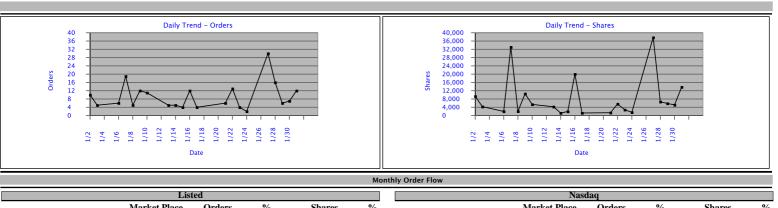
# HIGHTOWER SECURITIES, LLC 200 WEST MADISON SUITE 2500 CHICAGO, IL 60606

# MONTHLY ORDER FLOW REVIEW

January 2020



	List	ted				Nasdaq					
	Market Place	Orders	%	Shares	%		Market Place	Orders	%	Shares	%
Citadel Securities LLC		76	55.47%	88,351	65.38%	Citadel Securities LLC		30	52.63%	26,969	66.39%
Virtu Financial		39	28.47%	29,989	22.19%	Virtu Financial		20	35.09%	11,010	27.10%
G1 Execution Services, LLC		17	12.41%	13,672	10.12%	G1 Execution Services, LLC		5	8.77%	1,280	3.15%
UBS Securities, LLC		3	2.19%	1,980	1.47%	UBS Securities, LLC		2	3.51%	1,365	3.36%
Two Sigma Securities, LLC		2	1.46%	1,150	0.85%			57	100.00%	40,624	100.00%
		137	100.00%	135,142	100.00%						

	Listed O	der Flow Performan	ce			
Market Place	Avg. Speed (Seconds)	Average Effective Spread	Effective/ Quoted Spread	% Shares Price Impr.	Average Price Impr. Per Share	Dollars Saved
Citadel Securities LLC	0	0.001	5.46%	96.83%	\$0.009	\$781.28
Virtu Financial	0	-0.001	-2.15%	100.00%	\$0.015	\$444.34
G1 Execution Services, LLC	0	-0.001	-4.17%	100.00%	\$0.006	\$87.16
UBS Securities, LLC	0	-0.009	-85.15%	100.00%	\$0.009	\$18.33
Two Sigma Securities, LLC	0	0.008	55.00%	86.96%	\$0.004	\$3.60
	Nasdaq (	Order Flow Performa	nce			
		Average	Effective/	A/ (7)	Average	
Market Place	Avg. Speed	Effective	Quoted	% Shares	Price Impr.	<b>Dollars Saved</b>
	(Seconds)	Spread	Spread	Price Impr.	Per Share	
Citadel Securities LLC	0	0.004	12.74%	79.41%	\$0.016	\$352.10
Virtu Financial	0	0.001	3.73%	100.00%	\$0.008	\$91.31
G1 Execution Services, LLC	0	0.003	4.56%	100.00%	\$0.032	\$41.42
	0	0.002	9.40%	85.35%	\$0.013	\$15.54

The results above reflect the actual performance on your firm's orders sent to the market centers listed. Each destination listed above may get very different types of order flow from your firm and therefore should not be viewed as directly comparable. For example, some destinations may accept only certain order types, or selectively trade only certain securities.

HTS

# MONTHLY ORDER FLOW REVIEW

# **Description of content:**

The Monthly Order Flow Review is intended as a tool to aid and supplement your overall order flow evaluation. Although some of the execution quality measurement metrics are the same or similar to those that are required pursuant to SEC Rule 605, this not is a Rule 605 report, and is not intended to be used as such.

The order flow information and calculations are derived from the National Financial Services LLC (NFS) order entry and routing systems and internal execution analysis systems. The resulting market place execution quality is calculated using only your firm's orders, executed by that market place. They are not intended to represent that destination's overall or Rule 605 execution quality statistics.

#### Scope of Order Types:

- Shall include National Market System (NMS) Securities, market orders within the range of 100 9,999 shares. This size range is used because it represents an order size typically sent to a marketplace for automated, rather than manual, execution. Included are orders that were directed by NFS and orders that were directed by the broker/dealer to a specific market place destination.
- Shall include orders entered into the NFS order entry system during regular market hours (9:30 a.m. 4:00 p.m. ET).
- May exclude any order sent to a destination requiring manual handling, or for which there was a request for special handling for
- execution, including (but not limited to ) the following:
- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices \* Orders to be executed only at their
- \* Orders to be executed only at their full size \* Orders to be executed on a particular type of the
- \* Orders to be executed on a particular type of tick or bid \* Orders submitted on a "not held" basis
- \* Orders submitted on a "not held" basis
  \* Orders for other than regular settlement
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution.

**Calculations:** Calculations are based on the original execution time and price received by the venue and exclude subsequent price adjustments.

Average Speed - the average time between order receipt and order execution based on a weighted average of the entire order.

**Average Effective Spread -** on a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt.

Average Quoted Spread - the average difference between the National Best Bid and Offer (NBBO) at the time of order receipt.

Effective/Quoted Spread - the Average Effective Spread divided by the Average Quoted Spread.

Percent of Shares Price Improved - of total shares executed, the percentage of shares that were price improved.

Average Price Improvement per Share - for shares executed with price improvement, the share-weighted average amount per

share that prices were improved.

**Dollars Saved -** the total dollar value of price improvement received on executed orders.

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

Some language in the above calculation descriptions was borrowed from the RegOne Solutions Rule 605 Comparison Tool. RegOne Solutions is an independent organization that is not affiliated with Fidelity.

The data provided includes order information from National Financial Services' correspondent broker-dealers. There are different means and measures by which institutions evaluate execution quality. We believe the data, analytic techniques and presentation in this report represent a tool for evaluating and measuring certain aspects of execution quality. As such, methods and measurements should be used as a supplement to, and not a substitute for, a client's overall approach to measuring execution quality, including trade by trade best execution analysis.

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

The registered trademarks and service marks appearing herein are the property of FMR LLC.

361774.11.0

# Questions and Answers: Monthly Order Flow Review for Individual Firms

# Q1.What is the Monthly Order Flow Review?

A1. The Monthly Order Flow Review is a correspondent broker/dealer-specific report containing detailed information on executed orders.

# Q2.What type of information is included in the Monthly Order Flow Review?

A2. The report contains order routing information and market center performance representing the individual firm's executed order flow entered through National Financial Services LLC order entry system. Included are orders that were directed by National Financial Services LLC and orders that were directed by the broker/dealer to a specific market place destination.

## Q3.What is the intent of the Monthly Order Flow Review and does it fulfill a specific regulatory obligation?

A3. The report is provided in consideration of your fiduciary obligation to independently evaluate and assess the quality of executions you receive. This monthly service was developed to be used as a tool to aid and supplement your overall order flow evaluation and does not fulfill a specific regulatory obligation. Although some execution quality measurements metrics are the same or similar to those which are required under SEC Rule 605 reporting, this is not a SEC Rule 605 report and it is not intended to be used as such.

#### Q4.What does this report tell me, what should I be looking for, and against what do I compare it?

A4. The report provides broker/dealers information of their executions, formatted into execution quality metrics/buckets that are recognized throughout the industry. The results may highlight statistics that warrant further investigation or explanation, based on your firm's execution quality policies. Comparison of cumulative monthly reports will assist in your evaluation.

#### Q5.Who produces the report?

A5. The report is produced by Fidelity's Order FlowManagement group and is a service of Fidelity CapitalMarkets Services, a division of National Financial Services LLC.

# Q6.What does the Order Flow Management group do?

A6. The group is responsible for the routing of all orders for customers of National Financial Services LLC (NFS). It makes overall order routing decisions to ensure customer orders are executed at the best prices reasonably available under prevailing market conditions. The group also performs regular and rigorous review of execution quality.

#### Q7.What criteria are taken into consideration when making order routing decisions and assessing execution quality?

A7. While no one factor is the single determinant of either decision or assessment, each market maker and market center is evaluated on a number of criteria, including:

- \* The ability to provide executions at the National Best Bid or Offer(NBBO)
- \* The ability to provide price improvement opportunities
- \* The ability to cross pre-opening orders or provide midpoint pricing
- \* The extent to which different market centers or market makers trade or may be more suitable for different types of orders or particular securities
- \* Adequate staffing; and the general responsiveness of the firm
- \* Differences in execution quality for limit orders among various market makers or market centers
- \* The willingness to adjust a price in the event of missed markets
- \* The opportunity for liquidity enhancement
- \* The speed of execution
- \* The financial responsibility of the market maker
- \* The speed of display of better-priced limit orders
- \* The willingness to provide copies of exception reports with follow-up actions
- \* The establishment of procedures to handle volatile market situations
- \* The ability to provide real-time notice of the disabling of auto execution systems
- \* The reliability of systems

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

# Q8. From where does Fidelity's Order Flow Management group get the order flow information and calculations?

A8. The order flow information and calculations are derived from National Financial Services LLC order entry and routing systems and internal execution and analysis systems. The resulting marketplace execution quality is calculated using only a specific firm's orders, executed by that marketplace. They are not intended to represent that destination's overall or SEC Rule 605 execution quality statistics.

# Q9.What specific order types are covered in the Monthly Order Flow Review?

A9. The report covers execution statistics on market orders of 100 - 9,999 shares for National Market System (NMS) Securities.

# Q10. Does the report exclude any types of orders?

A10. The report may exclude any order sent to a destination requiring manual handling, or for which there is a request for special handling for execution, including, but not limited to:

- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices
- \* Orders to be executed only at their full size
- \* Orders to be executed on a particular type of tick or bid
- \* Orders submitted on a "not held" basis
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution

# Q11.What calculations are covered in the Monthly Order Flow Review?

A11. Calculations, and their definitions, include the following:

\* Average Speed - The average time between order receipt and order execution based on a weighted average of the entire order

- \* Average Effective Spread On a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt
- \* Average Quote Spread The average difference between the National Best Bid and Offer(NBBO) at the time of order receipt
- \* Effective/Quoted Spread The Average Effective Spread divided by the Average Quoted Spread
- \* Percentage of Shares Price Improved Of total shares executed, the percentage of shares that were price improved
- \* Average Price Improvement per Share For shares executed with price improvement, the share-weighted average amount per share that prices were improved
- \* Dollars Saved The total dollar value of the price improvement received on executed orders

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

#### Q12.What other steps does Fidelity take to assess and monitor execution quality and make stock-specific routing decisions?

A12.On at least an annual basis, the Order Flow Management Group conducts meeting with various market centers, including market centers to which NFS electronically transmits order flow. We may request written responses to an execution quality questionnaire.

The questionnaire includes, but is not limited to, inquiries into auto-execution size and price improvement parameters, procedures to ensure compliance with best execution requirements and SEC order-handling rules, and procedures to monitor for execution quality. The Order Flow Management Group considers the results of its write up of these market center meetings, and the written responses by the market centers to the questionnaire, as important factors for determining where to route customer order flow.

# Q13.What additional resources does Fidelity provide to help with your overall flow evaluation?

A13. Other execution quality resources can be found on Streetscape® under

Streetscape® >Resources >Product and Services >Leading Investment Solutions. In second paragraph choose link entitled : "Quality Execution Services". There, clients can access our monthly Execution Quality Report Cards and Rule 605 Comparison Reports, which let them view overall trade execution statistics for NFS. From this section of Streetscape, clients can also link to our public site, www.nationalfinancial.com, to review SEC Rules 605 and 606 information.

# Q14. In addition to their relationship manager, whom else can clients call with questions about execution quality resources and support?

A14. Correspondent broker/dealers can contact the Order Flow Management Group via e-mail at orderflowmanagement@fmr.com with questions.

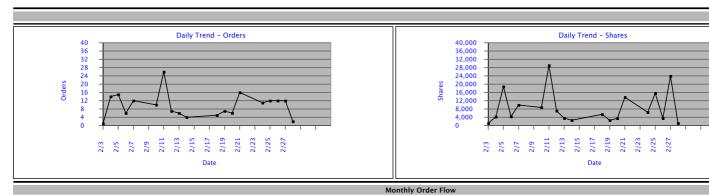
A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

# HIGHTOWER SECURITIES, LLC 200 WEST MADISON SUITE 2500 CHICAGO, IL 60606

# MONTHLY ORDER FLOW REVIEW February 2020



					Mor	thly Order Flow					
Listed							Naso	daq			
	Market Place	Orders	%	Shares	%		Market Place	Orders	%	Shares	%
Citadel Securities LLC		51	50.50%	34,241	41.53%	Citadel Securities LLC		39	46.99%	39,733	47.98%
Virtu Financial		31	30.69%	27,818	33.74%	Virtu Financial		30	36.14%	33,057	39.92%
Two Sigma Securities, LLC		9	8.91%	13,695	16.61%	G1 Execution Services, LLC		13	15.66%	9,853	11.90%
G1 Execution Services, LLC		8	7.92%	4,993	6.06%	Two Sigma Securities, LLC		1	1.20%	175	0.21%
UBS Securities, LLC		2	1.98%	1,700	2.06%			83	100.00%	82,818	100.00%
		101	100.00%	82,447	100.00%						

	Listed O	der Flow Performan	ce			
Market Place	Avg. Speed (Seconds)	Average Effective Spread	Effective/ Quoted Spread	% Shares Price Impr.	Average Price Impr. Per Share	Dollars Saved
Citadel Securities LLC	0	0.019	30.20%	80.43%	\$0.027	\$736.83
Virtu Financial	0	0.006	11.32%	87.96%	\$0.027	\$664.58
Two Sigma Securities, LLC	0	0.097	65.85%	23.27%	\$0.120	\$381.99
G1 Execution Services, LLC	0	0.014	10.48%	97.60%	\$0.059	\$289.78
UBS Securities, LLC	0	0.017	60.85%	100.00%	\$0.005	\$9.20
	Nasdaq (	Order Flow Performa	nce			
		Average	Effective/	0/ 51	Average	
Market Place	Avg. Speed	Effective	Quoted	% Shares	Price Impr.	<b>Dollars Saved</b>
	(Seconds)	Spread	Spread	Price Impr.	Per Share	
Citadel Securities LLC	0	0.042	38.39%	93.20%	\$0.036	\$1,341.12
Virtu Financial	0	0.013	23.74%	84.74%	\$0.025	\$711.55
G1 Execution Services, LLC	0	0.004	5.64%	58.49%	\$0.060	\$343.39
Two Sigma Securities, LLC	0	0.018	88.00%	100.00%	\$0.001	\$0.21

The results above reflect the actual performance on your firm's orders sent to the market centers listed. Each destination listed above may get very different types of order flow from your firm and therefore should not be viewed as directly comparable. For example, some destinations may accept only certain order types, or selectively trade only certain securities.

HTS

# MONTHLY ORDER FLOW REVIEW

# **Description of content:**

The Monthly Order Flow Review is intended as a tool to aid and supplement your overall order flow evaluation. Although some of the execution quality measurement metrics are the same or similar to those that are required pursuant to SEC Rule 605, this not is a Rule 605 report, and is not intended to be used as such.

The order flow information and calculations are derived from the National Financial Services LLC (NFS) order entry and routing systems and internal execution analysis systems. The resulting market place execution quality is calculated using only your firm's orders, executed by that market place. They are not intended to represent that destination's overall or Rule 605 execution quality statistics.

#### Scope of Order Types:

- Shall include National Market System (NMS) Securities, market orders within the range of 100 9,999 shares. This size range is used because it represents an order size typically sent to a marketplace for automated, rather than manual, execution. Included are orders that were directed by NFS and orders that were directed by the broker/dealer to a specific market place destination.
- Shall include orders entered into the NFS order entry system during regular market hours (9:30 a.m. 4:00 p.m. ET).
- May exclude any order sent to a destination requiring manual handling, or for which there was a request for special handling for
- execution, including (but not limited to ) the following:
- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices \* Orders to be executed only at their
- \* Orders to be executed only at their full size \* Orders to be executed on a particular type of the
- \* Orders to be executed on a particular type of tick or bid \* Orders submitted on a "not held" basis
- \* Orders submitted on a "not held" basis
  \* Orders for other than regular settlement
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution.

**Calculations:** Calculations are based on the original execution time and price received by the venue and exclude subsequent price adjustments.

Average Speed - the average time between order receipt and order execution based on a weighted average of the entire order.

**Average Effective Spread -** on a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt.

Average Quoted Spread - the average difference between the National Best Bid and Offer (NBBO) at the time of order receipt.

Effective/Quoted Spread - the Average Effective Spread divided by the Average Quoted Spread.

Percent of Shares Price Improved - of total shares executed, the percentage of shares that were price improved.

Average Price Improvement per Share - for shares executed with price improvement, the share-weighted average amount per

share that prices were improved.

**Dollars Saved -** the total dollar value of price improvement received on executed orders.

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

Some language in the above calculation descriptions was borrowed from the RegOne Solutions Rule 605 Comparison Tool. RegOne Solutions is an independent organization that is not affiliated with Fidelity.

The data provided includes order information from National Financial Services' correspondent broker-dealers. There are different means and measures by which institutions evaluate execution quality. We believe the data, analytic techniques and presentation in this report represent a tool for evaluating and measuring certain aspects of execution quality. As such, methods and measurements should be used as a supplement to, and not a substitute for, a client's overall approach to measuring execution quality, including trade by trade best execution analysis.

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

The registered trademarks and service marks appearing herein are the property of FMR LLC.

361774.11.0

# Questions and Answers: Monthly Order Flow Review for Individual Firms

# Q1.What is the Monthly Order Flow Review?

A1. The Monthly Order Flow Review is a correspondent broker/dealer-specific report containing detailed information on executed orders.

# Q2.What type of information is included in the Monthly Order Flow Review?

A2. The report contains order routing information and market center performance representing the individual firm's executed order flow entered through National Financial Services LLC order entry system. Included are orders that were directed by National Financial Services LLC and orders that were directed by the broker/dealer to a specific market place destination.

## Q3.What is the intent of the Monthly Order Flow Review and does it fulfill a specific regulatory obligation?

A3. The report is provided in consideration of your fiduciary obligation to independently evaluate and assess the quality of executions you receive. This monthly service was developed to be used as a tool to aid and supplement your overall order flow evaluation and does not fulfill a specific regulatory obligation. Although some execution quality measurements metrics are the same or similar to those which are required under SEC Rule 605 reporting, this is not a SEC Rule 605 report and it is not intended to be used as such.

#### Q4.What does this report tell me, what should I be looking for, and against what do I compare it?

A4. The report provides broker/dealers information of their executions, formatted into execution quality metrics/buckets that are recognized throughout the industry. The results may highlight statistics that warrant further investigation or explanation, based on your firm's execution quality policies. Comparison of cumulative monthly reports will assist in your evaluation.

#### Q5.Who produces the report?

A5. The report is produced by Fidelity's Order FlowManagement group and is a service of Fidelity CapitalMarkets Services, a division of National Financial Services LLC.

# Q6.What does the Order Flow Management group do?

A6. The group is responsible for the routing of all orders for customers of National Financial Services LLC (NFS). It makes overall order routing decisions to ensure customer orders are executed at the best prices reasonably available under prevailing market conditions. The group also performs regular and rigorous review of execution quality.

#### Q7.What criteria are taken into consideration when making order routing decisions and assessing execution quality?

A7. While no one factor is the single determinant of either decision or assessment, each market maker and market center is evaluated on a number of criteria, including:

- \* The ability to provide executions at the National Best Bid or Offer(NBBO)
- \* The ability to provide price improvement opportunities
- \* The ability to cross pre-opening orders or provide midpoint pricing
- \* The extent to which different market centers or market makers trade or may be more suitable for different types of orders or particular securities
- \* Adequate staffing; and the general responsiveness of the firm
- \* Differences in execution quality for limit orders among various market makers or market centers
- \* The willingness to adjust a price in the event of missed markets
- \* The opportunity for liquidity enhancement
- \* The speed of execution
- \* The financial responsibility of the market maker
- \* The speed of display of better-priced limit orders
- \* The willingness to provide copies of exception reports with follow-up actions
- \* The establishment of procedures to handle volatile market situations
- \* The ability to provide real-time notice of the disabling of auto execution systems
- \* The reliability of systems

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

# Q8. From where does Fidelity's Order Flow Management group get the order flow information and calculations?

A8. The order flow information and calculations are derived from National Financial Services LLC order entry and routing systems and internal execution and analysis systems. The resulting marketplace execution quality is calculated using only a specific firm's orders, executed by that marketplace. They are not intended to represent that destination's overall or SEC Rule 605 execution quality statistics.

# Q9.What specific order types are covered in the Monthly Order Flow Review?

A9. The report covers execution statistics on market orders of 100 - 9,999 shares for National Market System (NMS) Securities.

# Q10. Does the report exclude any types of orders?

A10. The report may exclude any order sent to a destination requiring manual handling, or for which there is a request for special handling for execution, including, but not limited to:

- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices
- \* Orders to be executed only at their full size
- \* Orders to be executed on a particular type of tick or bid
- \* Orders submitted on a "not held" basis
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution

# Q11.What calculations are covered in the Monthly Order Flow Review?

A11. Calculations, and their definitions, include the following:

\* Average Speed - The average time between order receipt and order execution based on a weighted average of the entire order

- \* Average Effective Spread On a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt
- \* Average Quote Spread The average difference between the National Best Bid and Offer(NBBO) at the time of order receipt
- \* Effective/Quoted Spread The Average Effective Spread divided by the Average Quoted Spread
- \* Percentage of Shares Price Improved Of total shares executed, the percentage of shares that were price improved
- \* Average Price Improvement per Share For shares executed with price improvement, the share-weighted average amount per share that prices were improved
- \* Dollars Saved The total dollar value of the price improvement received on executed orders

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

#### Q12.What other steps does Fidelity take to assess and monitor execution quality and make stock-specific routing decisions?

A12.On at least an annual basis, the Order Flow Management Group conducts meeting with various market centers, including market centers to which NFS electronically transmits order flow. We may request written responses to an execution quality questionnaire.

The questionnaire includes, but is not limited to, inquiries into auto-execution size and price improvement parameters, procedures to ensure compliance with best execution requirements and SEC order-handling rules, and procedures to monitor for execution quality. The Order Flow Management Group considers the results of its write up of these market center meetings, and the written responses by the market centers to the questionnaire, as important factors for determining where to route customer order flow.

# Q13.What additional resources does Fidelity provide to help with your overall flow evaluation?

A13. Other execution quality resources can be found on Streetscape® under

Streetscape® >Resources >Product and Services >Leading Investment Solutions. In second paragraph choose link entitled : "Quality Execution Services". There, clients can access our monthly Execution Quality Report Cards and Rule 605 Comparison Reports, which let them view overall trade execution statistics for NFS. From this section of Streetscape, clients can also link to our public site, www.nationalfinancial.com, to review SEC Rules 605 and 606 information.

# Q14. In addition to their relationship manager, whom else can clients call with questions about execution quality resources and support?

A14. Correspondent broker/dealers can contact the Order Flow Management Group via e-mail at orderflowmanagement@fmr.com with questions.

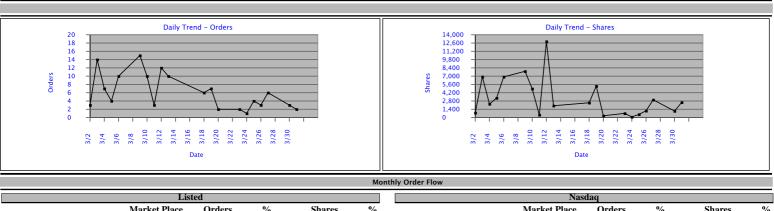
A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

# HIGHTOWER SECURITIES, LLC 200 WEST MADISON SUITE 2500 CHICAGO, IL 60606

### MONTHLY ORDER FLOW REVIEW March 2020



	List	ted				Nasdaq					
	Market Place	Orders	%	Shares	%		Market Place	Orders	%	Shares	%
Citadel Securities LLC		48	54.55%	28,086	59.77%	Citadel Securities LLC		26	72.22%	14,205	76.93%
Virtu Financial		23	26.14%	10,675	22.72%	Virtu Financial		4	11.11%	1,300	7.04%
G1 Execution Services, LLC		10	11.36%	4,702	10.01%	G1 Execution Services, LLC		2	5.56%	1,380	7.47%
Two Sigma Securities, LLC		3	3.41%	1,680	3.58%	Jane Street Capital		2	5.56%	700	3.79%
UBS Securities, LLC		3	3.41%	1,600	3.40%	Two Sigma Securities, LLC		1	2.78%	140	0.76%
Jane Street Capital		1	1.14%	250	0.53%	UBS Securities, LLC		1	2.78%	741	4.01%
		88	100.00%	46,993	100.00%			36	100.00%	18,466	100.00%

	Execu	tion Quality Result	S			
	Listed O	rder Flow Performan	ice			
Market Place	Avg. Speed (Seconds)	Average Effective Spread	Effective/ Quoted Spread	% Shares Price Impr.	Average Price Impr. Per Share	Dollars Saved
Citadel Securities LLC	0	-0.015	-45.98%	78.99%	\$0.030	\$672.2
Virtu Financial	0	0.010	27.14%	87.49%	\$0.017	\$158.2
G1 Execution Services, LLC	0	0.014	15.46%	100.00%	\$0.039	\$182.28
Two Sigma Securities, LLC	0	0.002	12.09%	42.26%	\$0.021	\$14.9
UBS Securities, LLC	0	0.110	67.13%	100.00%	\$0.027	\$42.9
Jane Street Capital	0	0.000	0.00%	100.00%	\$0.040	\$10.00
	Nasdaq	Order Flow Performa	ance			
	Avg. Speed	Average	Effective/	% Shares	Average	
Market Place	•••	Effective	Quoted		Price Impr.	Dollars Save
	(Seconds)	Spread	Spread	Price Impr.	Per Share	
Citadel Securities LLC	0	-0.005	-8.59%	79.14%	\$0.044	\$493.5
Virtu Financial	0	0.006	9.33%	100.00%	\$0.030	\$39.44
G1 Execution Services, LLC	0	0.020	20.33%	100.00%	\$0.038	\$52.90
Jane Street Capital	0	0.002	4.43%	100.00%	\$0.025	\$17.6
Two Sigma Securities, LLC	0	0.010	19.60%	100.00%	\$0.020	\$2.8
UBS Securities, LLC	0	0.016	80.00%	100.00%	\$0.002	\$1.4

The results above reflect the actual performance on your firm's orders sent to the market centers listed. Each destination listed above may get very different types of order flow from your firm and therefore should not be viewed as directly comparable. For example, some destinations may accept only certain order types, or selectively trade only certain securities.

HTS

# MONTHLY ORDER FLOW REVIEW

# **Description of content:**

The Monthly Order Flow Review is intended as a tool to aid and supplement your overall order flow evaluation. Although some of the execution quality measurement metrics are the same or similar to those that are required pursuant to SEC Rule 605, this not is a Rule 605 report, and is not intended to be used as such.

The order flow information and calculations are derived from the National Financial Services LLC (NFS) order entry and routing systems and internal execution analysis systems. The resulting market place execution quality is calculated using only your firm's orders, executed by that market place. They are not intended to represent that destination's overall or Rule 605 execution quality statistics.

#### Scope of Order Types:

- Shall include National Market System (NMS) Securities, market orders within the range of 100 9,999 shares. This size range is used because it represents an order size typically sent to a marketplace for automated, rather than manual, execution. Included are orders that were directed by NFS and orders that were directed by the broker/dealer to a specific market place destination.
- Shall include orders entered into the NFS order entry system during regular market hours (9:30 a.m. 4:00 p.m. ET).
- May exclude any order sent to a destination requiring manual handling, or for which there was a request for special handling for
- execution, including (but not limited to ) the following:
- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices \* Orders to be executed only at their
- \* Orders to be executed only at their full size \* Orders to be executed on a particular type of the
- \* Orders to be executed on a particular type of tick or bid \* Orders submitted on a "not held" basis
- \* Orders submitted on a "not held" basis
  \* Orders for other than regular settlement
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution.

**Calculations:** Calculations are based on the original execution time and price received by the venue and exclude subsequent price adjustments.

Average Speed - the average time between order receipt and order execution based on a weighted average of the entire order.

**Average Effective Spread -** on a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt.

Average Quoted Spread - the average difference between the National Best Bid and Offer (NBBO) at the time of order receipt.

Effective/Quoted Spread - the Average Effective Spread divided by the Average Quoted Spread.

Percent of Shares Price Improved - of total shares executed, the percentage of shares that were price improved.

Average Price Improvement per Share - for shares executed with price improvement, the share-weighted average amount per

share that prices were improved.

**Dollars Saved -** the total dollar value of price improvement received on executed orders.

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

Some language in the above calculation descriptions was borrowed from the RegOne Solutions Rule 605 Comparison Tool. RegOne Solutions is an independent organization that is not affiliated with Fidelity.

The data provided includes order information from National Financial Services' correspondent broker-dealers. There are different means and measures by which institutions evaluate execution quality. We believe the data, analytic techniques and presentation in this report represent a tool for evaluating and measuring certain aspects of execution quality. As such, methods and measurements should be used as a supplement to, and not a substitute for, a client's overall approach to measuring execution quality, including trade by trade best execution analysis.

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

The registered trademarks and service marks appearing herein are the property of FMR LLC.

361774.11.0

# Questions and Answers: Monthly Order Flow Review for Individual Firms

# Q1.What is the Monthly Order Flow Review?

A1. The Monthly Order Flow Review is a correspondent broker/dealer-specific report containing detailed information on executed orders.

# Q2.What type of information is included in the Monthly Order Flow Review?

A2. The report contains order routing information and market center performance representing the individual firm's executed order flow entered through National Financial Services LLC order entry system. Included are orders that were directed by National Financial Services LLC and orders that were directed by the broker/dealer to a specific market place destination.

## Q3.What is the intent of the Monthly Order Flow Review and does it fulfill a specific regulatory obligation?

A3. The report is provided in consideration of your fiduciary obligation to independently evaluate and assess the quality of executions you receive. This monthly service was developed to be used as a tool to aid and supplement your overall order flow evaluation and does not fulfill a specific regulatory obligation. Although some execution quality measurements metrics are the same or similar to those which are required under SEC Rule 605 reporting, this is not a SEC Rule 605 report and it is not intended to be used as such.

#### Q4.What does this report tell me, what should I be looking for, and against what do I compare it?

A4. The report provides broker/dealers information of their executions, formatted into execution quality metrics/buckets that are recognized throughout the industry. The results may highlight statistics that warrant further investigation or explanation, based on your firm's execution quality policies. Comparison of cumulative monthly reports will assist in your evaluation.

#### Q5.Who produces the report?

A5. The report is produced by Fidelity's Order FlowManagement group and is a service of Fidelity CapitalMarkets Services, a division of National Financial Services LLC.

# Q6.What does the Order Flow Management group do?

A6. The group is responsible for the routing of all orders for customers of National Financial Services LLC (NFS). It makes overall order routing decisions to ensure customer orders are executed at the best prices reasonably available under prevailing market conditions. The group also performs regular and rigorous review of execution quality.

#### Q7.What criteria are taken into consideration when making order routing decisions and assessing execution quality?

A7. While no one factor is the single determinant of either decision or assessment, each market maker and market center is evaluated on a number of criteria, including:

- \* The ability to provide executions at the National Best Bid or Offer(NBBO)
- \* The ability to provide price improvement opportunities
- \* The ability to cross pre-opening orders or provide midpoint pricing
- \* The extent to which different market centers or market makers trade or may be more suitable for different types of orders or particular securities
- \* Adequate staffing; and the general responsiveness of the firm
- \* Differences in execution quality for limit orders among various market makers or market centers
- \* The willingness to adjust a price in the event of missed markets
- \* The opportunity for liquidity enhancement
- \* The speed of execution
- \* The financial responsibility of the market maker
- \* The speed of display of better-priced limit orders
- \* The willingness to provide copies of exception reports with follow-up actions
- \* The establishment of procedures to handle volatile market situations
- \* The ability to provide real-time notice of the disabling of auto execution systems
- \* The reliability of systems

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.

# Q8. From where does Fidelity's Order Flow Management group get the order flow information and calculations?

A8. The order flow information and calculations are derived from National Financial Services LLC order entry and routing systems and internal execution and analysis systems. The resulting marketplace execution quality is calculated using only a specific firm's orders, executed by that marketplace. They are not intended to represent that destination's overall or SEC Rule 605 execution quality statistics.

# Q9.What specific order types are covered in the Monthly Order Flow Review?

A9. The report covers execution statistics on market orders of 100 - 9,999 shares for National Market System (NMS) Securities.

# Q10. Does the report exclude any types of orders?

A10. The report may exclude any order sent to a destination requiring manual handling, or for which there is a request for special handling for execution, including, but not limited to:

- \* Orders to be executed at a market opening price or a market closing price
- \* Orders submitted with stop prices
- \* Orders to be executed only at their full size
- \* Orders to be executed on a particular type of tick or bid
- \* Orders submitted on a "not held" basis
- \* Orders for other than regular settlement
- \* Orders to be executed at prices unrelated to the market price of the security at the time of execution

# Q11.What calculations are covered in the Monthly Order Flow Review?

A11. Calculations, and their definitions, include the following:

\* Average Speed - The average time between order receipt and order execution based on a weighted average of the entire order

- \* Average Effective Spread On a share-weighted average basis, twice the difference between the execution price and the midpoint of the consolidated best bid and offer at the time of order receipt
- \* Average Quote Spread The average difference between the National Best Bid and Offer(NBBO) at the time of order receipt
- \* Effective/Quoted Spread The Average Effective Spread divided by the Average Quoted Spread
- \* Percentage of Shares Price Improved Of total shares executed, the percentage of shares that were price improved
- \* Average Price Improvement per Share For shares executed with price improvement, the share-weighted average amount per share that prices were improved
- \* Dollars Saved The total dollar value of the price improvement received on executed orders

Price improvement calculations are based on "eligible" orders, where orders were received when the consolidated NBBO quoted spread was a minimum 1 cent spread. Eligible orders are orders in securities that have NBBO quotes.

#### Q12.What other steps does Fidelity take to assess and monitor execution quality and make stock-specific routing decisions?

A12.On at least an annual basis, the Order Flow Management Group conducts meeting with various market centers, including market centers to which NFS electronically transmits order flow. We may request written responses to an execution quality questionnaire.

The questionnaire includes, but is not limited to, inquiries into auto-execution size and price improvement parameters, procedures to ensure compliance with best execution requirements and SEC order-handling rules, and procedures to monitor for execution quality. The Order Flow Management Group considers the results of its write up of these market center meetings, and the written responses by the market centers to the questionnaire, as important factors for determining where to route customer order flow.

# Q13.What additional resources does Fidelity provide to help with your overall flow evaluation?

A13. Other execution quality resources can be found on Streetscape® under

Streetscape® >Resources >Product and Services >Leading Investment Solutions. In second paragraph choose link entitled : "Quality Execution Services". There, clients can access our monthly Execution Quality Report Cards and Rule 605 Comparison Reports, which let them view overall trade execution statistics for NFS. From this section of Streetscape, clients can also link to our public site, www.nationalfinancial.com, to review SEC Rules 605 and 606 information.

# Q14. In addition to their relationship manager, whom else can clients call with questions about execution quality resources and support?

A14. Correspondent broker/dealers can contact the Order Flow Management Group via e-mail at orderflowmanagement@fmr.com with questions.

A service of Fidelity Capital Markets, a division of National Financial Services LLC.

For broker-dealer use only. Not for distribution to the public as sales material in any form.

Clearing, custody or other brokerage services may be provided by National Financial Services LLC. Member NYSE, SIPC.