4th Quarter, 2022

October 2022

S\&P 500 Stocks


| Venue - <br> Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders <br> (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 28.96 | 34.51 | 44.44 | 2.83 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| G1 Execution Services, LLC (ETMM) | 20.93 | 24.98 | 22.22 | 1.89 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 20.60 | 24.61 | 27.78 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 14.57 | 0.00 | 0.00 | 0.00 | 99.47 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Jane Street Capital, LLC (JNST) | 11.24 | 13.45 | 5.56 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 1.56 | 1.87 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| NASDAQ Execution Services, LLC (NSDQ) | 0.65 | 0.00 | 0.00 | 39.62 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York Stock Exchange (NYSE) (NYSE) | 0.53 | 0.00 | 0.00 | 32.08 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |


| Venue - <br> Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable Limit Orders (\%) | Other Orders (\%) | $\begin{aligned} & \text { Net Payment } \\ & \text { Paid/Received for } \\ & \text { Market } \\ & \text { Orders(USD) } \end{aligned}$ | 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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 <br> Securities, LLC (UBSS) | 0.48 | 0.58 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Cboe EDGX US Equities Exchange (EDGX) | 0.33 | 0.00 | 0.00 | 19.81 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |

## Material Aspects:

Citadel Securities LIC (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).]
National Financial Services LLC (XSTM)
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[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).]
Two Sigma Securities, LLC (SOHO):
[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):
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[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).]

October 2022

## Non-S\&P 500 Stocks

Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| ---: | ---: | ---: | ---: | ---: |
| 100.00 | 97.63 | 0.83 | 1.53 | 0.00 |

## Venues

| Venue -Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable Limit Orders (\%) | Other Orders (\%) | $\begin{aligned} & \text { Net Payment } \\ & \text { Paid/Received for } \\ & \text { Market } \\ & \text { Orders(USD) } \end{aligned}$ | 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable Limit Orders(cents per hundred shares) | $\begin{aligned} & \text { Net Payment } \\ & \text { Paid/Received for } \\ & \text { Other } \\ & \text { Orders(USD) } \end{aligned}$ | Net Payment Paid/ Received for Other Orders(cents per hundred shares) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Citadel Securities LLC (CDRG) | 25.99 | 36.05 | 22.92 | 2.59 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 24.05 | 0.00 | 0.00 | 0.00 | 97.88 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 17.99 | 24.60 | 54.17 | 2.59 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| G1 Execution Services, LLC (ETMM) | 15.98 | 22.27 | 8.33 | 0.37 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Jane Street Capital, LLC (JNST) | 9.99 | 13.84 | 14.58 | 0.37 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 1.68 | 2.33 | 0.00 | 0.37 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York Stock Exchange (NYSE) | 1.01 | 0.00 | 0.00 | 30.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| NASDAQ <br> Execution <br> Services, LLC <br> (NSDQ) | 0.99 | 0.00 | 0.00 | 29.63 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Cboe EDGX US Equities Exchange (EDGX) | 0.81 | 0.00 | 0.00 | 24.07 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| UBS <br> Securities, LLC (UBSS) | 0.66 | 0.92 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |

## Material Aspects

Citadel Securities LLC (CDRG):
inser discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]
National Financial Services UC (XSTM)
[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]
[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]
G1 Execution Services LIC (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).]
Two Sigma Securities, LLC (SOHO):
[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):

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).]

## October 2022

## Options

## Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| ---: | ---: | ---: | ---: | ---: |
| 100.00 | 77.24 | 2.85 | 19.92 | 0.00 |


| Venue -Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 36.90 | 41.58 | 28.57 | 21.82 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Susquehanna Capital Group (SUSQ) | 26.98 | 33.68 | 28.57 | 3.64 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Dash Financial <br> Technologies LLC (DASH) | 17.46 | 15.79 | 0.00 | 25.45 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Wolverine Execution Services LLC (WEXX) | 13.10 | 3.68 | 42.86 | 41.82 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Morgan Stanley \& Company LLC (MSCO) | 5.56 | 5.26 | 0.00 | 7.27 | 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):

## November 2022

S\&P 500 Stocks


| Venue -Non-directed Order Flow | Non- Directed Orders (\%) Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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 <br> (CDRG) | 29.63 | 35.16 | 0.00 | 2.76 | 0.58 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 22.64 | 26.81 | 25.00 | 5.52 | 0.19 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| G1 Execution Services, LLC (ETMM) | 18.97 | 22.52 | 25.00 | 2.76 | 0.10 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 13.83 | 0.00 | 0.00 | 0.00 | 98.08 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Jane Street Capital, LLC (JNST) | 11.19 | 13.29 | 50.00 | 0.69 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 1.30 | 1.55 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| NASDAQ Execution Services, LLC (NSDQ) | 0.99 | 0.00 | 0.00 | 50.34 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York Stock Exchange (NYSE) | 0.57 | 0.00 | 0.00 | 28.97 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| UBS Securities, LLC (UBSS) | 0.47 | 0.57 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Instinet BlockCross (BLKX) | 0.15 | 0.00 | 0.00 | 0.00 | 1.06 | 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):
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Jane Street Capital, LLC (JNST):
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Two Sigma Securities, LLC (SOHO):
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NASDAQ Execution Services, LLC (NSDQ):
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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).]

## November 2022

## Non-S\&P 500 Stocks

## Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| ---: | ---: | ---: | ---: | ---: |
| 100.00 | 98.31 | 0.45 | 1.20 | 0.05 |


| Venue - <br> Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 24.80 | 34.33 | 24.14 | 0.91 | 0.10 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 23.42 | 0.00 | 0.00 | 0.00 | 97.96 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 18.98 | 26.28 | 24.14 | 0.30 | 0.05 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |


| Venue - <br> Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable Limit Orders <br> (\%) | 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable Limit Orders(cents per hundred shares) |  | Net Payment Paid/ Received for Other Orders(cents per hundred shares) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| G1 Execution Services, LLC (ETMM) | 16.56 | 22.88 | 31.03 | 0.60 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Jane Street Capital, LLC (JNST) | 9.65 | 13.37 | 13.79 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York Stock Exchange (NYSE) | 1.70 | 0.00 | 0.00 | 43.20 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 1.55 | 2.14 | 3.45 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| NASDAQ Execution Services, LLC (NSDQ) | 1.08 | 0.00 | 3.45 | 27.19 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| UBSSecurities, LLC <br> (UBSS) | 0.62 | 0.86 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Cboe EDGX US Equities Exchange (EDGX) | 0.61 | 0.00 | 0.00 | 15.41 | 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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[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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Jane Street Capital, LLC (JNST):
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New York Stock Exchange (NYSE)
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Two Sigma Securities, LLC (SOHO):
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NASDAQ Execution Services, LLC (NSDO):
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[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).]

Options


| Venue -Non-directed Order Flow | $\begin{gathered} \hline \text { Non- } \\ \text { Directed } \\ \text { Orders (\%) } \end{gathered}$ | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 52.68 | 50.58 | 75.00 | 48.61 | 100.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Susquehanna Capital Group (SUSQ) | 22.54 | 29.73 | 8.33 | 2.78 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Dash Financial Technologies LLC (DASH) | 11.83 | 9.27 | 8.33 | 23.61 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Wolverine Execution Services LLC (WEXX) | 7.89 | 4.63 | 0.00 | 22.22 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Morgan Stanley \& Company LLC (MSCO) | 4.79 | 5.79 | 0.00 | 2.78 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Interactive Brokers LLC (IBKR) | 0.28 | 0.00 | 8.33 | 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):
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).]

## S\&P 500 Stocks

## Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| :---: | ---: | ---: | ---: | ---: |
| 100.00 | 99.44 | 0.05 | 0.42 | 0.09 |


| Venue - <br> Non-directed Order Flow | Non- Directed Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable Limit Orders (\%) | Other Orders (\%) |  | 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable Limit Orders(cents per hundred shares) | $\begin{gathered} \text { Net Payment } \\ \text { Paid/Received for } \\ \text { Other } \\ \text { Orders(USD) } \end{gathered}$ | Net Payment Paid/ Received for Other Orders(cents per hundred shares) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Citadel Securities LLC (CDRG) | 30.06 | 35.47 | 25.00 | 0.84 | 0.23 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 22.37 | 26.36 | 25.00 | 2.09 | 0.15 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| G1 Execution Services, LLC (ETMM) | 20.39 | 24.07 | 25.00 | 0.42 | 0.15 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 12.78 | 0.00 | 0.00 | 0.00 | 98.17 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Jane Street Capital, LLC (JNST) | 9.62 | 11.36 | 25.00 | 0.42 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York <br> Stock Exchange (NYSE) | 1.45 | 0.00 | 0.00 | 61.09 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 1.39 | 1.65 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| NASDAQ <br> Execution Services, LLC (NSDQ) | 0.66 | 0.00 | 0.00 | 27.62 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| UBSSecurities, LLC <br> (UBSS) | 0.58 | 0.67 | 0.00 | 0.00 | 0.08 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| INTL Trading, Inc. (INTL) | 0.37 | 0.43 | 0.00 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |

## Material Aspects:

Citadel Securities LLC (CDRG):
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).]
National Financial Services LLC (XSTM)
[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).]
New York Stock Exchange (NYSE):
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).]
NASDAQ Execution Services, LLC (NSDQ):
NASDAQ Execution Services, LLC (NSDQ):
[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).]
INTL Trading, Inc. (INTL):
[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]

December 2022

## Non-S\&P 500 Stocks

Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| ---: | ---: | ---: | ---: | ---: |
| 100.00 | 98.63 | 0.48 | 0.85 | 0.05 |

Venues

| Venue -Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 25.10 | 34.65 | 34.21 | 0.75 | 0.11 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| National Financial Services LLC (XSTM) | 23.11 | 0.00 | 0.00 | 0.00 | 95.86 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| VIRTU Americas, LLC (NITE) | 18.99 | 26.23 | 21.05 | 1.51 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| G1 Execution Services, LLC (ETMM) | 17.09 | 23.64 | 21.05 | 0.25 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |


| Venue - <br> Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders (\%) | NonMarketable Limit Orders <br> (\%) | Other Orders (\%) | $\begin{gathered} \text { Net Payment } \\ \text { Paid/Received for } \\ \text { Market } \\ \text { Orders(USD) } \end{gathered}$ | 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 NonMarketable 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) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jane Street Capital, LLC (JNST) | 7.96 | 11.00 | 10.53 | 0.25 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| New York Stock Exchange (NYSE) | 2.13 | 0.00 | 0.00 | 59.05 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Two Sigma Securities, LLC (SOHO) | 2.04 | 2.81 | 5.26 | 0.00 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Instinet BlockCross <br> (BLKX) | 0.96 | 0.00 | 0.00 | 0.00 | 3.99 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| UBS Securities, LLC (UBSS) | 0.83 | 1.15 | 0.00 | 0.00 | 0.04 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Cboe EDGX US Equities Exchange (EDGX) | 0.63 | 0.00 | 0.00 | 17.34 | 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).]
[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, LIC (JNST):
[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).]
Instinet BlockCross (BLKX):
Instinet BlockCross (BLKX):
[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).]

## December 2022

## Options

## Summary

| Non-Directed Orders <br> as \% of All Orders | Market Orders as \% of <br> Non-Directed Orders | Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Non-Marketable Limit <br> Orders as \% of Non- <br> Directed Orders | Other Orders as \% of <br> Non-Directed Orders |
| ---: | ---: | ---: | ---: | ---: |
| 100.00 | 73.00 | 4.67 | 22.00 | 0.33 |


| Venue -Non-directed Order Flow | NonDirected Orders (\%) | Market Orders (\%) | Marketable Limit Orders <br> (\%) | NonMarketable Limit Orders (\%) | Other Orders (\%) |  | 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 NonMarketable Limit Orders(USD) | Net Payment Paid/ Received for NonMarketable 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) | 43.23 | 46.58 | 25.00 | 35.37 | 100.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Susquehanna Capital Group (SUSQ) | 25.48 | 33.79 | 37.50 | 2.44 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Wolverine Execution Services LLC (WEXX) | 13.87 | 5.02 | 12.50 | 37.80 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Dash Financial Technologies LLC (DASH) | 10.97 | 8.68 | 12.50 | 17.07 | 0.00 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 | 0 | 0.0000 |
| Morgan Stanley \& Company LLC (MSCO) | 6.45 | 5.94 | 12.50 | 7.32 | 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).]
Susquehanna Capital Group (SUSQ)
[Insert discussion of the material aspects of the relationship with this venue pursuant to rule 606(a)(1)(iv).]
[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).]

