

**SIGNATURE SECURITIES - Held NMS Stocks and
Options Order Routing Public Report
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4th Quarter, 2022

October 2022

**S&P 500 Stocks
Summary**

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
493	100.00	478	96.96	1	0.20	11	2.23	3	0.61

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
Citadel Securities LLC(CDRG)	164	27.11	160	34.86	0	0.00	4	8.70	0
VIRTU Americas, LLC(NITE)	131	21.65	126	27.45	1	100.00	1	2.17	3
G1 Execution Services, LLC(ETMM)	101	16.69	101	22.00	0	0.00	0	0.00	0
National Financial Services LLC(XSTM)	95	15.70	0	0.00	0	0.00	0	0.00	95
Jane Street Capital, LLC(JNST)	66	10.91	66	14.38	0	0.00	0	0.00	0
NASDAQ Execution Services, LLC(NSDQ)	17	2.81	0	0.00	0	0.00	17	36.96	0
New York Stock Exchange(NYSE)	15	2.48	0	0.00	0	0.00	15	32.61	0
Cboe EDGX US Equities Exchange(EDGX)	9	1.49	0	0.00	0	0.00	9	19.57	0

Two Sigma Securities, LLC(SOHO)	4	0.66	4	0.87	0	0.00	0	0.00	0
UBS Securities, LLC(UBSS)	2	0.33	2	0.44	0	0.00	0	0.00	0

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Non-S&P 500 Stocks Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
1,410	100.00	1,368	97.02	6	0.43	29	2.06	7	0.50

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
Citadel Securities LLC(CDRG)	517	26.18	507	37.64	2	40.00	5	5.95	3
National Financial Services LLC(XSTM)	516	26.13	0	0.00	0	0.00	0	0.00	516
VIRTU Americas, LLC(NITE)	331	16.76	327	24.28	0	0.00	1	1.19	3
G1 Execution Services, LLC(ETMM)	318	16.10	312	23.16	3	60.00	3	3.57	0
Jane Street Capital, LLC(JNST)	182	9.22	178	13.21	0	0.00	4	4.76	0
New York Stock Exchange(NYSE)	39	1.97	0	0.00	0	0.00	39	46.43	0
Instinet	16	0.81	0	0.00	0	0.00	0	0.00	16
BlockCross(BLKX)	16	0.81	0	0.00	0	0.00	0	0.00	16
Two Sigma Securities, LLC(SOHO)	12	0.61	11	0.82	0	0.00	0	0.00	1
UBS Securities, LLC(UBSS)	12	0.61	12	0.89	0	0.00	0	0.00	0

NASDAQ Execution Services, LLC(NSDQ)	11	0.56	0	0.00	0	0.00	11	13.10	0
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October 2022

Option Contracts Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
80	100.00	43	53.75	2	2.50	34	42.50	1	1.25

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
Citadel Securities LLC(CDRG)	39	41.94	19	44.19	2	100.00	17	36.17	1
Wolverine Execution Services LLC(WEXX)	18	19.35	3	6.98	0	0.00	15	31.91	0
Dash Financial Technologies LLC(DASH)	17	18.28	5	11.63	0	0.00	12	25.53	0
Susquehanna Capital Group(SUSQ)	13	13.98	13	30.23	0	0.00	0	0.00	0
Morgan Stanley & Company LLC(MSCO)	6	6.45	3	6.98	0	0.00	3	6.38	0

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S&P 500 Stocks Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders	
380	100.00	359	94.47	0	0.00		11	2.89	10	2.63

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders	
Citadel Securities LLC(CDRG)	137	26.92	133	38.22	0	0.00	0.00	1	2.22	3
VIRTU Americas, LLC(NITE)	104	20.43	98	28.16	0	0.00	0.00	0	0.00	6
National Financial Services LLC(XSTM)	98	19.25	0	0.00	0	0.00	0.00	0	0.00	98
G1 Execution Services, LLC(ETMM)	68	13.36	67	19.25	0	0.00	0.00	1	2.22	0
Jane Street Capital, LLC(JNST)	43	8.45	43	12.36	0	0.00	0.00	0	0.00	0
NASDAQ Execution Services, LLC(NSDQ)	32	6.29	0	0.00	0	0.00	0.00	32	71.11	0
Instinet BlockCross(BLKX)	8	1.57	0	0.00	0	0.00	0.00	0	0.00	8
Cboe EDGX US Equities Exchange(EDGX)	6	1.18	0	0.00	0	0.00	0.00	6	13.33	0
Two Sigma Securities, LLC(SOHO)	4	0.79	4	1.15	0	0.00	0.00	0	0.00	0
Members Exchange(MEMX)	3	0.59	0	0.00	0	0.00	0.00	3	6.67	0

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Non-S&P 500 Stocks Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
1,067	100.00	1,026	96.16	3	0.28	24	2.25	14	1.31

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
National Financial Services LLC(XSTM)	413	27.31	0	0.00	0	0.00	0	0.00	413
Citadel Securities LLC(CDRG)	366	24.21	356	35.32	1	25.00	5	7.81	4
VIRTU Americas, LLC(NITE)	299	19.78	290	28.77	1	25.00	0	0.00	8
G1 Execution Services, LLC(ETMM)	221	14.62	218	21.63	0	0.00	3	4.69	0
Jane Street Capital, LLC(JNST)	133	8.80	130	12.90	1	25.00	2	3.13	0
NASDAQ Execution Services, LLC(NSDQ)	26	1.72	0	0.00	0	0.00	26	40.63	0
Cboe EDGX US Equities Exchange(EDGX)	13	0.86	0	0.00	0	0.00	13	20.31	0
New York Stock Exchange(NYSE)	11	0.73	0	0.00	1	25.00	10	15.63	0
Instinet BlockCross(BLKX)	9	0.60	0	0.00	0	0.00	0	0.00	9
UBS Securities, LLC(UBSS)	7	0.46	5	0.50	0	0.00	0	0.00	2

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Option Contracts Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
42	100.00	29	69.05	0	0.00	13	30.95	0	0.00

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
Citadel Securities LLC(CDRG)	21	50.00	14	48.28	0	0.00	7	53.85	0
Susquehanna Capital Group(SUSQ)	12	28.57	12	41.38	0	0.00	0	0.00	0
Wolverine Execution Services LLC(WEXX)	8	19.05	2	6.90	0	0.00	6	46.15	0
Dash Financial Technologies LLC(DASH)	1	2.38	1	3.45	0	0.00	0	0.00	0

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S&P 500 Stocks Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
546	100.00	507	92.86	2	0.37	29	5.31	8	1.47

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
National Financial Services LLC(XSTM)	239	25.59	0	0.00	0	0.00	0	0.00	239

Citadel Securities LLC(CDRG)	172	18.42	163	33.47	1	50.00	6	3.92	2
VIRTU Americas, LLC(NITE)	157	16.81	148	30.39	1	50.00	5	3.27	3
G1 Execution Services, LLC(ETMM)	122	13.06	117	24.02	0	0.00	5	3.27	0
NASDAQ Execution Services, LLC(NSDQ)	64	6.85	0	0.00	0	0.00	64	41.83	0
New York Stock Exchange(NYSE)	57	6.10	0	0.00	0	0.00	57	37.25	0
Jane Street Capital, LLC(JNST)	56	6.00	54	11.09	0	0.00	2	1.31	0
Instinet									
BlockCross(BLKX)	45	4.82	0	0.00	0	0.00	0	0.00	45
Cboe EDGX US Equities Exchange(EDGX)	11	1.18	0	0.00	0	0.00	11	7.19	0
UBS Securities, LLC(UBSS)	4	0.43	2	0.41	0	0.00	0	0.00	2

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Non-S&P 500 Stocks Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
1,523	100.00	1,445	94.88	26	1.71	45	2.95	7	0.46

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
National Financial Services LLC(XSTM)	561	26.09	0	0.00	0	0.00	0	0.00	561
Citadel Securities LLC(CDRG)	534	24.84	517	36.20	10	38.46	3	3.16	4

VIRTU Americas, LLC(NITE)	381	17.72	373	26.12	6	23.08	2	2.11	0
G1 Execution Services, LLC(ETMM)	377	17.53	367	25.70	10	38.46	0	0.00	0
Jane Street Capital, LLC(JNST)	144	6.70	144	10.08	0	0.00	0	0.00	0
Instinet									
BlockCross(BLKX)	33	1.53	0	0.00	0	0.00	0	0.00	33
Cboe EDGX US Equities Exchange(EDGX)	28	1.30	0	0.00	0	0.00	28	29.47	0
NYSE American(AMEX)	19	0.88	0	0.00	0	0.00	19	20.00	0
NYSE Arca(ARCA)	18	0.84	0	0.00	0	0.00	18	18.95	0
UBS Securities, LLC(UBSS)	11	0.51	8	0.56	0	0.00	0	0.00	3

December 2022

Option Contracts Summary

Total Non-Directed Orders	Non-Directed Orders as % of All Orders	Total Market Orders	Market Orders as % of Non-Directed Orders	Total Marketable Limit Orders	Marketable Limit Orders as % of Non-Directed Orders	Total Non-Marketable Limit Orders	Non-Marketable Limit Orders as % of Non-Directed Orders	Total Other Orders	Other Orders as % of Non-Directed Orders
54	100.00	30	55.56	2	3.70	22	40.74	0	0.00

Venues

Venue - Non-directed Order Flow	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)	Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders	Non-Marketable Limit Orders(%)	Other Orders
Citadel Securities LLC(CDRG)	21	38.89	11	36.67	2	100.00	8	36.36	0
Wolverine Execution Services LLC(WEXX)	12	22.22	1	3.33	0	0.00	11	50.00	0
Susquehanna Capital Group(SUSQ)	10	18.52	10	33.33	0	0.00	0	0.00	0

Dash Financial Technologies LLC(DASH)	6	11.11	3	10.00	0	0.00	3	13.64	0
Morgan Stanley & Company LLC(MSCO)	5	9.26	5	16.67	0	0.00	0	0.00	0

0.00 0 0 0 0 0 0 0 0 0

	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)
Other Orders(%)	100.00	0	0	0	0	0	0	0
	0.00	0	0	0	0	0	0	0
	0.00	0	0	0	0	0	0	0
	0.00	0	0	0	0	0	0	0
	0.00	0	0	0	0	0	0	0

0.68	0	0	0	0	0	0	0	0	0
1.03	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
15.41	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
0.68	0	0	0	0	0	0	0	0	0

	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)
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93.34	0	0	0	0	0	0	0	0
0.67	0	0	0	0	0	0	0	0

0.00 0 0 0 0 0 0 0 0

0.00 0 0 0 0 0 0 0 0