



Zeno Equity Transaction Cost Universe: Asset Manager Trade Process Ranking Summary

FIRST QUARTER 2018

An asset manager’s trading process is often a significant component of their overall investment performance. Managers have a fiduciary obligation to both obtain best execution (so as to minimize the impact their trading has on their clients’ portfolio returns), and avoid paying excessive commissions. Asset owners, in turn, have a fiduciary obligation to monitor their managers to ensure those managers are in fact receiving best execution and paying reasonable commission rates. The tables below show the range of trading costs, commissions, and impact to performance, incurred by managers within each Zeno Peer Group Universe. In addition, key observations regarding each Peer Group Universe are provided in bullet-points. The tables cover the four-quarter average as of December 31, 2017. A glossary of terms is provided on page 4.

US Large Cap Growth				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (¢)	Execution Price vs. VWAP (bp)
Top (25%)	-24	-19	-1.89	-4
Median (50%)	-55	-44	-2.52	-7
Bottom (75%)	-78	-92	-2.79	-11

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s US Large Cap Growth Peer Universe was -55 bps.
- Median costs in Zeno’s US Large Cap Growth Peer Universe decreased by 2 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s US Large Cap Growth Peer Universe was 53 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s US Large Cap Growth Peer Universe was 48 bps.



US Large Cap Value				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (€)	Execution Price vs. VWAP (bp)
Top (25%)	-10	-4	-1.47	-4
Median (50%)	-21	-17	-2.01	-7
Bottom (75%)	-42	-40	-2.50	-9

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s US Large Cap Value Peer Universe was -21 bps.
- Median costs in Zeno’s US Large Cap Value Peer Universe decreased by 6 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s US Large Cap Value Peer Universe was 32 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s US Large Cap Value Peer Universe was 14 bps.

US Small Cap Growth				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (€)	Execution Price vs. VWAP (bp)
Top (25%)	-45	-39	-1.72	-3
Median (50%)	-66	-84	-2.60	-10
Bottom (75%)	-112	-159	-3.01	-16

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s US Small Cap Growth Peer Universe was -66 bps.
- Median costs in Zeno’s US Small Cap Growth Peer Universe increased by 40 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s US Small Cap Growth Peer Universe was 66 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s US Small Cap Growth Peer Universe was 56 bps.



US Small Cap Value				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (¢)	Execution Price vs. VWAP (bp)
Top (25%)	4	5	-1.52	-6
Median (50%)	-52	-44	-1.95	-11
Bottom (75%)	-98	-101	-2.53	-17

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s US Small Cap Value Peer Universe was -52 bps.
- Median costs in Zeno’s US Small Cap Value Peer Universe increased by 3 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s US Small Cap Value Peer Universe was 102 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s US Small Cap Value Peer Universe was 41 bps.

NonUS Developed Markets				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (bp)	Execution Price vs. VWAP (bp)
Top (25%)	-20	-6	-5	-7
Median (50%)	-34	-25	-7	-11
Bottom (75%)	-56	-68	-9	-14

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s NonUS Developed Markets Peer Universe was -34 bps.
- Median costs in Zeno’s NonUS Developed Markets Peer Universe decreased by 6 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s NonUS Developed Markets Peer Universe was 37 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s NonUS Developed Markets Peer Universe was 23 bps.



Emerging Markets				
Ranking	Total Costs (bp)	Performance Impact (bp)	Commissions (bp)	Execution Price vs. VWAP (bp)
Top (25%)	-23	-17	-6	-8
Median (50%)	-51	-35	-9	-12
Bottom (75%)	-89	-72	-13	-17

Total Costs (Implementation Shortfall) Quarterly Review

- The average trading costs over the trailing four-quarter period in Zeno’s Emerging Markets Peer Universe was -51 bps.
- Median costs in Zeno’s Emerging Markets Peer Universe increased by 3 bps from one year ago.
- The difference between the Top and Bottom quartile manager in Zeno’s Emerging Markets Peer Universe was 66 bps.
- The difference between the median “Execution Price vs. VWAP” and the median “Total Costs” in Zeno’s Emerging Markets Peer Universe was 39 bps.

Glossary of Terms

Ranking displays the results of the managers who ranked in the 25th, 50th, and 75th percentile of their respective Peer Group Universes.

Total Costs the four-quarter average of total execution costs (sum of Multi-day Delay, Daily Market-Impact and Commission costs) paid in order to build/unwind trade orders. The difference between the more efficient vs. more expensive managers can often exceed 100 bp in trading costs.

Performance Impact the loss of asset value incurred as a result of a manager’s trading activity (calculated by multiplying the manager’s “Total Cost” by that manager’s Turnover). In evaluating the factors contributing to manager returns (i.e. “performance attribution”), “Performance Impact” describes the impact that trading costs had on a manager’s overall performance.

Commissions (the explicit fees paid to brokers to execute trades) are typically the smallest, but most controllable part of a manager’s total execution costs – “*The tip of the iceberg.*”

Execution Price vs. VWAP the difference between the execution price of a manager’s trade, versus the average price paid for that security in the marketplace throughout the full day (“VWAP”). Negative figures indicate that the manager’s executed price was worse than that day’s VWAP.



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