14                           | 0.02             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| NYSE Arca (ARCA)                       | 1.06                    | 0.00              | 1.35                        | 17.78                           | 0.02             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| New York Stock Exchange (NYSE)         | 0.84                    | 0.00              | 1.35                        | 14.16                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| UBS Securities, LLC (UBSS)             | 0.78                    | 1.07              | 1.12                        | 0.28                            | 0.14             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Instinet BlockCross (BLKX)             | 0.74                    | 0.00              | 0.00                        | 0.00                            | 2.78             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |

## Material Aspects:

National Financial Services LLC (XSTM):

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

Citadel Securities LLC (CDRG):

[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).]

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).]

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).]

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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## June 2022

## 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                                 | 86.28                                     | 1.37  | 11.09   | 1.26                                     |

### 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)          | 45.52                   | 46.88             | 34.85                       | 36.59                           | 72.88            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Dash Financial Technologies LLC (DASH) | 22.59                   | 23.80             | 25.76                       | 17.32                           | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Susquehanna Capital Group (SUSQ)       | 21.97                   | 25.48             | 22.73                       | 1.68                            | 27.12            | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Wolverine Execution Services LLC       | 7.28                    | 1.39              | 12.12                       | 40.64                           | 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) |
|-------------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| (WEXX)                              |                         |                   |                             |                                 |                  |  |   |  |   |  |   |   |  |
| Morgan Stanley & Company LLC (MSCO) | 2.58                    | 2.45              | 1.52                        | 3.63                            | 0.00             | 0  | 0.0000  | 0  | 0.0000  | 0  | 0.0000  | 0   | 0.0000   |
| Interactive Brokers LLC (IBKR)      | 0.06                    | 0.00              | 3.03                        | 0.14                            | 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).]

Dash Financial Technologies LLC (DASH):

[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).]

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).]