

# APEX Clearing - Held NMS Stocks and Options Order Routing Public Report

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1st Quarter, 2022

January 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	46.11	5.96	38.32	9.60

### 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)
Jane Street Capital	25.02	24.08	28.20	26.29	22.51	9,045.84	15.0022	4,751.83	15.0000	5,687.28	28.7373	6,008.74	18.2305
Instinet, LLC	23.26	30.89	17.75	19.65	4.39								
Virtu Americas, LLC	20.20	18.61	23.72	20.96	22.59	6,603.48	15.0000	3,346.18	15.0000	4,286.36	29.0000	3,133.22	14.8335
CITADEL SECURITIES LLC	18.27	14.94	16.91	17.96	36.39	5,441.12	15.0000	2,897.35	15.0000	3,176.90	29.0000	3,556.92	17.4770
Two Sigma Securities, LLC	6.58	1.35	1.62	13.49	7.27	546.99	15.0008	356.70	15.0002	3,214.24	28.8865	657.39	17.4504

### Material Aspects:

#### Jane Street Capital:

APEX receives payment from Jane Street Capital, LLC (Jane) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### Instinet, LLC:

Instinet is APEX's technology provider, All Exchange fee/rebates are passed directly back to the client.

#### Virtu Americas, LLC:

APEX receives payment from Virtu Financial, Inc. (Virtu) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### CITADEL SECURITIES LLC:

APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### Two Sigma Securities, LLC:

APEX receives payment from Two Sigma Investments, LP (Two Sigma) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

## January 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	32.48	10.50	40.50	16.52

#### 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)
Jane Street Capital	22.82	26.23	30.03	21.69	14.32	108,830.88	12.2617	144,698.32	12.2211	93,730.43	25.9443	87,328.04	17.3962
Instinet, LLC	21.77	23.88	12.48	29.87	3.64								
CITADEL SECURITIES LLC	21.63	16.70	17.98	17.98	42.59	69,357.16	12.0567	89,503.46	11.8146	58,293.68	18.0193	65,077.78	15.8303
Virtu Americas, LLC	21.10	20.58	24.60	17.79	28.05	85,139.78	11.6032	100,937.29	11.2115	73,334.53	28.1158	43,123.91	13.7152
Two Sigma Securities, LLC	6.42	1.53	1.93	10.68	8.45	5,935.17	9.0097	9,197.41	9.5073	56,522.54	28.8888	11,859.55	16.6404

#### Material Aspects:

##### Jane Street Capital:

APEX receives payment from Jane Street Capital (Jane) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### Instinet, LLC:

Instinet is APEX's technology provider, All Exchange fee/rebates are passed directly back to the client.

##### CITADEL SECURITIES LLC:

APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### Virtu Americas, LLC:

APEX receives payment from Virtu Financial, Inc. (Virtu) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### Two Sigma Securities, LLC:

APEX receives payment from Two Sigma Investments, LP (Two Sigma) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

## January 2022

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### 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	2.89	4.38	35.65	57.08

#### 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)
Dash Financial Technologies	36.21	51.49	27.14	15.31	49.19	29,719.19	21.4680	24,476.78	23.4690	18,015.33	23.8860	234,141.09	51.4825
Wolverine Execution Services, LLC	35.71	26.61	42.91	49.79	26.83	14,274.85	28.3710	85,760.65	34.6027	43,349.65	31.2888	102,243.71	54.2554
Global Execution Brokers LP	17.96	11.22	17.26	22.12	15.76	4,525.05	28.7926	33,109.72	35.5735	25,925.20	33.1516	39,144.02	56.8260
CITADEL SECURITIES LLC	8.16	9.66	11.53	11.45	5.78	4,508.04	24.6099	18,440.61	28.5857	11,159.59	27.9060	14,637.45	52.7324

#### Material Aspects:

##### Dash Financial Technologies:

APEX receives payment from Dash Technologies Inc (Dash) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### Wolverine Execution Services, LLC:

APEX receives payment from Wolverine Execution Services (Wolverine) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### Global Execution Brokers LP:

APEX receives payment from G1 Execution Services, LLC (G1X) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

##### CITADEL SECURITIES LLC:

APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

## February 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	47.37	5.55	37.40	9.68

## 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)
Instinet, LLC	25.29	30.56	23.53	24.20	4.77								
Jane Street Capital	24.46	24.21	26.73	24.97	22.38	6,820.13	15.0088	5,049.77	15.0000	4,243.94	28.5322	3,702.15	20.4797
Virtu Americas, LLC	19.44	18.71	21.56	19.57	21.26	5,368.81	15.0000	3,256.55	15.0000	3,221.46	29.0000	2,644.23	14.7995
CITADEL SECURITIES LLC	18.18	14.98	15.78	17.67	37.15	4,265.97	15.0000	3,348.20	15.0000	2,708.94	29.0000	5,784.42	16.2834
Two Sigma Securities, LLC	6.02	1.34	1.56	12.23	7.50	374.11	15.0003	240.45	15.0009	2,758.61	28.9494	769.77	18.2643

## Material Aspects:

Instinet, LLC:  
Instinet is APEX's technology provider, All Exchange fee/rebates are passed directly back to the client.

Jane Street Capital:  
APEX receives payment from Jane Street Capital, LLC (Jane) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Virtu Americas, LLC:  
APEX receives payment from Virtu Financial, Inc. (Virtu) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

CITADEL SECURITIES LLC:  
APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Two Sigma Securities, LLC:  
APEX receives payment from Two Sigma Investments, LP (Two Sigma) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

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## February 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
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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	33.30	10.75	39.80	16.14

## 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)
Instinet, LLC	24.62	25.52	15.16	35.10	3.22								
Jane Street Capital	22.06	25.86	29.36	19.97	14.50	84,027.38	11.8194	136,181.93	12.2123	74,014.59	25.0174	74,434.43	16.5011
CITADEL SECURITIES LLC	21.69	16.18	17.34	17.60	46.04	51,343.34	11.2746	84,709.47	12.1100	47,193.45	16.6493	51,830.65	15.7457
Virtu Americas, LLC	19.54	20.13	23.67	15.96	24.39	63,998.21	10.9928	100,238.22	11.3985	56,479.88	28.0612	35,354.50	12.2604
Two Sigma Securities, LLC	6.04	1.50	1.89	9.84	8.81	4,746.62	8.0064	7,209.87	9.0095	43,830.84	28.8924	9,008.62	14.6971

## Material Aspects:

Instinet, LLC:  
Instinet is APEX's technology provider, All Exchange fee/rebates are passed directly back to the client.

Jane Street Capital:  
APEX receives payment from Jane Street Capital (Jane) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

CITADEL SECURITIES LLC:  
APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Virtu Americas, LLC:  
APEX receives payment from Virtu Financial, Inc. (Virtu) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Two Sigma Securities, LLC:  
APEX receives payment from Two Sigma Investments, LP (Two Sigma) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

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## February 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	2.97	5.01	37.25	54.77





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	21.86	19.32	20.37	15.92	49.85	104,811.28	10.7335	227,213.72	10.8345	102,254.10	13.8713	179,217.16	14.5007
Jane Street Capital	20.88	25.56	29.38	17.68	13.48	136,688.28	10.8007	300,917.50	11.3127	174,023.70	23.6261	118,545.70	15.2442
Virtu Americas, LLC	15.09	13.95	18.99	13.43	19.96	74,809.90	9.6435	167,885.33	9.7821	130,019.50	28.0399	71,572.08	12.3396
Two Sigma Securities, LLC	5.84	1.43	1.90	8.90	8.87	7,083.26	6.8905	16,748.91	7.9164	101,057.30	28.7572	15,793.41	14.0632

### Material Aspects:

Instinet, LLC:  
Instinet is APEX's technology provider, All Exchange fee/rebates are passed directly back to the client.

CITADEL SECURITIES LLC:  
APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Jane Street Capital:  
APEX receives payment from Jane Street Capital (Jane) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Virtu Americas, LLC:  
APEX receives payment from Virtu Financial, Inc. (Virtu) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

Two Sigma Securities, LLC:  
APEX receives payment from Two Sigma Investments, LP (Two Sigma) for directing order flow. Payment varies based upon a number of factors including but not limited to: whether an order is marketable at the time of order entry, the underlying price of the security and any special handling instructions. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

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## March 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	2.16	4.98	39.64	53.22

#### 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	21.86	19.32	20.37	15.92	49.85	104,811.28	10.7335	227,213.72	10.8345	102,254.10	13.8713	179,217.16	14.5007
Jane Street Capital	20.88	25.56	29.38	17.68	13.48	136,688.28	10.8007	300,917.50	11.3127	174,023.70	23.6261	118,545.70	15.2442
Virtu Americas, LLC	15.09	13.95	18.99	13.43	19.96	74,809.90	9.6435	167,885.33	9.7821	130,019.50	28.0399	71,572.08	12.3396
Two Sigma Securities, LLC	5.84	1.43	1.90	8.90	8.87	7,083.26	6.8905	16,748.91	7.9164	101,057.30	28.7572	15,793.41	14.0632



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)
Wolverine Execution Services, LLC	33.89	24.61	38.93	45.00	25.52	12,996.90	26.6729	124,110.95	34.8956	47,939.25	33.0288	112,439.96	55.0949
Dash Financial Technologies	32.62	46.47	25.16	15.31	45.65	22,924.92	21.7037	34,164.38	24.6479	18,531.56	23.6254	216,391.31	51.7610
Global Execution Brokers LP	15.94	13.63	16.15	18.51	14.10	6,257.46	25.0028	43,479.25	34.8377	20,660.25	33.5633	56,255.73	56.9673
CITADEL SECURITIES LLC	8.33	9.15	11.02	11.14	5.95	4,457.90	24.8531	24,399.60	29.6995	13,419.23	29.3201	17,256.88	53.0687
Matrix Executions, LLC / Simplex Trading, LLC	7.44	4.87	7.29	8.81	6.53	27.60	41.1940	19,978.65	33.0051	14,447.25	29.8417	37,867.40	55.5444

### Material Aspects:

#### Wolverine Execution Services, LLC:

APEX receives payment from Wolverine Execution Services (Wolverine) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### Dash Financial Technologies:

APEX receives payment from Dash Technologies Inc (Dash) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### Global Execution Brokers LP:

APEX receives payment from G1 Execution Services, LLC (G1X) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### CITADEL SECURITIES LLC:

APEX receives payment from Citadel Securities, LLC. (Citadel) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.

#### Matrix Executions, LLC / Simplex Trading, LLC:

APEX receives payment from Matrix Executions, LLC (Matrix) for directing order flow of options contracts. Payment varies based upon a number of factors including but not limited to: Type of the order and the underlying symbol of the security. These payments were not contingent upon volume-based tiered payment schedules, agreements regarding minimum order flow, incentives for exceeding order flow thresholds or disincentives for failing to meet order flow thresholds.