



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 7

MEETING DATE: November 7, 2017

SUBJECT: Quarterly Trading Activity and Commission Recapture Report – Third Quarter 2017

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Quarterly Trading Activity Report for the quarter ending September 30, 2017.

PURPOSE

This agenda item complies with SCERS' investment policy statement reporting requirements and provides a summary of SCERS' investment manager trade execution and Elkins / McSherry Quarterly Trade Cost Summary Report.

DISCUSSION

SCERS engages Elkins / McSherry ("EM"), a State Street company, to track SCERS' equity and fixed income trading activity and to monitor manager trade execution. EM analyzes a manager's trade activity against like managers across EM's universe of approximately 1,400 institutional investors.

EM's trade analysis report will highlight potential manager trading issues and, if they occur over two or more quarters, Staff will discuss compliance with the manager. The EM trading cost reports will analyze and compare the following:

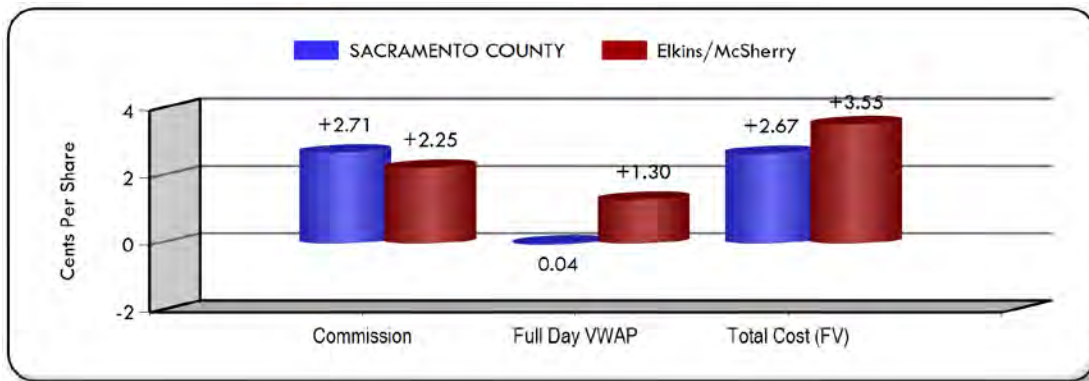
1. Commission costs, trade costs, and any soft dollar amounts.
2. Market Impact Cost, an industry performance metric, which measures the difference between a manager's trade price and the market's volume weighted average price ("VWAP"). VWAP is the average security price weighted by the share volume traded that day.
3. Total trading costs.

Industry metrics used to measure trade performance include "cps" (cents per share) and "bps" (basis points = 1/100th of one percent).

SCERS TRADE COST SUMMARY

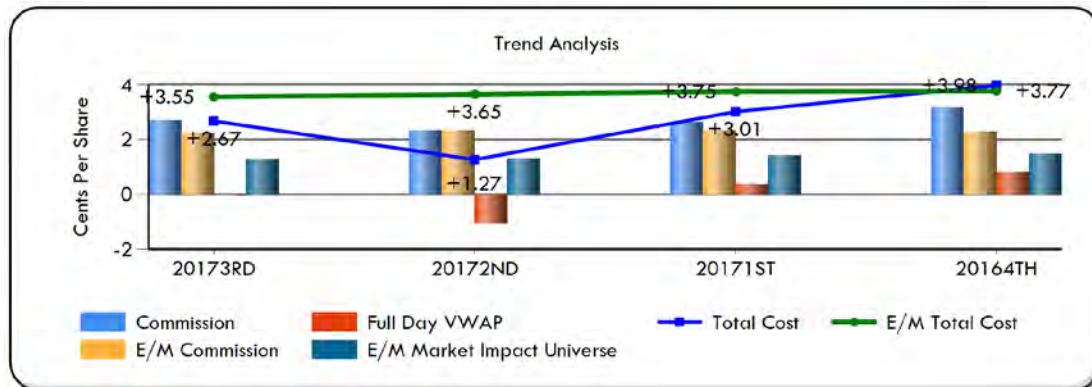
U.S. EQUITY

- SCERS' U.S. equity managers traded 3.9 million shares across the AMEX, NASDAQ and NYSE exchanges totaling \$136.4 million in principal, and ranked in the 59th percentile among the EM U.S. Equity universe.
- SCERS' total trading cost equaled +2.67 cps, which is +0.88 cps lower than the peer group, as follows:
 - Commission cost of +2.71 cps versus +2.25 cps
 - Market impact cost of -0.04 cps versus +1.30 cps
- As illustrated below, SCERS' total trading costs were better than 64% of the peer group.



- A majority of SCERS' U.S. Equity managers experienced unfavorable commission costs compared to the U.S. Equity peer group. Managers with commission costs greater than the average peer group cost of +2.25 cps include:
 - DGHM at +3.18 cps
 - Wedge Capital at +3.10 cps
 - CenterSquare at +2.96 cps
 - Weatherbie at +2.73 cps
 - Brown Advisors at +2.71 cps
 - UBS Global at +2.45 cps

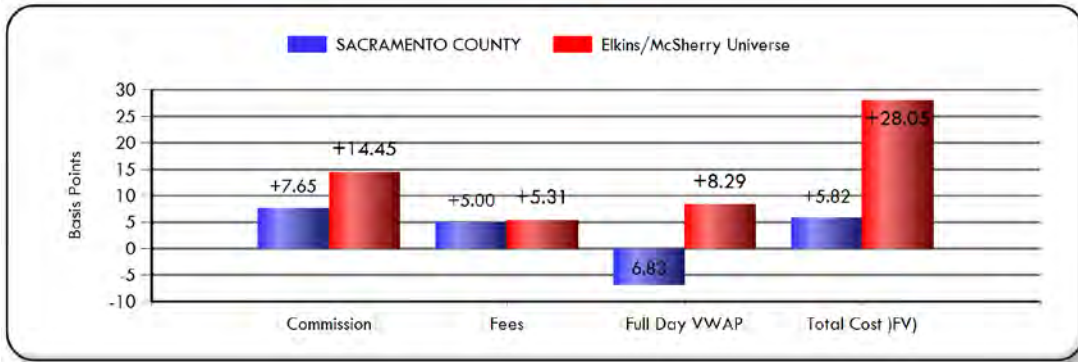
- As illustrated below, with the exception of last quarter, SCERS' managers have generally been experiencing higher commission costs than the peer group.



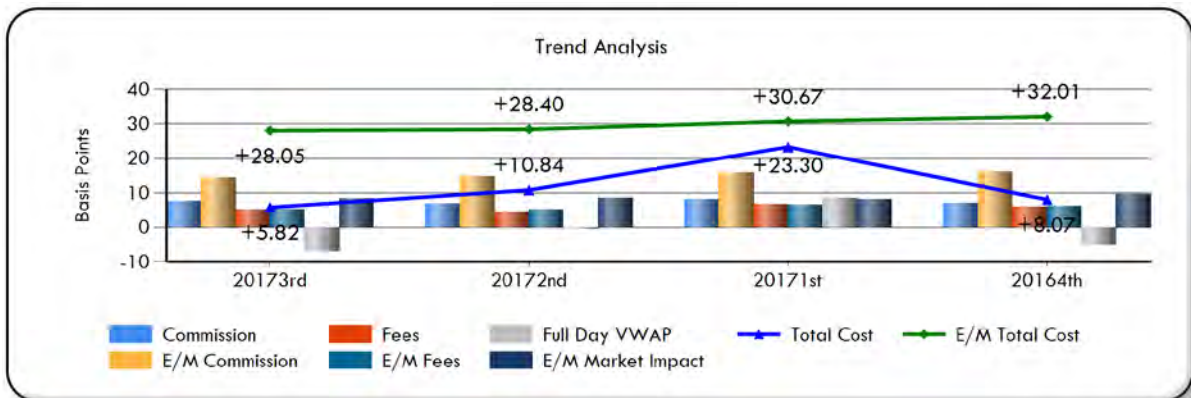
- The U.S. small cap managers (Weatherbie, UBS Global, DGHM, and Wedge Capital) and the U.S. REIT manager (CenterSquare) will typically incur additional commission costs in the form of a soft dollar relationship where, in return for conducting trades through a brokerage firm, the manager receives the brokerage firm's research, generally an additional +2.0 cps.
- According to Elkins / McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.59 cps, which is higher than all SCERS' U.S. Small Cap managers
- The majority of SCERS' U.S. Equity managers experienced favorable market impact costs compared to the peer group cost of +1.30 cps, except the following managers:
 - Weatherbie at +7.62 cps
 - Brown Advisors at +3.98 cps

INTERNATIONAL EQUITY

- SCERS' International Equity managers traded 28.6 million shares totaling \$186.1 million in principal across 26 countries.
- Total trading cost equaled +5.82 bps, which is +22.23 bps lower than the peer group, as follows:
 - Commission cost of +7.65 bps versus +14.45 bps
 - Fees (country taxes, tariffs) of +5.00 bps versus +5.31 bps
 - Market impact cost of -6.83 bps versus +8.29 bps



- All the SCERS’ International Equity managers analyzed generated commission costs (ranging from +1.91 bps to +10.07 bps), significantly less than the EM peer group (ranging from +14.04 bps to +14.67 bps). This result is consistent with the previous quarters’ lower trade costs versus the peer group, as illustrated below.

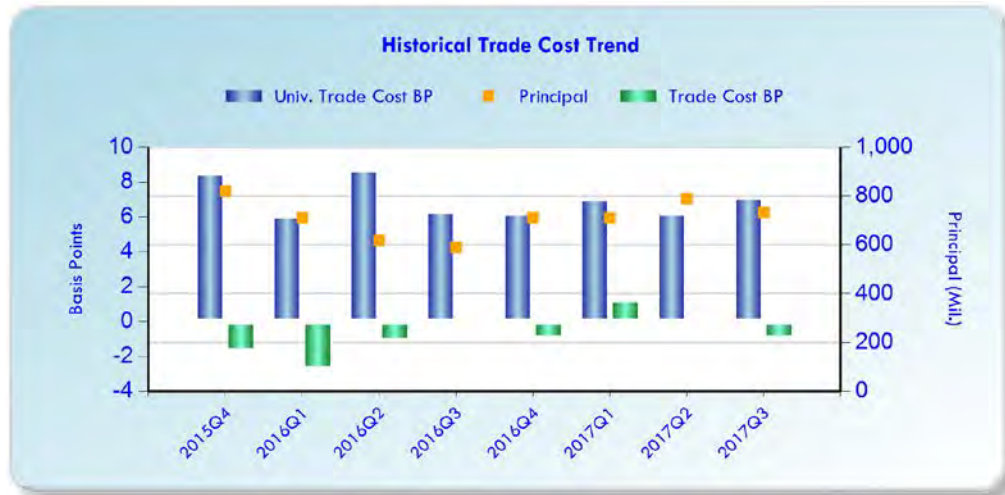


- All of SCERS’ International Equity managers experienced favorable market impact cost versus the peer group during the quarter.

U.S. FIXED INCOME

- SCERS’ U.S. Fixed Income managers conducted 712 trades totaling \$733.4 million in principal, as follows:
 - Mortgages: 463 trades totaling \$360 million
 - Governments: 211 trades totaling \$357 million
 - Corporates: 38 trades totaling \$16 million
- Total trading cost equaled -0.96 bps, which is +8.09 bps lower than the EM peer group, as follows:
 - Mortgages at -2.35 bps versus +5.23 bps
 - Governments at +0.10 bps versus +8.56 bps
 - Corporates at +6.87 bps versus +18.11 bps

- As illustrated below, the results are consistent with previous quarters' trade costs versus the peer group.

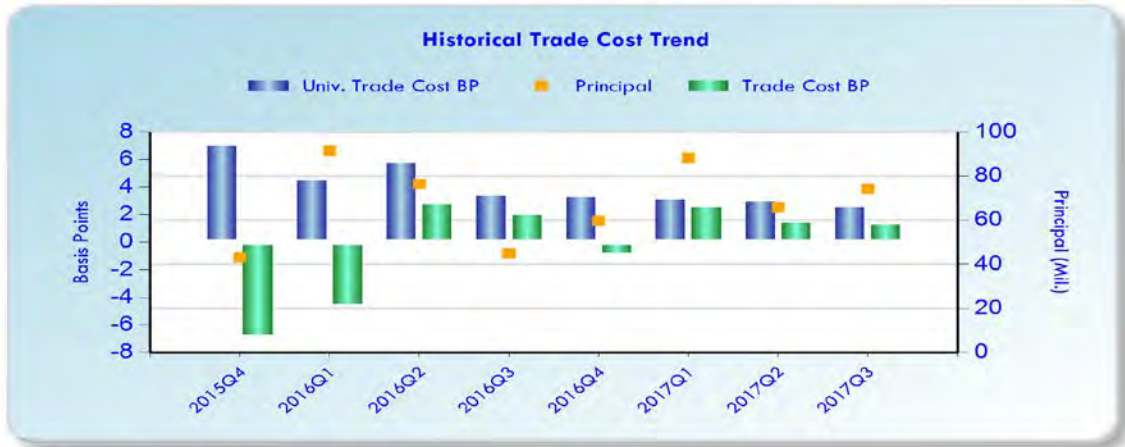


- Comparing SCERS' U.S. Fixed Income Core Plus managers trade costs versus their peer group is as follows:
 - TCW / MetWest at -0.65 bps versus +7.38 bps
 - NeubergerBerman at -2.33 bps versus +6.20 bps

INTERNATIONAL FIXED INCOME

- SCERS is invested with Brandywine Global Fixed Income's commingled fund; therefore, trading activity is not tracked.
- Prudential, SCERS' Core Plus Fixed Income manager, is permitted up to a 20% allocation in international bonds or non-U.S. denominated bonds, which is reported as follows:
 - Prudential conducted 178 international trades totaling \$74.3 million in principal as follows:
 - Governments: 128 trades totaling \$61 million
 - Corporates: 47 trades totaling \$12 million
 - Mortgages: 2 trades totaling \$1 million
 - Municipals: 1 trades totaling <\$1 million
 - Total trading cost was +1.49 bps, which was +1.26 bps lower than the EM peer group cost of +2.75 bps, as follows:
 - Governments at +1.09 bps versus +2.75 bps
 - Corporates at +4.20 bps versus +2.77 bps
 - Mortgages at -5.72 bps versus +2.75 bps
 - Municipals at +0.00 bps versus 2.75 bps

➤ Trading costs are consistent with previous quarters' results, as illustrated below.



COMMISSION RECAPTURE

- SCERS' commission recapture program, administered by State Street, instructs investment managers to trade with the program's brokerage partners but only if the trade cost is lower and is the best execution.
- SCERS' brokerage partners rebate back to SCERS approximately 60% of the commissions paid.
 - For the quarter ending September 30, 2017, the commission rebate totaled \$5,495.
 - For the year-to-date 2017, the commission rebate totaled \$33,136.

ATTACHMENT

Elkins / McSherry Trading Cost Summary report for the quarter ending September 30, 2017 for U.S. equity, international equity, U.S. fixed income, and international fixed income.

Prepared by:

/s/

 Brian Miller
 Investment Officer

Reviewed by:

/s/

 Steve Davis
 Chief Investment Officer

/s/

 Annette St. Urbain
 Interim Chief Executive Officer



SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End September 30, 2017





REPORT CONTENTS

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- **Most Active Stocks**
- **10 High / Low Cost Trades**
- **10 High Cost Trade Graphs**
- **10 Low Cost Trade Graphs**



(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates U.S. equity executions from July 1, 2017 to September 30, 2017. The analysis included trading of 3,933,837 shares representing \$136.42 million in principal.

Methodology :

The Elkins/McSherry analysis measures trading efficiency by quantifying the cost of brokerage commission and execution quality versus a Full Day VWAP benchmark for each of the securities traded. These data have been aggregated to summarize results by Buy/Sell, Commissions, Market Impact, Short Term Alpha, Market Cap, Trade Difficulty and Trade Detail. These results are quantified in USD as well as being displayed graphically to highlight the outcomes.

Results :

BENCHMARK PERFORMANCE

Commission	Full Day VWAP	E - Score
<ul style="list-style-type: none"> Your commission cost was +2.71 cps (+7.82 bp) or +\$106,661 (+0.46 cps (+1.32 bp) worse than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact savings was 0.04 cps (0.11 bp) or 1.33 cps (3.85 bp) better than the Elkins/McSherry Universe Your overall trading cost of +2.67 cps (+7.71 bp) was 0.88 cps (2.53 bp) better than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 82% Total Cost Universe Rank: 64% 	<ul style="list-style-type: none"> E-Score Rank : 59 E-Score : 0.54

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	75 %	+1.30
				25 %	+0.38
					+2.66



(+) = Cost

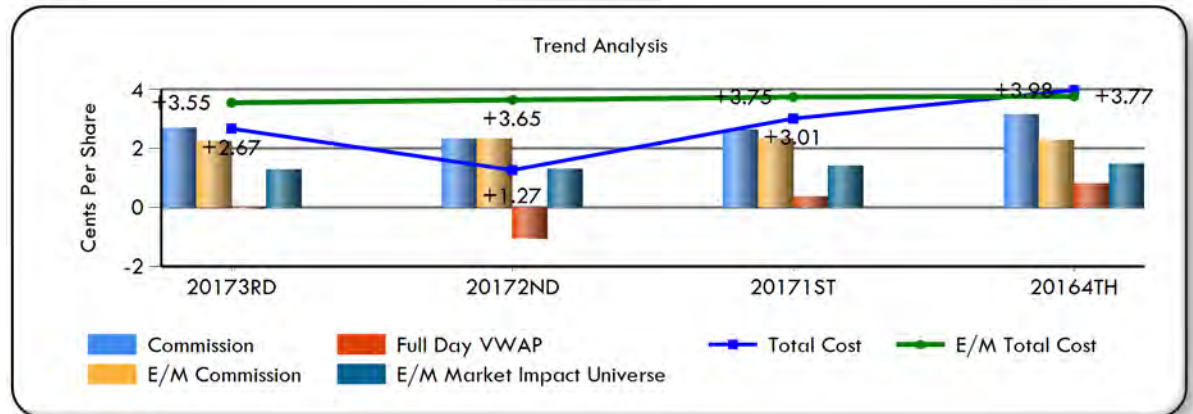
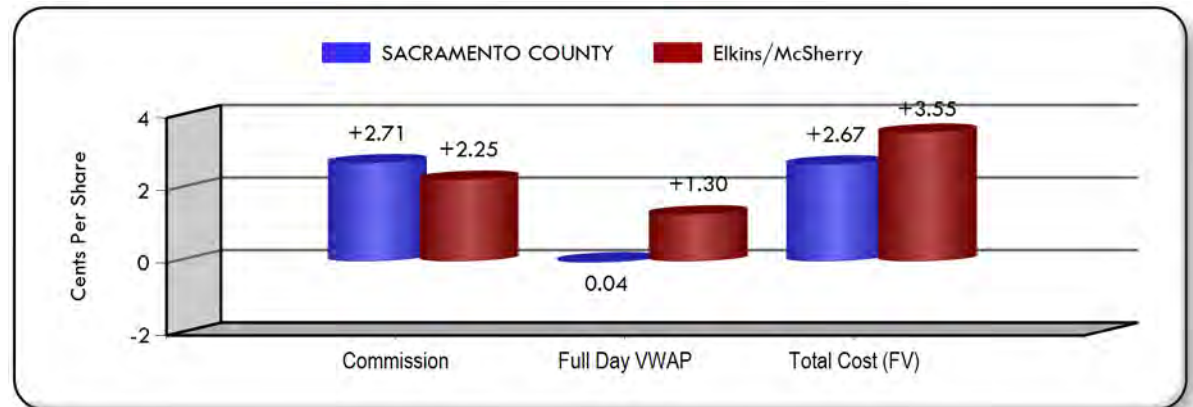
EXECUTIVE SUMMARY

TOTAL PORTFOLIO COST PERFORMANCE

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)	E - Score (Rank)	
Buys	+2.71	+2.25	+3.59	0.56	+1.30	+2.15	1.40	57	0.56
Sells	+2.71	+2.25	+3.59	+0.58	+1.30	+3.28	0.27	61	0.51
Total	+2.71	+2.25	+3.59	0.04	+1.30	+2.67	0.88	59	0.54

TRADING COMPONENTS

	Buys	Sells
Trade Principal	71,909,108	64,510,788
Shares	2,114,854	1,818,983
Unique Names	579	131
Liquidity (% ADV)	0.061	0.159
Avg. Execution Size	1,591	2,533
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,329	718



(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded (\$)	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score (Rank)	E - Score	Market Cap Definition
			Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP %	(cps)	Commission+ Full Day VWAP Vs. Universe (cps)			
Mid Cap	43.99 %	2,100	+2.96	+2.25	+1.58	+0.99	36 %	+4.54	+1.30	64	0.47	\$1 B TO \$5 B
Large Cap	30.46 %	1,157	+2.87	+2.25	0.29	+1.35	77 %	+2.58	1.03	52	0.64	\$5 B TO \$25 B
Giant Cap	17.81 %	1,646	+1.79	+2.25	+0.05	+1.49	74 %	+1.84	1.90	65	0.46	Over \$25 B
Small Cap	7.36 %	4,253	+2.55	+2.25	+0.00	+0.74	68 %	+2.55	0.44	59	0.53	\$250 M TO \$1 B
N.A.	0.39 %	17,550	+0.01	+2.25	77.67	+1.30	99 %	77.66	81.21	1	4.03	

Total Cost by Market Cap: (USD)

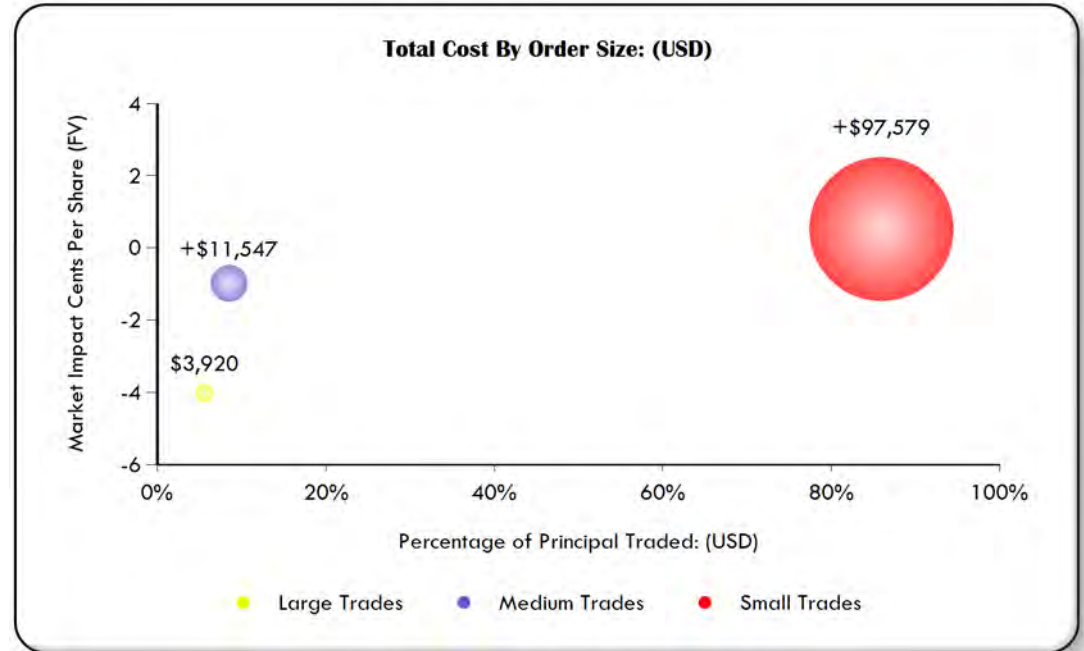
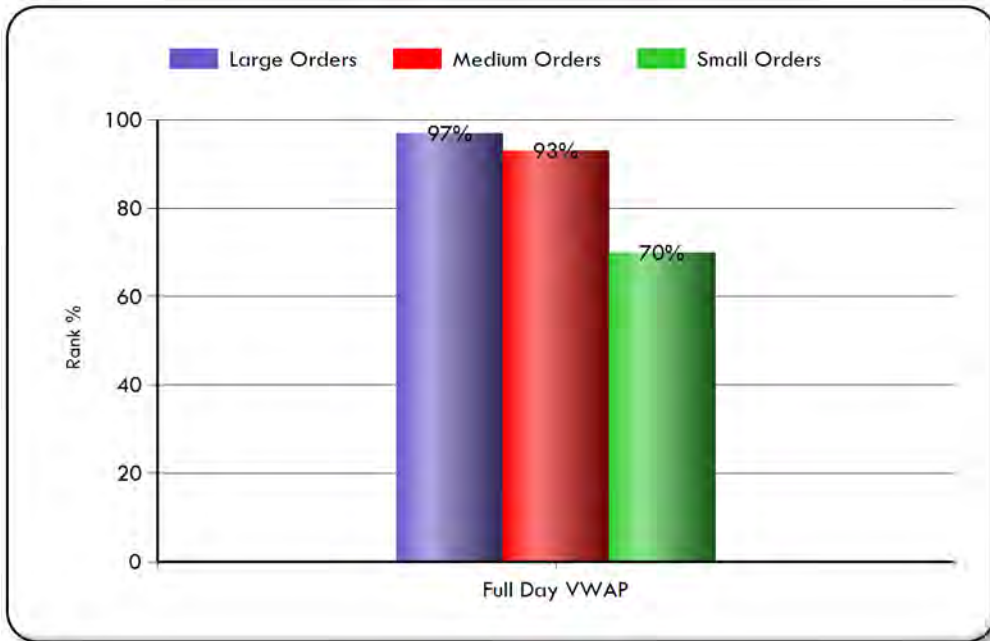


(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Shares Per Order	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score (Rank)	E - Score	Absolute Size (Shares)
				Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP	(cps)	Commission+Full Day VWAP Vs. Universe (cps)			
Large Orders	2	97,050	N/A	+2.00	+2.25	4.02	+1.30	97 %	2.02	5.57	66	0.44	50K or More
Med. Orders	51	17,070	N/A	+2.31	+2.25	0.99	+1.30	93 %	+1.33	2.22	55	0.59	10K-50K
Small Orders	1,994	1,439	N/A	+2.88	+2.25	+0.52	+1.30	70 %	+3.40	0.15	59	0.54	10K or Less





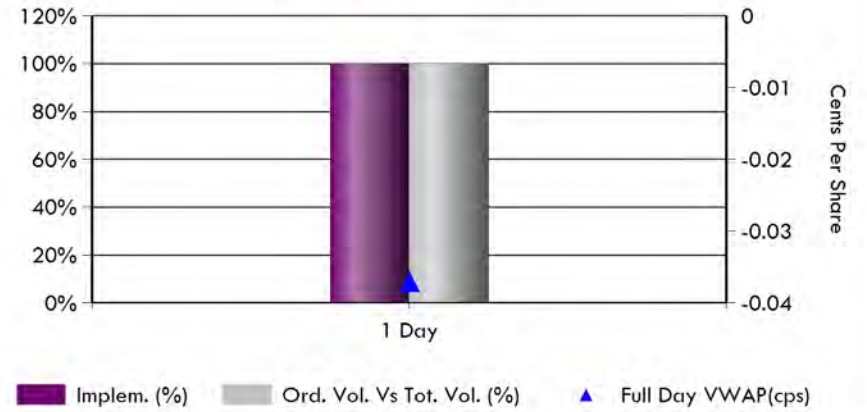
(+) = Cost

EXECUTIVE SUMMARY

IMPLEMENTATION DAYS BY TRADE

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
1 Day	100.00	100%	0.04	59	0.54

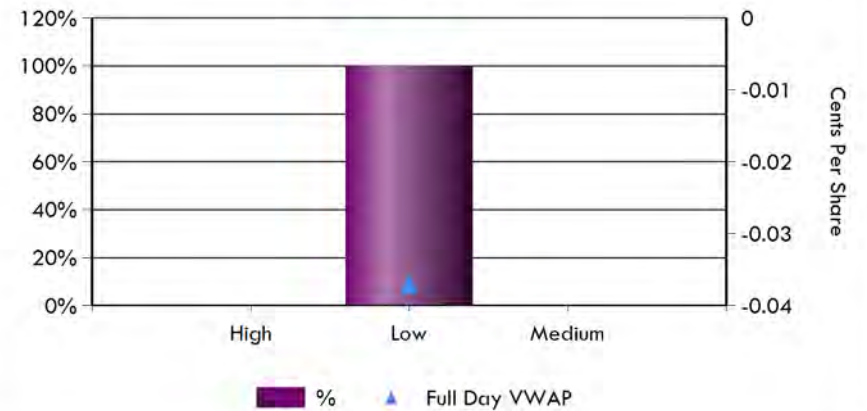
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
0%~20% of daily vol.	L	100%	0.04	59	0.54

Avg. % of Daily Volume





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EXECUTIVE SUMMARY

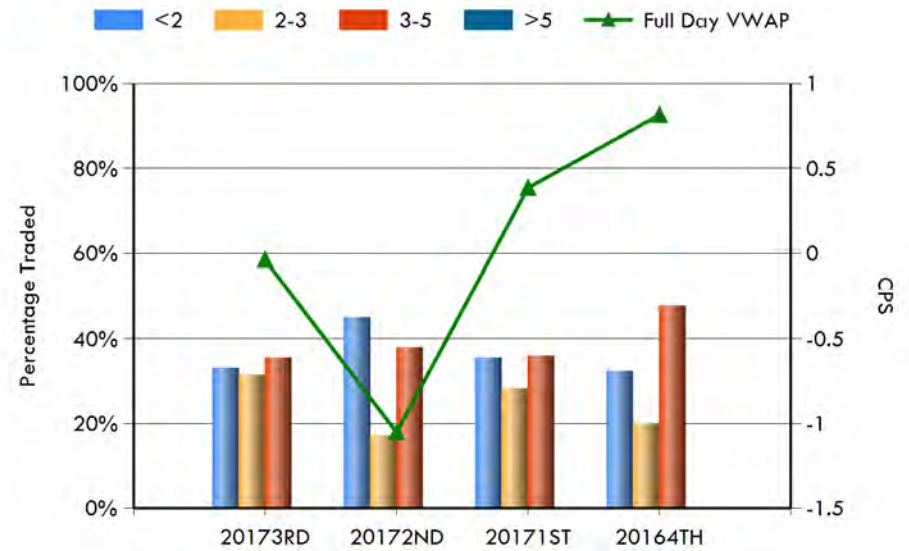
COMMISSION REVIEW

Top 10 Broker

Commission Trends

Broker	Total Commission (\$)	Commission 20173rd (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20172ND (cps)	20171ST (cps)	20164TH (cps)
LIQUIDNET	14,628	+2.28	+2.25	+3.59	+2.60	+2.74	+2.96
COWEN & CO	6,513	+2.45	+2.25	+3.59	+3.23	N.A	+3.70
CONVERGEX	5,767	+3.19	+2.25	+3.59	+4.11	+4.45	+4.94
CAPITAL IN	5,751	+3.28	+2.25	+3.59	+3.24	+3.42	+3.60
RBC CAPITA	5,647	+2.81	+2.25	+3.59	+3.22	+3.26	+3.28
JP MORGAN	4,964	+3.98	+2.25	+3.59	+0.39	+3.19	+3.34
SC BERNSTE	4,380	+2.12	+2.25	+3.59	+1.52	N.A	+1.40
STIFEL NIC	4,267	+3.27	+2.25	+3.59	+3.45	N.A	+3.34
MERRILL LY	4,265	+2.75	+2.25	+3.59	+2.85	+1.69	+2.49
ITG	4,007	+3.21	+2.25	+3.59	+3.30	+3.72	+3.87

Commission Category Trend



NOTES

(+) = Cost

TRADE CYCLE DETAIL

Manager Performance (Full Day VWAP)

						COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Manager	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2017 2ND (%)	2017 1ST (%)	2016 4TH (%)
CENTERSQUARE	32	1,546	997,476	51	0.66	+2.96	+2.25	0.32	85 %	0.90	90	68	-
UBS GLOBAL ASSET MGM	22	2,686	657,960	55	0.59	+2.45	+2.25	2.45	96 %	3.55	98	22	4
WEATHERBIE	21	2,408	416,651	59	0.54	+2.73	+2.25	+7.62	4 %	+6.81	37	84	62
DALTON, GREINER, HAR	19	4,426	978,077	68	0.41	+3.18	+2.25	0.83	93 %	1.20	92	94	25
EAGLE CAPITAL MANAGE	10	60,171	240,685	67	0.42	+2.00	+2.25	2.50	96 %	4.05	10	99	99
BROWN ADVISORY	10	1,204	98,757	65	0.45	+2.71	+2.25	+3.98	12 %	+3.14	31	77	99
WEDGE CAPITAL MGMT L	8	1,868	304,452	67	0.42	+3.10	+2.25	+0.15	79 %	0.31	90	49	91
ALLIANCE R 3000 CAPI	8	267	125,569	53	0.62	+0.56	+2.25	1.69	94 %	4.68	96	80	16
HUBER CAPITAL MANAGE	6	2,596	114,210	63	0.49	+0.78	+2.25	1.78	95 %	4.55	91	46	56

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	E - Score Rank	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		20172ND (%)	20171ST (%)	20164TH (%)
LIQUIDNET	25	2,246	642,257	60	0.52	14,628	+2.28	+2.25	1.79	95 %	3.07	30	94	99
GOLDMAN SACHS	10	365	182,991	49	0.68	2,389	+1.31	+2.25	+2.88	23 %	+0.64	99	93	93
CAPITAL INSTL SVCS	8	3,810	175,270	69	0.40	5,751	+3.28	+2.25	+0.01	81 %	0.26	21	96	73
SC BERNSTEIN	8	2,005	206,544	70	0.38	4,380	+2.12	+2.25	+1.42	46 %	0.01	99	1	99
ITG	7	1,403	124,895	54	0.60	4,007	+3.21	+2.25	4.51	97 %	4.85	34	46	28
THEMIS TRADING LLC	7	2,587	126,759	63	0.49	2,028	+1.60	+2.25	+13.93	1 %	+11.98	59	50	41
JP MORGAN CHASE	5	1,643	124,868	48	0.70	4,964	+3.98	+2.25	0.22	84 %	+0.20	98	80	92
MERRILL LYNCH	5	2,219	155,302	57	0.56	4,265	+2.75	+2.25	+0.50	71 %	0.31	98	27	5
UBS	5	2,315	118,071	58	0.55	2,472	+2.09	+2.25	+0.32	76 %	1.13	85	71	14
COWEN & CO	4	5,317	265,832	55	0.60	6,513	+2.45	+2.25	0.49	88 %	1.59	97	37	91

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
CITIGROUP	4	2,036	124,178	32	0.96	2,645	+2.13	+2.25	22.79	99 %	24.21	39	18	92
RBC CAPITAL MARKETS	4	2,915	201,136	64	0.47	5,647	+2.81	+2.25	0.70	91 %	1.44	97	21	9
CONVERGEX	4	2,873	180,981	72	0.36	5,767	+3.19	+2.25	0.58	90 %	0.94	91	91	82
BAIRD, ROBERT W	3	2,932	96,767	71	0.38	3,549	+3.67	+2.25	+0.39	75 %	+0.50	32	92	77
BROADCORT CAPITAL	3	3,018	51,303	63	0.48	1,477	+2.88	+2.25	+10.26	1 %	+9.59	98	27	94
JEFFERIES & CO	3	1,838	86,398	54	0.62	2,898	+3.35	+2.25	4.61	97 %	4.81	17	98	91
STIFEL NICOLAUS & CO	3	3,837	130,458	53	0.63	4,267	+3.27	+2.25	+4.48	10 %	+4.20	97	7	87
KEYBANC	2	2,229	51,267	72	0.36	1,986	+3.87	+2.25	2.00	95 %	1.68	90	84	63
MORGAN STANLEY	2	3,088	58,674	65	0.45	1,756	+2.99	+2.25	7.49	98 %	8.05	1	50	94
BARCLAYS	2	1,222	56,213	56	0.58	1,907	+3.39	+2.25	0.65	90 %	0.80	95	45	91

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS Commission + Full Day VWAP Vs. Universe	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		20172ND (%)	20171ST (%)	20164TH (%)
WELLS FARGO	2	2,052	71,827	58	0.55	2,352	+3.27	+2.25	+2.27	30 %	+2.00	94	20	84
PIPER JAFFRAY	1	6,356	88,988	69	0.40	2,196	+2.47	+2.25	+2.52	28 %	+1.44	1	29	84
WEEDEN & CO	1	1,858	42,726	78	0.28	1,495	+3.50	+2.25	2.42	96 %	2.47	92	90	94
OPPENHEIMER & CO INC	1	3,539	38,926	68	0.42	1,441	+3.70	+2.25	7.84	98 %	7.69	1	95	1
NEEDHAM & CO INC	1	2,843	28,430	65	0.46	1,023	+3.60	+2.25	+4.93	7 %	+4.98	99	95	99
CREDIT SUISSE	1	1,435	34,450	49	0.69	1,052	+3.05	+2.25	+8.05	3 %	+7.56	3	15	22
WILLIAM BLAIR	1	3,479	27,830	50	0.68	1,002	+3.60	+2.25	+39.63	1 %	+39.68	93	19	97
KNIGHT CAPITAL	1	736	25,770	82	0.23	517	+2.01	+2.25	+0.33	76 %	1.21	3	-	22
ISI GROUP INC	1	3,126	43,763	34	0.93	1,113	+2.54	+2.25	+2.33	29 %	+1.32	24	5	97
INSTINET	<1	1,623	11,364	44	0.75	148	+1.30	+2.25	+35.55	1 %	+33.30	-	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
RAYMOND JAMES	<1	1,365	30,029	69	0.41	916	+3.05	+2.25	3.88	97 %	4.38	85	93	81
CRAIG - HALLUM	<1	4,390	35,119	85	0.19	1,298	+3.70	+2.25	+2.79	24 %	+2.94	59	96	2
STATE STREET BANK	<1	1,066	12,790	25	1.11	116	+0.90	+2.25	+9.07	2 %	+6.42	27	7	28
JONES TRADING	<1	3,727	55,900	63	0.49	1,118	+2.00	+2.25	1.38	94 %	2.93	6	83	99
MKM PARTNERS	<1	2,042	30,636	48	0.70	625	+2.04	+2.25	0.73	91 %	2.24	91	-	-
CANTOR FITZGERALD	<1	5,160	25,800	89	0.14	903	+3.50	+2.25	+0.78	61 %	+0.73	1	99	1
STEPHENS & CO INC	<1	5,949	17,846	63	0.49	654	+3.67	+2.25	8.84	99 %	8.73	63	50	2
LOOP CAPITAL MARKETS	<1	3,052	12,208	77	0.30	528	+4.32	+2.25	1.37	94 %	0.60	1	-	-
BTIG LLC	<1	2,513	5,025	42	0.79	101	+2.00	+2.25	+26.62	1 %	+25.07	90	98	99
FIRST ANALYSIS SECUR	<1	4,365	4,365	63	0.48	218	+5.00	+2.25	1.42	94 %	+0.03	-	-	99

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
DEUTSCHE BANK	<1	3,718	14,870	20	1.24	339	+2.28	+2.25	8.62	98 %	9.90	98	98	99
GREEN STREET	<1	962	5,771	66	0.44	267	+4.62	+2.25	10.65	99 %	9.58	95	96	6
HIBERNIA SOUTHCOAST	<1	9,153	27,460	46	0.73	961	+3.50	+2.25	2.81	96 %	2.86	2	99	-
PERSHING	<1	1,766	5,298	62	0.49	185	+3.50	+2.25	9.46	99 %	9.51	-	91	-
TELSEY ADVISORY GR	<1	4,430	13,289	82	0.22	509	+3.83	+2.25	1.58	94 %	1.30	98	10	99
LEERINK SWANN	<1	1,920	3,839	48	0.71	138	+3.60	+2.25	+4.93	7 %	+4.98	98	98	86
KING, CL, & ASSOC	<1	2,433	7,300	93	0.09	329	+4.50	+2.25	+0.97	56 %	+1.92	92	-	93
CJS SECURITIES	<1	2,600	5,200	19	1.27	234	+4.50	+2.25	+40.94	1 %	+41.89	99	99	99
CANACCORD GENUITY	<1	4,754	9,507	73	0.35	342	+3.60	+2.25	+6.10	6 %	+6.15	39	99	93
LEK SECURITIES CORP	<1	6,530	13,060	90	0.12	457	+3.50	+2.25	0.27	85 %	0.32	-	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
NORTHLAND SECURITIES	<1	10,500	10,500	82	0.23	315	+3.00	+2.25	+1.96	33 %	+1.41	6	-	-
INDUSTRIAL & COMMERC	<1	1,700	1,700	98	0.03	77	+4.50	+2.25	+0.95	57 %	+1.90	-	-	-
MIZUHO	<1	1,910	3,820	51	0.65	129	+3.37	+2.25	9.25	99 %	9.44	9	-	-
NORTHCOAST RESEARCH	<1	2,046	2,046	91	0.12	92	+4.50	+2.25	+1.57	43 %	+2.52	-	-	-
SANDLER ONEILL	<1	339	1,356	41	0.81	47	+3.50	+2.25	14.37	99 %	14.42	95	-	93
CITATION FINL GROUP	<1	1,544	1,544	100	0.00	8	+0.50	+2.25	0.52	89 %	3.57	1	78	95
KEEFE BRUYETTE WOODS	<1	1,103	1,103	31	1.00	39	+3.50	+2.25	+28.56	1 %	+28.51	95	93	87
BMO CAPITAL MARKETS	<1	990	1,980	81	0.24	79	+4.00	+2.25	4.67	97 %	4.22	99	-	-
LUMINEX TRADING	<1	79	238	28	1.05	1	+0.30	+2.25	11.40	99 %	14.65	1	98	96

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.59	+2.25	+1.36	+1.43	+1.30

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

ALLIANCE R 3000 CAPITAL MANAGEM Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2017 2ND (%)	2017 1ST (%)	2016 4TH (%)
Grand Total	8	267	125,569	53	0.62	705	+0.56	+2.25	1.69	94 %	4.68	96	80	16
GOLDMAN SACHS	7	243	113,590	52	0.64	635	+0.56	+2.25	0.67	91 %	3.66	99	2	99
UBS	<1	10,435	10,435	78	0.28	63	+0.60	+2.25	12.95	99 %	15.91	-	-	-
CITATION FINL GROUP	<1	1,544	1,544	100	0.00	8	+0.50	+2.25	0.52	89 %	3.57	1	78	95



(+) = Cost

TRADE CYCLE DETAIL

BROWN ADVISORY Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2017 2ND (%)	2017 1ST (%)	2016 4TH (%)
Grand Total	10	1,204	98,757	65	0.45	2,675	+2.71	+2.25	+3.98	12 %	+3.14	31	77	99
CAPITAL INSTL SVCS	6	1,918	55,618	69	0.40	1,531	+2.75	+2.25	+1.93	34 %	+1.13	48	34	99
SC BERNSTEIN	<1	445	11,131	71	0.38	111	+1.00	+2.25	1.48	94 %	4.03	88	1	99
MORGAN STANLEY	<1	6,374	6,374	75	0.32	223	+3.50	+2.25	+1.70	39 %	+1.65	19	69	99
BAIRD, ROBERT W	<1	616	4,310	46	0.74	151	+3.50	+2.25	17.76	99 %	17.81	1	98	89
BTIG LLC	<1	2,513	5,025	42	0.79	101	+2.00	+2.25	+26.62	1 %	+25.07	90	98	99
JEFFERIES & CO	<1	1,434	2,868	86	0.18	100	+3.50	+2.25	4.07	97 %	4.12	1	96	1
INSTINET	<1	1,797	1,797	45	0.74	63	+3.50	+2.25	+104.51	1 %	+104.46	-	-	-
WELLS FARGO	<1	2,057	8,226	88	0.15	288	+3.50	+2.25	0.19	84 %	0.24	1	-	96
PIPER JAFFRAY	<1	239	239	28	1.06	8	+3.50	+2.25	+577.73	1 %	+577.68	98	-	-
UBS	<1	384	1,537	48	0.70	54	+3.50	+2.25	+5.63	6 %	+5.58	98	99	-
JP MORGAN CHASE	<1	576	1,152	27	1.07	39	+3.36	+2.25	54.49	99 %	54.68	32	99	90
ITG	<1	242	242	9	1.66	5	+2.00	+2.25	90.35	99 %	91.90	99	98	1
LUMINEX TRADING	<1	79	238	28	1.05	1	+0.30	+2.25	11.40	99 %	14.65	1	98	96



(+) = Cost

TRADE CYCLE DETAIL

CENTERSQUARE Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	32	1,546	997,476	51	0.66	29,547	+2.96	+2.25	0.32	85 %	0.90	90	68	-
LIQUIDNET	11	1,281	319,076	54	0.61	7,518	+2.36	+2.25	0.59	90 %	1.79	56	94	-
JP MORGAN CHASE	4	1,639	111,423	44	0.76	4,571	+4.10	+2.25	+0.07	80 %	+0.62	54	65	-
CITIGROUP	3	1,257	61,578	63	0.48	2,590	+4.21	+2.25	+2.09	32 %	+2.74	34	7	-
UBS	2	2,096	54,499	46	0.73	1,917	+3.52	+2.25	+3.74	14 %	+3.71	1	20	-
ITG	2	1,419	51,082	46	0.73	1,402	+2.74	+2.25	4.18	97 %	4.99	95	81	-
WELLS FARGO	1	2,052	63,601	54	0.62	2,064	+3.25	+2.25	+2.59	26 %	+2.29	95	12	-
MERRILL LYNCH	1	1,707	44,376	32	0.97	768	+1.73	+2.25	1.10	93 %	2.92	99	99	-
STIFEL NICOLAUS & CO	1	2,732	60,114	56	0.57	1,798	+2.99	+2.25	0.95	93 %	1.51	95	5	-
ISI GROUP INC	1	3,126	43,763	34	0.93	1,113	+2.54	+2.25	+2.33	29 %	+1.32	96	11	-
JEFFERIES & CO	<1	1,603	27,253	50	0.67	1,070	+3.92	+2.25	1.25	93 %	0.88	24	91	-
RAYMOND JAMES	<1	916	15,579	67	0.43	376	+2.42	+2.25	5.92	98 %	7.05	81	16	-
MKM PARTNERS	<1	2,042	30,636	48	0.70	625	+2.04	+2.25	0.73	91 %	2.24	91	-	-
MORGAN STANLEY	<1	1,397	15,370	61	0.51	453	+2.95	+2.25	2.56	96 %	3.16	97	50	-
CAPITAL INSTL SVCS	<1	1,499	11,988	63	0.48	533	+4.44	+2.25	4.64	97 %	3.75	1	82	-
KEYBANC	<1	1,009	13,111	65	0.46	295	+2.25	+2.25	1.76	95 %	3.06	57	90	-
DEUTSCHE BANK	<1	3,718	14,870	20	1.24	339	+2.28	+2.25	8.62	98 %	9.90	98	98	-
GREEN STREET	<1	962	5,771	66	0.44	267	+4.62	+2.25	10.65	99 %	9.58	95	96	-
CREDIT SUISSE	<1	1,508	7,540	34	0.94	357	+4.74	+2.25	+11.85	1 %	+13.04	89	2	-
BAIRD, ROBERT W	<1	1,204	6,020	58	0.55	301	+5.00	+2.25	+2.53	28 %	+3.98	99	15	-
GOLDMAN SACHS	<1	964	8,676	48	0.70	324	+3.74	+2.25	9.04	99 %	8.86	93	87	-



(+) = Cost

TRADE CYCLE DETAIL

CENTERSQUARE Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
RBC CAPITAL MARKETS	<1	4,336	17,344	46	0.73	438	+2.52	+2.25	+0.49	72 %	0.54	-	14	-
BARCLAYS	<1	1,334	8,006	42	0.80	220	+2.75	+2.25	+6.66	5 %	+5.86	97	38	-
MIZUHO	<1	1,910	3,820	51	0.65	129	+3.37	+2.25	9.25	99 %	9.44	9	-	-
BMO CAPITAL MARKETS	<1	990	1,980	81	0.24	79	+4.00	+2.25	4.67	97 %	4.22	99	-	-



(+) = Cost

TRADE CYCLE DETAIL

DALTON, GREINER, HARTMAN, MAHER Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	19	4,426	978,077	68	0.41	31,098	+3.18	+2.25	0.83	93 %	1.20	92	94	25
CONVERGEX	4	2,873	180,981	72	0.36	5,767	+3.19	+2.25	0.58	90 %	0.94	91	91	82
RBC CAPITAL MARKETS	3	3,402	163,311	68	0.41	4,492	+2.75	+2.25	0.28	85 %	1.08	92	22	39
LIQUIDNET	2	2,755	41,322	61	0.51	1,637	+3.96	+2.25	5.13	97 %	4.72	6	90	99
CAPITAL INSTL SVCS	2	11,963	107,664	70	0.38	3,687	+3.42	+2.25	0.47	87 %	0.59	88	99	55
KEYBANC	2	3,816	38,156	74	0.34	1,691	+4.43	+2.25	2.09	95 %	1.21	95	33	96
COWEN & CO	1	11,119	166,790	50	0.67	4,345	+2.61	+2.25	+0.22	78 %	0.72	99	-	-
BAIRD, ROBERT W	<1	4,439	31,075	73	0.35	1,159	+3.73	+2.25	+1.88	35 %	+2.06	-	-	-
CRAIG - HALLUM	<1	5,438	27,188	89	0.15	1,013	+3.73	+2.25	+0.54	69 %	+0.71	-	-	-
LOOP CAPITAL MARKETS	<1	3,052	12,208	77	0.30	528	+4.32	+2.25	1.37	94 %	0.60	1	-	-
FIRST ANALYSIS SECUR	<1	4,365	4,365	63	0.48	218	+5.00	+2.25	1.42	94 %	+0.03	-	-	99
WEEDEN & CO	<1	1,275	8,926	76	0.31	312	+3.50	+2.25	0.07	82 %	0.12	93	93	97
JEFFERIES & CO	<1	1,375	5,500	59	0.53	275	+5.00	+2.25	22.95	99 %	21.50	-	-	-
HIBERNIA SOUTHCOAST	<1	9,153	27,460	46	0.73	961	+3.50	+2.25	2.81	96 %	2.86	2	99	-
STEPHENS & CO INC	<1	6,850	13,700	68	0.42	505	+3.69	+2.25	17.21	99 %	17.07	91	96	16
OPPENHEIMER & CO INC	<1	6,503	13,006	49	0.68	520	+4.00	+2.25	10.66	99 %	10.21	-	-	-
RAYMOND JAMES	<1	2,890	14,450	72	0.35	540	+3.74	+2.25	1.69	94 %	1.50	-	-	-
ITG	<1	2,200	6,600	97	0.04	189	+2.87	+2.25	+0.40	74 %	0.29	1	-	73
TELSEY ADVISORY GR	<1	4,430	13,289	82	0.22	509	+3.83	+2.25	1.58	94 %	1.30	98	12	99
KING, CL, & ASSOC	<1	2,433	7,300	93	0.09	329	+4.50	+2.25	+0.97	56 %	+1.92	92	-	93
CJS SECURITIES	<1	2,600	5,200	19	1.27	234	+4.50	+2.25	+40.94	1 %	+41.89	99	99	99



(+) = Cost

TRADE CYCLE DETAIL

DALTON, GREINER, HARTMAN, MAHER Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2017 2ND (%)	2017 1ST (%)	2016 4TH (%)
PIPER JAFFRAY	<1	12,456	62,280	83	0.21	1,246	+2.00	+2.25	0.49	88 %	2.04	1	-	-
LEK SECURITIES CORP	<1	6,530	13,060	90	0.12	457	+3.50	+2.25	0.27	85 %	0.32	-	-	-
NORTHLAND SECURITIES	<1	10,500	10,500	82	0.23	315	+3.00	+2.25	+1.96	33 %	+1.41	6	-	-
INDUSTRIAL & COMMERC	<1	1,700	1,700	98	0.03	77	+4.50	+2.25	+0.95	57 %	+1.90	-	-	-
NORTHCOAST RESEARCH	<1	2,046	2,046	91	0.12	92	+4.50	+2.25	+1.57	43 %	+2.52	-	-	-



(+) = Cost

TRADE CYCLE DETAIL

EAGLE CAPITAL MANAGEMENT Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	10	60,171	240,685	67	0.42	4,814	+2.00	+2.25	2.50	96 %	4.05	10	99	99
LIQUIDNET	10	60,171	240,685	67	0.42	4,814	+2.00	+2.25	2.50	96 %	4.05	-	-	99



(+) = Cost

TRADE CYCLE DETAIL

HUBER CAPITAL MANAGEMENT Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2017 2ND (%)	2017 1ST (%)	2016 4TH (%)
Grand Total	6	2,596	114,210	63	0.49	891	+0.78	+2.25	1.78	95 %	4.55	91	46	56
UBS	3	2,580	51,600	65	0.46	439	+0.85	+2.25	0.76	91 %	3.46	91	78	9
CITIGROUP	<1	2,527	27,800	52	0.64	56	+0.20	+2.25	8.32	98 %	11.67	33	20	95
GOLDMAN SACHS	<1	2,362	11,810	54	0.61	24	+0.20	+2.25	9.64	99 %	12.99	98	87	99
MERRILL LYNCH	<1	3,300	13,200	60	0.52	79	+0.60	+2.25	+11.56	1 %	+8.61	33	48	90
JP MORGAN CHASE	<1	2,450	9,800	85	0.19	294	+3.00	+2.25	+2.87	23 %	+2.32	81	4	91



(+) = Cost

TRADE CYCLE DETAIL

UBS GLOBAL ASSET MGMT Performance (Full Day VWAP)

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	22	2,686	657,960	55	0.59	16,109	+2.45	+2.25	2.45	96 %	3.55	98	22	4
SC BERNSTEIN	7	2,449	173,913	70	0.39	3,516	+2.02	+2.25	+1.25	52 %	0.28	99	63	-
MERRILL LYNCH	3	2,443	97,726	69	0.40	3,419	+3.50	+2.25	0.27	85 %	0.33	84	7	4
COWEN & CO	2	2,683	75,133	55	0.59	1,307	+1.74	+2.25	3.72	97 %	5.53	97	-	2
BAIRD, ROBERT W	2	3,954	55,362	80	0.25	1,938	+3.50	+2.25	+0.73	63 %	+0.68	-	-	9
BROADCORT CAPITAL	2	2,548	25,479	63	0.48	573	+2.25	+2.25	+10.70	1 %	+9.40	99	-	97
GOLDMAN SACHS	1	2,494	42,397	30	1.01	1,172	+2.76	+2.25	+16.77	1 %	+15.98	99	78	1
STIFEL NICOLAUS & CO	<1	10,703	53,514	60	0.53	1,873	+3.50	+2.25	+0.81	61 %	+0.76	67	-	2
CREDIT SUISSE	<1	1,416	26,910	55	0.59	695	+2.58	+2.25	+6.99	5 %	+6.02	91	1	58
MORGAN STANLEY	<1	3,222	19,330	59	0.54	463	+2.40	+2.25	15.58	99 %	16.74	20	94	1
STATE STREET BANK	<1	1,066	12,790	25	1.11	116	+0.90	+2.25	+9.07	2 %	+6.42	27	94	45
INSTINET	<1	1,595	9,567	44	0.76	85	+0.89	+2.25	+22.60	1 %	+19.94	-	-	-
CITIGROUP	<1	34,800	34,800	1	4.13	0	+0.00	+2.25	78.38	99 %	81.93	-	-	97
PERSHING	<1	1,766	5,298	62	0.49	185	+3.50	+2.25	9.46	99 %	9.51	-	91	-
RBC CAPITAL MARKETS	<1	2,296	6,889	60	0.53	241	+3.50	+2.25	+9.91	1 %	+9.86	-	-	1
PIPER JAFFRAY	<1	2,739	10,954	61	0.50	383	+3.50	+2.25	0.79	92 %	0.84	1	1	-
JEFFERIES & CO	<1	1,351	5,405	21	1.21	81	+1.50	+2.25	16.66	99 %	18.71	97	98	97
JP MORGAN CHASE	<1	1,247	2,493	47	0.72	60	+2.42	+2.25	0.17	84 %	1.31	88	26	73



(+) = Cost

TRADE CYCLE DETAIL

WEATHERBIE Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	21	2,408	416,651	59	0.54	11,391	+2.73	+2.25	+7.62	4 %	+6.81	37	84	62
THEMIS TRADING LLC	7	2,587	126,759	63	0.49	2,028	+1.60	+2.25	+13.93	1 %	+11.98	59	50	41
ITG	5	1,367	66,971	55	0.59	2,411	+3.60	+2.25	4.93	97 %	4.88	24	28	24
LIQUIDNET	2	2,287	41,174	59	0.53	659	+1.60	+2.25	3.63	97 %	5.58	15	99	95
NEEDHAM & CO INC	1	2,843	28,430	65	0.46	1,023	+3.60	+2.25	+4.93	7 %	+4.98	98	95	99
WILLIAM BLAIR	1	3,479	27,830	50	0.68	1,002	+3.60	+2.25	+39.63	1 %	+39.68	72	10	53
JEFFERIES & CO	1	2,585	33,605	46	0.73	960	+2.86	+2.25	3.95	97 %	4.64	56	-	96
COWEN & CO	<1	3,416	23,909	60	0.53	861	+3.60	+2.25	+4.65	9 %	+4.69	9	37	95
PIPER JAFFRAY	<1	3,879	15,515	83	0.21	559	+3.60	+2.25	+8.08	3 %	+8.13	99	86	84
OPPENHEIMER & CO INC	<1	4,587	13,761	70	0.38	495	+3.60	+2.25	10.58	99 %	10.53	1	96	1
CRAIG - HALLUM	<1	2,644	7,931	79	0.27	286	+3.60	+2.25	+10.54	1 %	+10.58	59	96	2
STIFEL NICOLAUS & CO	<1	3,378	6,756	24	1.15	243	+3.60	+2.25	+54.15	1 %	+54.20	41	1	15
LEERINK SWANN	<1	1,920	3,839	48	0.71	138	+3.60	+2.25	+4.93	7 %	+4.98	23	98	86
CANACCORD GENUITY	<1	4,754	9,507	73	0.35	342	+3.60	+2.25	+6.10	6 %	+6.15	21	99	93
STEPHENS & CO INC	<1	4,146	4,146	49	0.68	149	+3.60	+2.25	+18.79	1 %	+18.84	3	7	1
GOLDMAN SACHS	<1	3,259	6,518	53	0.63	235	+3.60	+2.25	+13.09	1 %	+13.14	7	99	1



(+) = Cost

TRADE CYCLE DETAIL

WEDGE CAPITAL MGMT LLP Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20172ND (%)	20171ST (%)	20164TH (%)
Grand Total	8	1,868	304,452	67	0.42	9,433	+3.10	+2.25	+0.15	79 %	0.31	90	49	91
BRODCORT CAPITAL	2	3,689	25,824	64	0.47	904	+3.50	+2.25	+9.83	1 %	+9.78	91	27	42
BARCLAYS	2	1,205	48,207	58	0.55	1,687	+3.50	+2.25	1.86	95 %	1.91	93	-	80
KNIGHT CAPITAL	1	736	25,770	82	0.23	517	+2.01	+2.25	+0.33	76 %	1.21	3	-	22
WEEDEN & CO	<1	2,113	33,800	79	0.27	1,183	+3.50	+2.25	3.04	96 %	3.10	92	58	96
JONES TRADING	<1	3,727	55,900	63	0.49	1,118	+2.00	+2.25	1.38	94 %	2.93	-	83	99
SC BERNSTEIN	<1	3,071	21,500	77	0.29	753	+3.50	+2.25	+4.27	11 %	+4.22	56	1	97
RBC CAPITAL MARKETS	<1	971	13,592	44	0.76	476	+3.50	+2.25	12.55	99 %	12.60	99	94	95
CANTOR FITZGERALD	<1	5,160	25,800	89	0.14	903	+3.50	+2.25	+0.78	61 %	+0.73	1	-	1
JEFFERIES & CO	<1	1,681	11,767	69	0.40	412	+3.50	+2.25	0.31	85 %	0.36	6	99	2
STIFEL NICOLAUS & CO	<1	2,015	10,074	58	0.56	353	+3.50	+2.25	+23.11	1 %	+23.06	99	95	97
OPPENHEIMER & CO INC	<1	2,027	12,159	82	0.23	426	+3.50	+2.25	1.74	95 %	1.79	48	89	-
MORGAN STANLEY	<1	17,600	17,600	66	0.44	616	+3.50	+2.25	6.25	98 %	6.30	-	-	5
SANDLER ONEILL	<1	339	1,356	41	0.81	47	+3.50	+2.25	14.37	99 %	14.42	95	-	95
KEEFE BRUYETTE WOODS	<1	1,103	1,103	31	1.00	39	+3.50	+2.25	+28.56	1 %	+28.51	11	93	91



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Shares Volume Traded

							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
PDS	23	339,804	950,353	+2.00	0.43%	0.46	0.23
VER	29	146,850	1,258,460	+2.00	0.06%	0.73	+0.52
GM	3	143,300	5,000,191	+2.00	0.56%	0.41	1.07
MDRX	10	100,190	1,251,382	+3.50	0.34%	0.50	+2.06
MDLZ	2	97,000	4,191,992	+2.00	0.84%	0.48	5.58
DF	8	94,243	1,247,476	+3.50	0.21%	0.46	3.68
CUZ	20	67,940	600,405	+2.00	0.07%	0.81	0.90
ELOS	2	61,307	671,312	+3.50	3.52%	0.14	+0.14
PLAB	15	55,900	549,404	+2.00	0.93%	0.49	1.38
MYCC	9	51,442	801,273	+2.56	0.11%	0.19	1.91

Names Most Traded - Total Orders

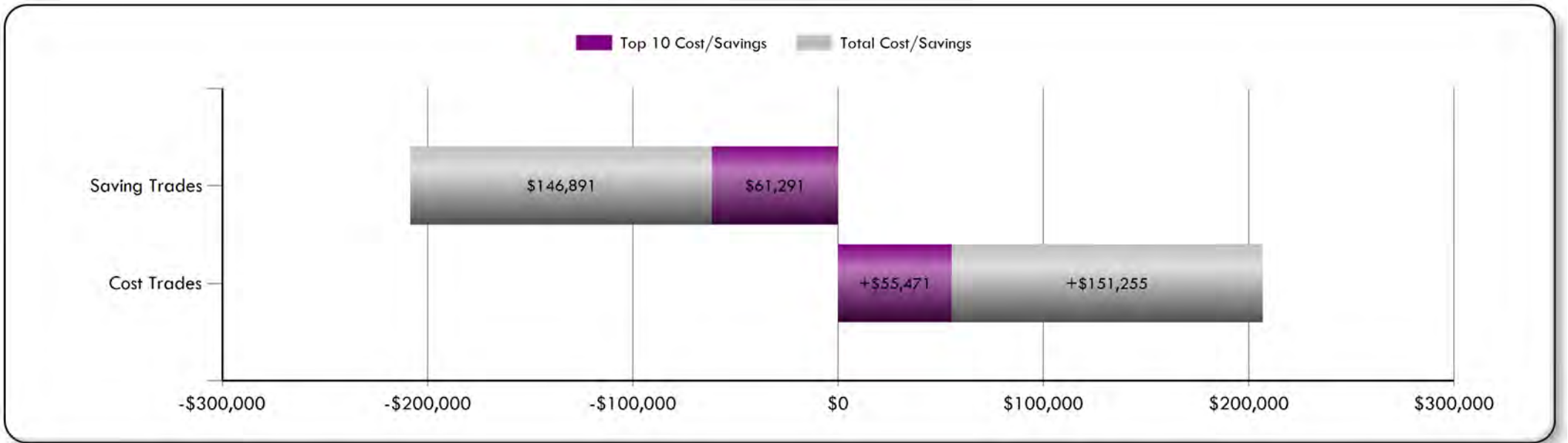
							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
VNO	41	24,930	1,992,296	+3.70	0.06%	0.82	+7.24
KRC	34	27,040	1,895,712	+3.48	0.14%	0.64	5.03
TUP	17	29,910	1,791,985	+1.38	0.26%	0.35	+0.92
MTSI	15	42,972	1,857,723	+2.35	0.19%	0.50	+5.69
STMP	11	15,223	3,113,776	+2.62	0.15%	0.56	+54.55
IPGP	11	10,244	1,761,012	+3.34	0.32%	0.41	10.04
HLF	8	23,800	1,593,921	+0.64	0.21%	0.55	13.27
CHTR	5	5,680	2,143,232	+2.18	0.05%	0.14	+25.02
GM	3	143,300	5,000,191	+2.00	0.56%	0.41	1.07
MDLZ	2	97,000	4,191,992	+2.00	0.84%	0.48	5.58



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	3,574,286	10	+115.68	26.83%
Cost Trades	67,469,870	1,003	+17.26	100.00%
Saving Trades	68,901,715	1,043	14.49	100.00%
10 Low Cost Trades	6,776,673	10	123.05	29.44%





(+) = Cost

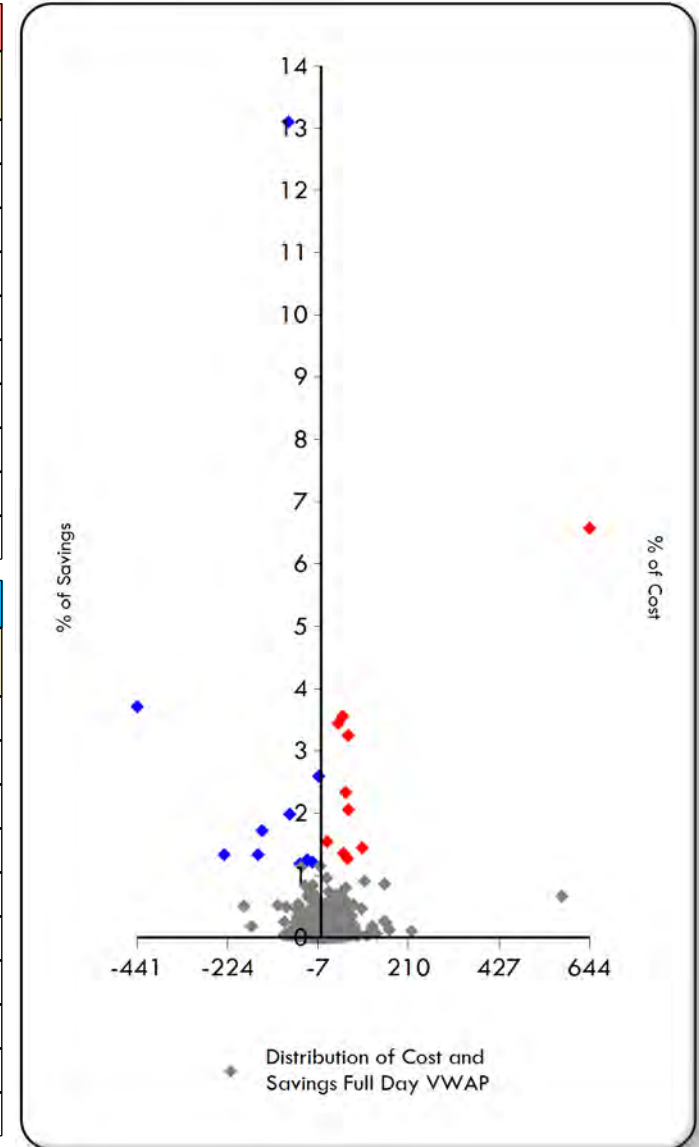
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	STMP	2017/08/07	2,109	6.57	1.43	+644.12	WEATHERBIE	THEMIS TRA
Sell	EXAS	2017/07/25	14,176	3.56	0.49	+51.92	UBS GLOBAL	SC BERNSTE
Buy	PRO	2017/07/13	17,302	3.45	1.61	+41.18	UBS GLOBAL	GOLDMAN SA
Buy	EFII	2017/08/08	10,350	3.25	0.96	+64.94	WEATHERBIE	WILLIAM BL
Buy	DXCM	2017/09/28	8,169	2.33	0.20	+59.05	BROWN ADVI	CAPITAL IN
Buy	EFII	2017/08/07	6,517	2.06	0.80	+65.28	WEATHERBIE	WILLIAM BL
Buy	MDRX	2017/07/12	22,150	1.54	0.85	+14.40	DALTON, GR	COWEN & CO
Buy	CLVS	2017/09/28	3,019	1.44	0.52	+98.85	UBS GLOBAL	BROADCORT
Sell	MTSI	2017/08/09	5,204	1.35	1.14	+53.77	WEATHERBIE	STIFEL NIC
Sell	DLR	2017/09/20	4,157	1.27	0.73	+63.31	WEDGE CAPI	BROADCORT

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	NCNA	2017/09/28	34,800	13.10	4.13	78.38	UBS GLOBAL	CITIGROUP
Sell	STMP	2017/08/07	1,753	3.71	0.98	441.07	WEATHERBIE	ITG
Sell	MDLZ	2017/07/07	96,700	2.59	0.48	5.59	EAGLE CAPI	LIQUIDNET
Buy	DXCM	2017/09/28	5,491	1.99	0.26	75.30	BROWN ADVI	CAPITAL IN
Sell	MTSI	2017/08/02	2,533	1.72	1.26	141.38	WEATHERBIE	JEFFERIES
Sell	OLED	2017/08/30	1,196	1.34	0.76	232.42	UBS GLOBAL	SC BERNSTE
Buy	BABA	2017/07/28	1,834	1.33	0.96	151.42	BROWN ADVI	CAPITAL IN
Buy	OKE	2017/09/15	7,798	1.25	1.79	33.44	ALLIANCE R	GOLDMAN SA
Sell	DF	2017/08/08	12,000	1.22	0.44	21.08	DALTON, GR	STEPHENS &
Buy	HLF	2017/08/02	4,900	1.19	0.72	50.41	HUBER CAPI	UBS





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

STMP - 2017/08/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	08/07/2017 09:30:00	08/07/2017 16:00:00	2,109	206.8655	213.3067	+13,584	+644.12	1.43	0.16



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 6.57% of your market impact cost.

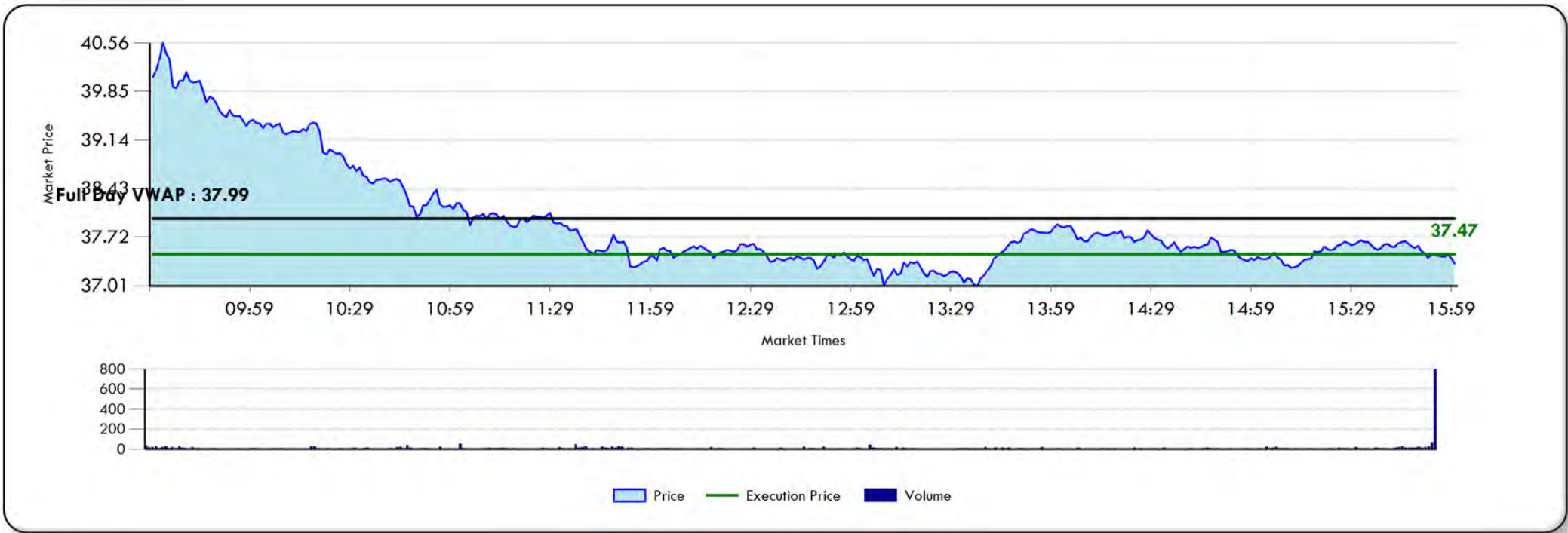


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EXAS - 2017/07/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	UBS GLOBAL ASSET MGMT	SC BERNSTEIN	07/25/2017 09:30:00	07/25/2017 16:00:00	14,176	37.4715	37.9907	+7,360	+51.92	0.49	0.39



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.56% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PRO - 2017/07/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	UBS GLOBAL ASSET MGMT	GOLDMAN SACHS	07/13/2017 09:30:00	07/13/2017 16:00:00	17,302	29.5000	29.0882	+7,125	+41.18	1.61	8.44



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.45% of your market impact cost.

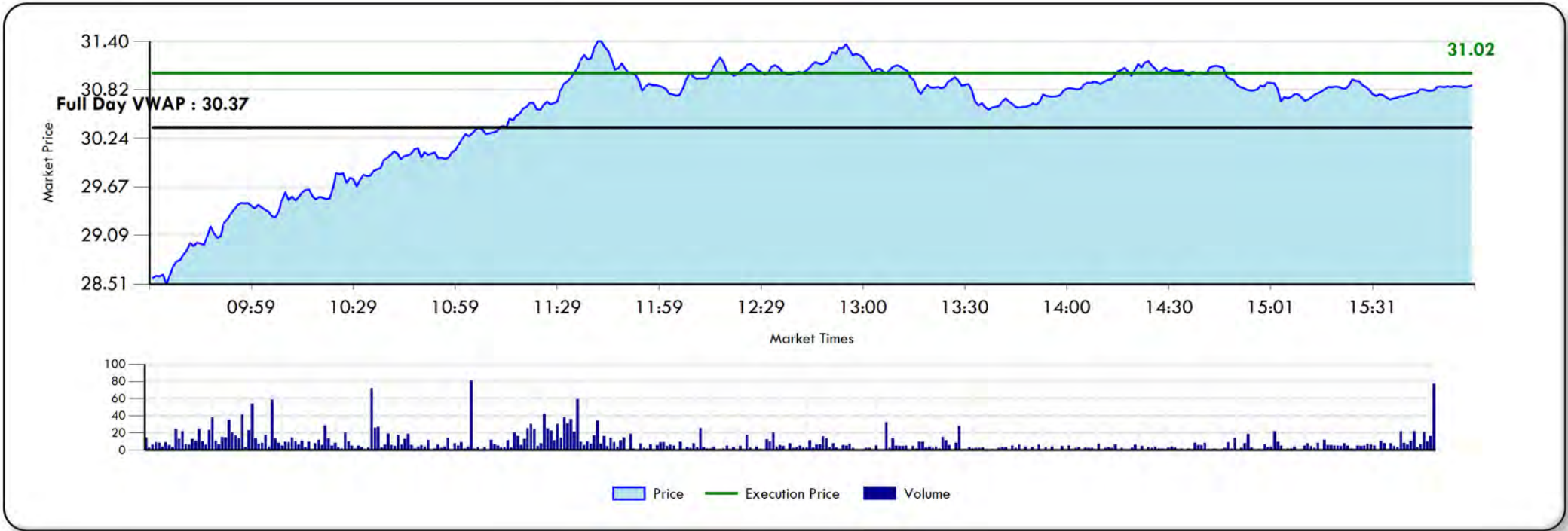


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EFII - 2017/08/08

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	WILLIAM BLAIR	08/08/2017 09:30:00	08/08/2017 16:00:00	10,350	31.0205	30.3711	+6,721	+64.94	0.96	0.33



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.25% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

DXCM - 2017/09/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	09/28/2017 09:30:00	09/28/2017 16:00:00	8,169	45.2257	44.6352	+4,824	+59.05	0.20	0.03



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.33% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EFII - 2017/08/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	WILLIAM BLAIR	08/07/2017 09:30:00	08/07/2017 16:00:00	6,517	28.7010	28.0482	+4,254	+65.28	0.80	0.14



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.06% of your market impact cost.

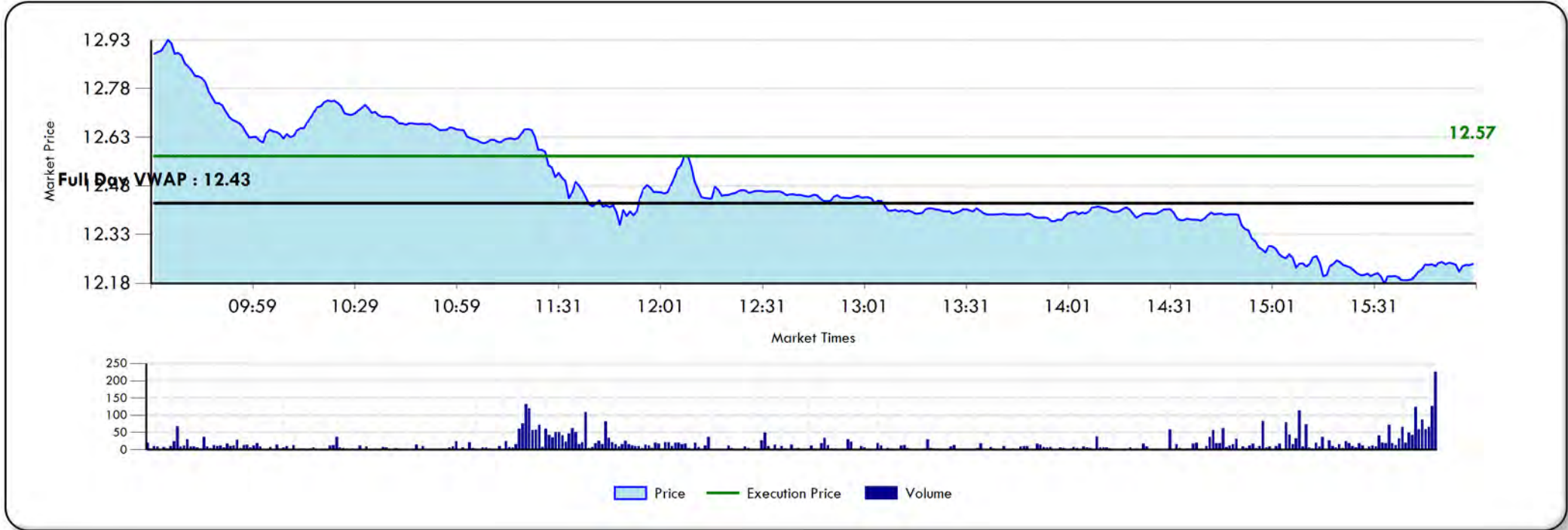


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MDRX - 2017/07/12

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	DALTON, GREINER, HARTMAN, MAHER	COWEN & CO	07/12/2017 09:30:00	07/12/2017 16:00:00	22,150	12.5694	12.4254	+3,189	+14.40	0.85	0.40



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.54% of your market impact cost.

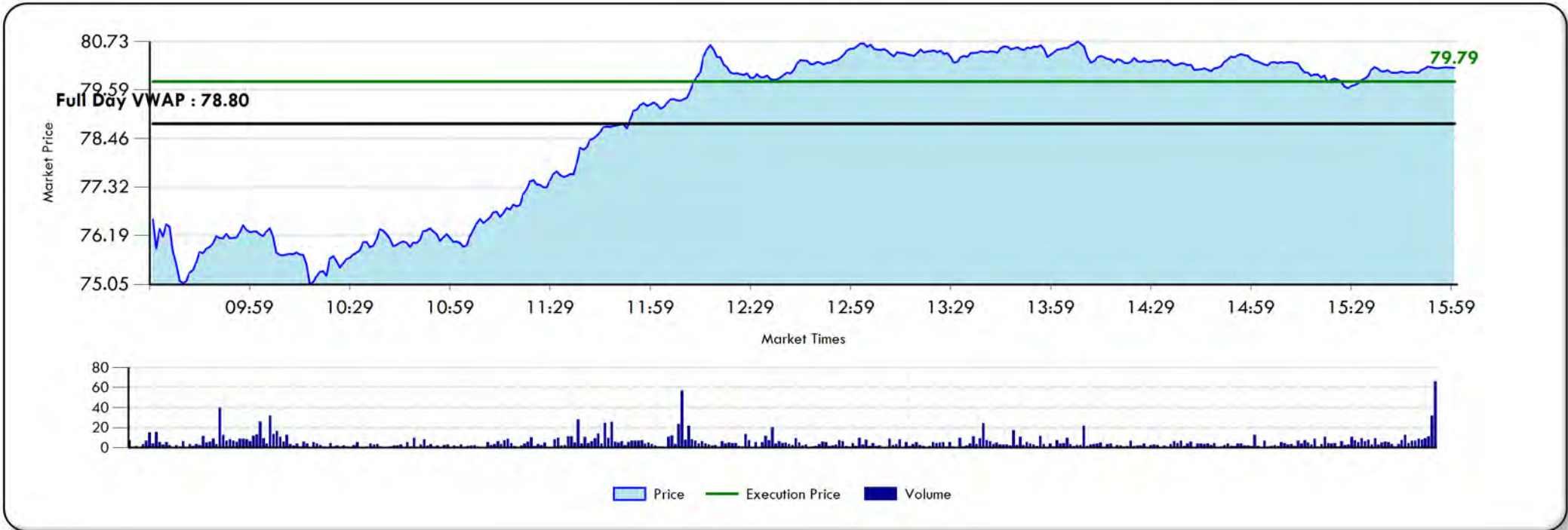


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CLVS - 2017/09/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	UBS GLOBAL ASSET MGMT	BROADCORT CAPITAL	09/28/2017 09:30:00	09/28/2017 16:00:00	3,019	79.7905	78.8020	+2,984	+98.85	0.52	0.15



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.44% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MTSI - 2017/08/09

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	STIFEL NICOLAUS & CO	08/09/2017 09:30:00	08/09/2017 16:00:00	5,204	42.8432	43.3809	+2,798	+53.77	1.14	0.63



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.35% of your market impact cost.

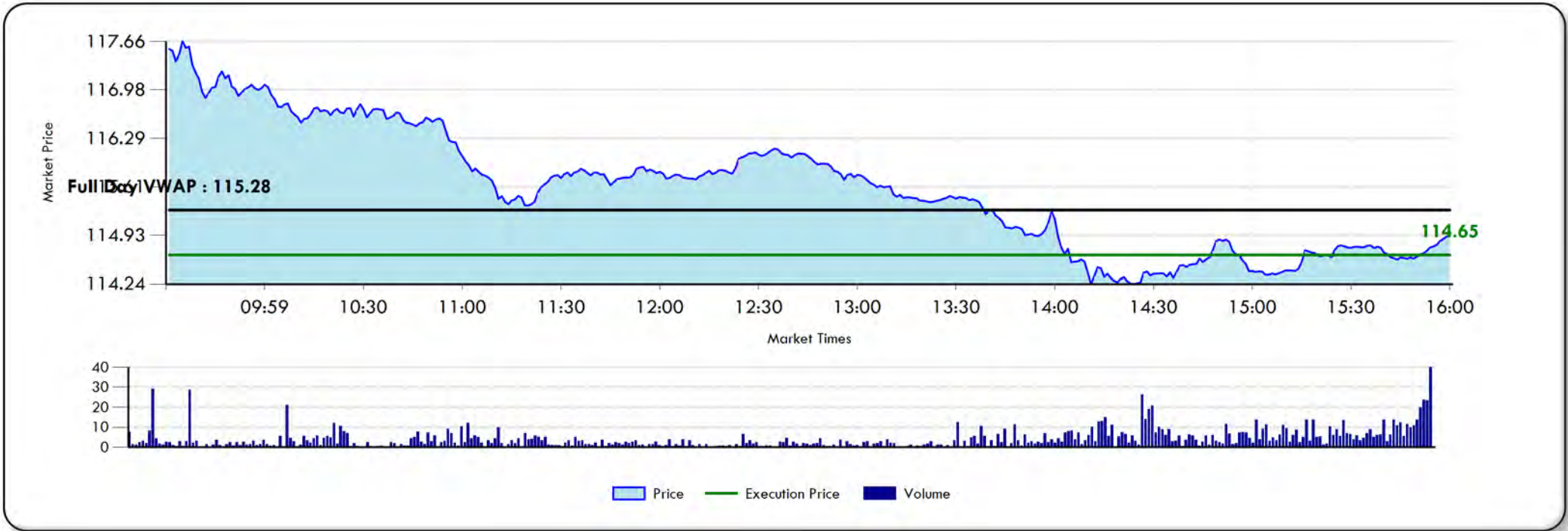


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

DLR - 2017/09/20

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEDGE CAPITAL MGMT LLP	BROADCORT CAPITAL	09/20/2017 09:30:00	09/20/2017 16:00:00	4,157	114.6478	115.2809	+2,632	+63.31	0.73	0.26



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.27% of your market impact cost.

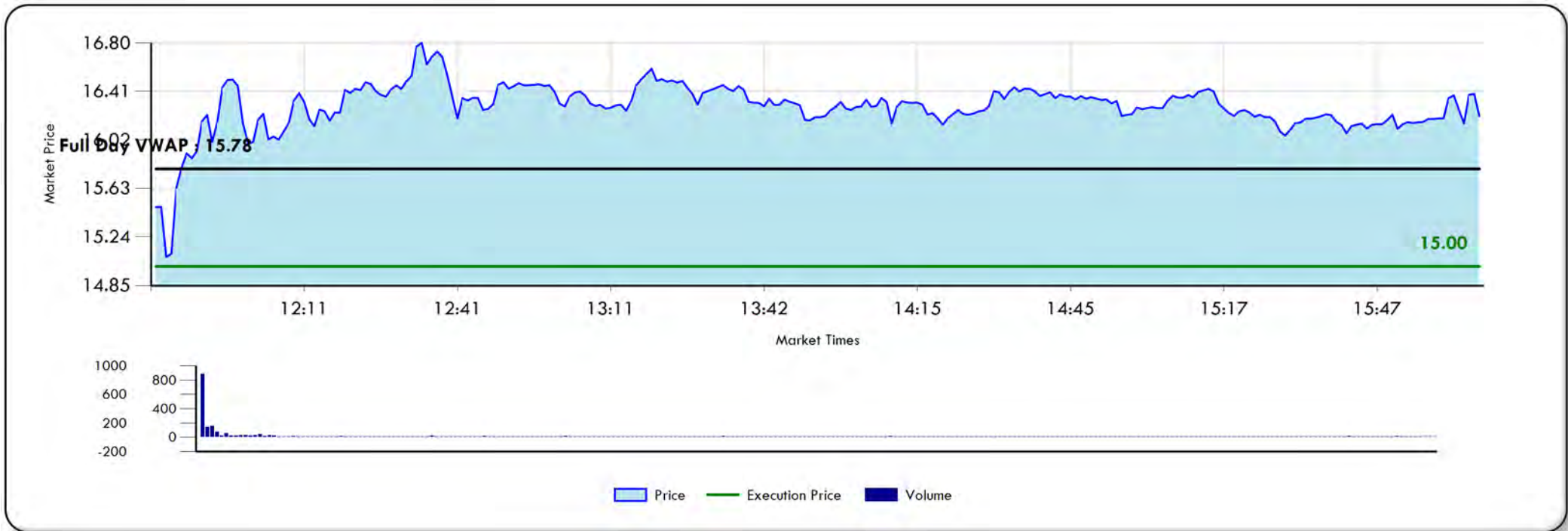


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NCNA - 2017/09/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	UBS GLOBAL ASSET MGMT	CITIGROUP	09/28/2017 09:30:00	09/28/2017 16:00:00	34,800	15.0000	15.7838	27,277	78.38	4.13	1.53



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 13.10% of your market impact savings.

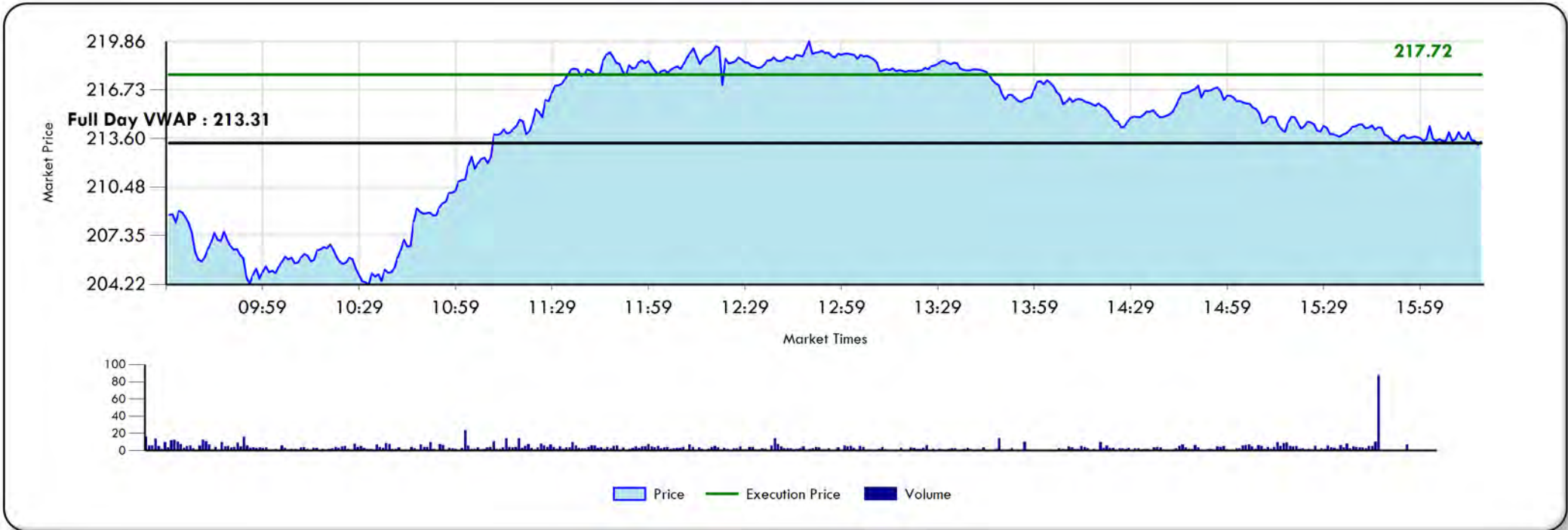


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

STMP - 2017/08/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	ITG	08/07/2017 09:30:00	08/07/2017 16:00:00	1,753	217.7174	213.3067	7,732	441.07	0.98	0.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.71% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MDLZ - 2017/07/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	07/07/2017 09:30:00	07/07/2017 16:00:00	96,700	43.2135	43.1576	5,402	5.59	0.48	1.18



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.59% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DXCM - 2017/09/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	09/28/2017 09:30:00	09/28/2017 16:00:00	5,491	43.8822	44.6352	4,135	75.30	0.26	0.02



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.99% of your market impact savings.

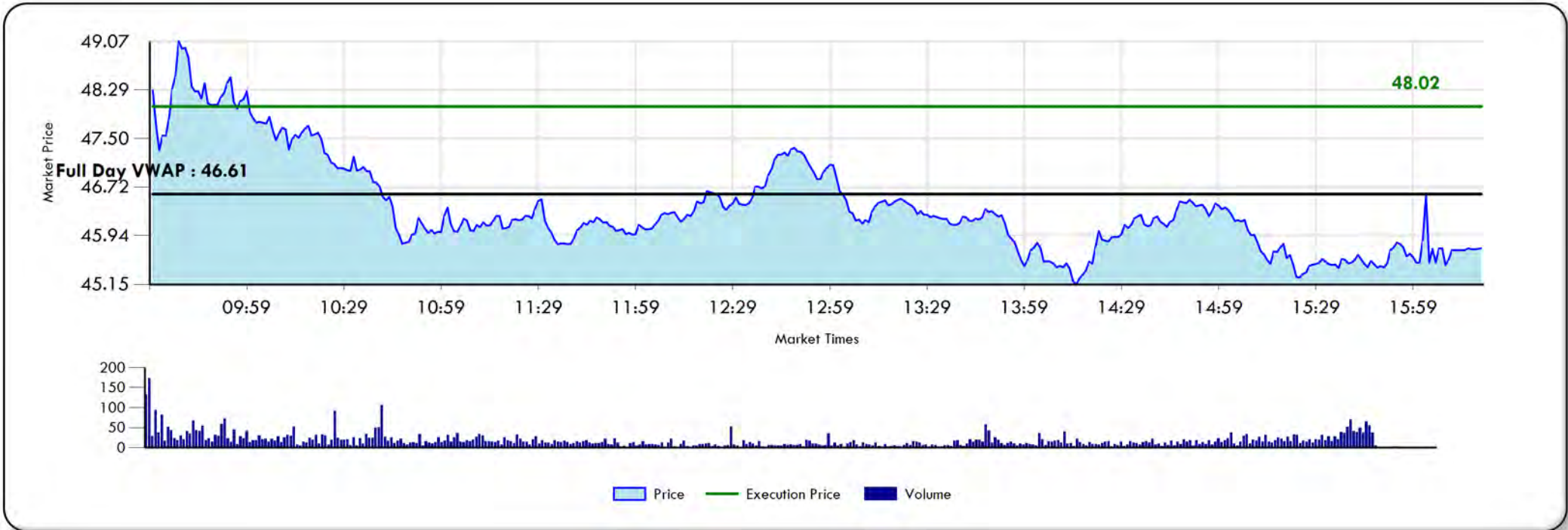


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MTSI - 2017/08/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	JEFFERIES & CO	08/02/2017 09:30:00	08/02/2017 16:00:00	2,533	48.0203	46.6065	3,581	141.38	1.26	0.04



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.72% of your market impact savings.

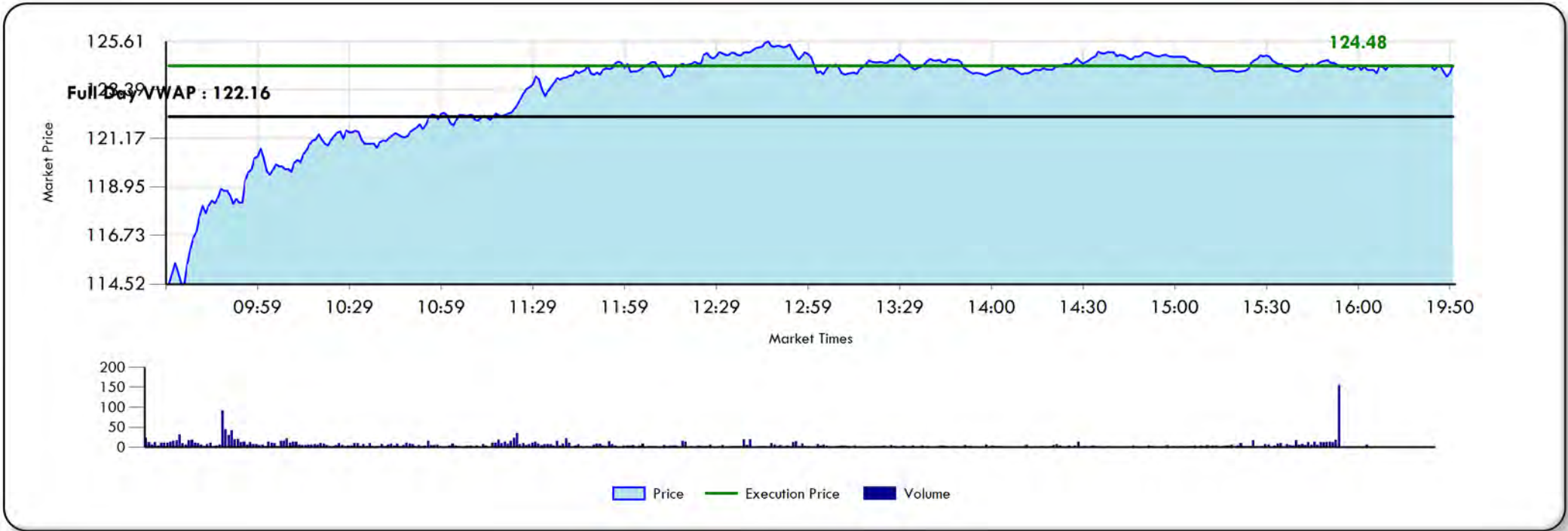


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

OLED - 2017/08/30

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	UBS GLOBAL ASSET MGMT	SC BERNSTEIN	08/30/2017 09:30:00	08/30/2017 16:00:00	1,196	124.4847	122.1606	2,780	232.42	0.76	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.34% of your market impact savings.

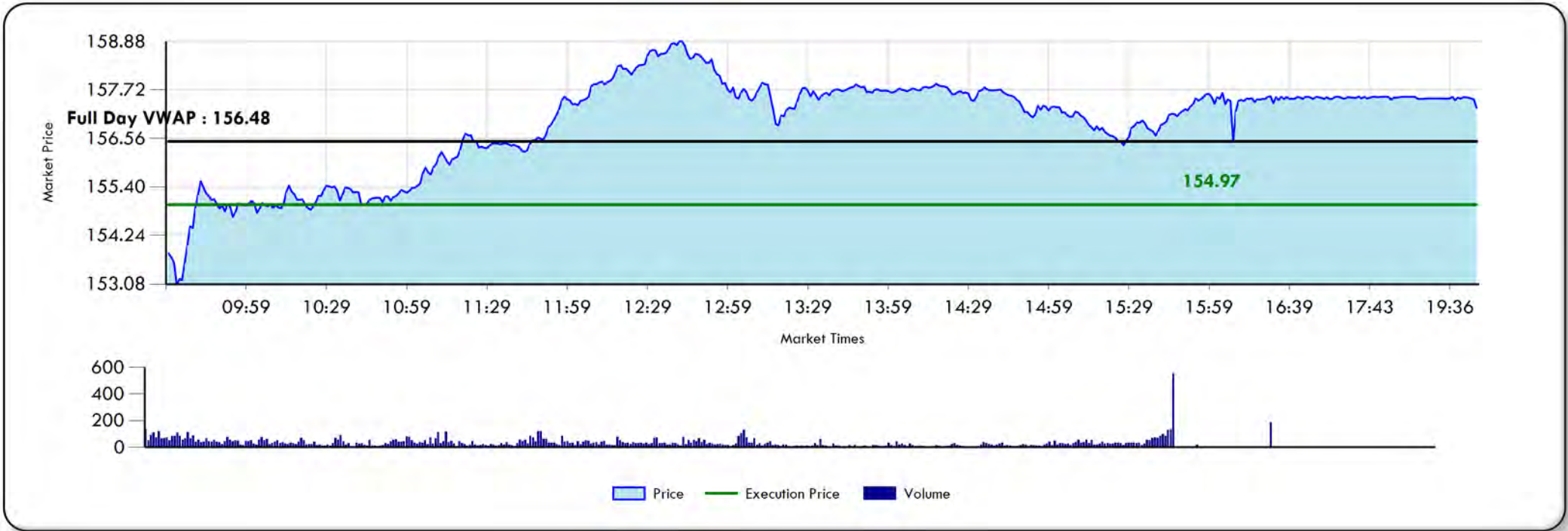


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BABA - 2017/07/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	07/28/2017 09:30:00	07/28/2017 16:00:00	1,834	154.9685	156.4827	2,777	151.42	0.96	0.01



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.33% of your market impact savings.

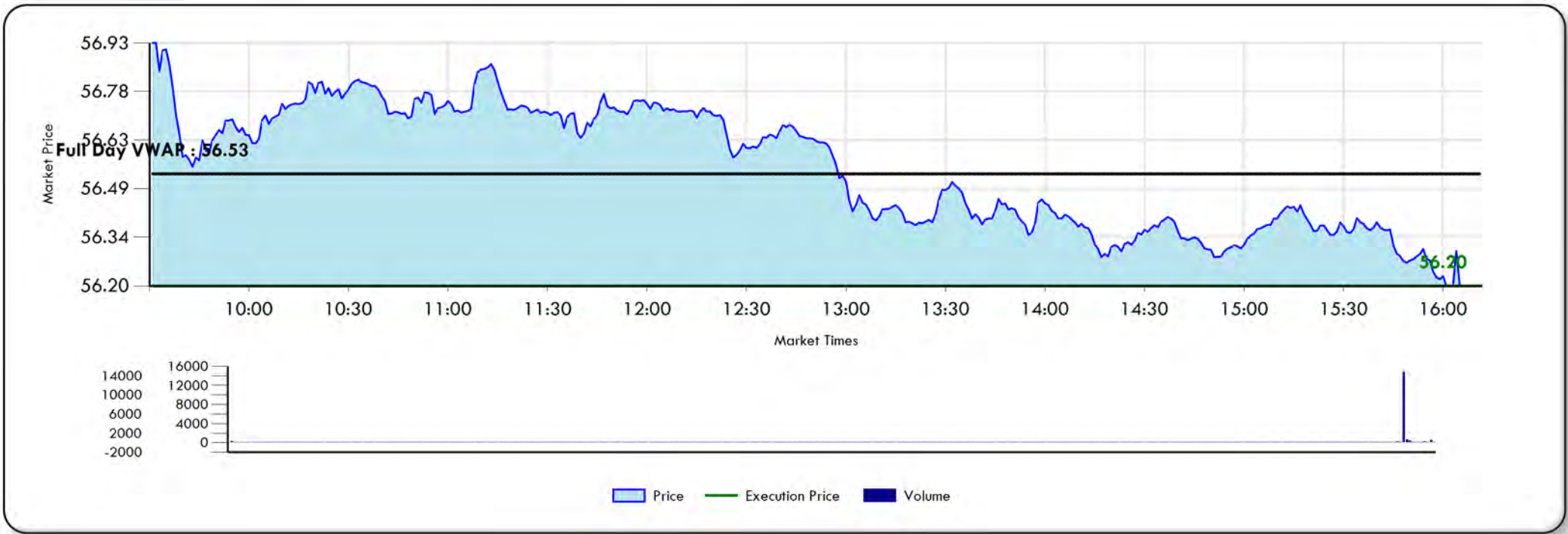


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

OKE - 2017/09/15

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	GOLDMAN SACHS	09/15/2017 09:30:00	09/15/2017 16:00:00	7,798	56.1990	56.5334	2,607	33.44	1.79	0.24



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.25% of your market impact savings.

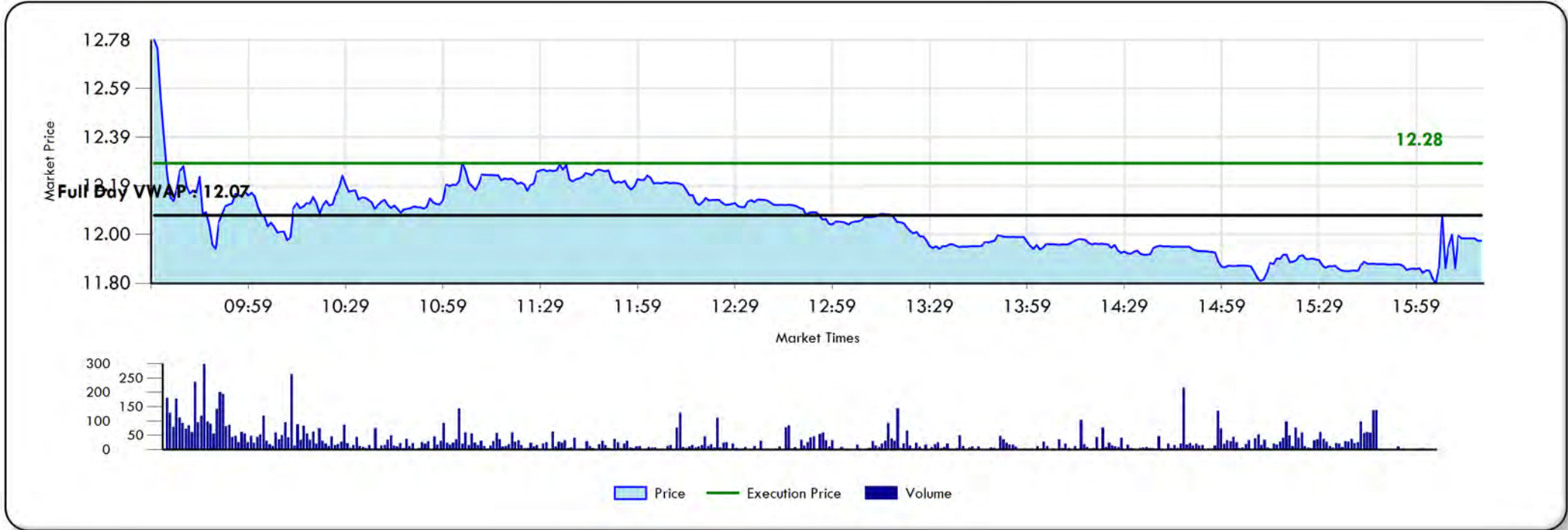


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DF - 2017/08/08

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	DALTON, GREINER, HARTMAN, MAHER	STEPHENS & CO INC	08/08/2017 09:30:00	08/08/2017 16:00:00	12,000	12.2840	12.0732	2,530	21.08	0.44	0.10



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.22% of your market impact savings.

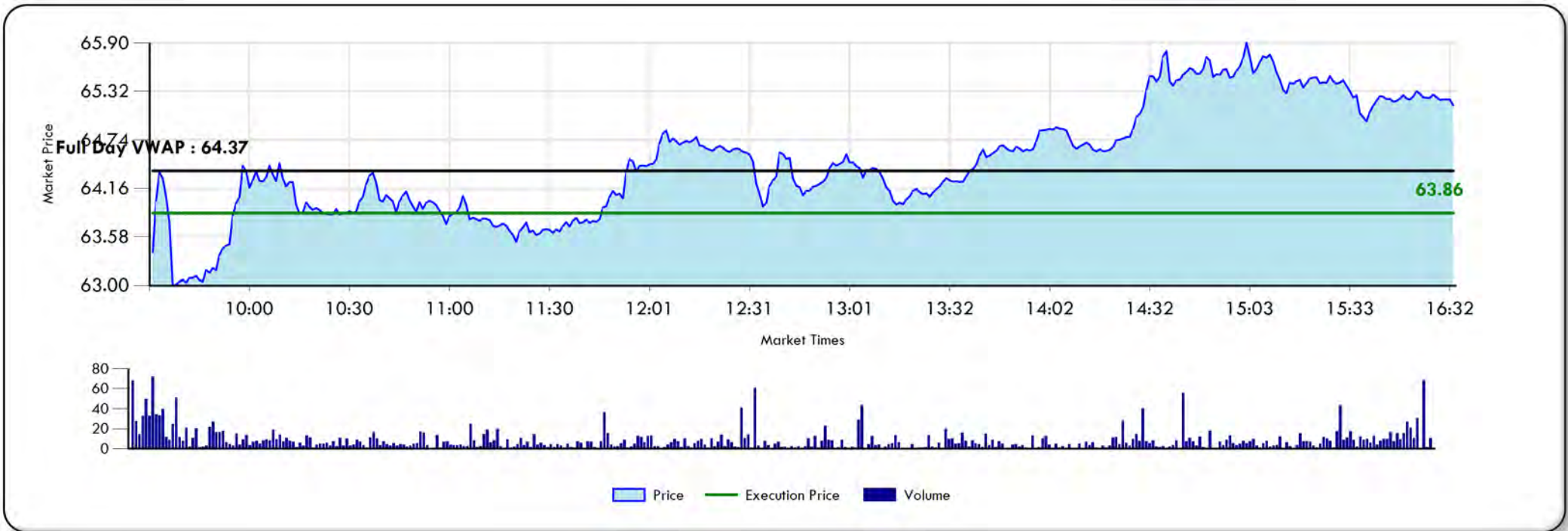


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

HLF - 2017/08/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	HUBER CAPITAL MANAGEMENT	UBS	08/02/2017 09:30:00	08/02/2017 16:00:00	4,900	63.8639	64.3680	2,470	50.41	0.72	0.16



NOTES

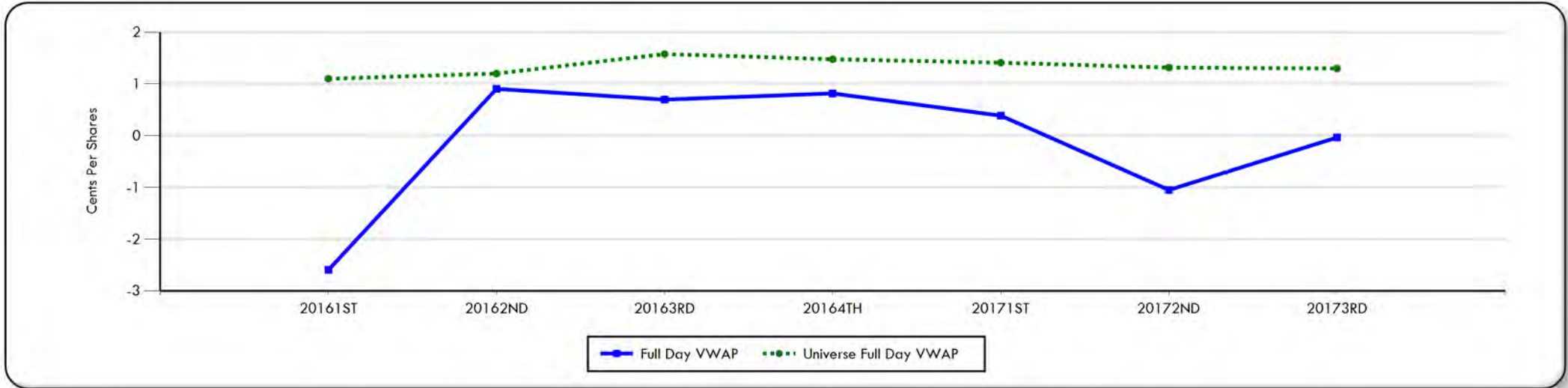
- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.19% of your market impact savings.



(+) = Cost

TRADE HISTORY

Trade History						
Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP	Full Day VWAP Universe Rank
			(cps)	(\$)	(cps)	(%)
20161ST	3,048,612	94,866,660	+3.15	96,160	2.60	89
20162ND	5,778,580	199,522,932	+2.59	149,738	+0.90	59
20163RD	3,727,750	130,612,069	+3.24	120,906	+0.70	67
20164TH	3,691,765	124,133,249	+3.16	116,656	+0.82	65
20171ST	3,961,231	140,137,188	+2.63	104,144	+0.39	74
20172ND	5,271,800	199,346,650	+2.32	122,417	1.05	91
20173RD	3,933,837	136,419,896	+2.71	106,661	0.04	82



Note on Universes:

Universes constructed of preferred securities are exclusive of fixed income transactions such as convertible bonds

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SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End September 30, 2017





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(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates global equity executions from July 1, 2017 to September 30, 2017. The analysis included trading of 28,563,991 shares representing \$186.11 million in principal across 26 countries.

Methodology :

The Elkins/McSherry analysis measures trading efficiency by quantifying the cost of brokerage commission, fees, and execution quality versus an Full Day VWAP benchmark for each of the securities traded. These data have been separated to summarize results, by Buy/Sell, Commissions, Market Impact, Short Term Alpha, Market Cap, Country, Trade Difficulty, and Highest and Lowest Cost Trades. These results are quantified in \$ and Basis Points (BP) as well as being displayed graphically to highlight the outcomes.

Results :

BENCHMARK PERFORMANCE			E - Score
Commission	Fees	Full Day VWAP	
<ul style="list-style-type: none"> Your commission cost was +7.65 bp or \$ +\$142,413 (6.80 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +5.00 bp or \$ +92,999 (0.31 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact savings was 6.83 bp or \$127,178 (15.11 bp better than the Elkins/McSherry Universe) Your overall trading cost of +5.82 bp was 22.23 bp better than the Elkins/McSherry Universe. Sacramento County trading was higher than the Elkins/McSherry Universe in 6 countries and lower than the Elkins/McSherry Universe in 24 countries. 8 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 45 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : -0.03



(+) = Cost

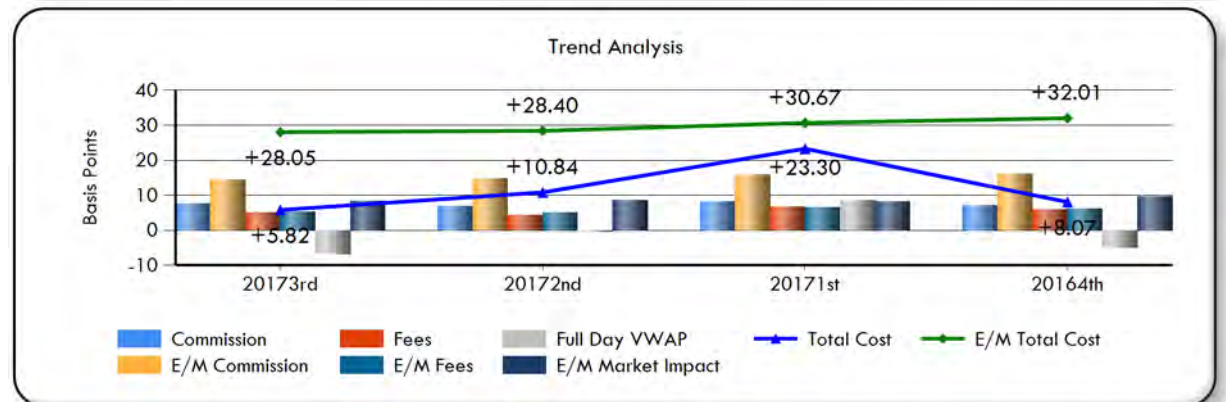
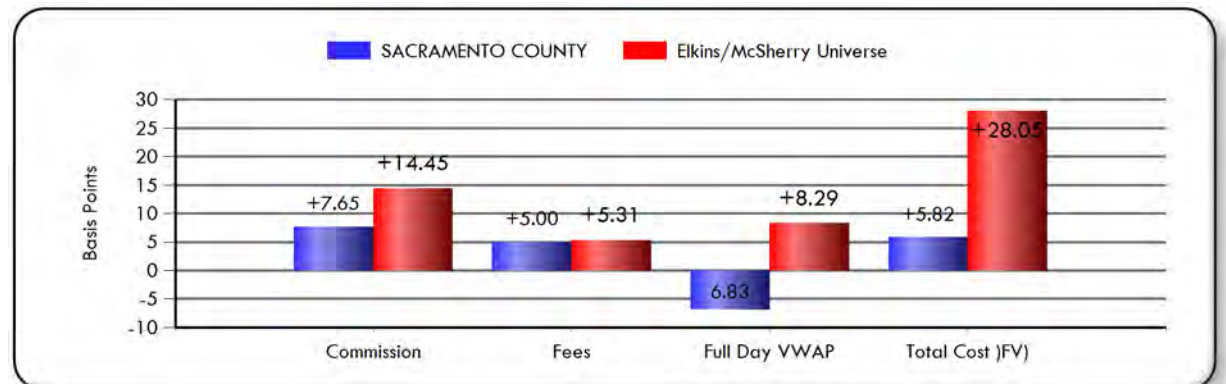
EXECUTIVE SUMMARY

TOTAL PORTFOLIO COST PERFORMANCE

Side	COMMISSION			Fees		MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score
	Your Avg. Commission	Bundled Universe	All Trading Universe	Fees	Universe	Full Day VWAP	Universe Full Day VWAP		Commission+Fees Full Day VWAP	
	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)	
Buy	+7.84	+14.47	+6.85	+9.23	+9.80	13.19	+6.16	+3.88	26.55	-0.04
Sell	+7.48	+14.43	+6.53	+0.92	+0.99	0.70	+10.34	+7.70	18.07	-0.01
Total	+7.65	+14.45	+6.69	+5.00	+5.31	6.83	+8.29	+5.82	22.23	-0.03

TRADING COMPONENTS

	Buys	Sells
Trade Principal	91,272,130	94,837,648
Shares	15,648,438	12,915,553
Unique Names	232	188
Liquidity (% POV)	0.396	0.629
Avg. Order Size	14,805	13,288
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,057	972





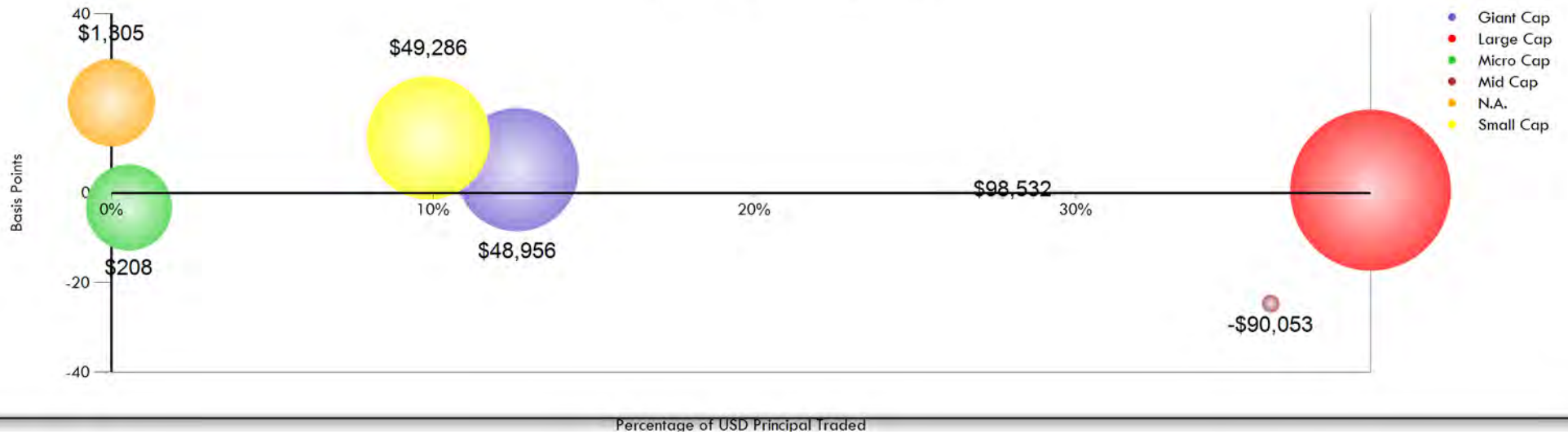
(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded	Avg. Principal Per Order	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	Bundled Universe	Full Day VWAP	Universe Full Day VWAP				
	(%)	(\$)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)		
Large Cap	39.46 %	102,717	+7.54	+14.30	+0.60	+8.85	+13.42	15.20	0.01	\$5 Billion To \$25 Billion
Mid Cap	36.36 %	83,538	+8.30	+14.59	24.74	+7.89	13.25	39.42	-0.12	\$1 Billion To \$5 Billion
Giant Cap	12.91 %	103,080	+5.71	+14.14	+5.18	+6.62	+20.39	9.80	-0.02	Over \$25 Billion
Small Cap	10.15 %	73,521	+8.60	+14.89	+12.28	+9.11	+26.09	3.81	0.15	\$250 Million To \$1 Billion
Micro Cap	0.83 %	129,146	+4.59	+14.55	3.25	+9.59	+1.34	22.82	-0.16	Under \$250 Million
N.A.	0.29 %	269,409	+4.00	+14.22	+20.14	+23.73	+24.19	13.76	0.00	

Total Cost by Market Cap: (USD)





(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Principal Per Order (\$)	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Absolute Size (Principal)
				Your Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	(bp)	Commission+Fees +Full Day VWAP Vs. Universe (bp)		
Large Orders	6	1,405,830	N/A	+5.86	+14.64	156.22	+6.30	143.14	171.53	-0.55	1M or Greater
Medium Orders	41	690,166	N/A	+10.80	+14.58	2.11	+8.64	+11.31	14.61	-0.08	Between 500k - 1M
Small Orders	1,982	75,367	N/A	+7.16	+14.41	+0.85	+8.34	+13.30	15.13	0.02	500K or Less

Total Cost By Order Size: (USD)





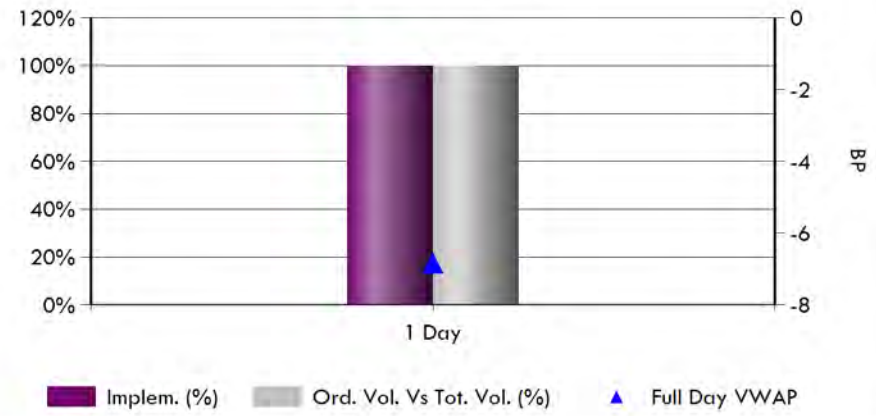
(+) = Cost

EXECUTIVE SUMMARY

IMPLEMENTATION DAYS BY TRADE

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (bp)	E - Score
1 Day	100.00	100%	6.83	-0.03

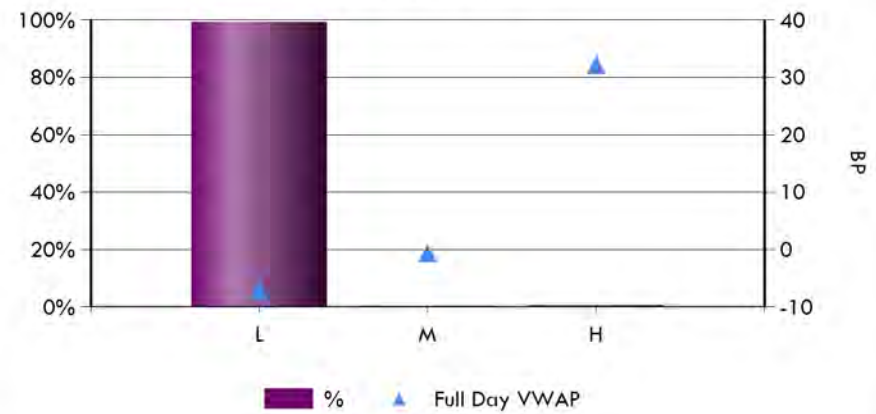
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	0%	+32.20	0.28
0%~20% of daily vol.	L	99%	7.03	-0.03
20%~50% of daily vol.	M	0%	0.55	0.06

Avg. % of Daily Volume



EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
HIGHEST COST COUNTRIES - Total Cost Universe Difference										
HONG KONG	16	8.86%	+9.15	+14.51	+10.77	+9.57	+19.76	+2.59	+13.01	0.29
BELGIUM	2	1.06%	+4.90	+13.85	+0.00	+0.02	+28.39	+7.02	+12.40	0.94
SOUTH AFRICA - SELLS	<1	0.07%	+15.00	+14.11	+0.41	+0.04	+17.62	+6.52	+12.36	0.36
AUSTRIA	<1	0.06%	+10.82	+13.56	+0.00	+0.03	+25.56	+11.92	+10.87	0.46
NEW ZEALAND	<1	0.34%	+16.17	+14.97	+0.00	+0.02	+18.41	+10.94	+8.64	0.54
MEXICO	<1	0.23%	+15.28	+15.75	+0.00	+0.00	+8.36	+2.53	+5.36	0.16

EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
LOWEST COST COUNTRIES - Total Cost Universe Difference										
CANADA	15	7.85%	+4.07	+15.83	+0.00	+0.02	97.60	+7.08	116.46	-0.62
DENMARK	<1	0.25%	+5.00	+13.68	+0.00	+0.01	45.94	+10.33	64.96	-1.56
U.K. - SELLS	18	9.57%	+7.23	+14.22	+0.11	+0.00	8.66	+23.73	39.26	-0.75
ITALY - SELLS	1	0.74%	+6.11	+12.82	+0.00	+0.00	15.51	+13.29	35.52	-0.62
PORTUGAL	<1	0.36%	+4.00	+14.00	+0.00	+0.01	13.43	+12.04	35.48	-0.47
FINLAND	3	1.41%	+7.09	+13.20	+0.00	+0.02	16.53	+11.48	34.14	-0.40
ITALY - BUYS	3	1.53%	+5.24	+13.60	+10.13	+12.00	19.26	+4.61	34.10	-0.55
SINGAPORE	10	5.11%	+13.17	+14.63	+3.57	+3.58	22.39	+3.67	27.53	0.04
IRELAND - SELLS	2	0.93%	+9.53	+13.34	+0.08	+0.00	+11.17	+30.08	22.64	0.38
SWITZERLAND	9	4.58%	+8.27	+13.73	+0.00	+0.04	9.65	+6.36	21.51	-0.21
GERMANY	3	1.50%	+5.09	+14.12	+0.00	+0.01	1.68	+7.00	17.73	0.01
JAPAN	34	18.33%	+7.45	+14.55	+0.00	+0.02	+0.70	+9.59	16.01	0.04
AUSTRALIA	21	11.23%	+10.12	+14.97	+0.00	+1.36	+0.17	+6.46	12.50	0.03
SPAIN	5	2.51%	+4.67	+14.10	+0.00	+0.01	+4.03	+6.51	11.92	0.12
FRANCE - BUYS	4	2.21%	+7.95	+13.89	+25.91	+30.00	+4.14	+5.55	11.44	0.11
THAILAND	<1	0.32%	+25.00	+15.68	+0.35	+0.97	13.43	+5.06	9.79	-0.42
FRANCE - SELLS	7	3.71%	+7.19	+14.01	+0.00	+0.00	+3.63	+5.72	8.91	0.13
U.S.	6	3.31%	+1.25	+12.77	+0.18	+0.11	+6.69	+4.10	8.85	0.24
NETHERLANDS	6	3.42%	+6.33	+14.03	+0.00	+0.22	+9.00	+6.68	5.59	0.11
ISRAEL	2	0.98%	+18.39	+20.24	+0.00	+0.09	+4.08	+6.95	4.81	0.19
U.K. - BUYS	11	6.17%	+5.37	+14.06	+47.66	+50.00	+10.43	+3.69	4.29	0.06
IRELAND - BUYS	<1	0.17%	+5.00	+14.36	+100.11	+100.00	+10.15	+4.99	4.09	0.59
SWEDEN	4	2.06%	+6.96	+14.04	+0.00	+0.01	+5.46	+2.41	4.03	0.23

EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
LOWEST COST COUNTRIES - Total Cost Universe Difference										
NORWAY	2	1.13%	+12.08	+14.19	+0.00	+0.02	+9.51	+11.09	3.71	0.25



(+) = Cost

TRADE CYCLE DETAIL

5 LOWEST COST MANAGER (Full Day VWAP)



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
CBRE CLARION (INTL R	52	431	28.00%	120,924	0.11	+10.07	+14.67	3.02	+5.59	13.38	17.69	11.74	35.90
WILLIAM BLAIR & COMP	25	290	13.62%	87,429	-0.01	+8.80	+14.27	0.65	+8.87	16.14	17.40	+1.61	17.96
S&P GLOBAL INFRAST-I	12	374	6.31%	31,386	0.06	+1.91	+14.04	+1.44	+6.56	17.28	12.03	5.15	22.76
LSV ASSET MANAGEMENT	40	560	21.35%	70,963	-0.12	+3.97	+14.51	0.26	+8.39	19.23	27.69	22.33	29.17
LAZARD ASSET MANAGEM	57	374	30.71%	152,832	-0.11	+8.67	+14.37	19.28	+10.78	36.08	15.49	2.60	17.96

NOTES

- Manager above made up 100.00 % of principal traded.

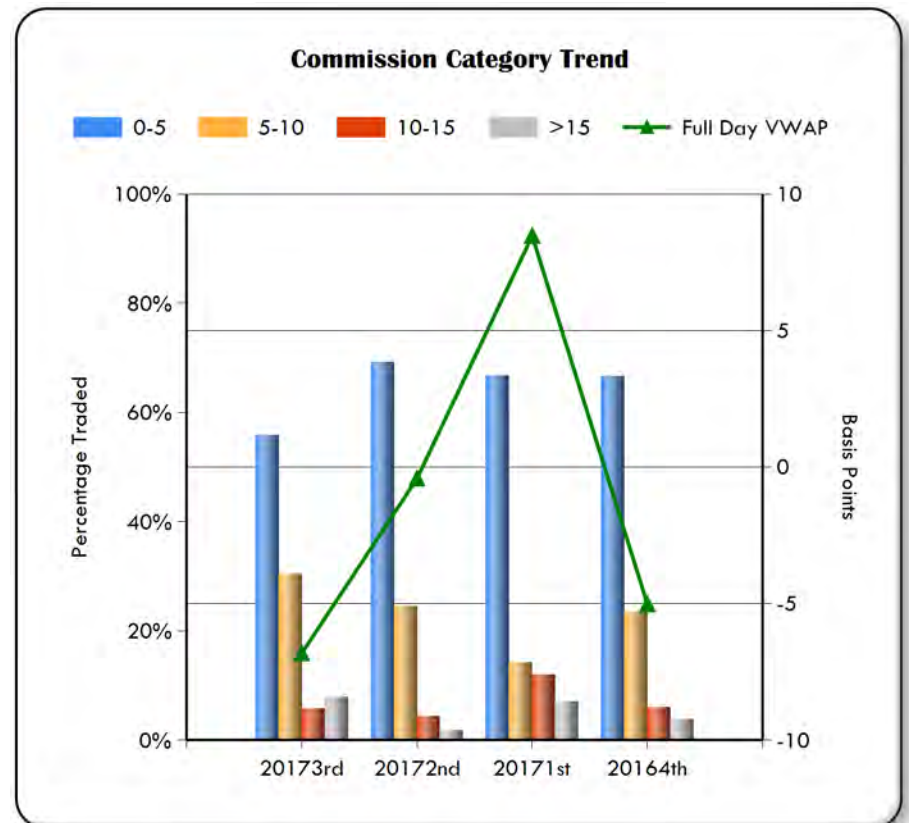


(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20172nd (bp)	20171st (bp)	20164th (bp)
CITIGROUP	18,239	+11.09	+14.94	+6.83	+5.37	+6.36	+5.70
CREDIT SUI	16,463	+8.54	+14.26	+6.65	+5.63	+9.54	+8.14
UBS	14,443	+7.49	+14.28	+6.75	+5.50	+6.67	+7.11
MERRILL LY	9,348	+6.13	+14.36	+6.67	+5.01	+9.23	+7.22
DAIWA SECU	8,684	+9.59	+14.51	+6.03	+9.75	+11.19	+6.58
MORGAN STA	7,284	+6.35	+14.17	+6.37	+11.38	+7.31	+4.58
MACQUARIE	7,122	+8.88	+14.84	+7.23	+7.32	+10.45	+8.74
SOCIETE GE	7,002	+6.29	+14.10	+6.39	+5.91	+6.21	+6.36
CREDIT AGR	6,793	+9.47	+14.68	+6.65	+9.31	+9.90	+11.46
GOLDMAN SA	6,731	+9.89	+14.35	+6.21	+7.72	+5.43	+7.52
JP MORGAN	5,579	+10.21	+14.46	+6.62	+6.43	+13.03	+11.48
ITG	4,340	+4.15	+13.91	+6.01	+6.63	+6.35	+4.69
HSBC BANK	3,601	+6.68	+14.22	+6.40	+4.40	+3.69	+3.03
INSTINET	3,233	+4.61	+14.51	+6.45	+6.71	+4.65	+4.55
DEUTSCHE B	3,230	+6.24	+14.31	+6.01	+5.07	+8.12	+7.58
MITSUBISHI	2,653	+9.98	+14.55	+5.91	+8.17	+10.20	+6.90
EXANE	2,092	+13.61	+13.97	+7.43	+4.54	+6.22	+6.92
BNP PARIBA	2,021	+8.27	+14.67	+6.47	+7.22	+7.69	+7.75
MIZUHO	1,449	+10.43	+14.54	+5.94	+10.56	+10.20	+8.78
WEEDEN & C	1,327	+9.05	+14.72	+7.40	+8.24	+1.59	+7.91





(+) = Cost

TRADE CYCLE DETAIL

MANAGER PERFORMANCE (FULL DAY VWAP)



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	2017 2nd (bp)	2017 1st (bp)	2016 4th (bp)
LAZARD ASSET MANAGEM	57	374	30.71%	152,832	-0.11	+8.67	+14.37	19.28	+10.78	36.08	15.49	2.60	17.96
CBRE CLARION (INTL R	52	431	28.00%	120,924	0.11	+10.07	+14.67	3.02	+5.59	13.37	17.69	11.74	35.90
LSV ASSET MANAGEMENT	40	560	21.35%	70,963	-0.12	+3.97	+14.51	0.26	+8.38	19.23	27.69	22.33	29.17
WILLIAM BLAIR & COMP	25	290	13.62%	87,429	-0.01	+8.80	+14.27	0.65	+8.87	16.14	17.40	+1.61	17.96
S&P GLOBAL INFRAS-T-I	12	374	6.31%	31,386	0.06	+1.91	+14.04	+1.44	+6.56	17.28	12.03	5.15	22.76

NOTES

- Manager above made up 100.00 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
UBS	19	205	10.37%	94,116	0.14	14,443	+7.49	+14.28	+1.94	+9.29	14.92	23.30	13.83	42.07
CREDIT SUISSE	19	171	10.36%	112,714	-0.08	16,463	+8.54	+14.26	3.05	+7.03	15.94	15.19	2.87	22.25
CITIGROUP	16	124	8.84%	132,680	0.20	18,239	+11.09	+14.94	6.82	+5.72	16.54	8.36	18.31	20.50
MERRILL LYNCH	15	146	8.19%	104,426	0.07	9,348	+6.13	+14.36	+11.10	+9.98	8.03	19.03	+11.10	8.57
MORGAN STANLEY	11	166	6.17%	69,130	-0.15	7,284	+6.35	+14.17	6.15	+6.20	20.44	7.94	18.27	20.48
SOCIETE GENERALE	11	96	5.98%	116,005	-0.42	7,002	+6.29	+14.10	8.32	+11.69	28.18	25.94	+21.34	15.19
ITG	10	144	5.62%	72,688	0.12	4,340	+4.15	+13.91	+15.78	+8.85	2.73	22.92	16.08	14.27
DAIWA SECURITIES	9	52	4.87%	174,145	0.18	8,684	+9.59	+14.51	+6.15	+5.47	3.55	1.86	11.53	113.49
MACQUARIE	8	59	4.31%	135,901	0.04	7,122	+8.88	+14.84	2.77	+6.07	15.54	8.45	18.50	26.85
CREDIT AGRICOLE	7	75	3.86%	95,669	0.02	6,793	+9.47	+14.68	0.48	+5.31	10.94	5.25	15.56	10.42

NOTES

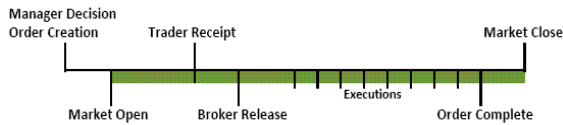
- Brokers above made up 68.56 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
INSTINET	7	98	3.77%	71,614	0.25	3,233	+4.61	+14.51	+10.10	+7.67	8.07	12.56	+3.84	28.65
GOLDMAN SACHS	7	56	3.66%	121,588	0.32	6,731	+9.89	+14.35	+2.90	+13.40	14.83	19.70	2.01	17.14
JP MORGAN CHASE	5	70	2.94%	78,069	-0.14	5,579	+10.21	+14.46	1.12	+8.00	13.56	6.94	+1.87	16.29
HSBC BANK	5	102	2.90%	52,858	-0.11	3,601	+6.68	+14.22	10.90	+11.04	29.13	71.14	27.07	56.52
DEUTSCHE BANK	5	70	2.78%	73,989	-0.23	3,230	+6.24	+14.31	5.09	+7.85	21.19	21.23	14.04	16.25
SCOTIA CAPITAL	4	40	2.04%	94,726	-0.30	361	+0.95	+15.83	11.90	+7.08	33.88	62.42	20.88	68.99
BARCLAYS	3	77	1.83%	44,189	-0.19	1,307	+3.84	+13.87	+2.49	+14.71	22.10	42.89	11.72	33.89
LIQUIDNET	3	8	1.74%	404,583	-1.87	1,278	+3.95	+15.34	399.04	+6.67	417.13	6.59	26.10	17.74
MITSUBISHI UFJ SECS	3	30	1.43%	88,631	0.22	2,653	+9.98	+14.55	+4.96	+9.59	9.22	15.60	13.32	25.68
BNP PARIBAS	2	18	1.31%	135,741	-0.21	2,021	+8.27	+14.67	+20.53	+8.24	+5.57	23.73	3.51	+7.77

NOTES

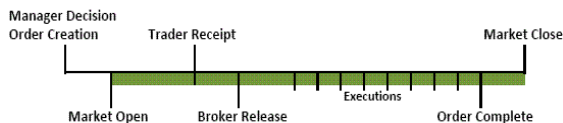
- Brokers above made up 24.39 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
TD WATERHOUSE	2	20	1.13%	104,743	-0.28	355	+1.70	+15.83	7.39	+7.08	28.62	36.47	42.17	39.07
EXANE	2	27	0.83%	56,924	-0.13	2,092	+13.61	+13.97	5.84	+5.93	20.52	22.54	27.47	32.78
WEEDEN & CO	1	50	0.79%	29,335	0.22	1,327	+9.05	+14.72	+3.34	+6.20	9.76	9.65	8.04	15.66
MIZUHO	1	23	0.75%	60,399	0.11	1,449	+10.43	+14.54	+1.34	+8.61	11.23	11.71	21.24	19.07
DAVY STOCKBROKERS	1	6	0.59%	182,144	0.47	1,311	+12.00	+13.34	+13.73	+30.08	17.63	20.72	+51.57	-
NESBITT BURNS	<1	1	0.31%	576,201	-0.81	0	+0.00	+15.83	23.26	+7.08	46.19	25.26	+56.79	-
NATIXIS	<1	4	0.27%	127,162	0.28	731	+14.38	+14.01	+4.88	+5.72	0.47	-	+10.41	-
SMBC SECURITIES INC	<1	8	0.25%	58,574	0.58	449	+9.58	+14.55	+5.46	+9.59	9.12	1.40	16.45	16.41
BANCO SANTANDER	<1	4	0.23%	105,422	0.16	644	+15.28	+15.75	+8.36	+2.53	+5.36	14.67	-	28.25
JEFFERIES & CO	<1	4	0.19%	87,405	0.01	320	+9.16	+14.19	3.19	+5.25	13.34	201.47	18.35	9.10

NOTES

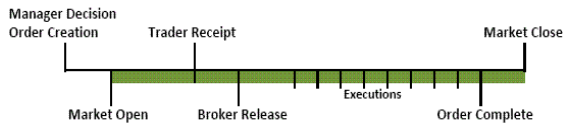
- Brokers above made up 5.32 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
RBC DOMINION SECS	<1	3	0.16%	102,176	0.04	498	+16.26	+15.83	+0.05	+7.08	6.61	18.54	+6.13	57.15
LIBERUM CAPITAL LTD	<1	5	0.16%	59,419	N/A	446	+15.00	+14.22	+4.21	+23.73	18.56	104.22	12.28	-
DANSKE BANK	<1	8	0.15%	35,547	-0.66	427	+15.00	+14.04	50.53	+2.41	51.99	-	-	+27.96
CARNEGIE	<1	2	0.15%	136,295	-0.07	409	+15.00	+13.20	0.68	+11.48	10.38	+3.82	10.09	17.04
JOH BERENBERG GOSSLE	<1	3	0.14%	85,628	1.31	385	+15.00	+14.12	+27.13	+7.00	+21.00	13.71	+36.20	59.30
REDBURN PARTNERS LLP	<1	1	0.12%	230,764	N/A	138	+6.00	+14.06	3.74	+3.69	15.43	+25.36	25.98	-
PAVILION GLOBAL MKT	<1	6	0.12%	36,955	-0.66	67	+3.00	+15.83	8.53	+7.08	28.46	41.80	44.18	15.67
ABN AMRO	<1	1	0.09%	170,740	0.12	205	+12.00	+14.03	+5.49	+6.68	3.44	19.23	-	42.34
DBS VICKERS SECS	<1	4	0.09%	41,809	0.10	167	+10.00	+14.56	+6.91	+3.03	0.10	13.65	32.12	15.92
INVESTEC SECURITIES	<1	1	0.07%	137,573	0.36	206	+15.00	+14.11	+17.62	+6.52	+12.36	32.98	-	-

NOTES

- Brokers above made up 1.26 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20172nd (bp)	20171st (bp)	20164th (bp)
INTERMONTE SIM	<1	1	0.07%	125,891	-0.11	101	+8.00	+13.60	2.22	+4.61	14.43	-	-	-
STIFEL NICOLAUS & CO	<1	1	0.06%	108,262	N/A	130	+12.00	+14.06	14.45	+3.69	20.08	-	37.42	17.40
SC BERNSTEIN	<1	5	0.06%	20,741	0.08	41	+3.99	+15.69	+7.69	+7.03	11.07	18.72	21.41	21.27
ABG SECURITIES	<1	3	0.05%	31,591	-0.24	114	+12.00	+14.19	8.42	+11.09	21.72	26.33	-	-
KNIGHT CAPITAL	<1	15	0.05%	5,788	0.23	24	+2.75	+13.85	+10.24	+5.27	7.03	35.58	-	-
KAS ASSOCIATE	<1	4	0.04%	19,684	-1.07	94	+12.00	+14.10	31.29	+6.51	39.91	+13.80	5.45	-
MAINFIRSTBANK	<1	1	0.04%	73,181	1.23	110	+15.00	+13.56	+51.09	+11.92	+40.58	8.17	-	+26.00
PERSHING	<1	2	0.03%	29,828	0.17	72	+12.00	+14.08	+12.46	+6.48	+3.90	-	20.29	+11.46
CIBC WORLD MARKETS	<1	2	0.03%	28,645	-1.03	327	+57.15	+15.83	22.94	+7.08	+11.28	-	+15.22	-
GREEN STREET	<1	3	0.02%	13,519	0.45	49	+12.00	+14.22	5.65	+23.73	30.96	+16.39	+14.64	32.61

NOTES

- Brokers above made up 0.45 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd	2017 1st	2016 4th
AUTREPAT-STK	<1	2	0.01%	10,934	N/A	0	+0.00	+14.12	281.77	+3.53	343.84	159.41	6.53	+94.15
PANMURE GORDON	<1	1	0.01%	17,081	0.38	14	+8.00	+14.06	+3.17	+3.69	5.76	-	-	32.82
AUTREPAT-DISTRIBUT	<1	1	0.00%	3,611	3.10	0	+0.00	+14.51	+244.67	+2.59	+218.00	-	-	-

NOTES

- Brokers above made up 0.02 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

CBRE CLARION (INTL RE) PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd	2017 1st	2016 4th
GRAND TOTAL	52	431	28.00%	120,924	0.11	52,495	+10.07	+14.67	3.02	+5.59	13.37	17.69	11.74	35.90
CITIGROUP	7	35	3.80%	202,317	0.43	10,088	+14.25	+14.67	17.71	+4.25	22.50	5.39	17.41	33.19
MACQUARIE	7	36	3.59%	185,354	0.01	6,198	+9.29	+14.86	4.02	+5.77	16.16	+4.02	24.93	31.63
DAIWA SECURITIES	6	31	3.08%	184,760	0.29	5,727	+10.00	+14.51	+13.07	+3.15	+6.52	+2.09	11.99	146.02
CREDIT AGRICOLE	5	47	2.72%	107,699	0.03	5,062	+10.00	+14.70	1.29	+4.18	10.03	3.49	21.82	15.53
UBS	5	44	2.66%	112,655	0.10	5,254	+10.60	+14.67	3.89	+5.46	13.87	42.30	24.50	23.16
MORGAN STANLEY	4	42	2.24%	99,419	-0.20	3,932	+9.42	+14.70	9.30	+5.01	20.01	14.02	15.69	31.89
MERRILL LYNCH	4	28	2.06%	137,180	-0.02	3,101	+8.07	+14.62	2.62	+6.88	16.63	28.06	16.04	14.59
JP MORGAN CHASE	3	30	1.63%	100,923	0.05	3,320	+10.96	+14.60	+4.79	+6.99	6.11	6.73	1.48	20.77
GOLDMAN SACHS	3	24	1.37%	106,303	0.20	1,934	+7.58	+14.58	+2.04	+7.38	12.15	11.93	17.67	13.94
INSTINET	2	25	1.13%	84,405	0.44	1,186	+5.62	+14.55	+8.99	+9.07	8.98	5.48	+6.92	20.82



(+) = Cost

TRADE CYCLE DETAIL

LAZARD ASSET MANAGEMENT PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd	2017 1st	2016 4th
GRAND TOTAL	57	374	30.71%	152,832	-0.11	49,568	+8.67	+14.37	19.28	+10.78	36.08	15.49	2.60	17.96
MERRILL LYNCH	9	78	5.09%	121,466	0.20	5,237	+5.53	+14.07	+20.57	+12.01	1.27	20.64	+14.48	+12.99
CREDIT SUISSE	8	49	4.22%	160,451	-0.06	8,041	+10.23	+13.85	+2.65	+6.45	7.46	29.99	+20.08	20.99
CITIGROUP	6	30	3.12%	193,725	0.14	6,415	+11.04	+15.56	0.78	+6.55	11.96	13.85	24.24	6.50
SOCIETE GENERALE	5	22	2.70%	228,708	-0.61	3,570	+7.09	+13.98	10.28	+10.45	27.60	3.22	8.32	3.65
UBS	5	38	2.49%	122,127	-0.16	4,809	+10.36	+14.57	2.36	+17.10	23.70	6.07	16.71	67.09
GOLDMAN SACHS	3	9	1.74%	359,950	1.13	4,028	+12.43	+14.17	+5.33	+19.82	16.20	31.80	14.96	-
DEUTSCHE BANK	3	24	1.50%	116,697	-0.12	2,245	+8.02	+14.48	0.40	+8.42	15.33	26.59	12.36	16.17
LIQUIDNET	3	1	1.44%	2,682,289	-2.24	1,066	+3.97	+15.83	480.34	+7.08	499.30	9.58	32.01	20.61
BARCLAYS	2	11	1.24%	209,835	-0.17	1,018	+4.41	+13.83	1.13	+16.46	26.95	41.72	13.14	24.56
INSTINET	2	31	0.98%	58,953	0.56	895	+4.90	+13.97	+21.27	+5.13	+4.66	-	-	-



(+) = Cost

TRADE CYCLE DETAIL

LSV ASSET MANAGEMENT PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd	2017 1st	2016 4th
GRAND TOTAL	40	560	21.35%	70,963	-0.12	15,792	+3.97	+14.51	0.26	+8.38	19.23	27.69	22.33	29.17
CREDIT SUISSE	8	95	4.46%	87,421	-0.09	3,902	+4.70	+14.38	7.28	+7.92	24.89	19.22	16.87	18.22
ITG	6	47	3.10%	122,889	0.08	2,753	+4.77	+14.15	+23.81	+8.64	+6.02	19.53	8.67	10.23
SCOTIA CAPITAL	4	35	2.02%	107,265	-0.30	328	+0.87	+15.83	12.04	+7.08	34.09	43.04	44.22	-
UBS	4	51	1.95%	71,180	0.53	1,815	+5.00	+13.92	+17.55	+6.74	+1.76	28.86	13.80	21.48
MORGAN STANLEY	3	45	1.77%	73,192	-0.39	1,365	+4.15	+14.03	12.73	+7.32	30.44	37.62	27.27	36.88
HSBC BANK	3	90	1.57%	32,544	-0.53	879	+3.00	+14.15	31.10	+13.70	55.66	39.20	27.77	57.68
INSTINET	3	37	1.40%	70,453	-0.18	853	+3.27	+14.90	0.10	+8.90	20.65	28.33	31.33	30.88
TD WATERHOUSE	2	20	1.13%	104,743	-0.28	355	+1.70	+15.83	7.39	+7.08	28.62	36.47	46.70	39.07
CITIGROUP	2	25	1.06%	79,186	0.02	792	+4.00	+14.53	+12.32	+8.22	6.69	12.93	26.46	31.09
DEUTSCHE BANK	2	33	1.04%	58,770	-0.40	776	+4.00	+14.00	10.33	+6.83	27.57	45.75	29.40	9.62



(+) = Cost

TRADE CYCLE DETAIL

S&P GLOBAL INFRAST-INDEX PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd	2017 1st	2016 4th
GRAND TOTAL	12	374	6.31%	31,386	0.06	2,237	+1.91	+14.04	+1.44	+6.56	17.28	12.03	5.15	22.76
UBS	3	43	1.67%	72,358	0.05	697	+2.24	+13.91	+0.86	+9.80	20.73	15.05	31.28	4.56
MORGAN STANLEY	2	63	1.18%	34,746	0.09	298	+1.36	+13.25	1.30	+6.52	19.50	+15.94	6.26	9.03
ITG	1	64	0.79%	22,843	0.49	99	+0.67	+12.91	+2.30	+4.23	14.08	+60.51	22.23	126.27
MERRILL LYNCH	1	30	0.63%	38,939	-0.37	227	+1.94	+15.52	1.45	+6.11	20.91	22.31	1.08	37.24
CITIGROUP	<1	28	0.46%	30,842	-0.40	185	+2.14	+14.87	2.81	+6.17	22.01	4.72	14.94	7.54
HSBC BANK	<1	9	0.41%	83,986	0.95	227	+3.00	+14.51	+30.74	+2.59	+17.85	-	-	11.25
MACQUARIE	<1	18	0.40%	41,259	0.29	224	+3.02	+14.88	+11.36	+6.09	7.37	44.84	62.11	41.71
JP MORGAN CHASE	<1	18	0.33%	33,724	-0.80	90	+1.48	+14.90	10.92	+6.18	30.59	10.11	9.03	+7.95
GOLDMAN SACHS	<1	18	0.16%	16,640	-0.25	99	+3.32	+14.55	4.18	+2.96	17.41	-	+13.45	16.45
WEEDEN & CO	<1	31	0.09%	5,279	0.00	24	+1.49	+12.77	+2.96	+4.10	12.54	11.01	6.23	3.96



(+) = Cost

TRADE CYCLE DETAIL

WILLIAM BLAIR & COMPANY PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	2017 2nd (bp)	2017 1st (bp)	2016 4th (bp)
GRAND TOTAL	25	290	13.62%	87,429	-0.01	22,321	+8.80	+14.27	0.65	+8.87	16.14	17.40	+1.61	17.96
SOCIETE GENERALE	5	63	2.69%	79,601	-0.21	2,860	+5.70	+14.24	5.70	+13.32	28.37	56.17	+79.29	19.30
UBS	3	29	1.59%	101,878	0.02	1,868	+6.32	+14.03	+0.46	+6.03	17.20	12.80	3.72	11.53
ITG	2	21	1.14%	101,065	-0.54	751	+3.54	+13.81	8.00	+11.61	30.08	13.42	13.30	18.99
CREDIT SUISSE	2	16	1.03%	120,342	0.21	2,828	+14.69	+15.05	+1.62	+5.97	5.05	3.32	7.54	40.04
EXANE	2	22	0.82%	69,498	-0.11	2,090	+13.67	+13.97	5.69	+5.92	20.35	-	+7.17	4.95
CREDIT AGRICOLE	1	19	0.68%	66,186	0.06	543	+4.32	+14.62	1.27	+7.49	19.08	+0.03	4.72	+19.91
DAIWA SECURITIES	<1	9	0.54%	110,785	0.04	565	+5.67	+14.41	2.01	+9.17	19.93	6.36	8.26	18.91
MIZUHO	<1	18	0.52%	53,297	0.04	1,019	+10.62	+14.54	+3.26	+8.17	8.61	17.22	-	-
MITSUBISHI UFJ SECS	<1	9	0.44%	90,424	0.26	802	+9.86	+14.55	+14.31	+9.59	+0.01	19.44	11.02	20.33
CITIGROUP	<1	6	0.38%	119,373	-0.18	760	+10.61	+13.86	5.61	+6.09	14.95	3.29	+8.70	8.27



(+) = Cost **TRADE DETAIL ANALYSIS**

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
JULIUS BAER GROUP LTD COMMON S	11	102,170	-5,708,540	5,708,540	1.70%	-0.13	4.13
WORLDPAY GROUP PLC COMMON STOC	14	775,706	4,073,873	4,073,873	1.16%	N/A	0.70
ASSOCIATED BRITISH FOODS PLC C	14	95,945	3,757,854	4,060,745	1.32%	-0.96	17.76
DAIWA HOUSE INDUSTRY CO LTD CO	17	116,800	4,055,063	4,055,063	0.50%	0.01	1.71
VALEO SA COMMON STOCK EUR1.0	16	54,867	3,311,893	3,712,835	0.96%	-0.04	+4.36
SUN HUNG KAI PROPERTIES COMMON	17	227,200	-3,634,491	3,634,491	0.51%	0.16	+9.12
WHARF HOLDINGS LTD COMMON STOC	16	383,500	933,146	3,564,445	0.64%	0.24	+4.93
GPT GROUP REIT NPV	12	910,354	1,764,458	3,515,887	2.99%	-0.28	16.88
KONINKLIJKE PHILIPS NV COMMON	28	88,800	3,368,863	3,368,863	0.17%	0.05	+1.98
TOROMONT INDUSTRIES LTD COMMON	2	67,200	-2,709,973	2,709,973	6.40%	-2.21	475.46

Names Most Traded - Total Orders (\$)

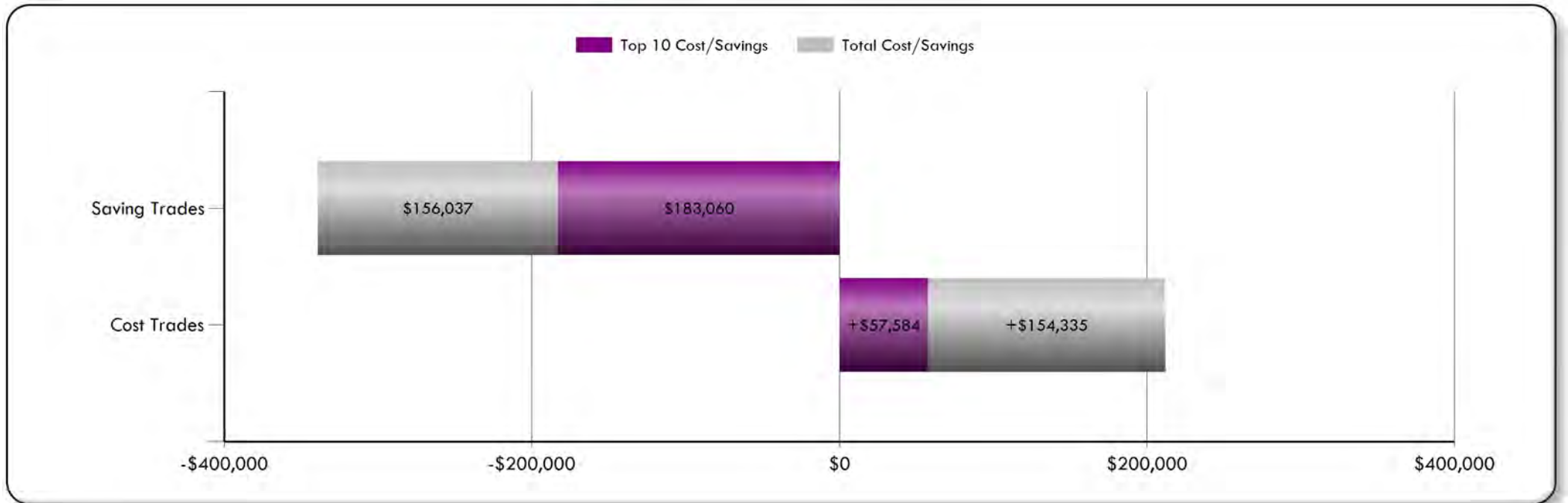
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
LEGAL + GENERAL GROUP PLC COMM	43	359,200	-1,228,028	+3.53	0.11%	-0.28	20.13
METSO OYJ COMMON STOCK	35	57,407	-1,887,024	+6.29	0.79%	-0.64	25.35
YAMAHA CORP COMMON STOCK	35	70,100	-2,462,734	+7.44	0.24%	-0.15	3.05
BT GROUP PLC COMMON STOCK GBP.	31	216,100	-834,436	+3.17	0.08%	0.16	+3.86
EDP ENERGIAS DE PORTUGAL SA CO	28	186,900	-675,347	+4.00	0.12%	-0.45	13.43
MITIE GROUP PLC COMMON STOCK G	28	237,400	815,098	+4.21	1.46%	-0.23	8.34
KONINKLIJKE PHILIPS NV COMMON	28	88,800	3,368,863	+4.17	0.17%	0.05	+1.98
KYORIN HOLDINGS INC COMMON STO	27	41,400	883,656	+4.35	0.74%	-0.16	5.83
ENEL SPA COMMON STOCK EUR1.	27	261,458	-1,233,159	+3.67	0.05%	-0.46	15.32
HONGKONG LAND HOLDINGS LTD COM	27	203,100	1,516,126	+13.60	0.84%	0.03	5.85



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	5,426,464	10	+176.99	27.17%
Cost Trades	90,554,188	932	+22.76	100.00%
Saving Trades	95,382,815	1,091	24.81	100.00%
10 Low Cost Trades	7,475,648	10	152.46	53.98%





(+) = Cost

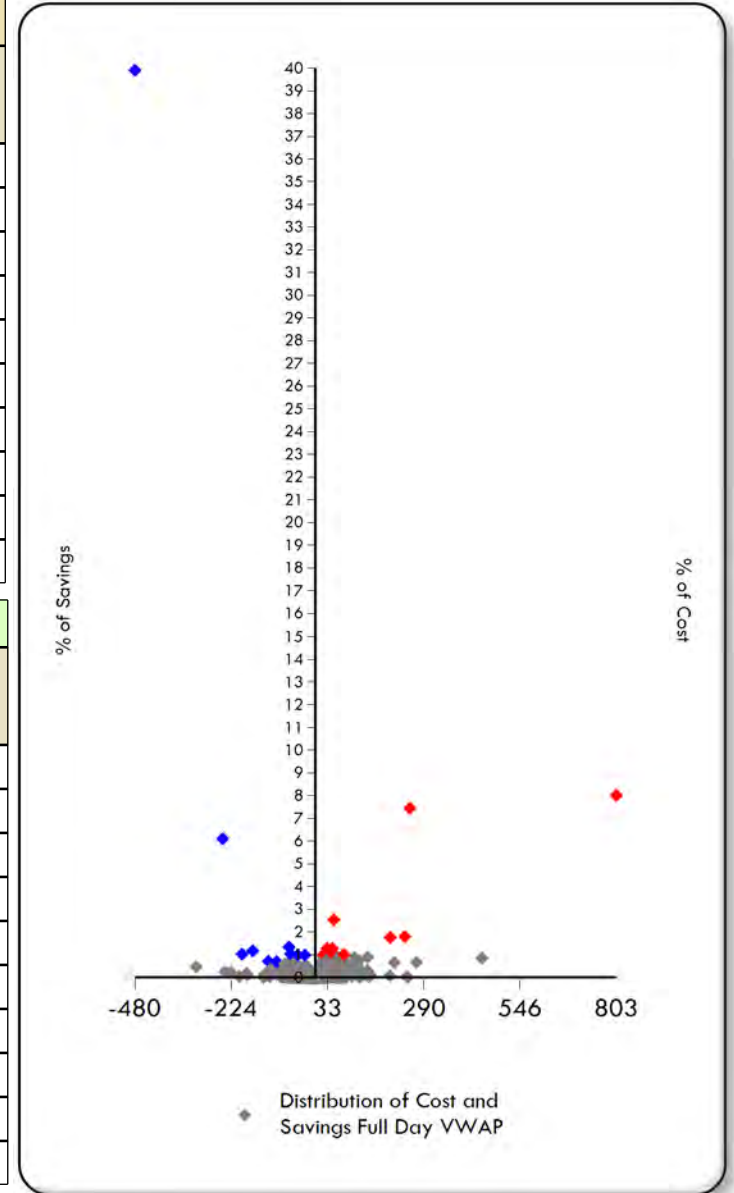
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	UK	DIAGEO PLC	20170829	228,639	8.02%	0.90	+802.85	LAZAR	MERRI
Buy	HKG	PAX GLOBAL	20170811	641,496	7.46%	1.17	+252.52	LSV A	ITG
Buy	BEL	SOLVAY SA	20170725	1,091,197	2.54%	1.71	+49.66	LSV A	UBS
Buy	HKG	PAX GLOBAL	20170814	163,516	1.80%	2.36	+238.91	LSV A	BNP P
Buy	NTH	COCA COLA	20170712	190,571	1.77%	1.97	+200.20	LAZAR	CREDI
Sell	SGP	CAPITALAND	20170825	852,012	1.29%	1.03	+31.86	CBRE	CITIG
Sell	HKG	WHARF HOLD	20170906	584,839	1.27%	0.61	+45.90	CBRE	DAIWA
Sell	SPA	CIA DE DIS	20170829	279,646	1.02%	0.99	+76.70	WILLI	SOCIE
Buy	SWE	SAAB AB B	20170828	959,846	1.01%	0.86	+22.43	LAZAR	SOCIE
Buy	AST	WESTFIELD	20170907	434,703	1.00%	0.16	+48.86	CBRE	MACQU

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	CAN	TOROMONT I	20170829	2,682,289	39.91%	-2.24	480.34	LAZAR	LIQUI
Buy	SGP	MAPLETREE	20170914	819,644	6.11%	N/A	246.51	CBRE	CITIG
Sell	UK	ASSOCIATED	20170915	654,622	1.34%	-3.54	69.76	LAZAR	SOCIE
Sell	UK	ASTRAZENECA	20170907	243,477	1.17%	-1.92	166.29	LSV A	HSBC
Buy	FIN	METSO OYJ	20170815	532,356	1.03%	-1.46	65.49	LAZAR	SOCIE
Sell	SWI	BUCHER IND	20170804	182,817	1.03%	-1.61	194.98	LSV A	CREDI
Buy	AST	MIRVAC GRO	20170817	720,459	0.99%	-1.13	46.23	CBRE	MACQU
Buy	UK	LLOYDS BAN	20170731	1,220,863	0.99%	-0.68	27.33	LSV A	ITG
Buy	HKG	WHARF HOLD	20170809	191,756	0.71%	0.22	124.67	CBRE	MORGA
Buy	DEN	ROYAL UNIB	20170825	227,363	0.70%	-3.51	103.04	WILLI	SOCIE





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

DIAGEO PLC COMMON STOCK GBP.28 - 20170829

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	UK	GBP	0237400	08/29/2017 08:00:00	08/29/2017 16:30:00	228,639	25.46	25.42	+16,992	+802.85	0.90	0.20



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 8.02% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PAX GLOBAL TECHNOLOGY LTD COMM - 20170811

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	ITG	HKG	HKD	B3LX5R0	08/11/2017 09:30:00	08/11/2017 16:00:00	641,496	4.57	4.46	+15,800	+252.52	1.17	11.84



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.46% of your market impact cost.

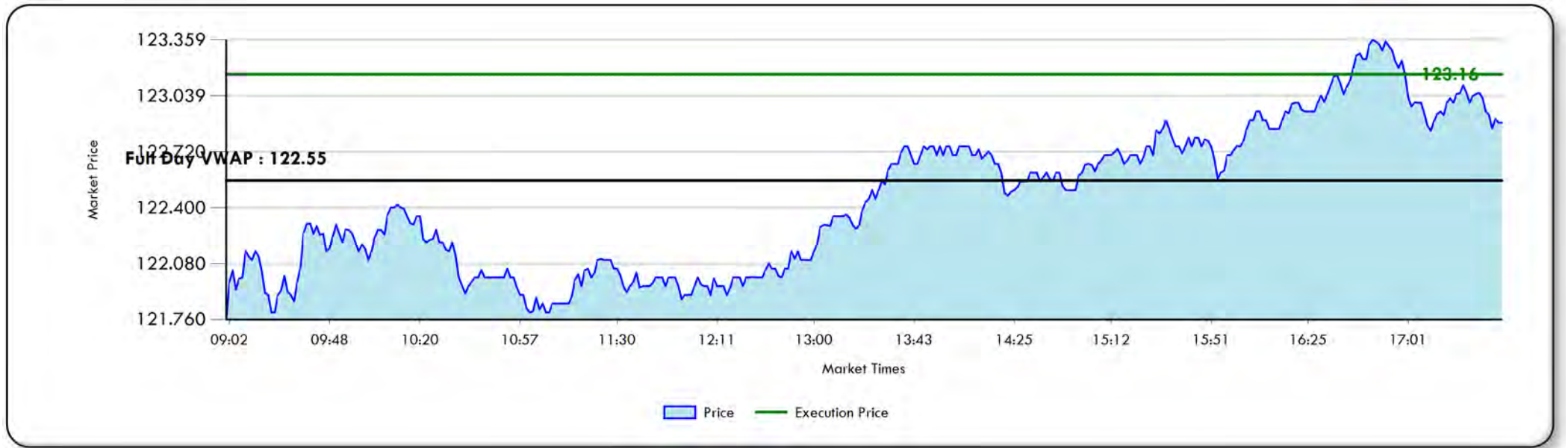


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SOLVAY SA COMMON STOCK EUR15.0 - 20170725

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	UBS	BEL	EUR	4821100	07/25/2017 09:00:00	07/25/2017 17:30:00	1,091,197	123.16	122.55	+5,392	+49.65	1.71	3.32



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.54% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PAX GLOBAL TECHNOLOGY LTD COMM - 20170814

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	BNP PARIBAS	HKG	HKD	B3LX5R0	08/14/2017 09:30:00	08/14/2017 16:00:00	163,516	4.32	4.22	+3,815	+238.91	2.36	2.45



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.80% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

COCA COLA EUROPEAN PARTNERS CO - 20170712

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	CREDIT SUISSE	NTH	EUR	BD4D942	07/12/2017 09:00:00	07/12/2017 17:30:00	190,571	36.72	36.00	+3,740	+200.20	1.97	5.76



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.77% of your market impact cost.

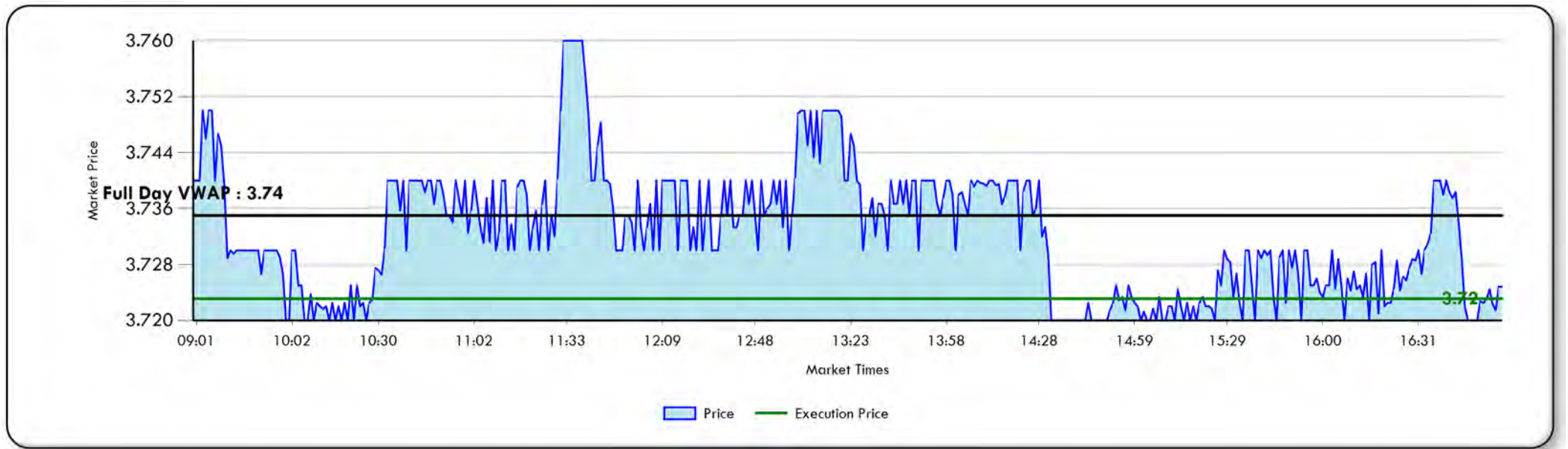


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CAPITALAND LTD COMMON STOCK - 20170825

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	CBRE CLARION (INTL RE)	CITIGROUP	SGP	SGD	6309303	08/25/2017 09:00:00	08/25/2017 17:00:00	852,012	3.72	3.74	+2,723	+31.86	1.03	5.47



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.29% of your market impact cost.

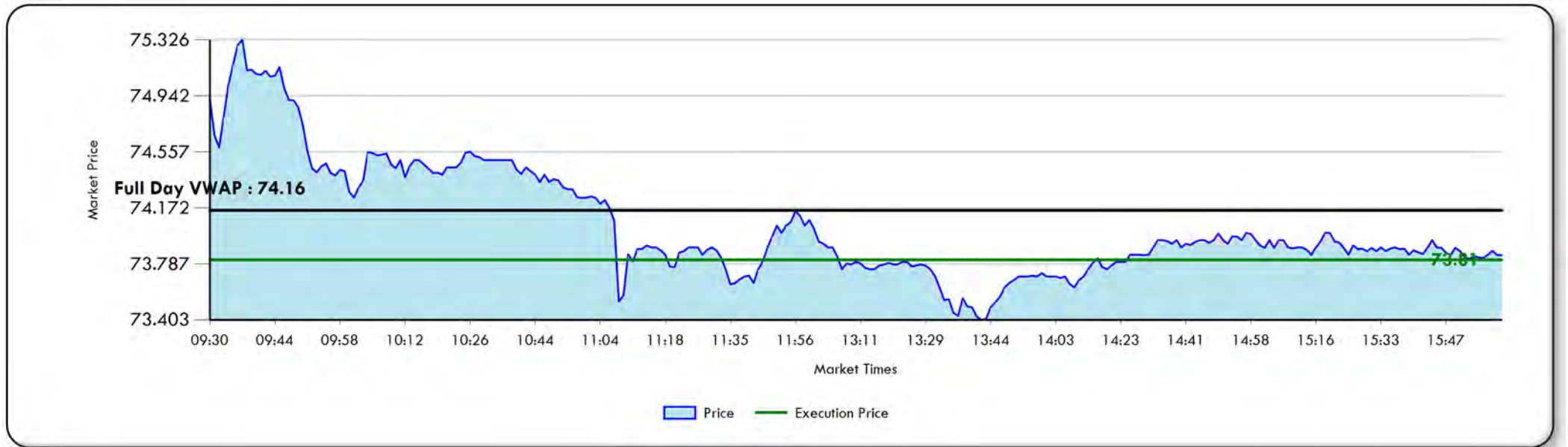


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WHARF HOLDINGS LTD COMMON STOC - 20170906

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	CBRE CLARION (INTL RE)	DAIWA SECURITIES	HKG	HKD	6435576	09/06/2017 09:30:00	09/06/2017 16:00:00	584,839	73.81	74.16	+2,697	+45.90	0.61	0.97



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.27% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CIA DE DISTRIBUCION INTEGRAL C - 20170829

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	SPA	EUR	BP3QYZ2	08/29/2017 09:00:00	08/29/2017 17:30:00	279,646	20.18	20.34	+2,162	+76.70	0.99	12.35



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.02% of your market impact cost.

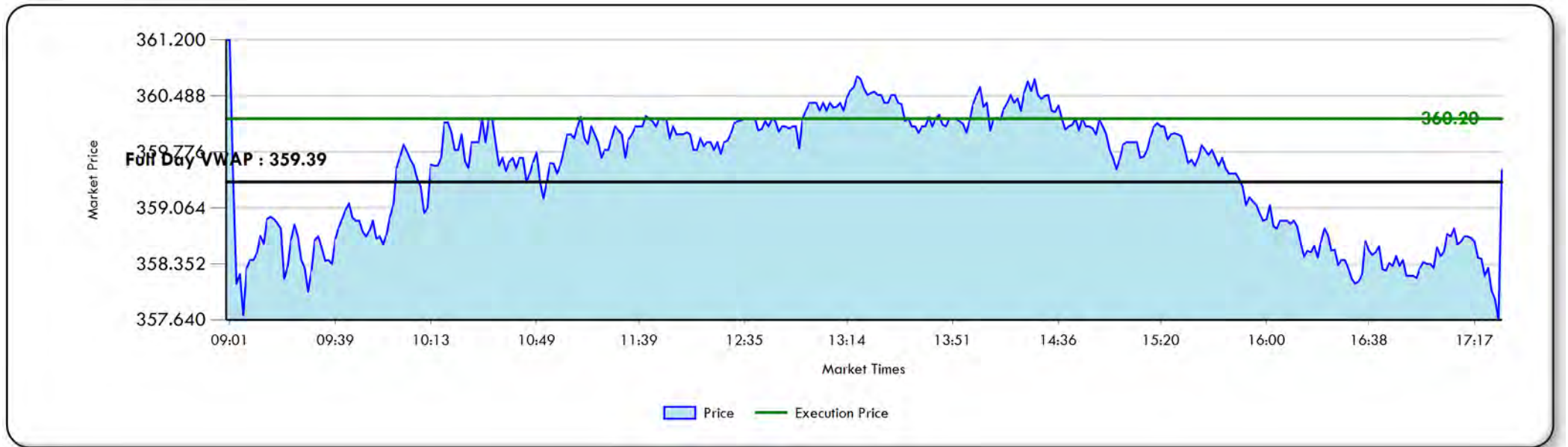


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SAAB AB B COMMON STOCK - 20170828

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	SWE	SEK	5469554	08/28/2017 09:00:00	08/28/2017 17:30:00	959,846	360.20	359.39	+2,148	+22.43	0.86	16.86



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.01% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WESTFIELD CORP MISC. - 20170907

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	MACQUARIE	AST	AUD	BMMVXX 4	09/07/2017 10:00:00	09/07/2017 16:12:00	434,703	7.92	7.88	+2,113	+48.85	0.16	0.94



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.00% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TOROMONT INDUSTRIES LTD COMMON - 20170829

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	LIQUIDNET	CAN	CAD	2897103	08/29/2017 09:30:00	08/29/2017 16:00:00	2,682,289	50.35	52.89	135,342	480.33	-2.24	12.26



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 39.91% of your market impact cost.

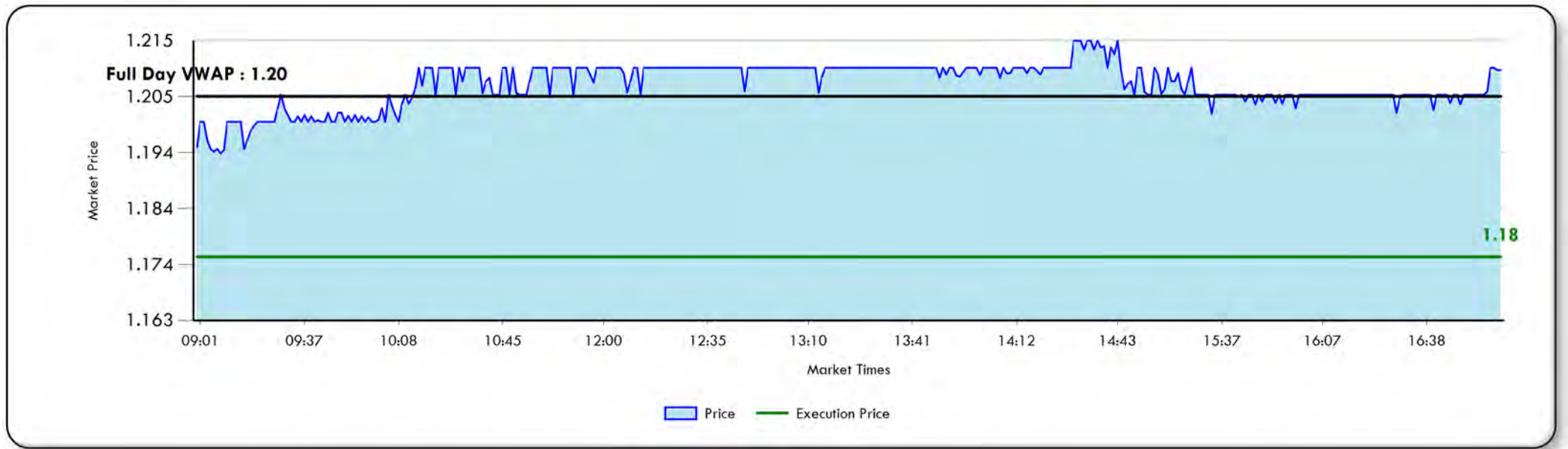


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MAPLE TREE LOGISTICS TRUST 20 R - 20170914

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	CITIGROUP	SGP	SGD	BOD6P43	09/14/2017 09:00:00	09/14/2017 17:00:00	819,644	1.18	1.20	20,716	246.51	N/A	7.88



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 6.11% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ASSOCIATED BRITISH FOODS PLC C - 20170915

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	UK	GBP	0673123	09/15/2017 08:00:00	09/15/2017 16:30:00	654,622	31.81	31.58	4,535	69.75	-3.54	3.93



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.34% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ASTRAZENECA PLC COMMON STOCK U - 20170907

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	HSBC BANK	UK	GBP	0989529	09/07/2017 08:00:00	09/07/2017 16:30:00	243,477	47.76	46.98	3,983	166.29	-1.92	0.14



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.17% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

METSO OYJ COMMON STOCK - 20170815

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	FIN	EUR	5713422	08/15/2017 09:00:00	08/15/2017 17:30:00	532,356	26.82	27.00	3,509	65.48	-1.46	9.41



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.03% of your market impact cost.

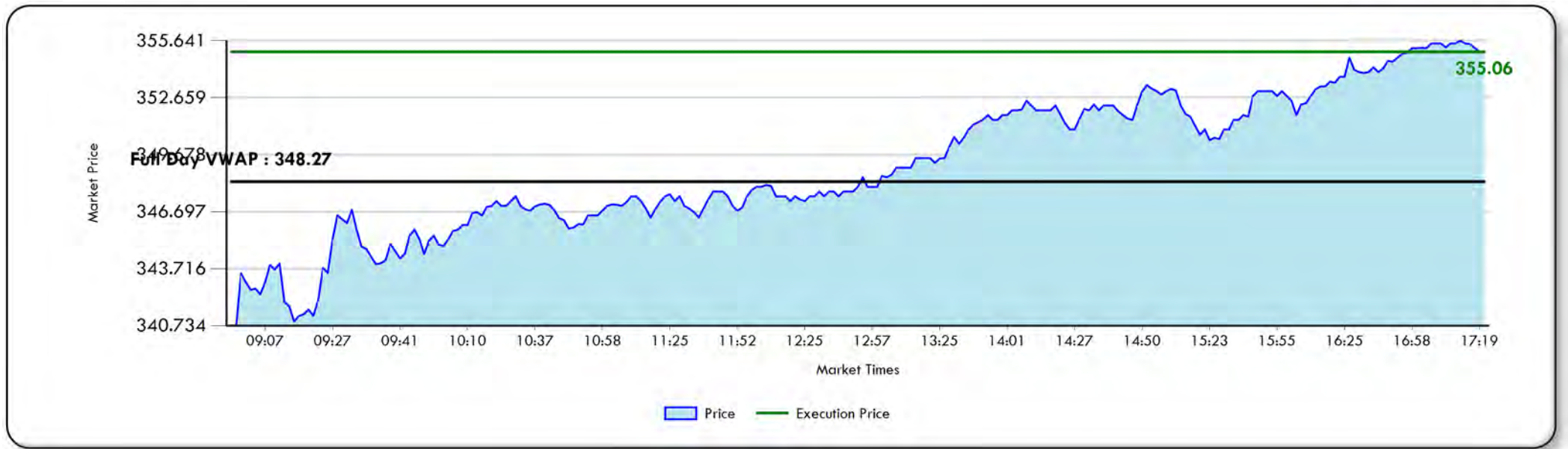


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BUCHER INDUSTRIES AG REG COMMO - 20170804

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	CREDIT SUISSE	SWI	CHF	B07ZBW6	08/04/2017 09:00:00	08/04/2017 17:20:00	182,817	355.06	348.27	3,496	194.98	-1.61	0.95



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.03% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MIRVAC GROUP REIT - 20170817

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	MACQUARIE	AST	AUD	6161978	08/17/2017 10:00:00	08/17/2017 16:12:00	720,459	2.31	2.32	3,346	46.22	-1.13	2.10



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.99% of your market impact cost.

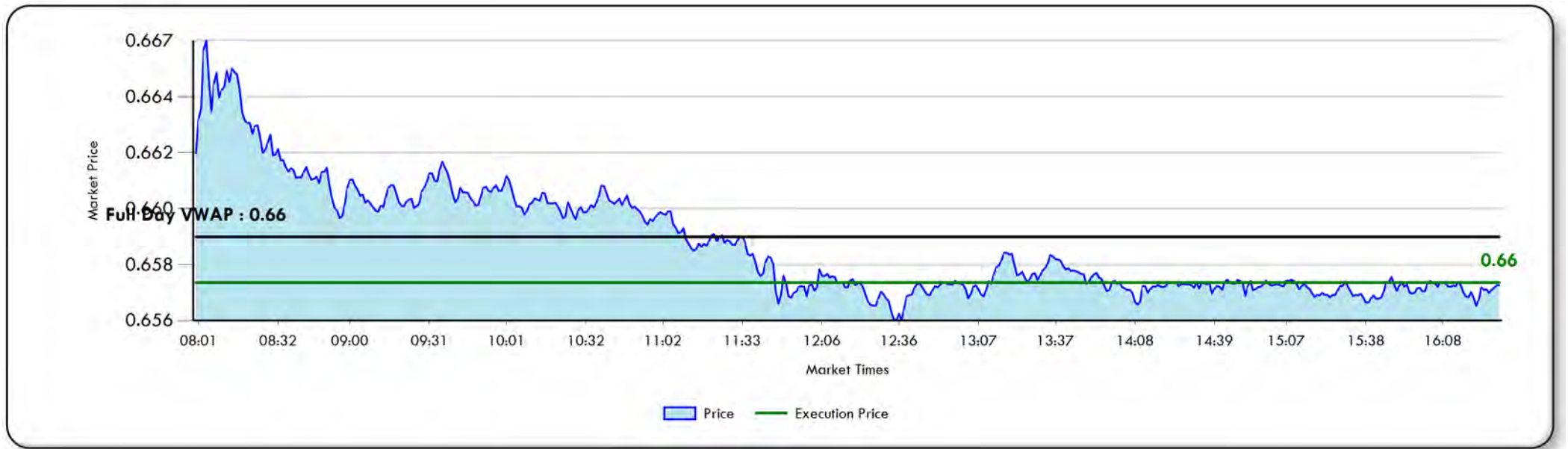


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

LLOYDS BANKING GROUP PLC COMMO - 20170731

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	ITG	UK	GBP	0870612	07/31/2017 08:00:00	07/31/2017 16:30:00	1,220,863	0.66	0.66	3,345	27.32	-0.68	0.75



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.99% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

WHARF HOLDINGS LTD COMMON STOC - 20170809

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	MORGAN STANLEY	HKG	HKD	6435576	08/09/2017 09:30:00	08/09/2017 16:00:00	191,756	74.97	75.92	2,421	124.66	0.22	0.10



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.71% of your market impact cost.

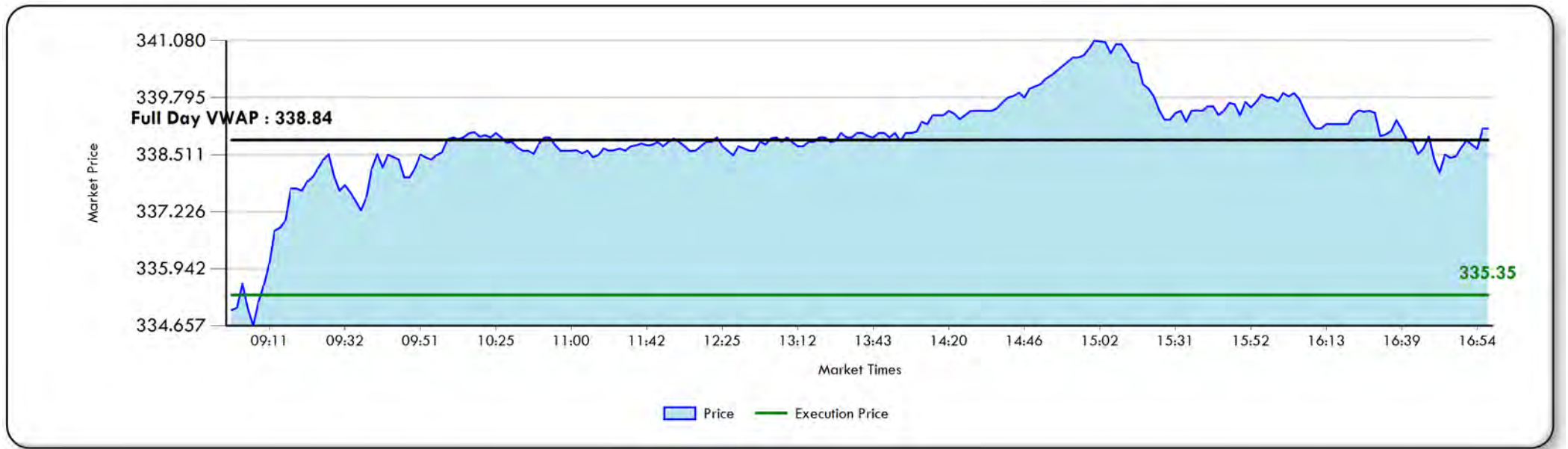


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ROYAL UNIBREW COMMON STOCK DKK - 20170825

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	DEN	DKK	BX8ZX20	08/25/2017 09:00:00	08/25/2017 17:00:00	227,363	335.35	338.84	2,367	103.04	-3.51	3.38

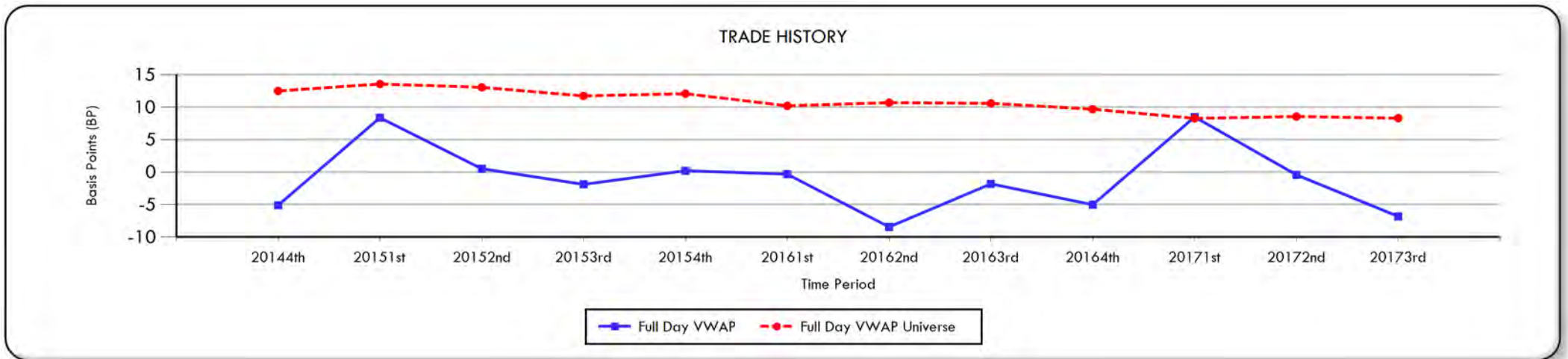


NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.70% of your market impact cost.

TRADE HISTORY

Period	Total Principal (\$)	Commission (bp)	Commission Universe (bp)	Fees (bp)	Fees Universe (bp)	Full Day VWAP (bp)	Full Day VWAP Universe (bp)	Total Cost/Savings Vs. Universe (bp)
20144th	506,158,401	+5.52	+17.06	+2.16	+2.30	5.11	+12.48	29.27
20151st	128,681,090	+9.88	+16.54	+6.39	+6.57	+8.36	+13.55	12.03
20152nd	105,915,243	+8.16	+17.11	+6.69	+6.43	+0.51	+13.04	21.21
20153rd	125,280,679	+8.08	+15.73	+6.43	+6.85	1.90	+11.72	21.69
20154th	149,071,955	+8.39	+15.71	+3.87	+4.30	+0.20	+12.06	19.60
20161st	122,988,471	+7.80	+15.62	+4.75	+5.22	0.33	+10.19	18.81
20162nd	188,544,188	+7.40	+16.20	+5.32	+5.52	8.45	+10.68	28.14
20163rd	170,434,065	+7.69	+16.36	+6.62	+6.96	1.82	+10.56	21.39
20164th	200,915,200	+7.12	+16.08	+5.97	+6.25	5.02	+9.68	23.94
20171st	193,287,065	+8.16	+15.81	+6.67	+6.60	+8.47	+8.26	7.37
20172nd	199,438,944	+6.90	+14.86	+4.37	+4.99	0.43	+8.55	17.56
20173rd	186,109,779	+7.65	+14.45	+5.00	+5.31	6.83	+8.29	22.23



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
ARGENTINA	2.97 BP	42.15 BP	0.00 BP	24.97 BP	67.12 BP
AUSTRALIA	5.79 BP	14.97 BP	1.36 BP	6.46 BP	22.79 BP
AUSTRIA	25.40 BP	13.56 BP	0.03 BP	11.92 BP	25.51 BP
BELGIUM	67.00 BP	13.85 BP	0.02 BP	7.02 BP	20.89 BP
BRAZIL	6.13 BP	16.02 BP	2.07 BP	12.51 BP	30.60 BP
CANADA	13.16 BP	15.83 BP	0.02 BP	7.08 BP	22.93 BP
CHILE	0.53 BP	16.15 BP	0.60 BP	7.03 BP	23.78 BP
CHINA	1.73 BP	14.26 BP	9.53 BP	3.39 BP	27.18 BP
COLOMBIA	0.85 BP	26.06 BP	0.66 BP	19.20 BP	45.92 BP
CZECH REPUBLIC	17.57 BP	18.40 BP	0.00 BP	5.82 BP	24.22 BP
DENMARK	51.31 BP	13.68 BP	0.01 BP	10.33 BP	24.02 BP
EGYPT	1.41 BP	33.26 BP	0.49 BP	13.93 BP	47.68 BP
FINLAND	16.62 BP	13.20 BP	0.02 BP	11.48 BP	24.70 BP
FRANCE - BUYS	45.41 BP	13.89 BP	30.00 BP	5.55 BP	49.44 BP
FRANCE - SELLS	48.04 BP	14.01 BP	0.00 BP	5.72 BP	19.73 BP
GERMANY	41.41 BP	14.12 BP	0.01 BP	7.00 BP	21.13 BP
GREECE	3.18 BP	17.17 BP	2.80 BP	24.37 BP	44.34 BP
HONG KONG	1.72 BP	14.51 BP	9.57 BP	2.59 BP	26.67 BP
HUNGARY	12.73 BP	17.71 BP	1.10 BP	4.91 BP	23.72 BP
INDIA	7.01 BP	18.59 BP	9.79 BP	4.59 BP	32.97 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDONESIA	0.47 BP	17.42 BP	9.15 BP	6.27 BP	32.84 BP
IRELAND - BUYS	0.39 BP	14.36 BP	100.00 BP	4.99 BP	119.35 BP
IRELAND - SELLS	3.87 BP	13.34 BP	0.00 BP	30.08 BP	43.42 BP
ISRAEL	6.44 BP	20.24 BP	0.09 BP	6.95 BP	27.28 BP
ITALY - BUYS	5.74 BP	13.60 BP	12.00 BP	4.61 BP	30.21 BP
ITALY - SELLS	5.11 BP	12.82 BP	0.00 BP	13.29 BP	26.11 BP
JAPAN	15.05 BP	14.55 BP	0.02 BP	9.59 BP	24.16 BP
KOREA - BUYS	59.77 BP	15.15 BP	0.00 BP	9.63 BP	24.78 BP
KOREA - SELLS	103.80 BP	18.91 BP	25.91 BP	5.43 BP	50.25 BP
LUXEMBOURG	63.31 BP	0.00 BP	0.00 BP	57.73 BP	57.73 BP
MALAYSIA	1.57 BP	15.82 BP	3.26 BP	2.81 BP	21.89 BP
MEXICO	1.95 BP	15.75 BP	0.00 BP	2.53 BP	18.28 BP
NETHERLANDS	33.78 BP	14.03 BP	0.22 BP	6.68 BP	20.93 BP
NEW ZEALAND	3.22 BP	14.97 BP	0.02 BP	10.94 BP	25.93 BP
NORWAY	11.89 BP	14.19 BP	0.02 BP	11.09 BP	25.30 BP
PERU	0.84 BP	19.31 BP	0.24 BP	10.12 BP	29.67 BP
PHILIPPINES - BUYS	0.64 BP	17.66 BP	29.50 BP	3.81 BP	50.97 BP
PHILIPPINES - SELLS	0.51 BP	21.73 BP	79.50 BP	2.09 BP	103.32 BP
POLAND	8.80 BP	16.09 BP	0.00 BP	7.88 BP	23.97 BP
PORTUGAL	5.27 BP	14.00 BP	0.01 BP	12.04 BP	26.05 BP



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.03 BP	20.00 BP	0.02 BP	29.74 BP	49.76 BP
SINGAPORE	2.36 BP	14.63 BP	3.58 BP	3.67 BP	21.88 BP
SOUTH AFRICA - BUYS	9.50 BP	15.49 BP	23.62 BP	8.71 BP	47.82 BP
SOUTH AFRICA - SELLS	6.16 BP	14.11 BP	0.04 BP	6.52 BP	20.67 BP
SPAIN	8.10 BP	14.10 BP	0.01 BP	6.51 BP	20.62 BP
SWEDEN	14.36 BP	14.04 BP	0.01 BP	2.41 BP	16.46 BP
SWITZERLAND	54.25 BP	13.73 BP	0.04 BP	6.36 BP	20.13 BP
TAIWAN - BUYS	1.92 BP	15.34 BP	0.00 BP	3.09 BP	18.43 BP
TAIWAN - SELLS	2.47 BP	19.28 BP	27.66 BP	5.89 BP	52.83 BP
THAILAND	1.86 BP	15.68 BP	0.97 BP	5.06 BP	21.71 BP
TURKEY	2.47 BP	15.64 BP	0.03 BP	7.57 BP	23.24 BP
U.K. - BUYS	6.51 BP	14.06 BP	50.00 BP	3.69 BP	67.75 BP
U.K. - SELLS	7.36 BP	14.22 BP	0.00 BP	23.73 BP	37.95 BP
U.S.	45.31 BP	12.77 BP	0.11 BP	4.10 BP	16.98 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	15.92 BP	16.76 BP	8.06 BP	10.23 BP	35.04 BP



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SACRAMENTO COUNTY

US Fixed Income Analysis

Period End September 30, 2017



Sacramento County
Period End September 30, 2017
(US Fixed Income Analysis)

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates U.S. fixed income executions from July 01,2017 to September 30,2017. The analysis included trading of 712 trades in 245 different issues representing \$733,364,522 in principal across mortgages, governments And corporates.

Methodology:

The Elkins/McSherry analysis measures trading efficiency by quantifying the cost of each trade by comparing your executed price to the average price or benchmark price on the day of the trade and to the Elkins/McSherry U.S. Fixed Income Trading Cost Universe. Daily prices are calculated from Market Axess, Tullett Prebon, Bloomberg and Reuters. For comparison purposes, Elkins/McSherry establishes average institutional trading costs quarterly for the most actively traded U.S.treasury, corporates, agencies, mortgages and municipal issues. The "Universe" is the average trading cost incurred by pension funds, investment managers, banks and brokers for Treasuries, Corporates, Agencies, Mortgages and Municipals. Benchmark prices are calculated by using the following methodologies: Government Bonds – Average of six indicative prices received from Tullett Prebon. Municipal Bonds – Average of institutional sized execution prices from MSRB. If actual trade prices are not available the Elkins/McSherry analysis defaults to a fair value price from Reuters or Bloomberg. Corporate Bonds – Average of execution prices where available, from TRACE and Market Axess. If actual trade prices are not available the Elkins/McSherry analysis defaults to a fair value price from Reuters or Bloomberg. Mortgage Bonds – Reuters or Bloomberg fair value prices.

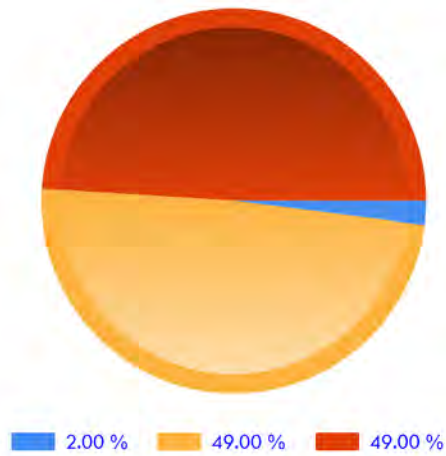
Results:

Buy/Sell	GRAND TOTAL PERFORMANCE							TRADE COST HISTORICAL PERFORMANCE				
	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2017	Q1 2017	Q4 2016	Q3 2016
BUYS	350	338	150	+203.44	+5.81	+8.20	83.58	2.39	+8.74	+7.88	+12.19	+2.63
SELLS	383	374	168	273.87	7.15	+6.16	509.83	13.31	8.67	5.46	14.01	3.11
GRAND TOTAL	733	712	245	70.43	0.96	+7.13	593.40	8.09	0.14	+1.25	0.97	0.25

EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q2 2017	Q1 2017	Q4 2016	Q3 2016
Mortgages	360	463	139	84.85	2.35	+5.23	273.40 7.58	1.17	+1.58	4.63	1.31
Governments	357	211	73	+3.48	+0.10	+8.56	302.08 8.46	+0.20	+0.12	+1.23	+0.07
Corporates	16	38	33	+10.94	+6.87	+18.11	17.92 11.24	+4.11	+6.12	+1.84	+8.03

Bonds by Principal Traded



Historical Trade Cost Trend



EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	277	621	234	32.05	1.16	+6.98	225.64	8.14
5~10	184	25	16	+25.63	+1.39	+7.37	110.21	5.98
2~5	175	58	31	66.80	3.83	+6.61	182.16	10.44
10~50	97	8	6	+2.79	+0.29	+8.06	75.39	7.77

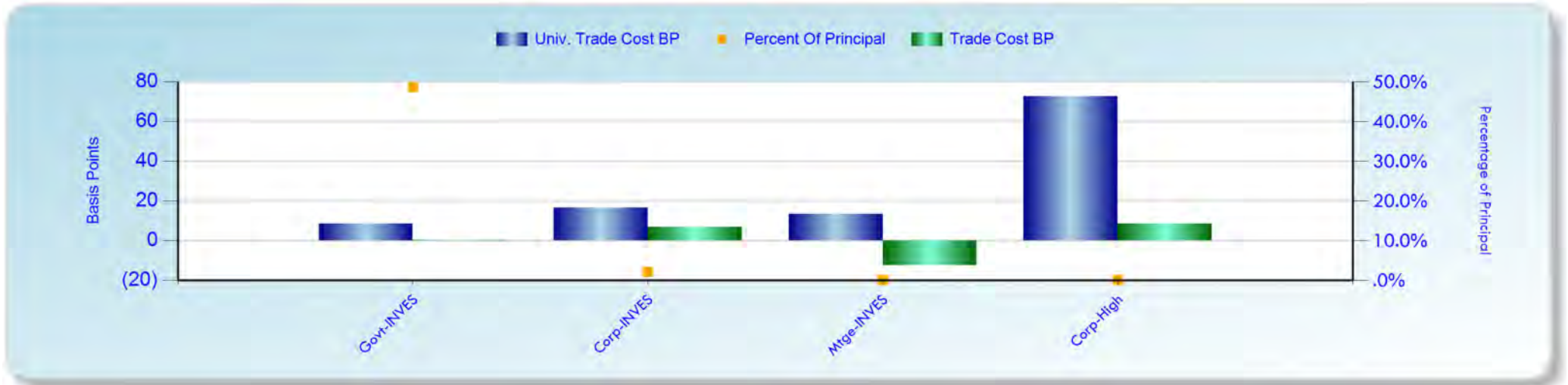




EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	357	211	73	+3.48	+0.10	+8.56	302.08	8.46
Corp-INVESTMENT GRADE	16	30	29	+10.57	+6.82	+16.57	15.12	9.75
Mtge-INVESTMENT GRADE	<1	1	1	0.62	12.38	+13.40	1.28	25.78
Corp-High Yield	<1	8	4	+0.37	+8.48	+72.66	2.80	64.18



EXECUTIVE SUMMARY

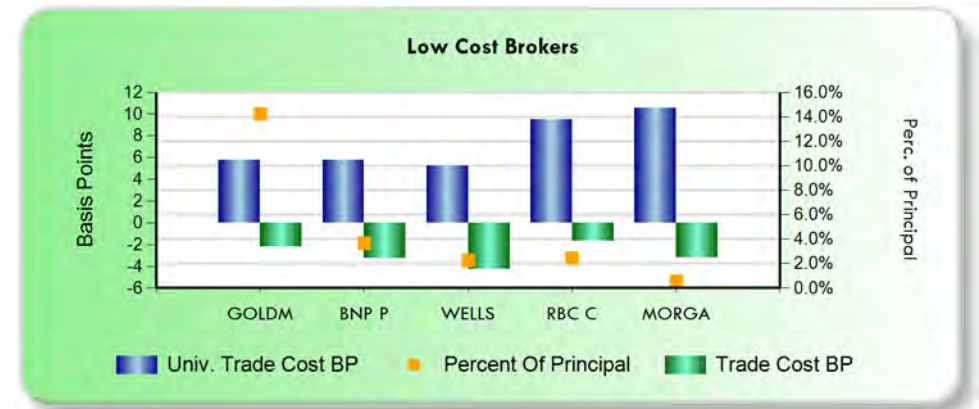
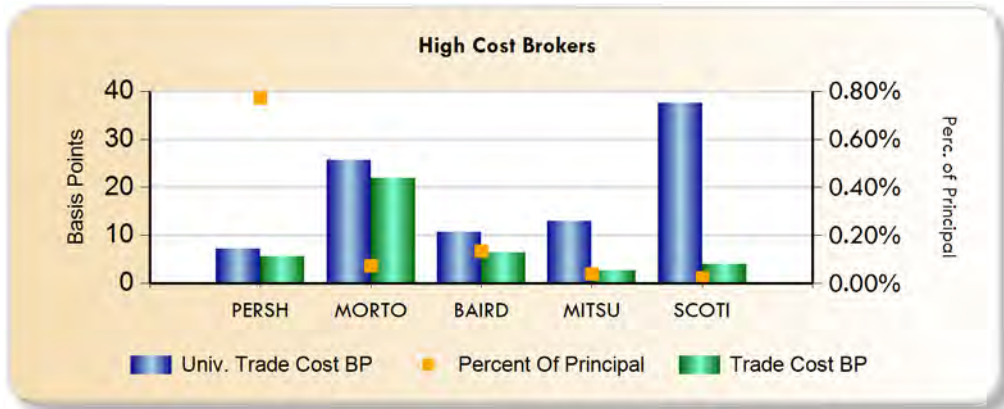
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
N/A	359.80	462	138	84.23	2.34	+5.22	272.12	7.56
AAA	357.62	212	74	+2.86	+0.08	+8.56	303.36	8.48
A-	5.56	11	10	+6.98	+12.56	+17.30	2.63	4.74
BBB+	3.47	5	5	+0.84	+2.41	+8.19	2.01	5.78
A	2.18	5	5	+0.65	+2.99	+26.34	5.09	23.35
AA-	1.09	1	1	1.39	12.73	+12.52	2.76	25.25
A+	<1	3	3	+1.35	+13.60	+10.09	+0.35	+3.51
BBB-	<1	2	2	+0.72	+7.55	+14.39	0.65	6.84
BBB	<1	2	2	0.40	6.22	+10.87	1.11	17.09
AA	<1	1	1	+1.83	+30.05	+50.12	1.22	20.07



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
PERSHING	6	6	6	+3.21	+5.67	+7.22	0.88	1.55
MORTON HALL & ROUNDS	<1	1	1	+1.19	+21.92	+25.74	0.21	3.82
BAIRD, ROBERT W	<1	6	6	+0.63	+6.44	+10.76	0.43	4.32
MITSUBISHI UFJ SECS	<1	1	1	+0.08	+2.68	+13.00	0.31	10.32
SCOTIA CAPITAL	<1	1	1	+0.07	+4.05	+37.52	0.58	33.47
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
GOLDMAN SACHS	104	118	67	22.94	2.20	+5.78	83.24	7.98
BNP PARIBAS	27	59	38	8.71	3.23	+5.80	24.38	9.03
WELLS FARGO	17	46	28	7.11	4.29	+5.24	15.80	9.53
RBC CAPITAL MARKETS	18	5	4	3.00	1.66	+9.50	20.14	11.16
MORGAN STANLEY	4	10	10	1.30	3.19	+10.56	5.62	13.75



COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country	Side	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
								UNITED STATES	BUYS
	SELLS	383	374	168	273.87	7.15	+6.16	509.83	13.31

Manager PERFORMANCE

Manager PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2017	Q1 2017	Q4 2016	Q3 2016
METROPOLITAN WEST MG	578	234	80	37.54	0.65	+7.38	463.70	8.03	0.41	+1.15	0.87	0.16
NEUBERGER BERMAN	147	411	171	34.25	2.33	+6.20	125.32	8.53	+0.75	+1.51	1.36	0.20
BARCLAYS 1-10 YR TIP	9	67	26	+1.36	+1.53	+6.44	4.38	4.91	2.32	2.44	+0.01	2.57

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2017	Q1 2017	Q4 2016	Q3 2016
CREDIT SUISSE	121	43	29	11.10	0.91	+5.72	80.58	6.63	0.12	+3.00	7.64	1.12
CITIGROUP	107	113	74	6.56	0.61	+7.38	85.39	7.99	+1.26	+0.10	2.52	2.51
GOLDMAN SACHS	104	118	67	22.94	2.20	+5.78	83.24	7.98	+0.50	1.12	0.65	+1.61
NOMURA	96	103	73	1.87	0.20	+8.96	87.50	9.16	0.26	+0.69	1.73	1.29
JP MORGAN CHASE	82	44	36	10.57	1.28	+8.61	81.45	9.89	0.27	+3.33	+0.16	0.91
BARCLAYS	68	40	26	3.68	0.54	+6.42	47.62	6.96	0.21	+1.22	+1.10	1.86
BNP PARIBAS	27	59	38	8.71	3.23	+5.80	24.38	9.03	6.63	0.47	2.42	+2.33
BANK OF AMERICA	20	49	33	+0.09	+0.04	+5.40	10.89	5.36	1.41	0.56	+0.16	2.36
DEUTSCHE BANK	20	15	11	1.15	0.59	+13.02	26.57	13.61	+1.52	+0.97	+5.13	1.12
RBC CAPITAL MARKETS	18	5	4	3.00	1.66	+9.50	20.14	11.16	+2.37	+1.90	8.01	+1.81
WELLS FARGO	17	46	28	7.11	4.29	+5.24	15.80	9.53	0.85	1.81	1.55	1.38
BMO CAPITAL MARKETS	12	6	6	+1.84	+1.48	+1.04	+0.54	+0.44	+1.17	+1.08	+0.70	+0.97
RBS	12	6	6	1.47	1.27	+7.96	10.67	9.23	0.80	+0.55	0.69	-
PERSHING	6	6	6	+3.21	+5.67	+7.22	0.88	1.55	+1.17	+9.23	0.13	+1.92
HSBC BANK	5	11	9	+0.97	+1.99	+8.39	3.14	6.40	+1.07	-	+2.17	+0.36
PIERPONT SECURITIES	5	5	5	+0.56	+1.16	+9.37	3.97	8.21	+4.82	12.69	+7.28	-
JEFFERIES & CO	4	5	5	+0.25	+0.61	+9.52	3.64	8.91	+5.09	+17.01	0.19	+3.63
MORGAN STANLEY	4	10	10	1.30	3.19	+10.56	5.62	13.75	0.56	+1.67	+3.49	+6.63
UBS	2	16	13	+0.16	+0.93	+4.32	0.58	3.39	4.65	+1.93	+1.98	+7.24
BAIRD, ROBERT W	<1	6	6	+0.63	+6.44	+10.76	0.43	4.32	+8.92	0.65	+25.11	0.29

TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Highest Cost Trades											
B	01F04068 FNCL 4 8/09	Mtge	07/06/2017 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	7,044,174	104.746	104.246	+47.74	+33,631
B	01F0426A FNCL 4.5 10/09	Mtge	09/08/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,019,250	107.500	107.168	+30.88	+27,855
B	01F0406A FNCL 4 10/09	Mtge	09/08/2017 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	5,603,887	105.627	105.198	+41.33	+23,160
S	912810RX US TREASURY N/B 05/47 3	Govt	09/25/2017 05/15/2047	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,454,036	104.352	104.912	+53.70	+18,547
B	01F04269 FNCL 4.5 9/09	Mtge	08/03/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	8,437,670	107.281	107.112	+15.82	+13,351
B	01F0426B FNCL 4.5 11/10	Mtge	09/29/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	8,998,275	107.250	107.092	+14.73	+13,256
S	912810RX US TREASURY N/B 05/47 3	Govt	09/14/2017 05/15/2047	METROPOLITAN WE DEUTSCHE BANK	US	USD	4,440,491	104.359	104.655	+28.29	+12,560
B	9128282K US TREASURY N/B 07/19 1.375	Govt	07/25/2017 07/31/2019	METROPOLITAN WE NOMURA	US	USD	13,795,113	100.037	99.950	+8.70	+12,008
S	912828XS US TREASURY N/B 05/19 1.25	Govt	08/02/2017 05/31/2019	METROPOLITAN WE CITIGROUP	US	USD	11,260,451	99.738	99.832	+9.40	+10,584
B	9128282S US TREASURY N/B 08/22 1.625	Govt	08/29/2017 08/31/2022	METROPOLITAN WE GOLDMAN SACHS	US	USD	9,986,832	99.719	99.620	+9.90	+9,890
B	01F0326A FNCL 3.5 10/10	Mtge	09/06/2017 12/31/2099	METROPOLITAN WE BNP PARIBAS	US	USD	2,368,207	103.604	103.221	+40.57	+9,607
S	21H04269 G2SF 4.5 9/09	Mtge	09/14/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	6,803,672	106.641	106.760	+11.19	+7,616
S	912810RX US TREASURY N/B 05/47 3	Govt	09/26/2017 05/15/2047	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,457,479	104.352	104.653	+28.84	+7,088
B	01F04068 FNCL 4 8/09	Mtge	07/06/2017 12/31/2099	METROPOLITAN WE BARCLAYS	US	USD	1,487,006	104.719	104.246	+45.14	+6,713



S	912828XS US TREASURY N/B 05/19 1.25	Govt	07/26/2017 05/31/2019	METROPOLITAN WE JP MORGAN CHASE	US	USD	7,231,025	99.738	99.827	+8.92	+6,453
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TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Lowest Cost Trades											
S	01F04067 FNCL 4 7/09	Mtge	07/06/2017 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	7,055,733	104.918	104.282	60.66	42,803
S	01F04269 FNCL 4.5 9/09	Mtge	09/08/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,026,132	107.582	107.201	35.42	31,968
S	01F04069 FNCL 4 9/10	Mtge	09/08/2017 12/31/2099	Multiple Mgrs. GOLDMAN SACHS	US	USD	5,161,385	105.766	105.233	50.45	26,040
S	01F0426A FNCL 4.5 10/10	Mtge	09/29/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,008,107	107.367	107.134	21.69	19,539
S	01F04268 FNCL 4.5 8/10	Mtge	08/03/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	8,445,658	107.383	107.158	20.91	17,658
B	912810RY US TREASURY N/B 08/47 2.75	Govt	09/14/2017 08/15/2047	METROPOLITAN WE DEUTSCHE BANK	US	USD	4,342,187	99.250	99.640	39.29	17,063
B	912810RY US TREASURY N/B 08/47 2.75	Govt	09/25/2017 08/15/2047	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,374,500	99.250	99.750	50.38	17,000
S	01F03269 FNCL 3.5 9/10	Mtge	09/06/2017 12/31/2099	Multiple Mgrs. BNP PARIBAS	US	USD	2,439,864	103.824	103.264	53.94	13,161
S	912828ST US TREASURY N/B	Govt	07/25/2017 04/30/2019	METROPOLITAN WE NOMURA	US	USD	15,576,234	99.848	99.770	7.77	12,101
S	01F04068 FNCL 4 8/09	Mtge	08/04/2017 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	4,425,585	105.371	105.126	23.28	10,302
S	912828XW US TREASURY N/B 06/22 1.75	Govt	08/29/2017 06/30/2022	METROPOLITAN WE GOLDMAN SACHS	US	USD	10,341,576	100.306	100.217	8.89	9,197
S	01F0406A FNCL 4 10/10	Mtge	09/26/2017 12/31/2099	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,979,050	105.453	105.134	30.23	9,007
S	01F04067 FNCL 4 7/09	Mtge	07/06/2017 12/31/2099	METROPOLITAN WE BARCLAYS	US	USD	1,489,446	104.891	104.282	58.07	8,650
B	9128282K US TREASURY N/B 07/19 1.375	Govt	08/02/2017 07/31/2019	METROPOLITAN WE CITIGROUP	US	USD	10,338,534	99.938	100.020	8.26	8,535
S	02R04069 FGLMC 4 9/10	Mtge	09/06/2017 12/31/2099	Multiple Mgrs. GOLDMAN SACHS	US	USD	1,502,538	105.813	105.260	52.23	7,847

Sacramento County
Period End September 30, 2017
(US Fixed Income Analysis)



AGENCIES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
CORPORATES	16	38	33	+10.94	+6.87	+18.11	17.92	11.24

CORPORATES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
GOVERNMENTS	357	211	73	+3.48	+0.10	+8.56	302.08	8.46

GOVERNMENTS



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MORTGAGES	360	463	139	84.85	2.35	+5.23	273.40	7.58

MORTGAGES





MUNICIPALS



RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
N/A	360	462	138	84.23	2.34	+5.22	272.12	7.56
AAA	<1	1	1	0.62	12.38	+13.40	1.28	25.77



RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
AAA	357	211	73	+3.48	+0.10	+8.56	302.08	8.46

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
A-	6	11	10	+6.98	+12.56	+17.30	2.63	4.74
BBB+	3	5	5	+0.84	+2.41	+8.19	2.01	5.78
A	2	5	5	+0.65	+2.99	+26.34	5.09	23.35
AA-	1	1	1	1.39	12.73	+12.52	2.76	25.25
A+	<1	3	3	+1.35	+13.60	+10.09	+0.35	+3.50
BBB-	<1	2	2	+0.72	+7.55	+14.39	0.65	6.84
BBB	<1	2	2	0.40	6.22	+10.87	1.11	17.10
AA	<1	1	1	+1.83	+30.05	+50.12	1.22	20.07
BB+	<1	6	3	+0.24	+7.27	+45.70	1.29	38.42
CCC+	<1	2	1	+0.13	+12.47	+162.00	1.51	149.53

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
07/01/2017-09/30/2017	733,365	712	245	70.43	0.96	+7.13	593.40	8.09
04/01/2017-06/30/2017	789,018	849	277	11.21	0.14	+6.26	504.99	6.40
01/01/2017-03/31/2017	710,311	779	281	+88.61	+1.25	+7.07	413.59	5.82
Year-Ending 2017	2,232,693	2340		+6.98	+0.03	+6.80	1,511.98	6.77
10/01/2016-12/31/2016	711,667	646	221	68.72	0.97	+6.26	514.24	7.23
07/01/2016-09/30/2016	589,731	684	203	14.71	0.25	+6.35	389.30	6.60
04/01/2016-06/30/2016	619,130	801	269	67.81	1.10	+8.74	608.75	9.84
01/02/2016-03/31/2016	710,978	1117	262	193.39	2.72	+6.08	625.45	8.80
Year-Ending 2016	2,631,505	3248		344.62	1.31	+6.81	2,137.74	8.12
10/01/2015-12/31/2015	820,526	980	212	138.86	1.69	+8.52	837.57	10.21
07/01/2015-09/30/2015	992,841	1625	204	225.86	2.27	+3.74	596.77	6.01
04/01/2015-06/30/2015	1,141,971	1504	246	310.14	2.72	+7.36	1,150.64	10.08
01/01/2015-03/31/2015	944,141	1100	191	8.38	0.09	+6.57	628.26	6.66
Year-Ending 2015	3,899,478	5209		683.23	1.75	+6.49	3,213.25	8.24
10/01/2014-12/31/2014	676,216	885	213	+41.55	+0.61	+5.86	354.40	5.25
07/01/2014-09/30/2014	905,295	785	133	+534.89	+5.91	+6.85	85.46	0.94
04/01/2014-06/30/2014	727,152	957	240	48.64	0.67	+7.04	560.46	7.71
01/02/2014-03/31/2014	920,513	1033	210	131.04	1.42	+6.54	733.34	7.96
Year-Ending 2014	3,229,176	3660		+396.76	+1.23	+6.60	1,733.66	5.37
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07
07/01/2013-09/30/2013	778,379	825	214	+21.56	+0.28	+6.25	465.02	5.97
04/01/2013-06/30/2013	937,180	803	217	51.74	0.55	+7.82	784.80	8.37
01/02/2013-03/31/2013	635,964	613	190	+89.06	+1.40	+8.12	427.14	6.72
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	
10/01/2012-12/31/2012	528,034	613	192	215.02	4.07	+7.49	610.46	11.56
07/01/2012-09/30/2012	567,084	722	230	+18.83	+0.33	+8.56	466.39	8.23
04/01/2012-06/30/2012	520,106	739	204	+102.98	+1.98	+8.39	333.44	6.41
01/02/2012-03/31/2012	136,055	131	54	+29.91	+2.20	+7.08	66.46	4.88
Year-Ending 2012	1,751,279	2205		63.30	0.36	+8.07	1,476.76	8.43
10/01/2011-12/31/2011	91,474	88	43	18.39	2.01	+6.04	73.67	8.05
07/01/2011-09/30/2011	101,872	106	49	47.22	4.64	+4.74	95.51	9.38
04/01/2011-06/30/2011	100,523	97	54	4.28	0.43	+4.90	53.56	5.33
01/02/2011-03/31/2011	205,267	171	56	143.81	7.01	+7.08	289.08	14.09
Year-Ending 2011	499,136	462		213.70	4.28	+5.97	511.82	10.25
10/01/2010-12/31/2010	184,240	138	57	8.71	0.47	+5.73	114.34	6.20
07/01/2010-09/30/2010	219,586	151	60	20.80	0.95	+4.97	129.88	5.92
04/01/2010-06/30/2010	161,213	123	50	+101.24	+6.28	+7.34	17.15	1.06
01/02/2010-03/31/2010	221,701	181	70	+60.21	+2.72	+11.49	194.49	8.77
Year-Ending 2010	786,740	593		+131.95	+1.68	+7.47	455.85	5.79



BENCHMARK VENDOR REPORT

Bonds	Number of Trades	Number of Issues	Vendor Benchmark	Percent Of Principal
CORPORATES	31	27	BLOOMBERGTERMINAL	73.10 %
	4	4	MARKETAXESS-TRADES	14.87 %
	2	2	ISSUE PRICE	7.28 %
	1	1	MARKETAXESS-SUMMARYDATA	4.75 %
GOVERNMENTS	208	70	BLOOMBERGTERMINAL	99.62 %
	3	3	ISSUE PRICE	0.38 %
MORTGAGES	252	40	TULLET PREBON	56.75 %
	211	99	BLOOMBERGTERMINAL	43.25 %

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SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End September 30, 2017



Sacramento County
Period End September 30, 2017
(Global Fixed Income Analysis)

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates global fixed income executions from July 01,2017 to September 30,2017. The analysis included trading of 178 trades in 73 different issues representing \$74,270,909 in principal across municipals, mortgages, governments And corporates.

Methodology:

The cost of each trade will be determined by comparing your executed price to the average or benchmark price of the issue on the day of the trade and to the Elkins/McSherry Fixed Income Trading Cost Universe. For comparison purposes, Elkins/McSherry establishes average institutional trading costs quarterly for governments, corporates and agency issues. The Universe is the average trading cost incurred by pension funds, investment managers, banks and brokers.

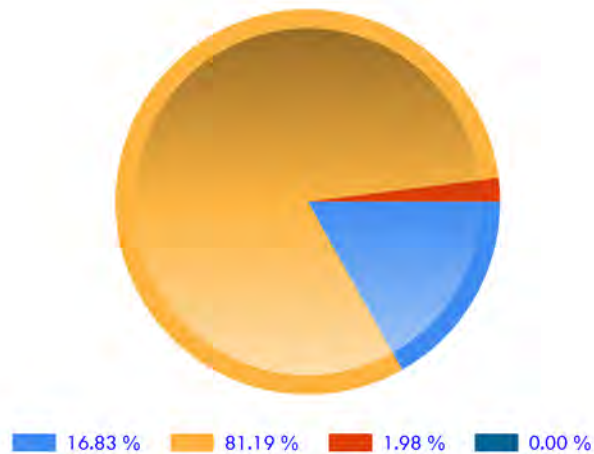
Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2017	Q1 2017	Q4 2016	Q3 2016
BUYS	39	91	45	7.55	1.96	+2.76	18.19	4.72	0.87	0.80	16.78	+2.38
SELLS	36	87	44	+18.65	+5.23	+2.75	+8.84	+2.48	+5.09	+6.72	+11.94	+1.98
GRAND TOTAL	74	178	73	+11.09	+1.49	+2.75	9.35	1.26	+1.65	+2.75	0.96	+2.18

EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q2 2017	Q1 2017	Q4 2016	Q3 2016
Governments	61	128	35	+6.58	+1.09	+2.75	10.08 1.66	+0.35	0.02	+5.81	+3.61
Corporates	12	47	35	+5.18	+4.20	+2.77	+1.77 +1.43	+5.70	+9.80	+10.99	5.92
Mortgages	1	2	2	.68	5.72	+2.75	1.00 8.47	-	9.17	179.51	+13.43
Municipals	<1	1	1	+0.00	+0.00	+2.75	0.04 2.75	-	-	-	-

Bonds by Principal Traded



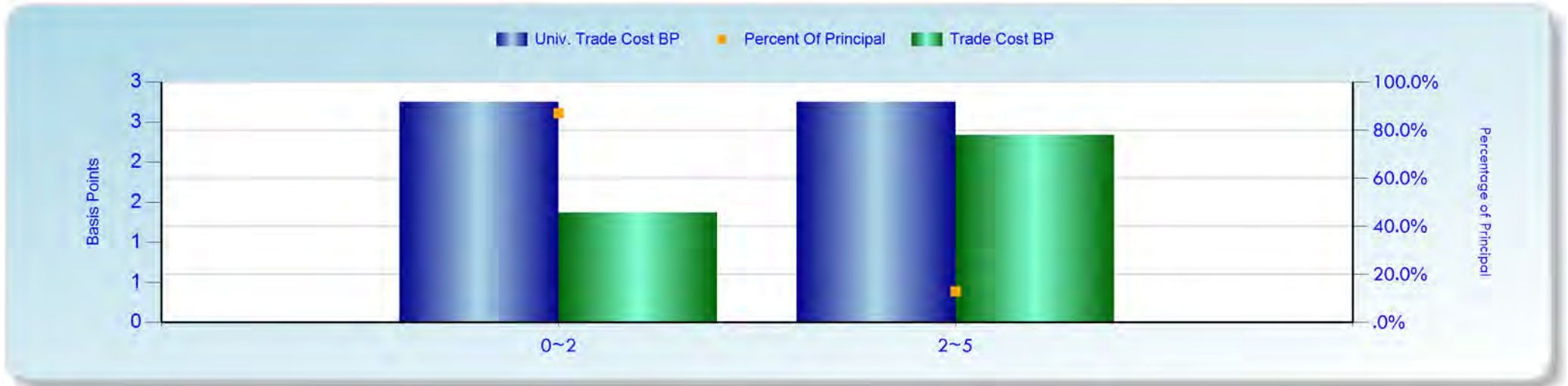
Historical Trade Cost Trend



EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	65	174	73	+8.85	+1.37	+2.75	8.96	1.38
2~5	10	4	1	+2.24	+2.34	+2.75	0.40	0.41





EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	60	127	34	+6.21	+1.04	+2.75	10.21	1.71
Corp-INVESTMENT GRADE	9	35	23	+1.90	+2.02	+2.77	0.71	0.75
Corp-High Yield	3	11	11	+1.92	+7.31	+2.75	+1.20	+4.56
Mtge-INVESTMENT GRADE	1	2	2	0.68	5.72	+2.75	1.00	8.47
Muni-INVESTMENT GRADE	<1	1	1	+0.00	+0.00	+2.75	0.04	2.75



EXECUTIVE SUMMARY

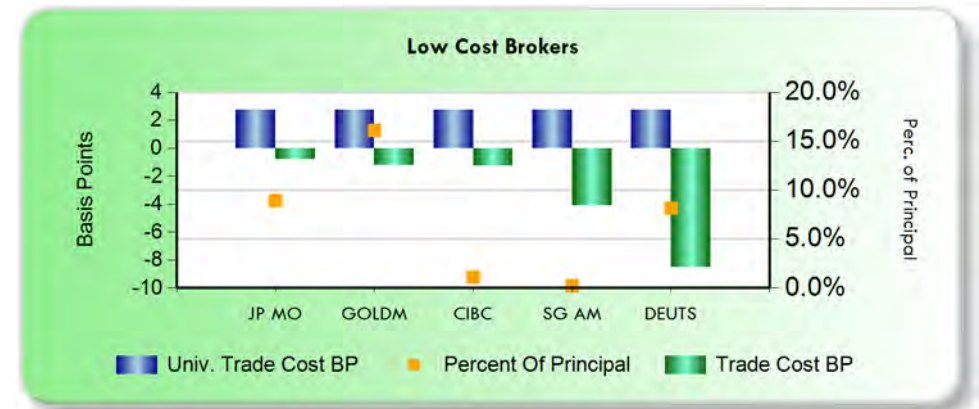
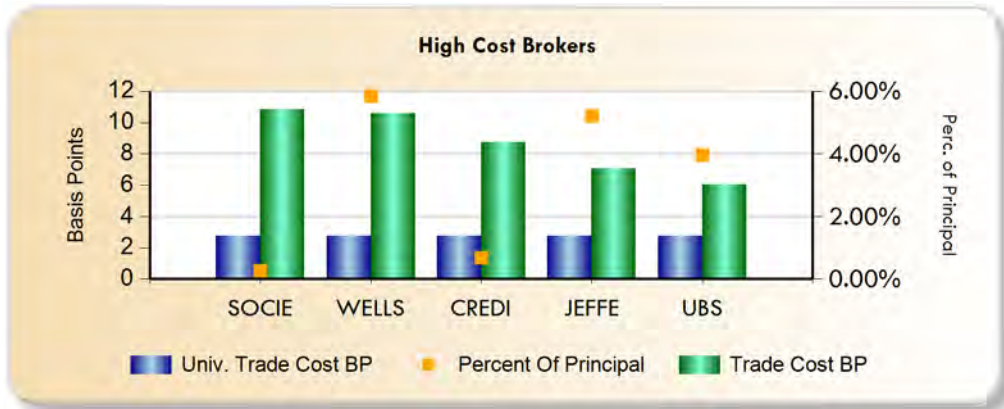
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
AAA	61.02	130	37	+5.53	+0.91	+2.75	11.25	1.84
BBB+	5.13	14	8	+2.02	+3.94	+2.75	+0.61	+1.19
BBB-	1.63	10	8	1.54	9.45	+2.88	2.01	12.33
N/A	1.21	2	2	+1.74	+14.35	+2.75	+1.40	+11.60
AA-	1.15	5	2	+0.49	+4.27	+2.75	+0.17	+1.52
BB+	1.07	7	7	+1.14	+10.70	+2.75	+0.85	+7.95
BBB	<1	5	4	+0.93	+9.66	+2.75	+0.67	+6.91
B	<1	1	1	+0.83	+11.24	+2.75	+0.63	+8.49
A	<1	1	1	+0.00	+0.00	+2.75	0.15	2.75
CCC+	<1	1	1	+0.24	+7.70	+2.75	+0.15	+4.95



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
SOCIETE GENERALE	<1	1	1	+0.22	+10.85	+2.75	+0.16	+8.10
WELLS FARGO	4	6	5	+4.60	+10.58	+2.75	+3.40	+7.83
CREDIT SUISSE	<1	2	2	+0.45	+8.77	+2.75	+0.31	+6.02
JEFFERIES & CO	4	7	7	+2.74	+7.07	+2.75	+1.67	+4.32
UBS	3	2	2	+1.78	+6.03	+2.75	+0.97	+3.28
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
JP MORGAN CHASE	7	17	13	0.54	0.81	+2.75	2.36	3.56
GOLDMAN SACHS	12	32	20	1.47	1.23	+2.75	4.76	3.98
CIBC WORLD MARKETS	<1	2	2	0.11	1.26	+2.75	0.34	4.01
SG AMERICAS	<1	1	1	0.08	4.09	+2.75	0.13	6.84
DEUTSCHE BANK	6	10	6	5.18	8.53	+2.75	6.85	11.28



COUNTRY PERFORMANCE

COUNTRY SUMMARY								TRADE COST HISTORICAL PERFORMANCE				
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2017	Q1 2017	Q4 2016	Q3 2016
UNITED STATES	74	177	72	+10.98	+1.48	+2.75	9.38	1.27	+1.65	+2.75	1.79	+1.74
UNITED KINGDOM	<1	1	1	+0.11	+5.03	+3.72	+0.03	+1.31	-	-	-	-

COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country	Side	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
UNITED STATES	SELLS	36	87	44	+18.65	+5.23	+2.75	+8.84	+2.48
	BUYS	38	90	44	7.66	2.00	+2.75	18.22	4.75
UNITED KINGDOM	BUYS	<1	1	1	+0.11	+5.03	+3.72	+0.03	+1.31

Manager PERFORMANCE

Manager PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2017	Q1 2017	Q4 2016	Q3 2016
PRUDENTIAL INVESTMEN	74	178	73	+11.09	+1.49	+2.75	9.35	1.26	+1.65	+2.75	0.96	+2.18

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2017	Q1 2017	Q4 2016	Q3 2016
GOLDMAN SACHS	12	32	20	1.47	1.23	+2.75	4.76	3.98	+2.07	1.83	+8.01	+6.85
BANK OF AMERICA	8	20	15	+1.76	+2.20	+2.75	0.44	0.55	+5.18	0.39	+4.64	35.07
JP MORGAN CHASE	7	17	13	0.54	0.81	+2.75	2.36	3.56	+1.14	+16.69	5.64	+4.16
RBC CAPITAL MARKETS	6	18	9	+3.18	+4.95	+2.75	+1.41	+2.20	+5.08	+14.09	+102.21	+7.87
DEUTSCHE BANK	6	10	6	5.18	8.53	+2.75	6.85	11.28	4.97	2.68	+20.96	+8.37
CITIGROUP	5	10	8	0.34	0.69	+2.75	1.69	3.44	0.94	1.42	25.28	+6.66
BARCLAYS	5	17	11	+1.84	+4.04	+2.80	+0.56	+1.24	+3.98	+5.85	+14.74	6.43
WELLS FARGO	4	6	5	+4.60	+10.58	+2.75	+3.40	+7.83	+7.31	+2.51	12.65	+0.35
NOMURA	4	8	8	+0.43	+1.11	+2.75	0.64	1.64	+1.88	+0.27	0.86	+1.02
JEFFERIES & CO	4	7	7	+2.74	+7.07	+2.75	+1.67	+4.32	+15.79	+53.68	+77.12	+5.93
UBS	3	2	2	+1.78	+6.03	+2.75	+0.97	+3.28	+2.78	+17.44	+28.08	+15.70
MIZUHO	3	8	7	+0.04	+0.16	+2.75	0.69	2.59	+9.11	+13.25	-	-
MERRILL LYNCH	2	2	2	+0.73	+3.81	+2.75	+0.20	+1.06	-	+7.64	-	-
TD SECURITIES	2	5	4	+0.42	+2.52	+2.75	0.04	0.23	0.63	0.76	-	-
BNY MELLON	1	4	4	+0.64	+4.73	+2.75	+0.27	+1.98	+0.00	21.79	+8.30	+7.05
MORGAN STANLEY	1	6	5	0.01	0.11	+2.75	0.37	2.86	+2.24	+4.01	+0.43	8.84
CIBC WORLD MARKETS	<1	2	2	0.11	1.26	+2.75	0.34	4.01	-	-	-	79.07
CREDIT SUISSE	<1	2	2	+0.45	+8.77	+2.75	+0.31	+6.02	-	+2.39	+10.74	-
SOCIETE GENERALE	<1	1	1	+0.22	+10.85	+2.75	+0.16	+8.10	-	-	-	-
SG AMERICAS	<1	1	1	0.08	4.09	+2.75	0.13	6.84	-	-	-	-

TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Highest Cost Trades											
S	912810RV US TREASURY N/B 02/47 3	Govt	08/10/2017 02/15/2047	PRUDENTIAL INVE CITIGROUP	US	USD	919,293	103.875	104.454	+55.71	+5,121
S	9128282R US TREASURY N/B 08/27 2.25	Govt	08/10/2017 08/15/2027	PRUDENTIAL INVE WELLS FARGO	US	USD	2,808,750	100.313	100.460	+14.70	+4,130
S	912828X8 US TREASURY N/B 05/27 2.375	Govt	07/26/2017 05/15/2027	PRUDENTIAL INVE JEFFERIES & CO	US	USD	713,300	100.465	100.746	+27.98	+1,996
S	25714PCW DOMINICAN REPUBLIC SR UNSECU	Govt	07/12/2017 01/27/2045	PRUDENTIAL INVE BANK OF AMERICA	US	USD	318,000	106.000	106.585	+55.16	+1,754
S	912828X8 US TREASURY N/B 05/27 2.375	Govt	07/26/2017 05/15/2027	PRUDENTIAL INVE BARCLAYS	US	USD	461,922	100.418	100.746	+32.67	+1,509
B	912828XX US TREASURY N/B 06/24 2	Govt	07/03/2017 06/30/2024	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	1,102,804	98.906	98.777	+13.11	+1,446
B	G13201AA STATE OF MINAS GERAIS GOVT G	CORP	09/29/2017 01/01/1900	PRUDENTIAL INVE BANK OF AMERICA	US	USD	307,125	102.375	101.922	+44.25	+1,359
B	71656LBT PETROLEOS MEXICANOS COMPANY	Corp	08/02/2017 09/21/2047	PRUDENTIAL INVE JEFFERIES & CO	US	USD	463,320	105.300	105.020	+26.59	+1,232
S	92343VCZ VERIZON COMMUNICATIONS SR UN	Corp	07/26/2017 03/15/2055	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	470,735	92.301	92.488	+20.24	+953
S	471048BL JPN BANK FOR INT L COOP GOVT	Govt	08/17/2017 07/21/2022	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	402,209	100.552	100.790	+23.64	+951
S	912828X8 US TREASURY N/B 05/27 2.375	Govt	07/31/2017 05/15/2027	PRUDENTIAL INVE UBS	US	USD	1,631,517	100.711	100.767	+5.59	+912
S	9128282R US TREASURY N/B 08/27 2.25	Govt	08/17/2017 08/15/2027	PRUDENTIAL INVE UBS	US	USD	1,316,601	100.504	100.570	+6.58	+866
B	912810RV US TREASURY N/B 02/47 3	Govt	07/20/2017 02/15/2047	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	460,435	103.469	103.277	+18.49	+851
B	15672JAA CEQUEL COM HLDG 1/CAP CP SR	Corp	08/09/2017 09/15/2020	PRUDENTIAL INVE BANK OF AMERICA	US	USD	739,500	102.000	101.885	+11.24	+831



S	912810RV US TREASURY N/B 02/47 3	Govt	08/01/2017 02/15/2047	PRUDENTIAL INVE MORGAN STANLEY	US	USD	215,184	102.469	102.826	+34.91	+751
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TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Lowest Cost Trades											
B	912810RX US TREASURY N/B 05/47 3	Govt	08/10/2017 05/15/2047	PRUDENTIAL INVE CITIGROUP	US	USD	914,701	103.943	104.518	55.26	5,055
S	9128282R US TREASURY N/B 08/27 2.25	Govt	09/21/2017 08/15/2027	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	1,859,491	99.973	99.750	22.27	4,141
B	9128282R US TREASURY N/B 08/27 2.25	Govt	08/10/2017 08/15/2027	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	2,705,637	100.395	100.460	6.50	1,760
B	71656LBS PETROLEOS MEXICANOS COMPANY	Corp	07/26/2017 03/13/2027	PRUDENTIAL INVE BANK OF AMERICA	US	USD	546,750	109.350	109.690	31.09	1,700
S	912828XT US TREASURY N/B 05/24 2	Govt	07/03/2017 05/31/2024	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	1,113,466	98.975	98.846	13.04	1,452
B	20605PAJ CONCHO RESOURCES INC COMPANY	Corp	09/13/2017 10/01/2047	PRUDENTIAL INVE BANK OF AMERICA	US	USD	69,824	99.749	101.619	187.49	1,309
B	9128282P US TREASURY N/B 07/22 1.875	Govt	08/17/2017 07/31/2022	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	517,025	100.393	100.580	18.61	962
S	9128282R US TREASURY N/B 08/27 2.25	Govt	08/11/2017 08/15/2027	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	2,112,058	100.574	100.530	4.40	929
B	61764PBU MORGAN STANLEY BAML TRUST MS	Mtge	07/26/2017 12/15/2047	PRUDENTIAL INVE JEFFERIES & CO	US	USD	983,695	103.547	103.640	8.99	885
B	25470DAT DISCOVERY COMMUNICATIONS COM	Corp	09/07/2017 09/20/2047	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	194,764	99.879	100.323	44.41	865
S	912828X8 US TREASURY N/B 05/27 2.375	Govt	07/24/2017 05/15/2027	PRUDENTIAL INVE CITIGROUP	US	USD	1,243,741	101.117	101.058	5.88	732
S	912828X8 US TREASURY N/B 05/27 2.375	Govt	07/14/2017 05/15/2027	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,135,738	100.508	100.444	6.34	721
B	911365BJ UNITED RENTALS NORTH AM COMP	Corp	09/08/2017 01/15/2028	PRUDENTIAL INVE MORGAN STANLEY	US	USD	250,625	100.250	100.491	24.05	603
S	25159MAT DEVELOPMENT BK OF JAPAN GOVT	Govt	09/20/2017 09/01/2022	PRUDENTIAL INVE MIZUHO	US	USD	199,180	99.590	99.290	30.12	600
B	912828XW US TREASURY N/B 06/22 1.75	Govt	07/05/2017 06/30/2022	PRUDENTIAL INVE JEFFERIES & CO	US	USD	708,799	99.133	99.194	6.21	440



AGENCIES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
CORPORATES	12	47	35	+5.18	+4.20	+2.77	+1.77	+1.43



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
GOVERNMENTS	61	128	35	+6.58	+1.09	+2.75	10.08	1.66

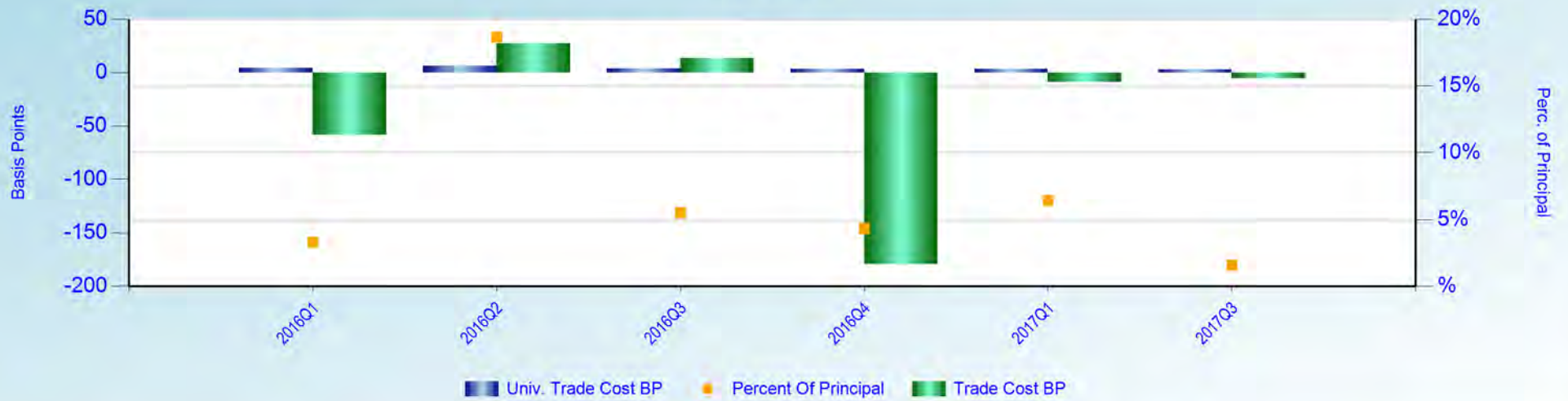
GOVERNMENTS



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
MORTGAGES	1	2	2	0.68	5.72	+2.75	1.00	8.47

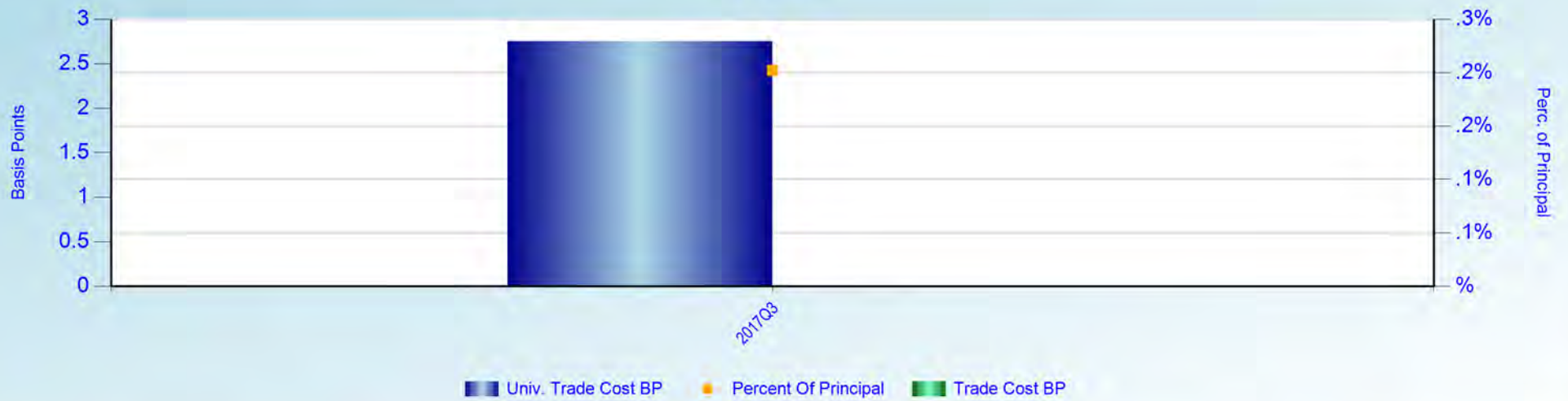
MORTGAGES



BOND TYPE PERFORMANCE

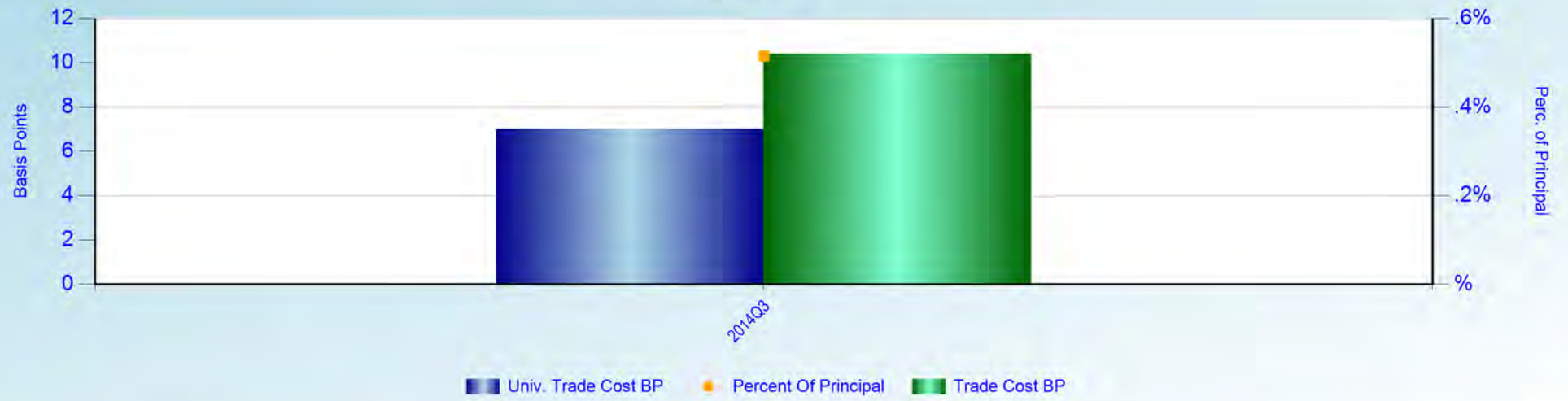
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MUNICIPALS	<1	1	1	+0.00	+0.00	+2.75	0.04	2.75

MUNICIPALS





UNCLASSIFIED





RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	179	381	34	+18.63	+1.04	+2.75	30.62	1.71
N/A	3	3	1	+1.13	+4.17	+2.75	+0.38	+1.42

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
BBB+	15	42	8	+6.06	+3.94	+2.75	+1.83	+1.19
BBB-	5	30	8	4.63	9.45	+2.88	6.04	12.33
AA-	3	15	2	+1.47	+4.27	+2.75	+0.52	+1.52
BB+	3	21	7	+3.42	+10.70	+2.75	+2.54	+7.95
BBB	3	15	4	+2.80	+9.66	+2.75	+2.00	+6.91
B	2	3	1	+2.49	+11.24	+2.75	+1.88	+8.49
A	2	3	1	+0.00	+0.00	+2.75	0.44	2.75
CCC+	<1	3	1	+0.72	+7.70	+2.75	+0.46	+4.95
N/A	<1	3	1	+4.08	+44.25	+2.75	+3.82	+41.50
BB	<1	3	1	+0.94	+11.89	+2.75	+0.72	+9.14
BB-	<1	3	1	1.81	24.05	+2.75	2.01	26.80



RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	4	6	2	2.03	5.72	+2.75	3.01	8.47



RATING BY EACH BOND TYPE

MUNICIPALS - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
AAA	<1	3	1	+0.00	+0.00	+2.75	0.12	2.75



COUNTRIES BY EACH BOND TYPE

GOVERNMENTS								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
UNITED STATES	182	384	35	+19.75	+1.09	+2.75	30.23	1.66

COUNTRIES BY EACH BOND TYPE

CORPORATES								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	36	138	34	+15.22	+4.18	+2.75	+5.21	+1.43
UNITED KINGDOM	<1	3	1	+0.33	+5.03	+3.72	+0.09	+1.31

COUNTRIES BY EACH BOND TYPE

MORTGAGES								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	4	6	2	2.03	5.72	+2.75	3.01	8.47

COUNTRIES BY EACH BOND TYPE

MUNICIPALS								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	<1	3	1	+0.00	+0.00	+2.75	0.12	2.75

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
07/01/2017-09/30/2017	74,271	178	73	+11.09	+1.49	+2.75	9.35	1.26
04/01/2017-06/30/2017	65,905	139	61	+10.87	+1.65	+3.17	10.02	1.52
01/01/2017-03/31/2017	88,323	207	89	+24.27	+2.75	+3.32	5.07	0.57
Year-Ending 2017	228,499	524		+46.23	+2.02	+3.09	24.44	1.07
10/01/2016-12/31/2016	59,762	110	50	5.73	0.96	+3.49	26.57	4.45
07/01/2016-09/30/2016	44,927	135	53	+9.79	+2.18	+3.58	6.28	1.40
04/01/2016-06/30/2016	76,455	102	58	+22.49	+2.94	+5.97	23.17	3.03
01/02/2016-03/31/2016	91,594	125	57	42.69	4.66	+4.69	85.61	9.35
Year-Ending 2016	272,738	472		16.14	0.59	+4.60	141.63	5.19
10/01/2015-12/31/2015	43,193	60	34	29.83	6.91	+7.18	60.85	14.09
07/01/2015-09/30/2015	20,663	41	24	68.34	33.07	+4.30	77.22	37.37
04/01/2015-06/30/2015	143,060	122	71	98.11	6.86	+5.55	177.48	12.41
01/01/2015-03/31/2015	116,093	109	56	60.79	5.24	+5.51	124.75	10.75
Year-Ending 2015	323,008	332		257.06	7.96	+5.67	440.30	13.63
10/01/2014-12/31/2014	48,315	72	50	+9.25	+1.91	+5.72	18.39	3.81
07/01/2014-09/30/2014	266,740	204	99	216.37	8.11	+7.08	405.13	15.19
04/01/2014-06/30/2014	244,265	204	138	+42.48	+1.74	+8.55	166.48	6.81
01/02/2014-03/31/2014	187,634	187	128	+186.20	+9.92	+8.13	+33.59	+1.79
Year-Ending 2014	746,953	667		+21.55	+0.29	+7.74	556.41	7.45
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43
07/01/2013-09/30/2013	187,166	136	90	+47.79	+2.55	+6.68	77.19	4.13
04/01/2013-06/30/2013	157,154	129	98	+104.81	+6.67	+1.44	+82.21	+5.23
01/02/2013-03/31/2013	281,064	206	156	+366.87	+13.05	+1.56	+323.04	+11.49
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
10/01/2012-12/31/2012	132,722	116	90	+470.95	+35.48	+2.11	+442.94	+33.37
07/01/2012-09/30/2012	120,859	101	77	+125.20	+10.36	+2.09	+99.92	+8.27
04/01/2012-06/30/2012	85,150	85	60	+71.84	+8.44	+2.27	+52.54	+6.17
01/02/2012-03/31/2012	31,666	13	9	0.75	0.24	+7.38	24.12	7.62
Year-Ending 2012	370,398	315		+667.24	+18.01	+2.59	+571.28	+15.42
10/01/2011-12/31/2011	54,456	22	11	+249.88	+45.89	+3.18	+232.57	+42.71
07/01/2011-09/30/2011	45,561	26	10	+31.66	+6.95	+4.14	+12.80	+2.81
04/01/2011-06/30/2011	40,214	15	6	+83.99	+20.88	+4.01	+67.86	+16.87
01/02/2011-03/31/2011	45,680	23	3	+2.18	+0.48	+5.21	21.63	4.73
Year-Ending 2011	185,912	86		+367.70	+19.78	+4.09	+291.59	+15.68
10/01/2010-12/31/2010	57,022	27	11	152.30	26.71	+8.46	200.51	35.17
Year-Ending 2010	57,022	27		152.30	26.71	+8.46	200.51	35.16

BENCHMARK VENDOR REPORT

Bonds	Number of Trades	Number of Issues	Vendor Benchmark	Percent Of Principal
CORPORATES	33	25	BLOOMBERGTERMINAL	62.34 %
	8	8	ISSUE PRICE	24.10 %
	5	5	MARKETAXESS-TRADES	10.13 %
	1	1	MARKETAXESS-SUMMARYDATA	3.43 %
GOVERNMENTS	126	35	BLOOMBERGTERMINAL	98.64 %
	2	2	ISSUE PRICE	1.36 %
MORTGAGES	2	2	BLOOMBERGTERMINAL	100.00 %
MUNICIPALS	1	1	BLOOMBERGTERMINAL	100.00 %

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