## October 2020

## S&P 500 Stocks Summary

			Market Orders as	%	
<b>Total Non-Directed</b>	<b>Non-Directed Orders</b>		of Non-Directed	<b>Total Marketable</b>	
Orders	as % of All Orders	<b>Total Market Orders</b>	Orders	Limit Orders	
47	100.00	45	95	5.74	0

Venue - Non- directed Order Flow Citadel Securities	Non-Directed Orders Orders(%)	ed Market C	orders Market	Orders(%)
LLC(CDRG)	23	47.92	23	51.11
VIRTU Americas LLC(NITE)	18	37.50	18	40.00
Two Sigma Securities,				
LLC(SOHO) Cboe EDGX US	2	4.17	2	4.44
Equities Exchange(EDGX)	1	2.08	0	0.00
G1 Execution Services, LLC(ETMM)	1	2.08	1	2.22
JANE STREET CAPITAL, LLC(JNST)	1	2.08	1	2.22
NASDAQ Execution Services, LLC(NSDQ)	1	2.08	0	0.00
New York Stock Exchange(NYSE)	1	2.08	0	0.00

## October 2020

## Non-S&P 500 Stocks Summary

				Market Orders as %		
<b>Total Non-Directed</b>	Non-Directed	Orders		of Non-Directed	<b>Total Marketable</b>	
Orders	as % of All Ord	lers To	tal Market Orders	Orders	Limit Orders	
26	53	100.00	109	41.44	ļ	35

Venue - Non- directed Order Flow Citadel Securities	Non-Directed Orders	Non-Directed Orders(%)	Market Orders	Market Orders(%)
LLC(CDRG)	126	42.00	52	47.71
VIRTU Americas LLC(NITE)	85	28.33	41	37.61
NASDAQ Execution				
Services, LLC(NSDQ)	34	11.33	0	0.00
Cboe EDGX US Equities				
Exchange(EDGX)	24	8.00	0	0.00
New York Stock Exchange(NYSE)	8	2.67	0	0.00
G1 Execution				
Services, LLC(ETMM) UBS Securities,	7	2.33	4	3.67
LLC(UBSS)	7	2.33	6	5.50
Two Sigma Securities,				
LLC(SOHO)	5	1.67	3	2.75
JANE STREET	_		_	
CAPITAL, LLC(JNST)	4	1.33	3	2.75

# Option Contracts Summary

			Market Orders a	as %	
<b>Total Non-Directed</b>	Non-Directed Or	ders	of Non-Directed	Total Marketable	
Orders	as % of All Order	rs Total Market Order	s Orders	<b>Limit Orders</b>	
0		0.00	0	0.00	0

Venues

Venue - Non-Directed

directed Order Flow Non-Directed Orders Orders(%) Market Orders Market Orders(%)

November 2020

S&P 500 Stocks Summary

				<b>Market Orders</b>	as %		
Total Non-Directed	ł	<b>Non-Directed Orders</b>		of Non-Directe	d	<b>Total Marketable</b>	
Orders		as % of All Orders	<b>Total Market Orders</b>	Orders		<b>Limit Orders</b>	
	70	100.00	58		82.86		4

Venue - Non-	Non-Directed			
directed Order Flow	Non-Directed Orders Orders(%)	<b>Market Orders</b>	Ma	rket Orders(%)
<b>Citadel Securities</b>				
LLC(CDRG)	48	52.75	40	68.97
New York Stock				
Exchange(NYSE)	21	23.08	0	0.00
VIRTU Americas				
LLC(NITE)	16	17.58	14	24.14
G1 Execution				
Services, LLC(ETMM)	2	2.20	2	3.45
Two Sigma				
Securities,				
LLC(SOHO)	2	2.20	2	3.45

Cboe EDGX US Equities Exchange(EDGX)	1	1.10	0	0.00
NASDAQ Execution Services, LLC(NSDQ)	1	1.10	0	0.00

November 2020

Non-S&P 500 Stocks Summary

				Market Orders as %		
<b>Total Non-Directe</b>	d	<b>Non-Directed Orders</b>		of Non-Directed	<b>Total Marketable</b>	
Orders		as % of All Orders	<b>Total Market Orders</b>	Orders	<b>Limit Orders</b>	
2	226	100.00	101	44.69		17

Venue - Non-		Non-Directed		
	Non-Directed Orders	Orders(%)	Market Orders	Market Orders(%)
Citadel Securities				
LLC(CDRG)	111	47.64	53	52.48
VIRTU Americas				
LLC(NITE)	79	33.91	33	32.67
C1 Evecution				
G1 Execution	10	4.29	6	5.94
Services, LLC(ETMM) Two Sigma	10	4.29	0	5.94
Securities,				
LLC(SOHO)	9	3.86	2	1.98
LEC(SOTIO)	3	3.00	2	1.50
JANE STREET				
CAPITAL, LLC(JNST)	8	3.43	6	5.94
Cboe EDGX US				
Equities				
Exchange(EDGX)	6	2.58	0	0.00
NASDAQ Execution				
Services, LLC(NSDQ)	4	1.72	0	0.00

luctions					
Instinet BlockCross(BLKX)	3	1.29		0	0.00
UBS Securities,	_				
LLC(UBSS) NYSE Arca(ARCA)	2	0.86 0.43		1 0	0.99
,					
November 2020					
Option Contracts Summary					
			Market Orders as %		
	Non-Directed Orders		of Non-Directed	Total Marketabl	е
Orders a	as % of All Orders 0.00	<b>Total Market Orders</b>		Limit Orders	0
Venues					
Venue - Non-	N. Birria (O.L.)	Non-Directed	M. L. O. L.	<b>1</b> 1 1 2 1 1 1 1 1	~^
Venue - Non- directed Order Flow	Non-Directed Orders		Market Orders	Market Orders(9	%)
directed Order Flow	Non-Directed Orders		Market Orders	Market Orders(%	%)
	Non-Directed Orders		Market Orders	Market Orders(%	%)
directed Order Flow I  December 2020  S&P 500 Stocks	Non-Directed Orders		Market Orders	Market Orders(9	%)
directed Order Flow   December 2020	Non-Directed Orders		Market Orders	Market Orders(9	%)

			Market Orders as %		
<b>Total Non-Directed</b>	<b>Non-Directed Orders</b>		of Non-Directed	<b>Total Marketable</b>	
Orders	as % of All Orders	<b>Total Market Orders</b>	Orders	<b>Limit Orders</b>	
76	100.00	63	82.89		0

Venue - Non-	Non-Directed			
directed Order Flow	Non-Directed Orders Orders(%)	<b>Market Orders</b>	Market Orde	ers(%)
<b>Citadel Securities</b>				
LLC(CDRG)	36	38.30	33	52.38
<b>VIRTU Americas</b>				
LLC(NITE)	23	24.47	16	25.40

New York Stock Exchange(NYSE)	14	14.89	0	0.00
G1 Execution Services, LLC(ETMM)	6	6.38	6	9.52
JANE STREET CAPITAL, LLC(JNST) Cboe EDGX US	6	6.38	6	9.52
Equities Exchange(EDGX)	4	4.26	0	0.00
NASDAQ Execution Services, LLC(NSDQ) Two Sigma	2	2.13	0	0.00
Securities, LLC(SOHO) Instinet	2	2.13	2	3.17
BlockCross(BLKX)	1	1.06	0	0.00

December 2020

Non-S&P 500 Stocks Summary

				Market Orders as %		
Total Non-Directed	d	Non-Directed Orders		of Non-Directed	<b>Total Marketable</b>	
Orders		as % of All Orders	<b>Total Market Orders</b>	Orders	<b>Limit Orders</b>	
2	93	100.00	153	52.22		36

Venue - Non- directed Order Flow Citadel Securities	Non-Dir Non-Directed Orders Orders(		Orders Market	Orders(%)
LLC(CDRG) VIRTU Americas	151	49.51	79	51.63
LLC(NITE)	98	32.13	51	33.33
G1 Execution Services, LLC(ETMM)	13	4.26	8	5.23

JANE STREET CAPITAL, LLC(JNST) Cboe EDGX US	13	4.26	12	7.84
Equities Exchange(EDGX) Instinet	10	3.28	0	0.00
BlockCross(BLKX)	8	2.62	0	0.00
NASDAQ Execution Services, LLC(NSDQ) Two Sigma Securities,	6	1.97	0	0.00
LLC(SOHO) UBS Securities,	4	1.31	2	1.31
LLC(UBSS)	2	0.66	1	0.65

December 2020

Option Contracts Summary

			Market Orders as	s %	
<b>Total Non-Directed</b>	Non-Directed Order	s	of Non-Directed	<b>Total Marketable</b>	
Orders	as % of All Orders	<b>Total Market Orders</b>	Orders	<b>Limit Orders</b>	
	0.0	0 0	)	0.00	0

Venues

Venue - NonVenue - Non-Directed

directed Order Flow Non-Directed Orders Orders(%)

Market Orders

Market Orders(%)

HIGHTOWER SECURITIES, LLC - Held NMS
Stocks and Options Order Routing Public
Report
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4th Quarter, 2020

Marketable Limit
Orders as % of NonDirected Orders Total Non-Mark

0.00

**Total Non-Marketable Limit Orders** 

Non-Marketable Limit Orders as % of Non-Directed Orders

2 4.26

Marketable Limit Orders	Marketable Limit Orders(%)		Non-Marketable Limit Orders	
	0	0.00	)	0
	0	0.00	)	0
	0	0.00	)	0
	0	0.00	)	1
	0	0.00	)	0
	0	0.00	)	0
	0	0.00	)	1
	0	0.00	)	1

Marketable Limit
Orders as % of NonDirected Orders

**Total Non-Marketable Limit Orders** 

Non-Marketable Limit Orders as % of Non-Directed Orders

13.31 42 15.97

Marketable Limit Orders	Marketable Limit Orders(%)		Non-Marketable Limit Orders
1	4	40.00	10
1	5	42.86	3
	0	0.00	34
	0	0.00	24
	0	0.00	8
	·	0.00	Ü
	3	8.57	0
(	0	0.00	0
	2	5.71	0
	1	2.86	0

Marketable Limit		Non-Marke	etable
Orders as % of Non-	-	Limit Orde	rs as % of
<b>Directed Orders</b>	<b>Total Non-Marketable Limit Orders</b>	Non-Direct	ed Orders
0.0	0	0	0.00

Marketable Limit		Non-Marketable
Orders	Marketable Limit Orders(%)	Limit Orders

Marketable Limit			Non-Marketable
Orders as % of Non-			Limit Orders as % of
<b>Directed Orders</b>	<b>Total Non-Marketable Limit Orders</b>		<b>Non-Directed Orders</b>
5.71		3	4.29

Marketable Limit Orders	Marketable Limit Orders(%)		Non-Marketable Limit Orders
	3	75.00	0
	0	0.00	21
	1	25.00	1
	0	0.00	0
	0	0.00	0

0	0.00	1
0	0.00	1

Marketable Limit
Orders as % of NonDirected Orders
7.52

Non-Marketable
Limit Orders as % of
Non-Directed Orders
Non-Directed Orders
5.75

Marketable Limit Orders	Marketable Limit Orders(%)		Non-Marketable Limit Orders	
	8	47.06		0
	6	35.29		2
	2	11.76		1
	0	0.00		0
	0	0.00		2
	0	0.00		6
	0	0.00		4

0	0.00	0
1	5.88	0
0	0.00	1

Marketable Limit
Orders as % of NonDirected Orders

0.00

Non-Marketable
Limit Orders as % of
Non-Directed Orders

Non-Directed Orders

0 0.00

Marketable Limit
Orders

Marketable Limit Orders(%)

Non-Marketable
Limit Orders

Marketable Limit
Orders as % of NonDirected Orders

0.00

Non-Marketable
Limit Orders as % of
Non-Directed Orders

Non-Directed Orders

7.89

Marketable Limit Orders	Marketable Limit Orders(%)	Non-Marketable Limit Orders		
	0	0.00	0	
	0	0.00	3	

0	0.00	14
0	0.00	0
0	0.00	0
0	0.00	4
0	0.00	2
0	0.00	0
0	0.00	0

Marketable Limit
Orders as % of NonDirected Orders

12.29

Non-Marketable
Limit Orders as % of
Non-Directed Orders

Non-Directed Orders

16
5.46

Marketable Limit Orders	Marketable Limit Orders(%)		Non-Marketable Limit Orders	
21		60.00		4
7	,	20.00		0
5		14.29		0

1	2.86	0
0	0.00	10
0	0.00	0
0	0.00	6
0	0.00	1
1	2.86	0

Marketable Limit
Orders as % of NonDirected Orders Total Non-Marketable Limit Orders

0.00

Non-Marketable
Limit Orders as % of
Non-Directed Orders
0 0.00

Marketable Limit
Orders

Marketable Limit Orders(%)

Non-Marketable Limit Orders

Total Other Orders S % of Non-Directed Orders
0 0.00

Non-Marketable Limit Orders(%)	Other Orders	Other Orders(%	)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cen per hundred share	
0.00	)	0	0.00	(	)	0
0.00	ı	0	0.00	(	)	0
0.00		0	0.00	C	)	0
33.33		0	0.00	C	)	0
0.00		0	0.00	C	)	0
0.00	1	0	0.00	C	)	0
33.33	:	0	0.00	C	)	0
33.33	,	0	0.00	(	)	0

Other Orders as % of Total Other Orders
Non-Directed Orders
77 29.28

Non-Marketable Limit Orders(%)	Other Orders	Other Orders(%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)
12.66	50	64.94	0	0
3.80	26	33.77	0	0
43.04	. (	0.00	0	0
30.38	(	0.00	0	0
10.13	(	0.00	0	0
0.00	(	0.00	0	0
0.00	:	1.30	0	0
0.00	(	0.00	0	0
0.00	(	0.00	0	0

Other Orders as % of Total Other Orders
Non-Directed Orders
0 0.00

				Net Payment
			<b>Net Payment</b>	Paid/Received for
Non-Marketable			Paid/Received for	Market Orders(cents
Limit Orders(%)	Other Orders	Other Orders(%)	Market Orders(USD)	per hundred shares)

Total Other Orders 5 Other Orders as % of Non-Directed Orders 5 7.14

Non-Marketable Limit Orders(%)	Other Orders	Other Orders	(%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cer) per hundred share	nts
0.00		5	100.00	) (	0	0
87.50		0	0.00	)	0	0
4.17		0	0.00	) (	0	0
0.00		0	0.00	)	0	0
0.00		0	0.00	) (	0	0

4.17	0	0.00	0	0
<i>1</i> .17	0	0.00	0	0
4.17	0	0.00	0	

Non-Marketable Limit Orders(%)	Other Orders	Other Orders(%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)
0.00	50	50.51	0	0
12.50	38	38.38	0	0
6.25	1	1.01	0	0
0.00	7	7.07	0	0
12.50	C	0.00	0	0
37.50	C	0.00	0	0
25.00	C	0.00	0	0

0.00	3	3.03	0	0
0.00	0	0.00	0	0
6.25	0	0.00	0	0

Other Orders as % of Total Other Orders Non-Directed Orders
0 0.00

				Net Payment
			Net Payment	Paid/Received for
Non-Marketable			Paid/Received for	<b>Market Orders(cents</b>
Limit Orders(%)	Other Orders	Other Orders(%)	Market Orders(USD)	per hundred shares)

Total Other Orders Solution Non-Directed Orders 9.21

Non-Marketable Limit Orders(%)	Other Orders	Other Orders(	%)	Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cei ) per hundred share	nts
0.00	)	3	37.50	(	0	0
13.04	1	4	50.00	(	0	0

60.87	0	0.00	0	0
0.00	0	0.00	0	0
0.00	0	0.00	0	0
17.39	0	0.00	0	0
8.70	0	0.00	0	0
0.00	0	0.00	0	0
0.00	1	12.50	0	0

Total Other Orders Sound Non-Directed Orders 88 30.03

Non-Marketable Limit Orders(%)	Other Orders	Other Order		Net Payment Paid/Received for Market Orders(USD)	Net Payment Paid/Received for Market Orders(cents per hundred shares)	
19.05		47	48.96	0	(	)
0.00		40	41.67	0	(	)
0.00		0	0.00	0	C	)

(	0.00	0	0.00	0	0
4	7.62	0	0.00	0	0
(	0.00	8	8.33	0	0
2	8.57	0	0.00	0	0
	4.76	1	1.04	0	0
(	0.00	0	0.00	0	0

Total Other Orders S % of Non-Directed Orders
0 0.00

				Net Payment
			Net Payment	Paid/Received for
Non-Marketable			Paid/Received for	<b>Market Orders(cents</b>
Limit Orders(%)	Other Orders	Other Orders(%)	Market Orders(USD)	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 share		Net Payment Paid/Received for Other Orders(USD)	
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0
	0	0		0		0		0

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 S) Other Orders(USD	
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

Net Payment	Net Payment Paid/Received for	Net Payment	Net Payment Paid/Received for	
Paid/Received for	Marketable Limit	Paid/Received for	Non-Marketable	Net Payment Paid/Received for Other Orders(USD)
Marketable Limit	Orders(cents per	Non-Marketable	Limit Orders(cents	
Orders(USD)	hundred shares)	Limit Orders(USD)	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)	
	0	0		0	0		0
	0	0		0	0	1	0
	0	0		0	0	1	0
	0	0		0	0		0
	0	0		0	O	1	0

0	0	0	0	0
0	0	0	0	0

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)	)
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

0	0	0	0	0
0	0	0 0	0	0
0	0	0	0	0

	Net Payment		Net Payment	
Net Payment	Paid/Received for	Net Payment	Paid/Received for	
Paid/Received for	Marketable Limit	Paid/Received for	Non-Marketable	Net Payment
Marketable Limit	Orders(cents per	Non-Marketable	Limit Orders(cents	Paid/Received for
Orders(USD)	hundred shares)	Limit Orders(USD)	per hundred shares)	Other Orders(USD)

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)	
	0	0	0	)	0
	0	0	0	)	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

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)	l
	0		0		0		0		0
	0		0		0		0		0
	0		0		0		0		0

0	0	0	0	0
	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

**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) Other Orders(USD)

**Net Payment** Paid/Received for Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)

Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)

Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)

Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)

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per hundred shares)

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Paid/Received for
Other Orders(cents
per hundred shares)

Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)

Net Payment
Paid/Received for
Other Orders(cents
per hundred shares)