

State Street Global Markets, LLC(SSBS)	0.25	0.09	23.53	0.00	0.00	0	0	0	0	0	0	0	0
Cboe BZX U.S. Equities Exchange(ZBAT)	0.13	0.00	0.00	4.62	0.00	0	0	0	0	0	0	0	0

Material Aspects:

January 2020

Option Contracts

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	0.00	0.00	100.00	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)
Citadel Securities LLC(CDRG)	71.43	0.00	0.00	71.43	0.00	0	0	0	0	0	0	0	0
DASH FINANCIAL TECHNOLOGIES LLC(DASH)	28.57	0.00	0.00	28.57	0.00	0	0	0	0	0	0	0	0

Material Aspects:

February 2020

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	93.38	1.35	4.32	0.95

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(CDRG)	57.79	60.49	30.00	18.60	71.43	0	0	0	0	0	0	0	0
VIRTU Americas LLC(NITE)	28.23	28.08	60.00	23.26	28.57	0	0	0	0	0	0	0	0
G1 Execution Services, LLC(ETMM)	7.59	7.96	10.00	2.33	0.00	0	0	0	0	0	0	0	0
UBS Securities, LLC(UBSS)	1.86	2.03	0.00	0.00	0.00	0	0	0	0	0	0	0	0
NASDAQ Execution Services, LLC(NSDQ)	1.46	0.00	0.00	25.58	0.00	0	0	0	0	0	0	0	0
New York Stock Exchange(NYSE)	1.33	0.00	0.00	23.26	0.00	0	0	0	0	0	0	0	0
JANE STREET CAPITAL, LLC(INST)	0.93	1.01	0.00	0.00	0.00	0	0	0	0	0	0	0	0
Cboe EDGX U.S. Equities Exchange(EDGX)	0.40	0.00	0.00	6.98	0.00	0	0	0	0	0	0	0	0
Two Sigma Securities, LLC(SOHO)	0.40	0.43	0.00	0.00	0.00	0	0	0	0	0	0	0	0

Material Aspects:

February 2020

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	94.92	0.80	3.95	0.33

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(CDRG)	53.97	56.70	41.18	10.57	57.14	0	0	0	0	0	0	0	0
VIRTU Americas LLC(NITE)	29.94	31.22	52.94	4.88	42.86	0	0	0	0	0	0	0	0
G1 Execution Services, LLC(ETMM)	7.38	7.92	0.00	0.00	0.00	0	0	0	0	0	0	0	0
UBS Securities, LLC(UBSS)	2.03	2.08	5.88	0.81	0.00	0	0	0	0	0	0	0	0
Cboe EDGX U.S. Equities Exchange(EDGX)	1.80	0.00	0.00	31.71	0.00	0	0	0	0	0	0	0	0
NASDAQ Execution Services, LLC(NSDQ)	1.66	0.00	0.00	29.27	0.00	0	0	0	0	0	0	0	0
Two Sigma Securities, LLC(SOHO)	1.06	1.14	0.00	0.00	0.00	0	0	0	0	0	0	0	0
NYSE Arca(ARCA)	0.88	0.00	0.00	15.45	0.00	0	0	0	0	0	0	0	0
JANE STREET CAPITAL, LLC(JNST)	0.69	0.74	0.00	0.00	0.00	0	0	0	0	0	0	0	0
New York Stock Exchange(NYSE)	0.28	0.00	0.00	4.88	0.00	0	0	0	0	0	0	0	0

Material Aspects:

February 2020

Option Contracts

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	0.00	25.00	75.00	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)
Citadel Securities LLC(CDRG)	37.50	0.00	100.00	16.67	0.00	0	0	0	0	0	0	0	0
MORGAN STANLEY & CO. LLC(MSCO)	25.00	0.00	0.00	33.33	0.00	0	0	0	0	0	0	0	0
Wolverine Execution Services LLC(WEXX)	25.00	0.00	0.00	33.33	0.00	0	0	0	0	0	0	0	0
DASH FINANCIAL TECHNOLOGIES LLC(DASH)	12.50	0.00	0.00	16.67	0.00	0	0	0	0	0	0	0	0

Material Aspects:

March 2020

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	88.13	1.26	9.17	1.44
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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(CDRG)	54.49	58.73	65.22	24.53	54.17	0	0	0	0	0	0	0	0
VIRTU Americas LLC(NITE)	18.67	20.01	13.04	8.49	33.33	0	0	0	0	0	0	0	0
G1 Execution Services, LLC(ETMM)	8.51	9.28	0.00	5.19	0.00	0	0	0	0	0	0	0	0
UBS Securities, LLC(UBSS)	5.70	6.44	4.35	0.94	4.17	0	0	0	0	0	0	0	0
NASDAQ Execution Services, LLC(NSDQ)	4.82	0.00	0.00	38.68	0.00	0	0	0	0	0	0	0	0
Two Sigma Securities, LLC(SOHO)	3.35	3.74	0.00	0.47	8.33	0	0	0	0	0	0	0	0
New York Stock Exchange(NYSE)	1.76	0.00	13.04	12.74	0.00	0	0	0	0	0	0	0	0
JANE STREET CAPITAL, LLC(JNST)	1.47	1.66	4.35	0.00	0.00	0	0	0	0	0	0	0	0
Cboe EDGX U.S. Equities Exchange(EDGX)	0.94	0.00	0.00	7.55	0.00	0	0	0	0	0	0	0	0
Cboe BZX U.S. Equities Exchange(ZBAT)	0.18	0.00	0.00	1.42	0.00	0	0	0	0	0	0	0	0

Material Aspects:

March 2020

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	90.73	0.63	8.25	0.40

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(CDRG)	53.55	58.95	50.00	15.52	64.29	0	0	0	0	0	0	0	0
VIRTU Americas LLC(NITE)	18.07	18.56	7.69	14.86	28.57	0	0	0	0	0	0	0	0
G1 Execution Services, LLC(ETMM)	9.42	10.50	19.23	1.55	0.00	0	0	0	0	0	0	0	0
UBS Securities, LLC(UBSS)	5.31	5.79	3.85	2.00	7.14	0	0	0	0	0	0	0	0
NASDAQ Execution Services, LLC(NSDQ)	3.12	0.00	0.00	25.28	0.00	0	0	0	0	0	0	0	0
Two Sigma Securities, LLC(SOHO)	2.74	3.10	7.69	0.00	0.00	0	0	0	0	0	0	0	0
JANE STREET CAPITAL, LLC(JNST)	2.63	3.00	0.00	0.22	0.00	0	0	0	0	0	0	0	0
NYSE Arca(ARCA)	2.16	0.00	0.00	17.52	0.00	0	0	0	0	0	0	0	0
Cboe EDGX U.S. Equities Exchange(EDGX)	2.00	0.00	0.00	16.19	0.00	0	0	0	0	0	0	0	0
New York Stock Exchange(NYSE)	0.68	0.00	7.69	5.10	0.00	0	0	0	0	0	0	0	0

Material Aspects:

March 2020

Option Contracts

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	3.45	10.34	86.21	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)
Citadel Securities LLC(CDRG)	57.14	100.00	33.33	58.33	0.00	0	0	0	0	0	0	0	0
DASH FINANCIAL TECHNOLOGIES LLC(DASH)	10.71	0.00	0.00	12.50	0.00	0	0	0	0	0	0	0	0
MORGAN STANLEY & CO. LLC(MSCO)	10.71	0.00	0.00	12.50	0.00	0	0	0	0	0	0	0	0
Citigroup Global Markets, Inc.(CITI)	7.14	0.00	0.00	8.33	0.00	0	0	0	0	0	0	0	0
Susquehanna Capital Group(SUSQ)	7.14	0.00	66.67	0.00	0.00	0	0	0	0	0	0	0	0
Wolverine Execution Services LLC(WEXX)	7.14	0.00	0.00	8.33	0.00	0	0	0	0	0	0	0	0

Material Aspects: