

# HSBC Securities - Held NMS Stocks and Options Order Routing Public Report

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1st Quarter, 2020

January 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	1.54	21.56	60.91	15.99

### 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)
Primex Prime Electronic Execution, Inc.	15.98	0.64	0.00	0.00	99.83	-36.19	-0.1900					-226,349.15	-0.1900
NASDAQ-ALL MARKETS	14.98	27.90	18.05	17.49	0.07	-291.20	-0.1503	-1,496.85	-0.1476	848.56	0.1679	-6.45	-0.1500
BATS Y Exchange	13.08	1.91	2.96	20.38	0.00	-5.56	-0.1607	-1.86	-0.0017	-2,189.57	-0.1886		
NEW YORK STOCK EXCHANGE, INC.	9.88	43.52	5.25	13.23	0.09	-946.63	-0.1900	-1,014.26	-0.1900	-636.48	-0.1900	-22.59	-0.1900
Citadel Securities	8.97	0.00	27.15	5.13	0.00			0.00	0.0000	0.00	0.0000		
CBOE EDGA US Equities Exchange	7.40	0.68	5.04	10.35	0.00	0.11	0.0073	63.79	0.0353	-2,757.00	-0.2968		
Bats Trading Inc.	4.31	0.51	5.65	5.06	0.00	-6.75	-0.3006	-1,144.37	-0.2482	373.77	0.1537		
Nasdaq OMX BX	4.23	0.30	0.94	6.61	0.00	-0.15	-0.0375	-19.35	-0.0517	-1,417.28	-0.2978		
UBS Securities, LLC ATS	4.06	0.00	10.31	3.01	0.00			-473.35	-0.1000	-47.17	-0.1000		
Instinet, LLC	3.62	23.58	3.07	4.26	0.00	-66.22	-0.1000	-279.71	-0.1000	-579.67	-0.1000	-0.10	-0.1000

### Material Aspects:

Primex Prime Electronic Execution, Inc.:  
No material aspects related to this relationship

NASDAQ-ALL MARKETS:  
No material aspects related to this relationship

BATS Y Exchange:  
No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:  
No material aspects related to this relationship

Citadel Securities:  
No material aspects related to this relationship

CBOE EDGA US Equities Exchange:  
No material aspects related to this relationship

Bats Trading Inc.:  
No material aspects related to this relationship

Nasdaq OMX BX:  
No material aspects related to this relationship

UBS Securities, LLC ATS:  
No material aspects related to this relationship

Instinet, LLC:  
No material aspects related to this relationship

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## January 2020

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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
100.00	0.67	30.03	67.29	2.01

#### 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)
BATS Y Exchange	15.20	3.68	5.58	20.07	0.00	-25.78	-0.1813	-1,647.38	-0.1016	-14,898.77	-0.1889		
NASDAQ-ALL MARKETS	14.86	19.08	22.46	11.88	0.03	-441.91	-0.1520	-16,710.45	-0.2072	3,392.35	0.1302	-0.33	-0.1450
CBOE EDGA US Equities Exchange	12.76	2.00	6.25	16.15	0.00	-3.85	-0.0556	-787.69	-0.0783	-20,675.35	-0.2967		
Citadel Securities	8.05	0.00	16.72	4.50	0.00			0.00	0.0000	0.00	0.0000		
Nasdaq OMX BX	7.87	0.86	1.26	11.13	0.00	-1.51	-0.0832	-149.35	-0.0425	-9,922.38	-0.2719		
NYSE Arca, Inc.	6.21	13.24	6.16	6.35	0.00	-356.73	-0.1533	-9,190.30	-0.2559	1,100.09	0.1032		
NEW YORK STOCK EXCHANGE, INC.	5.87	12.30	3.34	7.12	0.04	-987.52	-0.1900	-10,301.29	-0.1900	-2,145.73	-0.1900	-5.50	-0.1900

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)
UBS Securities, LLC ATS	5.19	0.04	9.13	3.63	0.00			-2,345.23	-0.1000	-141.40	-0.1000		
Credit Suisse AES Crossfinder	4.34	0.08	6.71	3.45	0.00								
Bats Trading Inc.	4.18	2.66	5.57	3.70	0.00	-15.83	-0.1236	-3,417.45	-0.1286	1,630.22	0.2239		

Material Aspects:

BATS Y Exchange:  
No material aspects related to this relationship

NASDAQ-ALL MARKETS:  
No material aspects related to this relationship

CBOE EDGA US Equities Exchange:  
No material aspects related to this relationship

Citadel Securities:  
No material aspects related to this relationship

Nasdaq OMX BX:  
No material aspects related to this relationship

NYSE Arca, Inc.:  
No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:  
No material aspects related to this relationship

UBS Securities, LLC ATS:  
No material aspects related to this relationship

Credit Suisse AES Crossfinder:  
No material aspects related to this relationship

Bats Trading Inc.:  
No material aspects related to this relationship

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January 2020

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	2.56	34.58	62.86	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)
Interactive Brokers LLC	100.00	100.00	100.00	100.00	0.00	2,278.67	0.7188	2,582.87	0.1249	8,737.45	0.3213		

#### Material Aspects:

Interactive Brokers LLC:

No material aspects related to this relationship

## 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	1.05	31.83	59.30	7.82

#### 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)
NASDAQ-ALL MARKETS	23.85	41.32	20.23	28.61	0.05	-593.35	-0.1579	-2,593.41	-0.0850	4,722.92	0.2128	-39.95	-0.1497
NEW YORK STOCK EXCHANGE, INC.	10.70	40.47	7.59	13.24	0.10	-974.77	-0.1900	-2,782.33	-0.1900	-1,598.70	-0.1900	-158.33	-0.1900
Citadel Securities	9.65	0.00	18.39	6.39	0.00			0.00	0.0000	0.00	0.0000		
Bats Trading Inc.	9.19	4.00	12.92	8.50	0.00	-56.96	-0.3004	-1,887.47	-0.1087	1,924.83	0.2197		
Primex Prime Electronic Execution, Inc.	7.81	0.06	0.00	0.00	99.85							-266,483.35	-0.1900
UBS Securities, LLC ATS	5.22	0.00	7.89	4.56	0.00			-787.70	-0.1000	-115.62	-0.1000		
NYSE Arca, Inc.	4.64	1.99	2.30	6.55	0.00	-18.60	-0.2932	-1,215.20	-0.2551	1,196.56	0.1821		
Credit Suisse AES Crossfinder	4.34	0.00	5.48	4.38	0.00			-118.92	-0.1000	-9.06	-0.1000		
Cboe EDGX Exchange, Inc.	4.18	2.02	3.30	5.24	0.00	-10.65	-0.2227	-542.31	-0.1260	690.69	0.1455		
Nasdaq OMX BX	3.64	0.56	1.71	5.21	0.00	-3.56	-0.2507	-324.95	-0.1993	-789.91	-0.2975		

Material Aspects:

NASDAQ-ALL MARKETS:  
No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:  
No material aspects related to this relationship

Citadel Securities:  
No material aspects related to this relationship

Bats Trading Inc.:  
No material aspects related to this relationship

Primex Prime Electronic Execution, Inc.:  
No material aspects related to this relationship

UBS Securities, LLC ATS:  
No material aspects related to this relationship

NYSE Arca, Inc.:  
No material aspects related to this relationship

Credit Suisse AES Crossfinder:  
No material aspects related to this relationship

Cboe EDGX Exchange, Inc.:  
No material aspects related to this relationship

Nasdaq OMX BX:  
No material aspects related to this relationship

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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	0.41	29.05	68.95	1.59

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)
NASDAQ-ALL MARKETS	17.52	30.04	18.82	17.30	0.04	-674.05	-0.1432	-18,840.81	-0.1765	16,557.04	0.1824	-20.80	-0.1500
NYSE Arca, Inc.	8.73	21.35	5.95	10.02	0.00	-573.01	-0.1714	-11,144.29	-0.2289	6,356.32	0.1445		
Citadel Securities	8.05	0.00	14.41	5.61	0.00			0.00	0.0000	0.00	0.0000		
Bats Trading Inc.	7.49	6.91	10.36	6.46	0.00	-12.38	-0.0234	-5,725.13	-0.1191	5,398.04	0.2170		
NEW YORK STOCK EXCHANGE, INC.	6.90	15.90	5.46	7.60	0.08	-1,170.03	-0.1900	-11,667.84	-0.1900	-9,497.47	-0.1900	-79.15	-0.1900

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)
Nasdaq OMX BX	6.84	0.64	2.46	8.88	0.00	-3.09	-0.2158	-1,326.05	-0.1724	-5,720.33	-0.2824		
Cboe EDGX Exchange, Inc.	6.74	5.39	6.58	6.97	0.00	-30.97	-0.1214	-5,430.90	-0.1439	5,297.87	0.1348		
CBOE EDGA US Equities Exchange	5.79	1.17	5.17	6.22	0.00	-3.20	-0.0905	-1,907.83	-0.1198	-14,146.96	-0.2979		
UBS Securities, LLC ATS	5.54	0.00	7.35	4.94	0.00			-3,282.67	-0.1000	-204.44	-0.1000		
Credit Suisse AES Crossfinder	4.92	0.00	5.46	4.83	0.00			-727.56	-0.1000	-39.84	-0.1000		

Material Aspects:

NASDAQ-ALL MARKETS:  
No material aspects related to this relationship

NYSE Arca, Inc.:  
No material aspects related to this relationship

Citadel Securities:  
No material aspects related to this relationship

Bats Trading Inc.:  
No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:  
No material aspects related to this relationship

Nasdaq OMX BX:  
No material aspects related to this relationship

Cboe EDGX Exchange, Inc.:  
No material aspects related to this relationship

CBOE EDGA US Equities Exchange:  
No material aspects related to this relationship

UBS Securities, LLC ATS:  
No material aspects related to this relationship

Credit Suisse AES Crossfinder:  
No material aspects related to this relationship

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February 2020

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	5.97	42.65	51.38	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)
Interactive Brokers LLC	100.00	100.00	100.00	100.00	0.00	5,385.13	0.6663	3,243.54	0.1290	18,001.46	0.4321		

## Material Aspects:

Interactive Brokers LLC:

No material aspects related to this relationship

## 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	1.04	22.23	71.09	5.64

## 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)
NASDAQ-ALL MARKETS	28.46	35.90	24.36	31.33	7.05	-577.09	-0.1468	-2,536.56	-0.0909	5,772.60	0.2054	-8.70	-0.1499
NEW YORK STOCK EXCHANGE, INC.	15.87	41.31	8.39	17.76	16.98	-1,379.89	-0.1900	-2,359.69	-0.1900	-2,968.80	-0.1900	-28.69	-0.1900
Bats Trading Inc.	9.67	3.91	11.06	10.09	0.05	-36.21	-0.2984	-2,123.00	-0.1654	2,875.82	0.2207		
Citadel Securities	8.33	0.00	21.95	4.85	0.00			0.00	0.0000	0.00	0.0000		
NYSE Arca, Inc.	6.51	3.26	4.06	7.84	0.00	-23.82	-0.2979	-1,218.92	-0.2435	1,494.32	0.1758		
Cboe EDGX Exchange, Inc.	4.91	1.68	3.07	5.92	0.00	-10.67	-0.2194	-533.03	-0.1686	806.39	0.1521		
UBS Securities, LLC ATS	4.63	0.00	10.21	3.32	0.00			-1,024.15	-0.1000	-91.74	-0.1000		
Primex Prime Electronic Execution, Inc.	4.12	0.85	0.00	0.00	72.78	-21.19	-0.1900					-168,168.18	-0.1900
Credit Suisse AES Crossfinder	3.54	0.00	6.26	3.02	0.00			-293.30	-0.1000	-34.62	-0.1000		
CBOE EDGA US Equities	3.38	0.53	2.04	4.11	0.00	0.65	0.0568	313.77	0.1330	-2,650.16	-0.2920		

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)
Exchange													

Material Aspects:

NASDAQ-ALL MARKETS:  
No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:  
No material aspects related to this relationship

Bats Trading Inc.:  
No material aspects related to this relationship

Citadel Securities:  
No material aspects related to this relationship

NYSE Arca, Inc.:  
No material aspects related to this relationship

Cboe EDGX Exchange, Inc.:  
No material aspects related to this relationship

UBS Securities, LLC ATS:  
No material aspects related to this relationship

Primex Prime Electronic Execution, Inc.:  
No material aspects related to this relationship

Credit Suisse AES Crossfinder:  
No material aspects related to this relationship

CBOE EDGA US Equities Exchange:  
No material aspects related to this relationship

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	0.51	23.62	74.94	0.93

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)
NASDAQ-ALL MARKETS	20.47	30.20	20.64	20.54	5.19	-844.47	-0.1399	-18,309.23	-0.1858	18,159.76	0.1774	1.89	0.0373
NYSE Arca, Inc.	12.33	25.20	9.70	13.21	1.60	-862.44	-0.1734	-14,890.76	-0.2037	8,895.30	0.1504	0.10	0.1000
Bats Trading	8.32	6.57	7.33	8.73	0.95	-32.11	-0.0867	-3,606.00	-0.1060	6,720.84	0.2258	11.05	0.1117



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)
Inc.													
Cboe EDGX Exchange, Inc.	8.02	5.24	5.63	8.89	0.63	-20.70	-0.0892	-3,867.90	-0.1112	6,295.59	0.1564	2.43	0.0618
Citadel Securities	7.14	0.00	15.66	4.59	0.42			0.00	0.0000	0.00	0.0000	0.00	0.0000
NEW YORK STOCK EXCHANGE, INC.	6.93	15.36	4.55	7.65	5.23	-948.33	-0.1900	-9,312.57	-0.1900	-9,228.52	-0.1900	-24.22	-0.1900
CBOE EDGA US Equities Exchange	5.48	0.71	3.43	6.22	0.04	-2.48	-0.1045	-1,192.43	-0.1009	-11,565.10	-0.2978	1.68	0.2400
UBS Securities, LLC ATS	5.19	0.00	8.80	4.14	0.23			-3,376.73	-0.1000	-377.86	-0.1000		
Nasdaq OMX BX	4.91	0.44	5.81	4.71	0.00	-1.60	-0.1048	-3,934.25	-0.2354	-3,379.95	-0.2501		
Credit Suisse AES Crossfinder	4.49	0.00	6.42	3.96	0.23			-1,096.04	-0.1000	-139.18	-0.1000	-0.30	-0.1000

#### Material Aspects:

NASDAQ-ALL MARKETS:

No material aspects related to this relationship

NYSE Arca, Inc.:

No material aspects related to this relationship

Bats Trading Inc.:

No material aspects related to this relationship

Cboe EDGX Exchange, Inc.:

No material aspects related to this relationship

Citadel Securities:

No material aspects related to this relationship

NEW YORK STOCK EXCHANGE, INC.:

No material aspects related to this relationship

CBOE EDGA US Equities Exchange:

No material aspects related to this relationship

UBS Securities, LLC ATS:

No material aspects related to this relationship

Nasdaq OMX BX:

No material aspects related to this relationship

Credit Suisse AES Crossfinder:

No material aspects related to this relationship

March 2020

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	4.70	18.12	77.18	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)
Interactive Brokers LLC	100.00	100.00	100.00	100.00	0.00	1,918.34	0.2337	3,278.83	0.1731	25,624.48	0.3255		

Material Aspects:

Interactive Brokers LLC:

No material aspects related to this relationship