

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

Generated on Wed Jan 31 2024 14:48:30 GMT-0500 (Eastern Daylight Time)

4th Quarter, 2023

October 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
100.00	53.88	5.37	37.22	3.53

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)	39.30	41.63	40.00	36.72	29.88	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	24.65	27.35	24.40	21.55	16.48	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	17.42	13.75	17.09	21.08	35.23	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	8.84	9.94	8.77	7.56	5.68	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	8.00	5.06	8.02	11.87	11.99	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	1.80	2.27	1.72	1.22	0.74	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Virtu Americas, LLC (NITE):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

October 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
100.00	57.54	6.50	32.93	3.04

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)
Virtu Americas, LLC (NITE)	32.98	33.35	33.29	31.86	37.35	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Citadel Securities (CDRG)	26.13	24.69	27.83	28.28	26.46	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	22.28	24.52	20.92	19.25	15.67	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	8.90	6.39	8.76	12.84	14.05	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	7.26	7.98	6.88	6.25	5.40	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	2.45	3.07	2.32	1.53	1.06	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Virtu Americas, LLC (NITE):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

Citadel Securities (CDRG):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4ddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

October 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	0.04	26.77	68.68	4.51

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)	60.66	65.85	63.45	59.68	58.88	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna International Group, LLP (SUSQ)	23.32	21.95	21.21	24.04	24.74	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Svc. (WEXX)	16.03	12.20	15.33	16.28	16.38	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/CDRG/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Susquehanna International Group, LLP (SUSQ):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/SUSQ/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Wolverine Execution Svc. (WEXX):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/WEXX/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

November 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
100.00	55.76	5.13	34.98	4.13

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)	38.99	41.77	39.33	35.78	28.32	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	24.57	27.13	24.83	21.30	17.33	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	16.72	13.67	16.70	19.91	30.86	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	8.92	9.94	8.71	7.62	6.29	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	7.98	5.06	7.72	11.98	13.86	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	2.82	2.42	2.72	3.41	3.34	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Virtu Americas, LLC (NITE):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

November 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
100.00	59.09	6.29	30.83	3.80

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)
Virtu Americas, LLC (NITE)	30.50	30.97	31.06	29.09	33.74	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Citadel Securities (CDRG)	26.40	25.38	27.91	28.05	26.37	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	21.96	24.12	20.60	18.88	15.71	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	9.01	9.91	8.89	7.66	6.28	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	8.89	6.54	8.63	12.79	14.17	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	3.23	3.07	2.90	3.54	3.73	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Virtu Americas, LLC (NITE):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Citadel Securities (CDRG):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

November 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	0.02	24.94	71.17	3.87

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)	60.48	62.75	63.17	59.57	60.00	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna International Group, LLP (SUSQ)	23.40	25.49	21.45	24.11	22.89	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Svc. (WEXX)	16.12	11.76	15.38	16.32	17.11	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/CDRG/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Susquehanna International Group, LLP (SUSQ):

https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/SUSQ/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Wolverine Execution Svc. (WEXX):

https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/WEXX/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

December 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
100.00	56.57	5.14	33.93	4.35

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)
---------------------------------------	--------------------------------	-------------------------	-----------------------------------	---	------------------------	---	---	--	--	---	---	--	--

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)	36.40	38.37	37.22	33.97	28.69	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	23.46	25.49	23.43	20.82	17.67	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Virtu Americas, LLC (NITE)	17.44	15.01	17.06	20.13	28.52	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	10.31	11.66	10.16	8.54	6.86	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	8.00	5.13	7.79	12.07	13.73	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	4.39	4.34	4.34	4.47	4.54	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/2023Q4/SP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Virtu Americas, LLC (NITE):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/SP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

December 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
100.00	60.25	6.30	29.39	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)
Virtu Americas, LLC (NITE)	28.10	28.44	27.80	27.03	31.35	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Citadel Securities (CDRG)	26.77	25.78	29.17	28.31	26.44	0	0.0000	0	0.0000	0	0.0000	0	0.0000
G1 Execution Services, LLC (ETMM)	22.30	24.34	20.77	19.22	16.50	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Jane Street Capital, LLC (JNST)	9.24	10.16	8.91	7.80	6.44	0	0.0000	0	0.0000	0	0.0000	0	0.0000
UBS Securities LLC (UBSS)	8.98	6.67	8.82	12.95	14.62	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Two Sigma Securities (SOHO)	4.62	4.60	4.53	4.69	4.65	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Virtu Americas, LLC (NITE):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/NITE/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Citadel Securities (CDRG):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/CDRG/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

G1 Execution Services, LLC (ETMM):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/ETMM/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Jane Street Capital, LLC (JNST):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/JNST/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

UBS Securities LLC (UBSS):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/UBSS/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

Two Sigma Securities (SOHO):
https://nms606.karngroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/NONSP500/SOHO/e7dfb6de341e057e7d51abc3bede6d1f4dddf76d/Material%20Aspects%20Equities.pdf

December 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	0.07	23.97	71.83	4.13

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)	60.15	78.75	63.30	59.12	59.58	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Susquehanna International Group, LLP (SUSQ)	23.74	13.13	21.47	24.52	23.55	0	0.0000	0	0.0000	0	0.0000	0	0.0000
Wolverine Execution Svc. (WEXX)	16.11	8.13	15.23	16.36	16.87	0	0.0000	0	0.0000	0	0.0000	0	0.0000

Material Aspects:

Citadel Securities (CDRG):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/CDRG/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Susquehanna International Group, LLP (SUSQ):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/SUSQ/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf

Wolverine Execution Svc. (WEXX):

https://nms606.kargroup.com/api/606stats/public606/606/report/VGRD_ALL/material/2023Q4/O/WEXX/74d4083636bc0c887185bb158b9fb8a305b27ace/Material%20Aspects%20Options.pdf