

Charles Schwab - Held NMS Stocks and Options Order Routing Public Report

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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
99.69	60.22	4.18	25.80	9.80

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	29.48	28.84	27.13	27.96	38.48	235,747.63	10.0000	34,806.74	10.0000	190,405.46	32.9997	51,490.28	10.2213
Virtu Americas, LLC	23.23	24.19	23.19	17.44	32.63	221,839.83	9.9889	30,007.89	10.0000	91,715.10	32.9996	35,272.51	8.9362
G1 Execution Services, LLC	20.80	18.87	20.37	27.85	14.25	159,531.76	10.0000	24,018.14	10.0000	203,769.03	32.8014	38,402.50	15.0762
JANEST	14.58	19.98	20.05	4.59	5.40	195,464.60	10.0000	32,226.76	10.0000	37,693.17	31.8685	20,108.19	10.8738
UBS Securities, LLC	7.47	4.63	5.41	14.64	6.92	37,547.32	10.0000	13,578.05	10.0000	98,085.30	31.7445	20,840.14	16.8953

Material Aspects:

CITADEL SECURITIES LLC:

Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Virtu Americas, LLC:

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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
99.40	56.29	6.72	27.48	9.50

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)
CITADEL SECURITIES LLC	28.89	27.43	26.96	27.98	41.50	819,032.33	10.0000	252,446.07	10.0000	616,599.75	25.4701	148,302.80	7.5092
Virtu Americas, LLC	22.75	22.98	23.09	17.51	36.28	726,791.42	9.9677	209,461.40	9.9993	305,885.72	26.6866	96,538.01	6.3992
G1 Execution Services, LLC	21.31	19.94	19.86	27.86	11.57	540,271.66	10.0000	155,336.70	10.0000	654,830.00	25.6657	92,467.76	14.6642
JANEST	14.76	21.11	20.35	4.57	2.67	706,067.50	10.0000	230,613.41	10.0000	126,518.18	24.8989	26,994.50	11.0409
UBS Securities, LLC	7.73	4.92	5.22	14.56	6.43	135,226.17	9.9998	83,859.59	10.0000	333,377.14	26.5907	66,498.48	15.7964

Material Aspects:

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Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

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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
100.00	10.82	5.29	46.00	37.89

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 Marketable Limit 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	32.65	33.62	33.96	33.42	31.26	1,329,856.37	49.7764	1,392,102.01	52.5877	1,186,453.28	44.5836	66,759.99	2.6424
Wolverine Execution Services, LLC	25.39	24.00	24.34	25.40	25.91	1,171,254.02	56.6445	990,228.64	60.6828	1,470,841.93	59.8113	1,041,674.37	48.7113
Global Execution Brokers LP	24.09	27.10	27.66	25.75	20.73	1,307,578.64	54.8558	1,001,479.65	53.5922	1,431,472.26	60.8064	688,825.70	49.1424
Dash/IMC Financial Markets	17.87	15.27	14.04	15.43	22.10	794,155.55	52.1878	466,469.56	48.6262	891,327.47	53.2768	875,959.78	46.5746

Material Aspects:

CITADEL SECURITIES LLC:
Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Wolverine Execution Services, LLC:
Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Global Execution Brokers LP:
Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Dash/IMC Financial Markets:
Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker. In connection with Dash's handling of Charles Schwab's retail equity option orders, Dash has arrangements with multiple unaffiliated liquidity providers, including IMC, designed to facilitate liquidity provision and price improvement opportunities. Pursuant to these arrangements, Dash routes Charles Schwab's retail equity option orders to exchanges and preferences the liquidity providers consistent with exchange sponsored programs which are described in the fee schedules of the options exchanges. It is noted that these liquidity providers provide Dash with remuneration in connection with Schwab's retail equity options orders, including reciprocal order flow consideration or payment per contract in return for Schwab retail equity options orders that Dash routes or directs.

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
99.58	59.29	4.35	26.50	9.86

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	29.94	28.58	28.18	29.75	39.39	239,706.11	10.0000	35,529.62	10.0000	194,890.69	32.9982	46,724.13	9.7377
Virtu Americas, LLC	23.18	23.45	22.94	18.68	33.79	210,573.40	9.9884	30,064.00	9.9999	96,538.92	32.9923	32,423.93	8.7208
G1 Execution Services, LLC	18.91	19.42	18.76	20.59	11.40	168,609.07	10.0000	22,854.63	10.0000	187,633.96	32.8964	32,024.14	14.8029
JANEST	15.45	20.61	20.55	6.77	5.45	205,222.82	10.0000	32,797.83	10.0000	48,151.00	32.0377	17,698.58	11.0700
UBS Securities, LLC	7.23	4.04	5.13	14.81	6.93	35,190.98	9.9999	11,305.32	10.0000	97,881.13	31.7736	19,201.53	16.8150

Material Aspects:

CITADEL SECURITIES LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Virtu Americas, LLC:
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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
99.39	55.62	6.76	27.98	9.65

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	29.61	27.36	27.69	30.08	42.60	797,165.47	10.0000	238,434.32	10.0000	676,136.04	27.2551	146,502.38	7.3718
Virtu Americas, LLC	22.70	22.10	22.33	18.74	37.87	687,776.03	9.9989	189,051.41	9.9965	331,268.40	26.8990	94,226.58	6.4192
G1 Execution Services, LLC	19.09	20.51	18.08	20.34	7.95	538,410.45	10.0000	136,370.72	10.0000	625,541.57	26.6987	69,129.16	14.4066
JANEST	15.64	21.78	20.89	6.70	2.51	720,516.46	10.0000	224,927.23	10.0000	163,542.00	26.0830	27,290.59	11.1902
UBS Securities, LLC	7.52	4.31	5.01	14.74	6.81	122,118.03	9.9912	68,166.48	10.0000	321,714.01	26.6564	70,224.93	15.7374

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February 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
100.00	12.02	5.64	44.57	37.77

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	33.27	34.11	35.18	34.05	31.80	1,379,090.31	49.8662	1,361,602.98	52.7760	1,213,888.77	45.4137	95,607.67	4.1669
Wolverine Execution Services, LLC	26.04	25.11	25.42	26.29	26.13	1,220,645.30	56.0783	1,013,998.39	61.4572	1,487,567.07	59.1204	1,012,187.86	50.0051
Global Execution Brokers LP	23.70	29.08	28.70	24.86	19.89	1,361,742.04	54.2402	1,048,101.28	53.9200	1,387,228.20	59.5016	593,527.87	48.3857
Dash/IMC Financial Markets	16.98	11.70	10.70	14.80	22.18	631,959.76	53.2298	332,211.85	49.5080	810,758.96	53.0543	890,533.29	47.5853

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March 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
99.59	59.15	4.61	26.87	9.36

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)
CITADEL SECURITIES LLC	30.08	28.92	28.44	29.52	39.79	313,633.70	10.0000	50,980.67	10.0000	264,520.09	32.9878	57,867.92	9.6882
Virtu Americas, LLC	22.77	23.16	22.76	18.25	33.31	270,562.48	9.9827	41,139.99	9.9668	136,071.63	32.7435	37,244.21	8.4303
G1 Execution Services, LLC	18.76	18.22	18.30	22.53	11.58	200,846.44	9.9785	29,085.65	9.9711	254,420.50	32.7811	34,969.73	14.5321
JANEST	15.74	21.11	20.75	6.64	5.46	274,364.99	9.9855	47,130.73	9.9694	68,118.69	31.9020	20,964.81	11.2294
UBS Securities, LLC	7.28	4.40	5.21	14.07	6.98	49,893.26	10.0000	13,027.35	10.0000	131,983.83	31.7594	19,603.16	14.8306

Material Aspects:

CITADEL SECURITIES LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Virtu Americas, LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

G1 Execution Services, LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

JANEST:
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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
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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
99.47	56.33	6.90	27.46	9.30

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	29.72	27.77	28.01	29.86	42.43	954,585.12	10.0000	296,112.99	10.0000	800,380.02	26.6411	166,712.18	7.4956
Virtu Americas, LLC	22.32	21.97	22.24	18.47	35.90	803,098.28	9.9771	232,696.19	9.9548	379,644.81	26.6577	104,773.64	6.4439
G1 Execution Services, LLC	19.07	19.22	18.09	22.20	9.60	597,866.09	9.9888	162,634.77	9.9973	701,022.29	27.1638	77,474.05	13.9715
JANEST	16.01	22.13	21.25	6.52	3.04	878,661.03	9.9971	287,588.48	9.9977	200,483.28	25.5607	31,637.13	11.2597
UBS Securities, LLC	7.45	4.64	5.05	14.05	6.76	153,550.66	9.9997	79,597.43	10.0000	371,564.52	26.5132	60,556.49	14.2116

Material Aspects:

CITADEL SECURITIES LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Virtu Americas, LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

G1 Execution Services, LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

JANEST:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

UBS Securities, LLC:
Schwab receives payment for listed equity order flow routed to market makers. For marketable orders the payment rate is \$0.001 per share or less, for non-marketable orders the rate is \$0.0033 per share or less, and for extended hours orders the rate is \$0.0006 per share or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

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
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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	11.58	5.36	45.54	37.52

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)
CITADEL SECURITIES LLC	34.18	36.24	36.83	34.47	32.81	1,677,015.28	51.2186	1,707,142.21	54.5938	1,491,375.42	47.1226	63,014.22	2.1519
Wolverine Execution Services, LLC	26.39	27.36	27.13	26.85	25.43	1,524,645.43	56.5777	1,187,372.05	61.3779	1,861,417.67	59.0600	1,237,182.57	49.5860
Global Execution Brokers LP	25.17	31.37	31.24	26.89	20.29	1,686,324.02	54.8379	1,280,821.68	56.1556	1,794,514.73	60.0078	723,288.58	48.5500
Dash/IMC Financial Markets	14.27	5.03	4.79	11.80	21.47	299,121.34	53.6946	175,842.62	51.5672	761,646.55	52.4951	1,076,614.40	47.6400

Material Aspects:

CITADEL SECURITIES LLC:

Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Wolverine Execution Services, LLC:

Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Global Execution Brokers LP:

Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker.

Dash/IMC Financial Markets:

Schwab receives payment for multi-listed option order flow routed to market makers. For non-complex marketable orders the payment rate is \$1.49 per contract or less (for classes in the penny interval program the rate is \$0.51 per contract or less). For complex orders the payment rate is \$0.93 per contract or less (for classes in the penny interval program the rate is \$0.43 per contract or less). For non-marketable orders the payment rate is \$0.98 per contract or less. All market makers pay the same rate to Schwab for any given order flow type. Schwab does not negotiate payment as a condition for sending more order flow to a market maker. In connection with Dash's handling of Charles Schwab's retail equity option orders, Dash has arrangements with multiple unaffiliated liquidity providers, including IMC, designed to facilitate liquidity provision and price improvement opportunities. Pursuant to these arrangements, Dash routes Charles Schwab's retail equity option orders to exchanges and preferences the liquidity providers consistent with exchange sponsored programs which are described in the fee schedules of the options exchanges. It is noted that these liquidity providers provide Dash with remuneration in connection with Schwab's retail equity options orders, including reciprocal order flow consideration or payment per contract in return for Schwab retail equity options orders that Dash routes or directs.