

Vanguard Brokerage Services - Held NMS Stocks and Options Order Routing Public Report

Generated on Thu Jul 29 2021 16:30:13 GMT-0400 (Eastern Daylight Time)

2nd Quarter, 2021

April 2021

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	52.75	5.34	36.56	5.35

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 (CDRG)	42.78	44.17	43.39	41.81	35.17	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	24.28	20.47	23.26	28.21	36.09	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	24.22	24.46	24.38	23.63	25.75	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	8.71	10.91	8.98	6.35	3.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):

https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2021Q2/SP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Virtu Americas, LLC (NITE):

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April 2021

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	57.93	5.60	32.42	4.05

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 (CDRG)	37.50	37.08	38.15	38.43	35.24	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	32.19	29.06	34.86	36.42	39.54	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	16.76	20.85	16.25	10.91	5.78	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	13.54	13.01	10.74	14.24	19.44	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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April 2021

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	0.07	16.17	77.53	6.23

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)
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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 (CDRG)	61.38	66.51	63.14	60.67	65.49	237	14.8965	68,697	14.9849	63,812	14.9714	5,512	14.2485
Susquehanna International Group, LLP (SUSQ)	32.18	28.84	31.27	32.60	29.31	15,491	14.9793	11,229	14.7216	32,978	14.9158	138	10.2593
Wolverine Execution Svc. (WEXX)	6.45	4.65	5.59	6.73	5.20	14	15.0000	4,102	14.9868	6,478	14.9951	819	14.7304

Material Aspects:

Citadel Securities (CDRG):

https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2021Q2/O/CDRG/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

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May 2021

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	52.46	5.47	36.99	5.07

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 (CDRG)	42.53	43.69	43.06	41.76	35.41	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	24.45	20.55	23.62	28.39	36.99	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	24.19	24.61	24.16	23.53	24.71	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	8.83	11.15	9.15	6.32	2.89	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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May 2021

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	56.71	6.01	33.27	4.01

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(cent's per hundred shares)	Net Payment Paid/ Received for Marketable Limit Orders(USD)	Net Payment Paid/ Received for Marketable Limit Orders(cent's per hundred shares)	Net Payment Paid/ Received for Non- Marketable Limit Orders(USD)	Net Payment Paid/ Received for Non- Marketable Limit Orders(cent's per hundred shares)	Net Payment Paid/Received for Other Orders(USD)	Net Payment Paid/ Received for Other Orders(cent's per hundred shares)
Citadel Securities (CDRG)	34.85	33.75	35.46	36.71	33.96	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	31.22	27.85	33.67	35.52	39.36	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	21.33	26.98	20.58	13.50	7.69	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	12.60	11.42	10.29	14.27	18.99	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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May 2021

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	0.09	17.59	76.05	6.27

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 (CDRG)	61.32	67.97	63.34	60.48	65.67	187	14.9759	75,175	14.9892	61,963	14.9777	4,232	14.1922
Susquehanna International Group, LLP (SUSQ)	31.97	24.22	30.88	32.50	28.69	32	15.0000	17,340	14.8547	31,852	14.8373	12,572	14.9233
Wolverine Execution Svc. (WEXX)	6.71	7.81	5.78	7.01	5.64	38	15.0000	4,946	14.9968	6,285	14.9914	889	15.0000

Material Aspects:

Citadel Securities (CDRG):

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June 2021

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	52.07	5.52	37.24	5.17

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 (CDRG)	46.65	48.75	47.99	44.90	36.74	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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 (UBSS)	27.94	29.40	28.03	26.22	25.52	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	25.00	21.32	23.57	28.61	37.57	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	0.41	0.54	0.41	0.27	0.17	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):
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June 2021

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	54.70	6.57	33.79	4.94

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 (CDRG)	42.49	42.99	43.84	42.19	37.20	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	40.81	39.90	42.79	41.64	42.64	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	15.51	15.69	11.93	15.32	19.66	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	1.19	1.42	1.43	0.86	0.50	0	0.0000	0	0.0000	0	0.0000	0	0.0000

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June 2021

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	0.08	18.72	75.40	5.80

Venues

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Citadel Securities (CDRG)	61.27	69.53	63.49	60.47	64.44	231	14.8553	91,602	14.9876	74,742	14.9727	3,532	13.7773
Susquehanna International Group, LLP (SUSQ)	28.31	23.05	26.41	28.88	27.08	17.25	15.0000	19,552	14.8864	32,736	14.8731	12,543	14.9560
Wolverine Execution Svc. (WEXX)	10.42	7.42	10.10	10.65	8.48	17	15.0000	10,793	14.9979	11,596	14.9679	1,935	14.7710

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