

Execution Quality Scorecard

October 2018

EQUITIES

	Quoted Spread	Effective Spread	Effective/Quoted	Percent At Quote or Better	Covered Order Size	Percent of Shares Price Improved	Price Improvement Cents Per Share
Listed S&P 500	2.73	0.90	32.87	98.4	346	94.9	0.99
NASDAQ 100	9.00	3.33	36.99	96.7	316	93.8	3.12
NYSE ARCA ETF's	2.82	0.94	33.31	98.2	404	95.4	1.01

OPTIONS

	Quoted Spread	Effective Spread	Effective/Quoted	Percent At Quote or Better	Covered Order Size	Percent of Contracts Price Improved	Price Improvement Cents Per Contract
Penny Pilot Classes	13.96	4.17	29.87	94.5	4	67.8	7.59
Non Penny Pilot Classes	30.95	10.59	34.22	98.2	4	76.1	13.62

The performance for Pershing is comprised of the four largest routing destinations receiving Pershing's order flow for the month in terms of covered shares pursuant to SEC rule 605 for eligible market orders of less than 2,000 shares for equities. The option data is produced by Pershing and covers electronic market orders, which meet the eligibility tests of SEC rule 605 for equities, and are less than 20 contracts to harmonize the data provided for equities. The Penny Classes category includes all option classes that were part of the pilot being conducted by the industry to modify the minimum trading increment when the option premium is less than three dollars per contract during the reporting month. Non Penny Classes category does not include single listed index products.

This report is for general reference only. It does not necessarily reflect the performance which your firm received and should not be solely relied upon to satisfy your firm's obligation to regularly and rigorously review the execution quality of your order flow.

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EQSC-PER-TS-3-15