

Alpaca Securities LLC - Held NMS Stocks and Options Order Routing Public Report

Generated on Mon Apr 24 2023 04:30:30 GMT-0800 (Alaska Daylight Time)

1st Quarter, 2023

January 2023

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 | 54.82 | 25.21 | 12.77 | 7.20 |

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) |
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| Virtu Americas, LLC (NITE) | 15.69 | 13.29 | 16.08 | 20.46 | 24.07 | 2,378.46 | 333.3434 | 1,066.36 | 26.8574 | 501.10 | 19.5946 | 490.39 | 28.9089 |
| Citadel Securities LLC (CDRG) | 38.10 | 42.69 | 33.03 | 47.31 | 4.49 | 5,666.03 | 24.7255 | 1,852.03 | 22.7147 | 1,133.10 | 19.1616 | -14.67 | -4.6336 |
| Jane Street Capital, LLC (JNST) | 46.22 | 44.02 | 50.89 | 32.23 | 71.44 | 6,249.11 | 26.4492 | 2,241.54 | 17.8427 | 805.63 | 20.0000 | 1,717.86 | 34.1142 |

Material Aspects:

Virtu Americas, LLC (NITE):

Alpaca Securities receives revenue from third-party liquidity providers based on the order flow execution received at each destination. While rebate rates are substantially similar amongst the liquidity providers they may vary based on order characteristics (such as price of execution, marketability, and other characteristics). Extended hours orders routed to Virtu and filled outside the core session will not receive payment. However, orders marked as extended hours eligible filled in the core session will receive a payment. Orders filled on the primary market opening and closing auctions/crosses will not receive a rebate nor incur a charge. Marketable orders filled above \$1 filled during the core session will receive 12% of the spread per share, capped at 5 cents per share. Non-marketable orders filled at a price of \$1 per share or higher that are filled during the core session will receive a rebate of 20 mills per share. There is a potential conflict inherent to a market maker such as Virtu both paying for order flow and providing price improvement, as the potential source of funds for each is the same, namely the anticipated profit the market maker seeks to earn from executing or facilitating the execution of Alpaca Securities LLC customer orders. Accordingly, from such anticipated profit, a market maker such as Virtu can (i) forgo a portion of such anticipated profit to provide price improvement; (ii) forgo a portion of such anticipated profit to pay for order flow; or (iii) retain a larger portion of anticipated profit and not provide (or provide less) price improvement or not provide (or provide less) payment for order flow. A market maker's (such as Virtu's) anticipated profit must be allocated among these three sub-categories, such that an increased allocation to any one subcategory will result in a decreased allocation to one or more of the other categories.

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January 2023

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 | 70.43 | 8.96 | 17.53 | 3.09 |

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) | 16.07 | 15.50 | 14.61 | 16.81 | 29.26 | 21,533.17 | 8.0391 | 6,444.17 | 20.0727 | 4,447.70 | 6.1503 | 1,661.71 | 7.4942 |
| Citadel Securities LLC (CDRG) | 32.62 | 32.36 | 35.58 | 34.23 | 20.85 | 55,323.51 | 9.8907 | 17,919.56 | 22.9128 | 10,548.92 | 7.1631 | -214.48 | -1.3577 |
| Jane Street Capital, LLC (JNST) | 51.30 | 52.14 | 49.81 | 48.95 | 49.89 | 85,679.20 | 9.5083 | 22,974.15 | 20.9815 | 13,639.87 | 6.4772 | 4,503.94 | 11.9153 |

Material Aspects:

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January 2023

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 |
|---|--|--|--|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 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) |
|--|--------------------------------|-------------------------|-----------------------------------|---|------------------------|---|---|--|--|---|---|--|--|
| | | | | | | | | | | | | | |

Material Aspects:

February 2023

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 | 50.07 | 30.15 | 14.08 | 5.70 |

Venues

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|---------------------------------------|--------------------------------|-------------------------|-----------------------------------|---|------------------------|---|---|--|--|---|---|--|--|
| Virtu Americas, LLC (NITE) | 24.83 | 22.10 | 26.94 | 26.79 | 32.84 | 4,258.34 | 37.8010 | 1,927.03 | 23.3106 | 758.02 | 19.7407 | 586.21 | 30.7836 |
| Citadel Securities LLC (CDRG) | 29.84 | 34.73 | 23.72 | 36.16 | 3.72 | 7,061.81 | 39.8940 | 1,900.73 | 26.1112 | 984.46 | 18.9952 | -3.36 | -1.5587 |
| Jane Street Capital, LLC (JNST) | 45.32 | 43.17 | 49.34 | 37.05 | 63.45 | 7,471.94 | 33.9590 | 2,913.22 | 19.2373 | 1,062.00 | 20.0000 | 1,340.89 | 36.4398 |

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February 2023

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Summary

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|---|--|--|--|---|
| 100.00 | 69.71 | 10.28 | 17.06 | 2.95 |

Venues

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|---------------------------------------|--------------------------------|-------------------------|-----------------------------------|---|------------------------|---|---|--|--|---|---|--|--|
| Virtu Americas, LLC (NITE) | 27.79 | 27.05 | 32.27 | 26.84 | 35.33 | 40,937.71 | 9.5575 | 8,362.16 | 11.0939 | 6,843.00 | 6.5782 | 1,866.93 | 7.8763 |
| Citadel Securities LLC (CDRG) | 20.72 | 19.64 | 22.67 | 24.98 | 14.69 | 40,856.17 | 13.1360 | 10,245.39 | 19.3530 | 8,020.45 | 8.2846 | -319.17 | -3.2380 |
| Jane Street Capital, LLC (JNST) | 51.49 | 53.32 | 45.06 | 48.18 | 49.98 | 81,004.37 | 9.5935 | 16,144.31 | 15.3380 | 13,277.88 | 7.1120 | 3,494.14 | 10.4190 |

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|---|--|--|--|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Venues

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|--|--------------------------------|-------------------------|-----------------------------------|---|------------------------|---|---|--|--|---|---|--|--|
|--|--------------------------------|-------------------------|-----------------------------------|---|------------------------|---|---|--|--|---|---|--|--|

Material Aspects:

March 2023

S&P 500 Stocks
Summary

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|---|--|--|--|---|
| 100.00 | 50.34 | 31.88 | 11.39 | 6.39 |

Venues

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|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
| Virtu Americas, LLC (NITE) | 27.91 | 25.60 | 29.82 | 28.40 | 35.69 | 6,415.62 | 33.3655 | 3,115.40 | 21.9684 | 960.25 | 19.8922 | 948.51 | 27.8719 |
| Citadel Securities LLC (CDRG) | 24.70 | 28.89 | 18.11 | 36.12 | 4.16 | 8,035.57 | 37.0355 | 226.50 | 25.8550 | 1,149.91 | 187,268 | 108.04 | 27.2682 |
| Jane Street Capital, LLC (JNST) | 47.39 | 45.50 | 52.07 | 35.48 | 60.15 | 10,977.18 | 32.1240 | 4,890.92 | 19.7536 | 1,206.20 | 20.0000 | 1,846.93 | 32.2051 |

Material Aspects:

Virtu Americas, LLC (NITE):
Alpaca Securities receives revenue from third-party liquidity providers based on the order flow execution received at each destination. While rebate rates are substantially similar amongst the liquidity providers they may vary based on order characteristics (such as price of execution, marketability, and other characteristics). Extended hours orders routed to Virtu and filled outside the core session will not receive payment. However, orders marked as extended hours eligible filled in the core session will receive a payment. Orders filled on the primary market opening and closing auctions/crosses will not receive a rebate nor incur a charge. Marketable orders filled above \$1 filled during the core session will receive 12% of the spread per share, capped at 5 cents per share. Non-marketable orders filled at a price of \$1 per share or higher that are filled during the core session will receive a rebate of 20 mills per share. There is a potential conflict inherent to a market maker such as Virtu both paying for order flow and providing price improvement, as the potential source of funds for each is the same, namely the anticipated profit the market maker seeks to earn from executing or facilitating the execution of Alpaca Securities LLC customer orders. Accordingly, from such anticipated profit, a market maker such as Virtu can (i) forgo a portion of such anticipated profit to provide price improvement; (ii) forgo a portion of such anticipated profit to pay for order flow; or (iii) retain a larger portion of anticipated profit and not provide (or provide less) price improvement or not provide (or provide less) payment for order flow. A market maker's (such as Virtu's) anticipated profit must be allocated among these three sub-categories, such that an increased allocation to any one subcategory will result in a decreased allocation to one or more of the other categories.

Citadel Securities LLC (CDRG):
Alpaca Securities receives revenue from third-party liquidity providers based on the order flow execution received at each destination. While rebate rates are substantially similar amongst the liquidity providers they may vary based on order characteristics (such as price of execution, marketability, and other characteristics). Extended hours orders routed to Citadel and filled outside the core session will not receive payment. However, orders marked as extended hours eligible filled in the core session will receive a payment. Orders filled on the primary market opening and closing auctions/crosses will incur a charge against Alpaca of 12 mills per share. Marketable orders filled during the core session will receive 12% of the spread per share, capped at 5 cents per share. Non-marketable orders filled at a price greater than \$1 will receive a rebate of 20 mills per share. Non-marketable orders that are filled at a price of less than \$1 and filled during the core session, Alpaca Securities LLC will receive a rebate of 1.3 mills per share. There is a potential conflict inherent to a market maker such as Citadel both paying for order flow and providing price improvement, as the potential source of funds for each is the same, namely the anticipated profit the market maker seeks to earn from executing or facilitating the execution of Alpaca Securities LLC customer orders. Accordingly, from such anticipated profit, a market maker such as Citadel can (i) forgo a portion of such anticipated profit to provide price improvement; (ii) forgo a portion of such anticipated profit to pay for order flow; or (iii) retain a larger portion of anticipated profit and not provide (or provide less) price improvement or not provide (or provide less) payment for order flow. A market maker's (such as Citadel's) anticipated profit must be allocated among these three sub-categories, such that an increased allocation to any one subcategory will result in a decreased allocation to one or more of the other categories.

Jane Street Capital, LLC (JNST):
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March 2023

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 | 58.32 | 22.75 | 13.43 | 5.50 |

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) |
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|

| 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) | 30.34 | 29.97 | 30.31 | 29.28 | 37.05 | 47,796.54 | 7.5173 | 26,305.57 | 10.4867 | 239,081.19 | 6.3486 | 6,800.01 | 9.1698 |
| Citadel Securities LLC (CDRG) | 18.04 | 18.12 | 19.61 | 21.08 | 3.22 | 38,393.03 | 9.9849 | 19,544.25 | 12.0404 | 8,184.96 | 7.9483 | 452.80 | 7.0291 |
| Jane Street Capital, LLC (JNST) | 51.62 | 51.91 | 50.07 | 49.64 | 59.73 | 94,037.99 | 8.5373 | 49,572.74 | 11.9631 | 17,112.76 | 7.0554 | 13,931.57 | 11.6524 |

Material Aspects:

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March 2023

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 |
|--|---|---|---|--|
| 0.00 | 0.00 | 0.00 | 0.00 | 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) |
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|
|---------------------------------|-------------------------|-------------------|-----------------------------|---------------------------------|------------------|--|---|--|---|--|---|---|--|

Material Aspects: