



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 12

MEETING DATE: February 21, 2018

SUBJECT: Quarterly Trading Activity Report – Fourth Quarter 2017

SUBMITTED FOR: X Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Quarterly Trading Activity Report for the quarter ending December 31, 2018.

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:

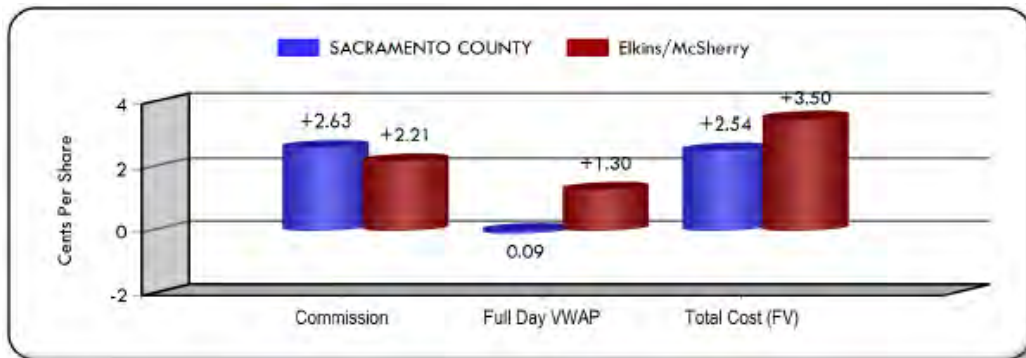
1. Commission costs, trade costs, and any soft dollar amounts.
2. Market Impact Cost, an industry performance metric, which measures the difference between a manager's trade price and the market's volume weighted average price ("VWAP"). VWAP is the average security price weighted by the share volume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

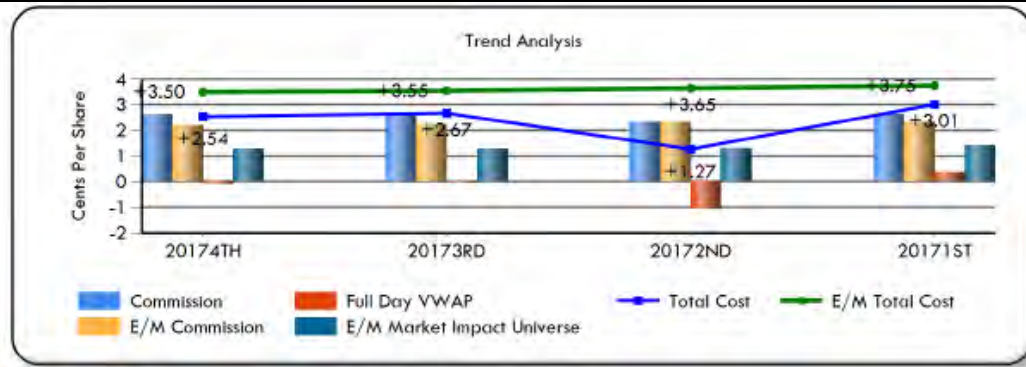
SCERS TRADE COST SUMMARY

U.S. EQUITY

- SCERS’ U.S. equity managers traded 4.1 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$144.8 million in principal, and ranked in the 63rd percentile among the EM U.S. Equity universe.
- SCERS’ total trading cost equaled +2.54 cps, which is +0.96 cps lower than the peer group, as follows:
 - Commission cost of +2.63 cps versus +2.25 cps
 - Market impact cost of -0.09 cps versus +1.30 cps
- As illustrated below, SCERS’ total trading costs were better than 64% of the peer group.



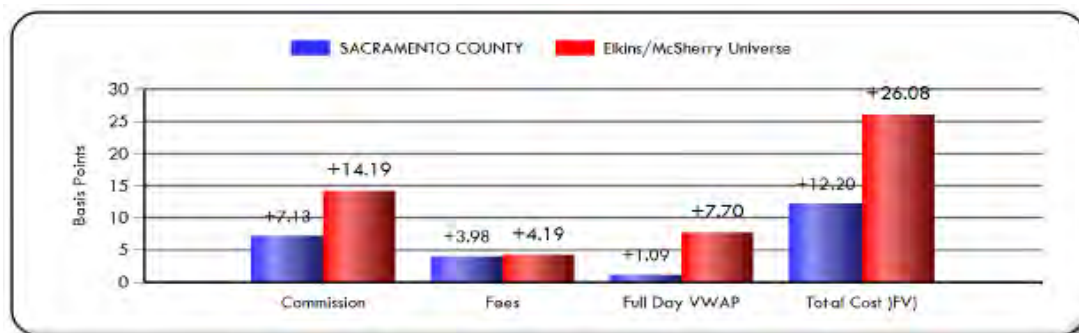
- A majority of SCERS’ U.S. Equity managers experienced unfavorable commission costs compared to the U.S. Equity peer group. Managers with commission costs greater than the average peer group cost of +2.21 cps include:
 - DGHM at +3.49 cps
 - Wedge Capital at +3.20 cps
 - CenterSquare at +3.11 cps
 - Weatherbie at +2.67 cps
 - Eagle Capital at +2.30 cps
 - UBS Global at +2.29 cps
- As illustrated below, with the exception of Q2 2017, SCERS’ managers have generally been experiencing higher commission costs than the peer group.



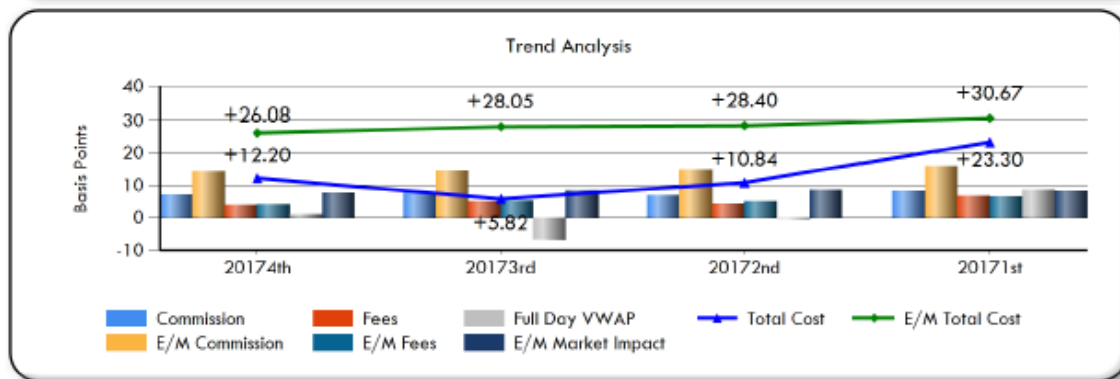
- The U.S. small cap managers (Weatherbie, UBS Global, DGHM, and Wedge Capital) and the U.S. REIT manager (CenterSquare) will typically incur additional commission costs in the form of a soft dollar relationship where, in return for conducting trades through a brokerage firm, the manager receives the 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 +3.65 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:
 - UBS Global at +4.06 cps

INTERNATIONAL EQUITY

- SCERS’ International Equity managers traded 22.6 million shares totaling \$198.0 million in principal across 32 countries.
- Total trading cost equaled +12.20 bps, which is +13.88 bps lower than the peer group, as follows:
 - Commission cost of +7.13 bps versus +14.19 bps
 - Fees (country taxes, tariffs) of +3.98 bps versus +4.19 bps
 - Market impact cost of +1.09 bps versus +7.70 bps



- All the SCERS' International Equity managers analyzed generated commission costs (ranging from +1.79 bps to +9.28 bps), significantly less than the EM peer group (ranging from +13.80 bps to +14.49 bps). This result is consistent with the previous quarters' lower trade costs versus the peer group, as illustrated below (commission vs. E/M commission).



- All of SCERS' International Equity managers experienced favorable market impact cost versus the peer group during the quarter (full day VWAP vs. E/M market impact).

U.S. FIXED INCOME

- SCERS' U.S. Fixed Income managers conducted 649 trades totaling \$624.7 million in principal, as follows:
 - Mortgages: 289 trades totaling \$181 million
 - Governments: 258 trades totaling \$373 million
 - Corporates: 99 trades totaling \$6 million
 - Municipals: 3 trades totaling \$2 million
- Total trading cost equaled -0.60 bps, which is +7.19 bps lower than the EM peer group, as follows:
 - Mortgages at -2.65 bps versus +4.31 bps
 - Governments at +0.03 bps versus +5.91 bps
 - Corporates at +1.35 bps versus +18 bps
 - Municipals at +0.24 bps versus +39.95
- 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 -0.89 bps versus +5.84 bps
 - NeubergerBerman at +0.04 bps versus +8.16 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 119 international trades totaling \$47.4 million in principal as follows:
 - Governments: 80 trades totaling \$34 million
 - Corporates: 25 trades totaling \$5 million
 - Mortgages: 10 trades totaling \$7 million
 - Municipals: 4 trades totaling \$2 million
 - Total trading cost was -4.64 bps, which was +8.64 bps lower than the EM peer group cost of +4.00 bps, as follows:
 - Governments at +0.05 bps versus +4.04 bps
 - Corporates at -2.85 bps versus +3.90 bps
 - Mortgages at -29.94 bps versus +3.90 bps
 - Municipals at +1.53 bps versus +3.90 bps
 - Trading costs somewhat lower than previous quarters' results, as illustrated below, led by lower trading cost for Mortgages.



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 December 31, 2017, the commission rebate totaled \$12,613.
 - For the year-to-date 2017, the commission rebate totaled \$45,749.

ATTACHMENTS

1. Elkins / McSherry Trading Cost Summary report for the quarter ending December 31, 2017 for U.S. equity, international equity, U.S. fixed income, and global fixed income.

Prepared by:

/S/

 Brian Miller
 Investment Officer

Reviewed by:

/S/

 Steve Davis
 Chief Investment Officer

/S/

 Eric Stern
 Chief Executive Officer



SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End December 31, 2017





REPORT CONTENTS

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- **Results / Methodology**
- **Performance vs. Universe / Trading Components**
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- **Manager Performance**
- **Broker Performance**

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- **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 October 1 , 2017 to December 31, 2017. The analysis included trading of 4,135,427 shares representing \$144.81 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 +2.63 cps (+7.50 bp) or +\$108,628 (+0.42 cps (+1.20 bp) worse than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact savings was 0.09 cps (0.24 bp) or 1.38 cps (3.95 bp) better than the Elkins/McSherry Universe Your overall trading cost of +2.54 cps (+7.26 bp) was 0.96 cps (2.75 bp) better than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 80% Total Cost Universe Rank: 64% 	<ul style="list-style-type: none"> E-Score Rank : 63 E-Score : 0.48

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program		Full Day VWAP
+3.65	+2.21	+1.29	+1.37	Median	+1.30
				75 %	+0.31
				25 %	+2.76



(+) = Cost

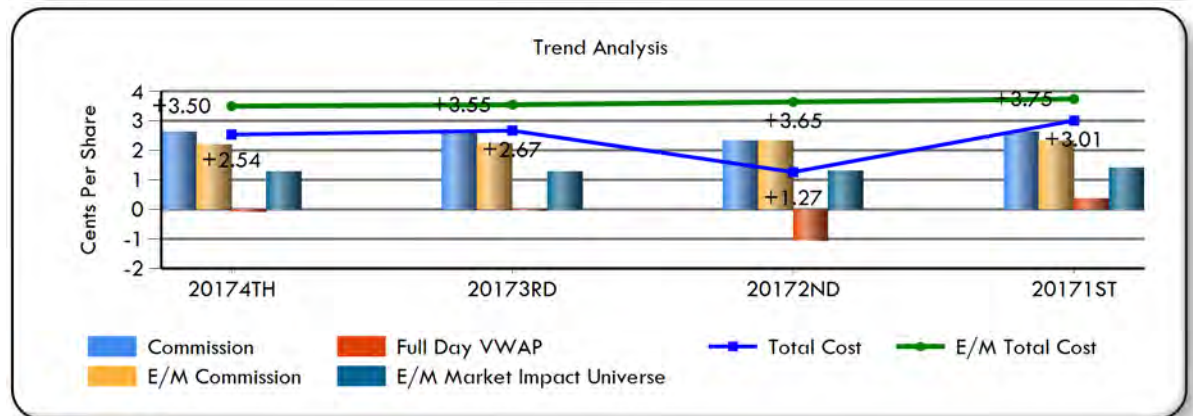
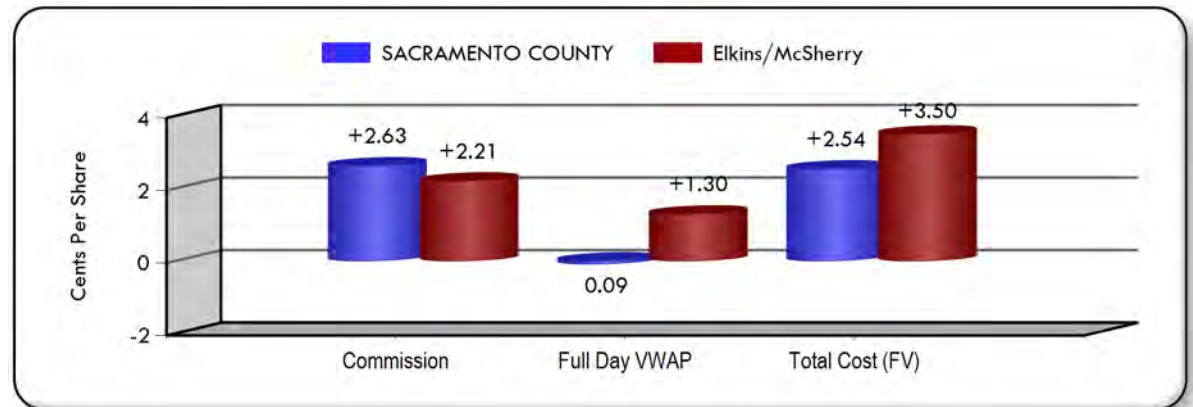
EXECUTIVE SUMMARY

TOTAL PORTFOLIO COST PERFORMANCE

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score (Rank)	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)		
Buys	+2.63	+2.21	+3.65	1.38	+1.30	+1.25	2.25	63	0.49
Sells	+2.62	+2.21	+3.65	+1.47	+1.30	+4.09	+0.58	63	0.48
Total	+2.63	+2.21	+3.65	0.09	+1.30	+2.54	0.96	63	0.48

TRADING COMPONENTS

	Buys	Sells
Trade Principal	71,169,952	73,642,044
Shares	2,255,697	1,879,730
Unique Names	138	141
Liquidity (% ADV)	0.132	0.162
Avg. Execution Size	2,896	2,395
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	779	785



(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded (\$)	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost (cps)	Total Cost/Savings (cps)	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 %					
Mid Cap	43.55 %	3,179	+2.75	+2.21	+1.23	+0.94	44 %	+3.98	+0.84	64	0.47	\$1 B TO \$5 B
Large Cap	29.77 %	1,621	+2.99	+2.21	1.73	+1.45	85 %	+1.25	2.40	58	0.55	\$5 B TO \$25 B
Giant Cap	20.03 %	3,785	+1.31	+2.21	2.58	+1.41	87 %	1.27	4.88	68	0.42	Over \$25 B
Small Cap	6.58 %	3,399	+2.44	+2.21	0.36	+0.59	74 %	+2.07	0.72	65	0.46	\$250 M TO \$1 B
N.A.	0.07 %	3,600	+2.25	+2.21	59.15	+1.30	99 %	56.90	60.41	40	0.83	

Total Cost by Market Cap: (USD)

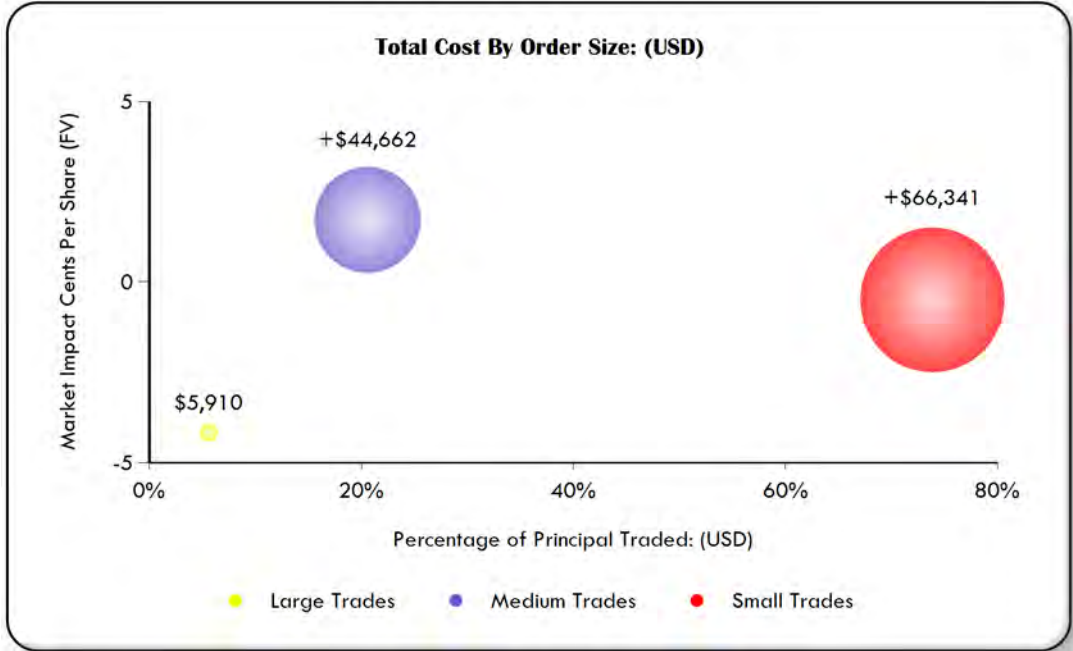
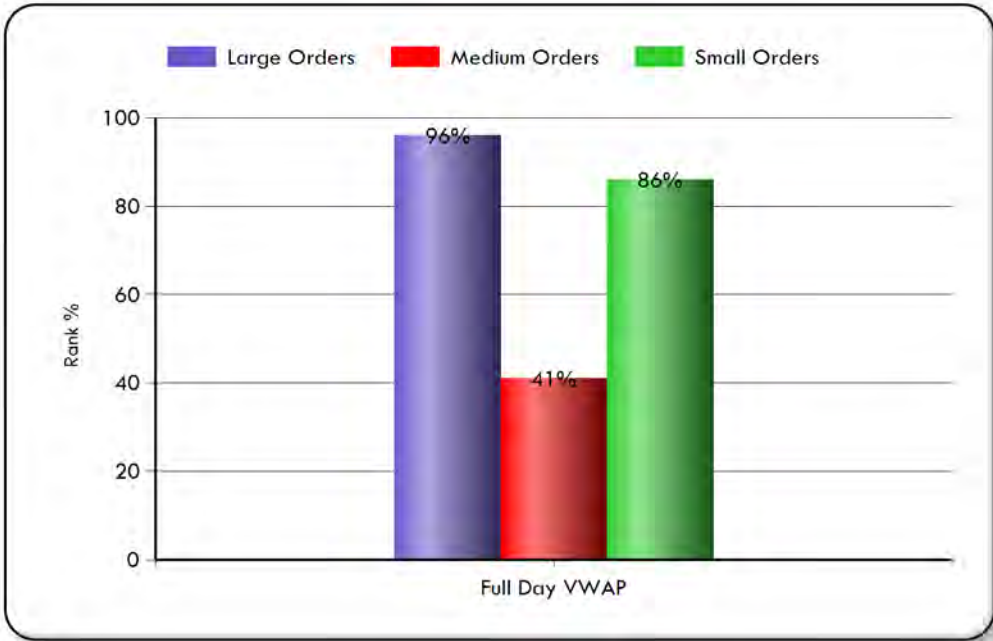


(+) = Cost

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	3	72,961	N/A	+1.46	+2.21	4.16	+1.30	96 %	2.70	6.20	88	0.15	50K or More
Med. Orders	66	17,005	N/A	+2.26	+2.21	+1.72	+1.30	41 %	+3.98	+0.48	62	0.49	10K-50K
Small Orders	1,495	1,869	N/A	+2.87	+2.21	0.49	+1.30	86 %	+2.37	1.13	61	0.51	10K or Less





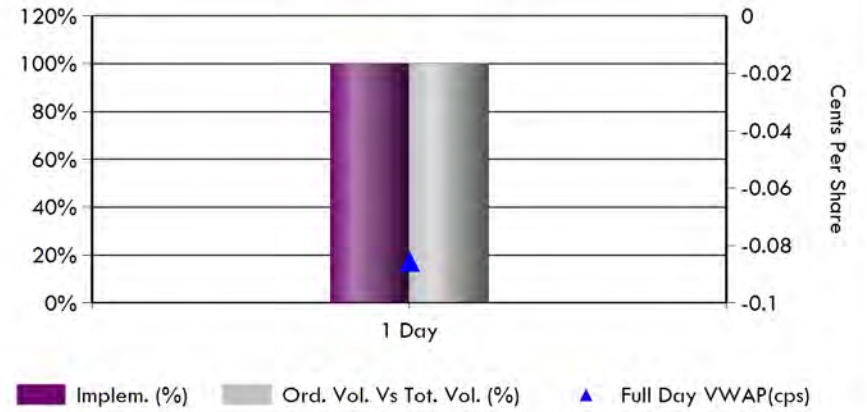
(+) = Cost

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%	0.09	63	0.48

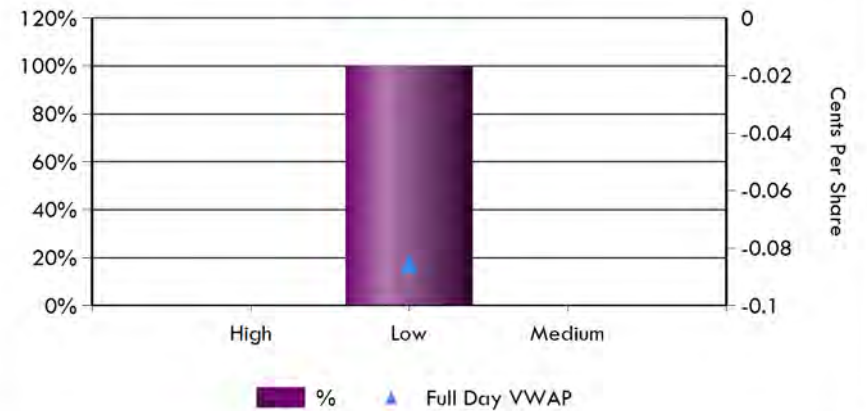
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
0%~20% of daily vol.	L	100%	0.09	63	0.48

Avg. % of Daily Volume





(+) = Cost

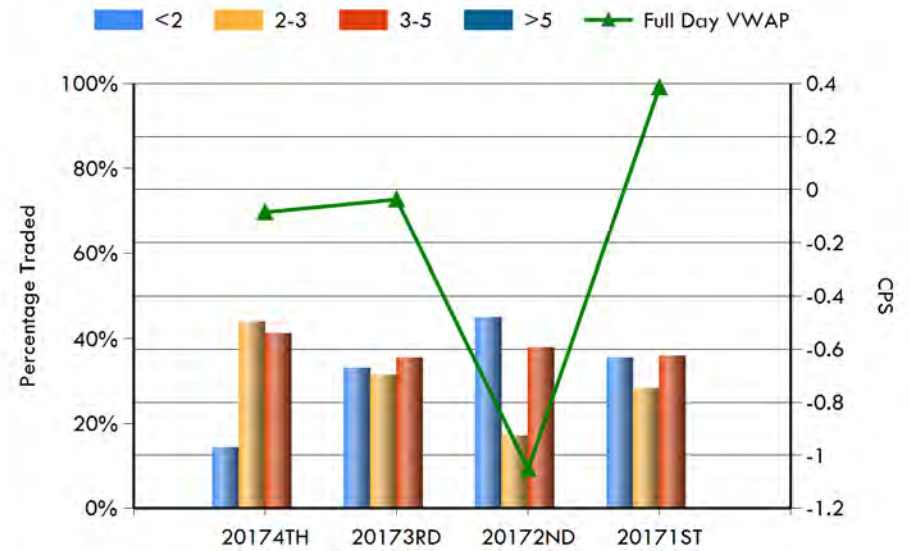
EXECUTIVE SUMMARY

COMMISSION REVIEW

Top 10 Broker

Broker	Total Commission (\$)	Commission Trends					
		Commission 20174th (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20173RD (cps)	20172ND (cps)	20171ST (cps)
LIQUIDNET	14,529	+2.42	+2.21	+3.65	+2.28	+2.60	+2.74
BROADCORT	9,286	+2.28	+2.21	+3.65	+2.88	+2.92	N.A
CONVERGEX	9,107	+4.08	+2.21	+3.65	+3.19	+4.11	+4.45
CAPITAL IN	6,843	+3.47	+2.21	+3.65	+3.28	+3.24	+3.42
COWEN & CO	5,242	+3.27	+2.21	+3.65	+2.45	+3.23	N.A
ITG	4,495	+3.28	+2.21	+3.65	+3.21	+3.30	+3.72
GOLDMAN SA	4,373	+2.03	+2.21	+3.65	+1.31	+2.25	N.A
JEFFERIES	4,238	+2.45	+2.21	+3.65	+3.35	+3.20	N.A
MERRILL LY	4,055	+2.20	+2.21	+3.65	+2.75	+2.85	+1.69
JP MORGAN	3,742	+4.21	+2.21	+3.65	+3.98	+0.39	+3.19

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	20173RD (%)	20172ND (%)	20171ST (%)
CENTERSQUARE	38	1,388	1,042,666	55	0.60	+3.11	+2.21	+0.54	68 %	+0.15	85	90	68
UBS GLOBAL ASSET MGM	26	3,442	943,224	59	0.54	+2.29	+2.21	+4.06	13 %	+2.85	96	98	22
WEATHERBIE	19	2,752	470,563	64	0.46	+2.67	+2.21	+0.16	79 %	0.68	4	37	84
DALTON, GREINER, HAR	17	4,371	716,883	63	0.48	+3.49	+2.21	3.61	95 %	3.62	93	92	94
HUBER CAPITAL MANAGE	14	9,026	352,007	66	0.44	+0.43	+2.21	5.69	97 %	8.77	95	91	46
BROWN ADVISORY	13	1,902	157,825	67	0.43	+1.99	+2.21	0.98	91 %	2.49	12	31	77
EAGLE CAPITAL MANAGE	12	35,718	214,309	80	0.25	+2.30	+2.21	0.53	87 %	1.73	96	10	99
WEDGE CAPITAL MGMT L	6	3,181	225,827	78	0.28	+3.20	+2.21	+0.62	66 %	+0.32	79	90	49
ALLIANCE R 3000 CAPI	<1	1,694	6,774	25	1.11	+0.23	+2.21	17.86	99 %	21.13	94	96	80
PRINCIPAL GLOBAL INV	<1	5,349	5,349	82	0.23	+3.00	+2.21	+3.81	15 %	+3.30	-	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	Commission + Full Day VWAP Vs. Universe	20173RD (%)	20172ND (%)	20171ST (%)
LIQUIDNET	25	1,906	600,264	64	0.46	14,529	+2.42	+2.21	0.52	87 %	1.60	95	30	94
BROADCORT CAPITAL	11	3,426	407,698	67	0.43	9,286	+2.28	+2.21	+6.20	6 %	+4.98	1	98	27
CITIGROUP	10	3,591	262,127	62	0.49	3,708	+1.41	+2.21	5.30	97 %	7.39	99	39	18
ITG	7	2,016	137,093	63	0.48	4,495	+3.28	+2.21	+1.01	55 %	+0.78	97	34	46
SC BERNSTEIN	7	2,597	150,614	74	0.33	2,665	+1.77	+2.21	+5.75	7 %	+4.01	46	99	1
MERRILL LYNCH	6	2,675	184,573	54	0.61	4,055	+2.20	+2.21	+2.85	24 %	+1.54	71	98	27
CONVERGEX	6	3,185	222,931	65	0.46	9,107	+4.08	+2.21	12.22	99 %	11.64	90	91	91
THEMIS TRADING LLC	6	2,375	116,366	64	0.47	1,862	+1.60	+2.21	1.64	92 %	3.54	1	59	50
CAPITAL INSTL SVCS	6	3,948	197,376	64	0.47	6,843	+3.47	+2.21	1.95	93 %	1.98	81	21	96
UBS	6	2,402	112,914	57	0.57	2,151	+1.91	+2.21	+0.12	79 %	1.48	76	85	71

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	20173RD (%)	20172ND (%)	20171ST (%)
GOLDMAN SACHS	6	4,070	215,721	57	0.57	4,373	+2.03	+2.21	+4.83	9 %	+3.35	23	99	93
JEFFERIES & CO	4	2,663	173,110	69	0.40	4,238	+2.45	+2.21	+3.03	23 %	+1.97	97	17	98
JP MORGAN CHASE	4	1,154	88,836	50	0.66	3,742	+4.21	+2.21	+1.99	34 %	+2.69	84	98	80
WELLS FARGO	4	1,449	86,953	60	0.53	3,231	+3.72	+2.21	+1.47	46 %	+1.69	30	94	20
COWEN & CO	3	6,165	160,294	50	0.67	5,242	+3.27	+2.21	+4.58	10 %	+4.34	88	97	37
CREDIT SUISSE	3	2,696	83,584	62	0.49	2,402	+2.87	+2.21	6.05	97 %	6.68	3	3	15
JONES TRADING	3	11,166	78,164	83	0.21	2,212	+2.83	+2.21	5.09	97 %	5.76	94	6	83
BARCLAYS	3	3,123	84,333	72	0.37	2,743	+3.25	+2.21	0.82	90 %	1.07	90	95	45
RAYMOND JAMES	2	1,217	55,969	65	0.46	1,287	+2.30	+2.21	+5.47	7 %	+4.26	97	85	93
BAIRD, ROBERT W	2	3,183	31,827	77	0.29	1,125	+3.53	+2.21	+3.87	14 %	+3.90	75	32	92

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	20173RD (%)	20172ND (%)	20171ST (%)
WILLIAM BLAIR	2	3,443	51,650	62	0.50	1,766	+3.42	+2.21	15.06	99 %	15.15	1	93	19
MORGAN STANLEY	2	1,541	33,894	53	0.62	842	+2.48	+2.21	+5.30	7 %	+4.28	98	1	50
WEEDEN & CO	2	3,409	54,551	68	0.41	1,905	+3.49	+2.21	2.17	93 %	2.18	96	92	90
STIFEL NICOLAUS & CO	2	4,231	105,778	47	0.71	2,640	+2.50	+2.21	+1.46	46 %	+0.45	10	97	7
RBC CAPITAL MARKETS	2	2,270	47,667	50	0.67	1,031	+2.16	+2.21	6.46	97 %	7.80	91	97	21
ISI GROUP INC	1	1,426	21,386	67	0.43	668	+3.12	+2.21	+2.15	33 %	+1.77	29	24	5
KEYBANC	1	1,215	30,363	54	0.61	931	+3.07	+2.21	+2.31	32 %	+1.88	95	90	84
PERSHING	1	6,469	45,283	44	0.77	738	+1.63	+2.21	17.16	99 %	19.04	99	-	91
CANTOR FITZGERALD	<1	7,640	76,400	66	0.44	2,082	+2.72	+2.21	+2.30	32 %	+1.52	61	1	99
INSTINET	<1	1,436	18,667	49	0.69	187	+1.00	+2.21	8.71	98 %	11.22	1	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	20173RD (%)	20172ND (%)	20171ST (%)
OPPENHEIMER & CO INC	<1	3,259	13,034	48	0.71	468	+3.59	+2.21	4.36	96 %	4.27	98	1	95
STEPHENS & CO INC	<1	2,934	14,670	72	0.37	522	+3.56	+2.21	8.90	98 %	8.84	99	63	50
PIPER JAFFRAY	<1	4,132	20,659	70	0.39	731	+3.54	+2.21	4.06	96 %	4.02	28	1	29
SEAPORT GROUP SECS	<1	2,311	16,174	86	0.18	728	+4.50	+2.21	1.31	92 %	0.31	-	98	92
NEEDHAM & CO INC	<1	2,453	12,267	85	0.19	442	+3.60	+2.21	+0.76	61 %	+0.85	7	99	95
LEERINK SWANN	<1	1,491	4,473	70	0.38	159	+3.55	+2.21	41.24	99 %	41.19	7	98	98
LUMINEX TRADING	<1	21,700	21,700	31	0.99	505	+2.33	+2.21	+23.72	1 %	+22.54	99	1	98
CRAIG - HALLUM	<1	6,716	26,863	85	0.19	967	+3.60	+2.21	+0.51	70 %	+0.60	24	59	96
SCOTIA CAPITAL	<1	992	8,924	89	0.15	312	+3.50	+2.21	+0.59	66 %	+0.59	-	-	2
CANACCORD GENUITY	<1	1,852	9,261	86	0.17	333	+3.60	+2.21	+0.38	74 %	+0.48	6	39	99

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	20173RD (%)	20172ND (%)	20171ST (%)
GREEN STREET	<1	749	6,744	37	0.87	320	+4.75	+2.21	+1.92	36 %	+3.16	99	95	96
MKM PARTNERS	<1	1,792	16,126	51	0.65	396	+2.46	+2.21	+0.41	73 %	0.64	91	91	-
STATE STREET BANK	<1	5,349	5,349	82	0.23	160	+3.00	+2.21	+3.81	15 %	+3.30	2	27	7
MIZUHO	<1	11,140	11,140	29	1.04	223	+2.00	+2.21	+3.29	19 %	+1.79	99	9	-
BTIG LLC	<1	5,091	5,091	28	1.06	178	+3.50	+2.21	19.36	99 %	19.36	1	90	98
KNIGHT CAPITAL	<1	955	1,909	87	0.16	38	+2.00	+2.21	+1.85	38 %	+0.34	76	3	-
AUTREPAT-DISTRIBUT	<1	1,502	1,502	1	4.16	0	+0.00	+2.21	+19.01	1 %	+15.51	-	-	99
CITATION FINL GROUP	<1	1,663	1,663	37	0.88	8	+0.50	+2.21	10.53	99 %	13.53	89	1	78
DEUTSCHE BANK	<1	755	755	43	0.78	26	+3.50	+2.21	36.80	99 %	36.80	98	98	98
B.RILEY & CO	<1	737	737	53	0.62	26	+3.50	+2.21	4.59	96 %	4.60	-	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.65	+2.21	+1.29	+1.37	+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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	<1	1,694	6,774	25	1.11	16	+0.23	+2.21	17.86	99 %	21.13	94	96	80
MERRILL LYNCH	<1	2,107	2,107	39	0.85	0	+0.00	+2.21	48.64	99 %	52.14	-	-	22
AUTREPAT-DISTRIBUT	<1	1,502	1,502	1	4.16	0	+0.00	+2.21	+19.01	1 %	+15.51	-	-	99
CITATION FINL GROUP	<1	1,663	1,663	37	0.88	8	+0.50	+2.21	10.53	99 %	13.53	89	1	78
GOLDMAN SACHS	<1	1,502	1,502	9	1.66	8	+0.50	+2.21	19.66	99 %	22.67	91	99	2



(+) = 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	13	1,902	157,825	67	0.43	3,136	+1.99	+2.21	0.98	91 %	2.49	12	31	77
SC BERNSTEIN	4	2,566	66,705	82	0.23	697	+1.04	+2.21	+2.69	26 %	+0.23	94	88	1
CAPITAL INSTL SVCS	2	1,281	24,342	70	0.39	537	+2.20	+2.21	3.45	95 %	4.75	34	48	34
BAIRD, ROBERT W	2	4,616	18,463	77	0.29	646	+3.50	+2.21	+7.70	4 %	+7.70	99	1	98
MORGAN STANLEY	1	1,663	6,650	54	0.60	161	+2.42	+2.21	+27.96	1 %	+26.88	39	19	69
LIQUIDNET	<1	1,552	6,206	68	0.42	124	+2.00	+2.21	5.39	97 %	6.89	-	-	-
ISI GROUP INC	<1	451	1,354	65	0.46	47	+3.50	+2.21	+40.02	1 %	+40.01	-	1	2
UBS	<1	917	1,834	47	0.72	64	+3.50	+2.21	+42.92	1 %	+42.91	6	98	99
JONES TRADING	<1	9,278	9,278	25	1.11	186	+2.00	+2.21	28.32	99 %	29.82	-	-	-
BARCLAYS	<1	3,131	3,131	54	0.61	110	+3.50	+2.21	71.35	99 %	71.35	-	97	95
CREDIT SUISSE	<1	768	1,535	78	0.28	15	+1.00	+2.21	25.49	99 %	28.00	-	1	99
MERRILL LYNCH	<1	1,428	2,856	52	0.63	100	+3.50	+2.21	+24.30	1 %	+24.29	-	97	91
WILLIAM BLAIR	<1	1,384	1,384	26	1.09	48	+3.50	+2.21	104.29	99 %	104.29	-	99	59
ITG	<1	1,743	5,230	70	0.39	105	+2.00	+2.21	5.59	97 %	7.09	99	99	98
LEERINK SWANN	<1	2,089	2,089	65	0.45	73	+3.50	+2.21	+5.63	7 %	+5.63	-	99	-
STIFEL NICOLAUS & CO	<1	1,253	1,253	8	1.74	44	+3.50	+2.21	88.31	99 %	88.31	-	88	81
JP MORGAN CHASE	<1	318	953	41	0.81	19	+2.00	+2.21	+33.49	1 %	+31.98	99	32	99
KEYBANC	<1	2,689	2,689	28	1.06	94	+3.50	+2.21	+17.44	1 %	+17.44	-	22	-
RAYMOND JAMES	<1	325	325	49	0.69	11	+3.50	+2.21	26.19	99 %	26.20	-	88	99
OPPENHEIMER & CO INC	<1	740	740	17	1.32	26	+3.50	+2.21	10.78	99 %	10.79	-	-	-
STEPHENS & CO INC	<1	359	359	36	0.89	13	+3.50	+2.21	15.72	99 %	15.72	-	-	99



(+) = Cost

TRADE CYCLE DETAIL

BROWN ADVISORY 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	20173RD (%)	20172ND (%)	20171ST (%)
WELLS FARGO	<1	233	233	68	0.41	8	+3.50	+2.21	15.95	99 %	15.95	84	1	-
CANACCORD GENUITY	<1	216	216	79	0.27	8	+3.50	+2.21	8.80	98 %	8.80	-	97	-



(+) = Cost

TRADE CYCLE DETAIL

CENTERSQUARE 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	38	1,388	1,042,666	55	0.60	32,459	+3.11	+2.21	+0.54	68 %	+0.15	85	90	68
LIQUIDNET	12	1,161	307,728	56	0.58	8,113	+2.64	+2.21	1.24	91 %	2.11	90	56	94
WELLS FARGO	3	1,360	74,774	59	0.54	2,805	+3.75	+2.21	+2.26	32 %	+2.51	26	95	12
CITIGROUP	3	1,215	76,527	45	0.75	3,337	+4.36	+2.21	+5.34	7 %	+6.20	32	34	7
JP MORGAN CHASE	3	1,054	61,129	45	0.74	2,818	+4.61	+2.21	+1.39	48 %	+2.49	80	54	65
ITG	2	1,978	49,438	61	0.51	1,425	+2.88	+2.21	2.80	95 %	3.42	97	95	81
RAYMOND JAMES	2	1,245	54,784	65	0.46	1,237	+2.26	+2.21	+5.69	7 %	+4.45	98	81	16
MERRILL LYNCH	2	1,391	58,440	41	0.81	1,169	+2.00	+2.21	1.00	91 %	2.50	93	99	99
UBS	1	1,133	27,197	55	0.59	1,266	+4.66	+2.21	+3.88	14 %	+5.03	14	1	20
STIFEL NICOLAUS & CO	1	4,815	96,304	55	0.59	2,308	+2.40	+2.21	+1.87	37 %	+0.77	93	95	5
CAPITAL INSTL SVCS	1	1,683	33,655	56	0.58	1,500	+4.46	+2.21	6.30	97 %	5.34	97	1	82
JEFFERIES & CO	1	1,805	37,895	63	0.48	1,207	+3.19	+2.21	+2.01	34 %	+1.70	93	24	91
KEYBANC	<1	1,226	26,974	59	0.54	806	+2.99	+2.21	+1.26	52 %	+0.74	95	57	90
GOLDMAN SACHS	<1	1,379	27,572	66	0.44	1,065	+3.86	+2.21	0.51	87 %	0.15	99	93	87
ISI GROUP INC	<1	1,669	20,032	68	0.41	620	+3.10	+2.21	0.41	84 %	0.81	29	96	11
CREDIT SUISSE	<1	1,483	16,312	44	0.76	757	+4.64	+2.21	+0.20	78 %	+1.34	1	89	2
BARCLAYS	<1	1,309	15,708	43	0.79	445	+2.83	+2.21	+4.10	12 %	+3.43	5	97	38
MORGAN STANLEY	<1	1,509	22,628	57	0.56	577	+2.55	+2.21	5.61	97 %	6.57	96	97	50
GREEN STREET	<1	749	6,744	37	0.87	320	+4.75	+2.21	+1.92	36 %	+3.16	99	95	96
MKM PARTNERS	<1	1,792	16,126	51	0.65	396	+2.46	+2.21	+0.41	73 %	0.64	91	91	-
MIZUHO	<1	11,140	11,140	29	1.04	223	+2.00	+2.21	+3.29	19 %	+1.79	99	9	-



(+) = Cost

TRADE CYCLE DETAIL

CENTERSQUARE 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	20173RD (%)	20172ND (%)	20171ST (%)
BAIRD, ROBERT W	<1	520	1,559	47	0.71	65	+4.19	+2.21	+4.18	12 %	+4.86	28	99	15



(+) = 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	17	4,371	716,883	63	0.48	25,037	+3.49	+2.21	3.61	95 %	3.62	93	92	94
CONVERGEX	6	3,185	222,931	65	0.46	9,107	+4.08	+2.21	12.22	99 %	11.64	90	91	91
CAPITAL INSTL SVCS	2	12,671	139,379	63	0.49	4,806	+3.45	+2.21	0.63	88 %	0.69	87	88	99
LIQUIDNET	2	3,886	93,271	70	0.38	2,607	+2.79	+2.21	+1.22	52 %	+0.51	97	6	90
WEEDEN & CO	2	3,409	54,551	68	0.41	1,905	+3.49	+2.21	2.17	93 %	2.18	82	93	93
COWEN & CO	2	9,278	120,610	60	0.52	4,314	+3.58	+2.21	+1.24	52 %	+1.32	78	99	-
RBC CAPITAL MARKETS	1	2,312	41,616	46	0.74	819	+1.97	+2.21	7.42	98 %	8.96	85	92	22
SEAPORT GROUP SECS	<1	2,311	16,174	86	0.18	728	+4.50	+2.21	1.31	92 %	0.31	-	98	92
LUMINEX TRADING	<1	21,700	21,700	31	0.99	505	+2.33	+2.21	+23.72	1 %	+22.54	-	-	-
BTIG LLC	<1	5,091	5,091	28	1.06	178	+3.50	+2.21	19.36	99 %	19.36	-	-	-
RAYMOND JAMES	<1	860	860	73	0.34	39	+4.50	+2.21	+2.94	24 %	+3.94	94	-	-
KEYBANC	<1	350	700	12	1.49	32	+4.50	+2.21	15.19	99 %	14.19	95	95	33



(+) = 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	12	35,718	214,309	80	0.25	4,934	+2.30	+2.21	0.53	87 %	1.73	96	10	99
LIQUIDNET	9	37,327	149,309	77	0.30	2,986	+2.00	+2.21	+0.30	75 %	1.20	96	-	-
JONES TRADING	2	64,900	64,900	94	0.08	1,947	+3.00	+2.21	2.42	94 %	2.92	-	-	-
ITG	<1	100	100	66	0.44	1	+1.00	+2.21	15.76	99 %	18.26	-	80	-



(+) = Cost

TRADE CYCLE DETAIL

HUBER 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	14	9,026	352,007	66	0.44	1,513	+0.43	+2.21	5.69	97 %	8.77	95	91	46
CITIGROUP	7	18,560	185,600	71	0.38	371	+0.20	+2.21	9.70	98 %	13.00	98	33	20
UBS	4	6,139	79,807	58	0.56	678	+0.85	+2.21	2.34	94 %	5.00	91	91	78
MERRILL LYNCH	1	6,240	31,200	60	0.52	187	+0.60	+2.21	+4.29	11 %	+1.38	1	33	48
GOLDMAN SACHS	1	7,071	49,500	79	0.27	99	+0.20	+2.21	1.94	93 %	5.24	99	98	87
JP MORGAN CHASE	<1	1,475	5,900	59	0.54	177	+3.00	+2.21	9.30	98 %	9.81	23	81	4



(+) = Cost

TRADE CYCLE DETAIL

PRINCIPAL GLOBAL INVESTORS 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	<1	5,349	5,349	82	0.23	160	+3.00	+2.21	+3.81	15 %	+3.30	-	-	-
STATE STREET BANK	<1	5,349	5,349	82	0.23	160	+3.00	+2.21	+3.81	15 %	+3.30	-	-	-



(+) = 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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	26	3,442	943,224	59	0.54	21,607	+2.29	+2.21	+4.06	13 %	+2.85	96	98	22
BROADCORT CAPITAL	9	3,491	383,974	65	0.45	8,455	+2.20	+2.21	+6.83	6 %	+5.53	1	99	-
GOLDMAN SACHS	3	5,428	124,835	49	0.68	2,764	+2.21	+2.21	+8.10	3 %	+6.81	1	99	78
MERRILL LYNCH	3	4,735	89,970	61	0.51	2,599	+2.89	+2.21	+5.37	7 %	+4.76	85	84	7
CREDIT SUISSE	2	3,652	65,737	65	0.45	1,629	+2.48	+2.21	7.15	98 %	8.18	5	91	1
SC BERNSTEIN	2	2,500	77,501	57	0.57	1,744	+2.25	+2.21	+8.91	2 %	+7.65	52	99	63
PERSHING	1	6,469	45,283	44	0.77	738	+1.63	+2.21	17.16	99 %	19.04	99	-	91
COWEN & CO	<1	3,912	31,294	26	1.10	626	+2.00	+2.21	+8.95	2 %	+7.44	97	97	-
JEFFERIES & CO	<1	2,483	49,656	67	0.43	1,057	+2.13	+2.21	+0.99	55 %	0.39	99	97	98
INSTINET	<1	1,436	18,667	49	0.69	187	+1.00	+2.21	8.71	98 %	11.22	1	-	-
JP MORGAN CHASE	<1	1,652	16,521	63	0.48	576	+3.49	+2.21	+6.87	5 %	+6.85	84	88	26
BAIRD, ROBERT W	<1	3,935	11,805	83	0.22	413	+3.50	+2.21	2.15	93 %	2.16	63	-	-
BARCLAYS	<1	2,596	5,191	89	0.15	78	+1.50	+2.21	+1.52	45 %	0.48	-	-	-
MORGAN STANLEY	<1	1,539	4,616	37	0.89	104	+2.25	+2.21	+26.18	1 %	+24.93	99	20	94
STEPHENS & CO INC	<1	5,400	5,400	79	0.26	189	+3.50	+2.21	5.29	97 %	5.29	-	-	-
WELLS FARGO	<1	3,763	7,526	78	0.28	263	+3.50	+2.21	3.21	95 %	3.21	-	-	92
STIFEL NICOLAUS & CO	<1	1,977	3,953	72	0.35	138	+3.50	+2.21	2.79	95 %	2.80	61	67	-
DEUTSCHE BANK	<1	755	755	43	0.78	26	+3.50	+2.21	36.80	99 %	36.80	-	-	-
WILLIAM BLAIR	<1	540	540	8	1.70	19	+3.50	+2.21	40.97	99 %	40.97	-	-	-



(+) = 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	20173RD (%)	20172ND (%)
Grand Total	19	2,752	470,563	64	0.46	12,543	+2.67	+2.21	+0.16	79 %	0.68	4	37	84
THEMIS TRADING LLC	6	2,375	116,366	64	0.47	1,862	+1.60	+2.21	1.64	92 %	3.54	1	59	50
ITG	4	2,111	82,325	64	0.47	2,964	+3.60	+2.21	+3.73	16 %	+3.83	97	24	28
JEFFERIES & CO	2	3,725	81,954	71	0.37	1,847	+2.25	+2.21	+4.88	8 %	+3.63	97	56	-
WILLIAM BLAIR	2	3,825	49,726	68	0.41	1,698	+3.42	+2.21	12.30	99 %	12.38	1	72	10
LIQUIDNET	1	2,431	43,750	47	0.72	700	+1.60	+2.21	1.24	91 %	3.15	97	15	99
COWEN & CO	<1	1,678	8,390	59	0.54	302	+3.60	+2.21	+36.20	1 %	+36.29	9	9	37
OPPENHEIMER & CO INC	<1	4,098	12,294	50	0.67	443	+3.60	+2.21	3.97	96 %	3.88	99	1	96
NEEDHAM & CO INC	<1	2,453	12,267	85	0.19	442	+3.60	+2.21	+0.76	61 %	+0.85	7	98	95
STEPHENS & CO INC	<1	2,970	8,911	72	0.36	321	+3.60	+2.21	10.81	99 %	10.71	1	3	7
CRAIG - HALLUM	<1	6,716	26,863	85	0.19	967	+3.60	+2.21	+0.51	70 %	+0.60	1	59	96
CANACCORD GENUITY	<1	2,261	9,045	87	0.17	326	+3.60	+2.21	+0.60	66 %	+0.70	6	21	99
LEERINK SWANN	<1	1,192	2,384	73	0.35	86	+3.60	+2.21	82.31	99 %	82.21	7	23	98
PIPER JAFFRAY	<1	4,154	8,308	50	0.67	299	+3.60	+2.21	6.53	97 %	6.44	3	99	86
GOLDMAN SACHS	<1	7,112	7,112	39	0.84	256	+3.60	+2.21	+34.41	1 %	+34.51	1	7	99
STIFEL NICOLAUS & CO	<1	868	868	15	1.40	31	+3.60	+2.21	+50.35	1 %	+50.44	1	41	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	20173RD (%)	20172ND (%)	20171ST (%)
Grand Total	6	3,181	225,827	78	0.28	7,223	+3.20	+2.21	+0.62	66 %	+0.32	79	90	49
BRODCORT CAPITAL	2	2,636	23,724	78	0.28	830	+3.50	+2.21	3.95	96 %	3.95	1	91	27
BARCLAYS	2	5,025	60,303	83	0.21	2,111	+3.50	+2.21	+1.36	48 %	+1.35	95	93	-
CANTOR FITZGERALD	<1	7,640	76,400	66	0.44	2,082	+2.72	+2.21	+2.30	32 %	+1.52	61	1	-
PIPER JAFFRAY	<1	4,117	12,351	84	0.21	432	+3.50	+2.21	2.39	94 %	2.40	-	72	-
SCOTIA CAPITAL	<1	992	8,924	89	0.15	312	+3.50	+2.21	+0.59	66 %	+0.59	-	-	2
UBS	<1	510	4,076	85	0.19	143	+3.50	+2.21	+4.05	13 %	+4.05	-	-	84
RBC CAPITAL MARKETS	<1	2,017	6,051	94	0.08	212	+3.50	+2.21	+0.20	78 %	+0.20	99	99	94
JONES TRADING	<1	797	3,986	77	0.30	80	+2.00	+2.21	+5.55	7 %	+4.05	94	-	83
SC BERNSTEIN	<1	6,408	6,408	97	0.04	224	+3.50	+2.21	0.61	88 %	0.61	11	56	1
STIFEL NICOLAUS & CO	<1	3,400	3,400	46	0.72	119	+3.50	+2.21	+15.25	1 %	+15.25	1	99	95
WELLS FARGO	<1	2,210	4,420	61	0.50	155	+3.50	+2.21	2.93	95 %	2.94	-	-	98
KNIGHT CAPITAL	<1	955	1,909	87	0.16	38	+2.00	+2.21	+1.85	38 %	+0.34	76	3	-
GOLDMAN SACHS	<1	5,200	5,200	48	0.69	182	+3.50	+2.21	14.34	99 %	14.35	-	-	89
JP MORGAN CHASE	<1	2,167	4,333	79	0.26	152	+3.50	+2.21	+0.23	77 %	+0.22	-	91	99
JEFFERIES & CO	<1	1,803	3,605	93	0.09	126	+3.50	+2.21	0.25	83 %	0.26	85	6	99
B.RILEY & CO	<1	737	737	53	0.62	26	+3.50	+2.21	4.59	96 %	4.60	-	-	-



(+) = 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)
RGC	13	166,162	3,186,048	+2.30	0.19%	0.41	13.25
TRIP	11	159,150	5,386,553	+2.17	0.20%	0.23	1.09
VER	27	117,520	951,291	+2.00	0.04%	0.65	+0.92
NCI	24	112,489	2,135,745	+3.30	1.48%	0.40	+4.35
CSCO	2	106,400	3,637,011	+0.20	0.27%	0.07	4.87
CUZ	8	97,020	887,167	+2.00	0.12%	0.67	+2.29
FRAN	18	95,364	683,494	+2.18	0.49%	0.33	+0.80
CHGG	21	94,214	1,443,207	+2.49	0.46%	0.34	0.63
RMBS	7	86,219	1,268,494	+3.50	1.53%	0.44	+0.72
CNX	5	85,427	1,235,688	+3.55	0.38%	0.41	+1.04

Names Most Traded - Total Orders

							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
NCI	24	112,489	2,135,745	+3.30	1.48%	0.40	+4.35
IBTX	17	28,698	1,876,964	+2.98	1.67%	0.39	+0.03
IPGP	16	14,197	3,063,327	+2.16	0.21%	0.59	7.43
RGC	13	166,162	3,186,048	+2.30	0.19%	0.41	13.25
TRIP	11	159,150	5,386,553	+2.17	0.20%	0.23	1.09
EA	5	21,199	2,226,106	+2.53	0.09%	0.24	13.21
ORCL	5	41,500	2,011,456	+0.51	0.04%	0.70	4.09
CSCO	2	106,400	3,637,011	+0.20	0.27%	0.07	4.87
PEP	2	41,900	4,949,387	+2.00	0.71%	0.34	+4.39
MDLZ	1	52,484	2,176,123	+2.00	0.73%	0.38	4.35



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	3,731,503	10	+75.20	28.84%
Cost Trades	72,276,633	771	+14.42	100.00%
Saving Trades	72,535,362	793	16.52	100.00%
10 Low Cost Trades	7,319,111	10	60.19	29.32%





(+) = Cost

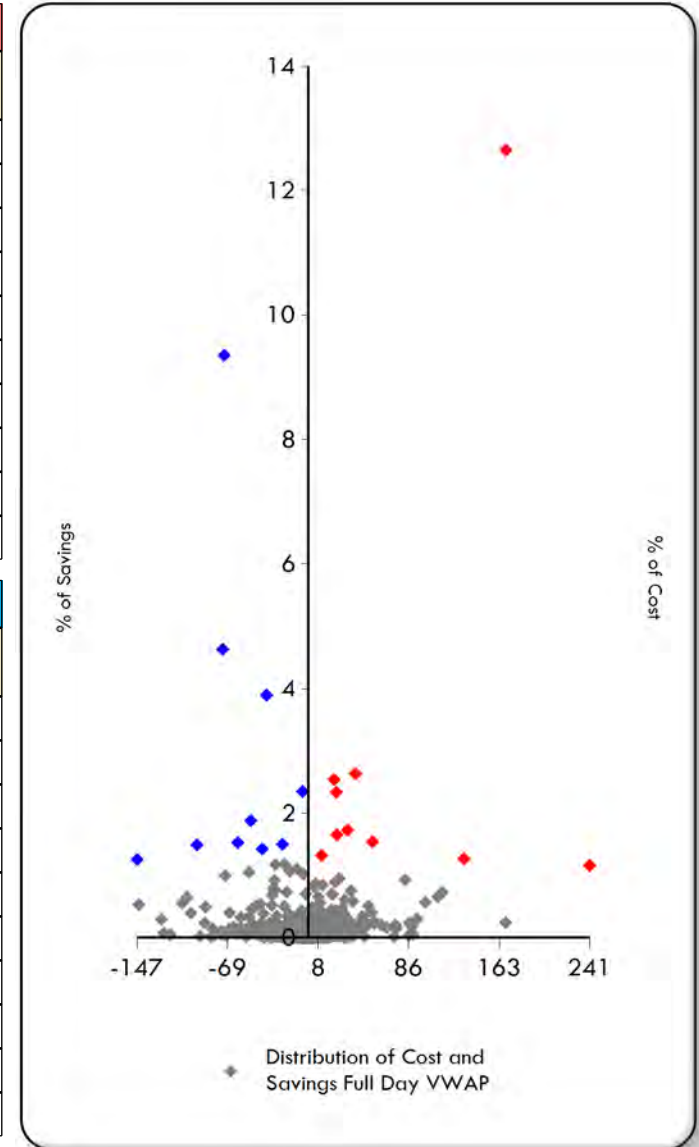
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	TVTY	2017/11/06	16,489	12.65	0.32	+168.99	UBS GLOBAL	BROADCORT
Buy	MULE	2017/10/09	14,451	2.64	1.04	+40.17	UBS GLOBAL	MERRILL LY
Buy	MXL	2017/12/21	25,659	2.54	2.01	+21.82	UBS GLOBAL	GOLDMAN SA
Sell	NCI	2017/11/28	21,700	2.34	0.99	+23.72	DALTON, GR	LUMINEX TR
Buy	GGP	2017/11/09	11,410	1.73	1.65	+33.35	CENTERSQUA	LIQUIDNET
Sell	TRIP	2017/11/07	15,020	1.65	0.15	+24.27	BROWN ADVI	SC BERNSTE
Buy	VYGR	2017/11/02	6,193	1.54	1.08	+54.79	UBS GLOBAL	SC BERNSTE
Buy	REVG	2017/10/13	26,100	1.32	0.48	+11.14	UBS GLOBAL	GOLDMAN SA
Sell	DECK	2017/10/27	2,097	1.27	1.48	+133.02	DALTON, GR	RBC CAPITA
Buy	W	2017/11/07	1,063	1.16	1.41	+240.67	WEATHERBIE	JEFFERIES

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	RGC	2017/11/28	28,942	9.35	0.65	72.30	DALTON, GR	CONVERGEX
Buy	ARNC	2017/10/23	14,100	4.64	0.68	73.58	HUBER CAPI	CITIGROUP
Buy	TRHC	2017/12/06	24,200	3.90	0.96	36.05	UBS GLOBAL	PERSHING
Sell	CSCO	2017/11/15	101,500	2.35	0.06	5.18	HUBER CAPI	CITIGROUP
Buy	LLY	2017/10/24	8,500	1.88	0.36	49.52	HUBER CAPI	UBS
Sell	MAC	2017/11/09	5,640	1.53	0.30	60.63	CENTERSQUA	LIQUIDNET
Sell	AYX	2017/12/20	15,044	1.50	0.46	22.33	UBS GLOBAL	BROADCORT
Buy	W	2017/11/02	3,487	1.49	0.42	95.78	WEATHERBIE	WILLIAM BL
Buy	ABM	2017/12/14	8,027	1.42	0.72	39.73	DALTON, GR	RBC CAPITA
Buy	STMP	2017/11/03	1,914	1.26	0.14	146.82	WEATHERBIE	THEMIS TRA



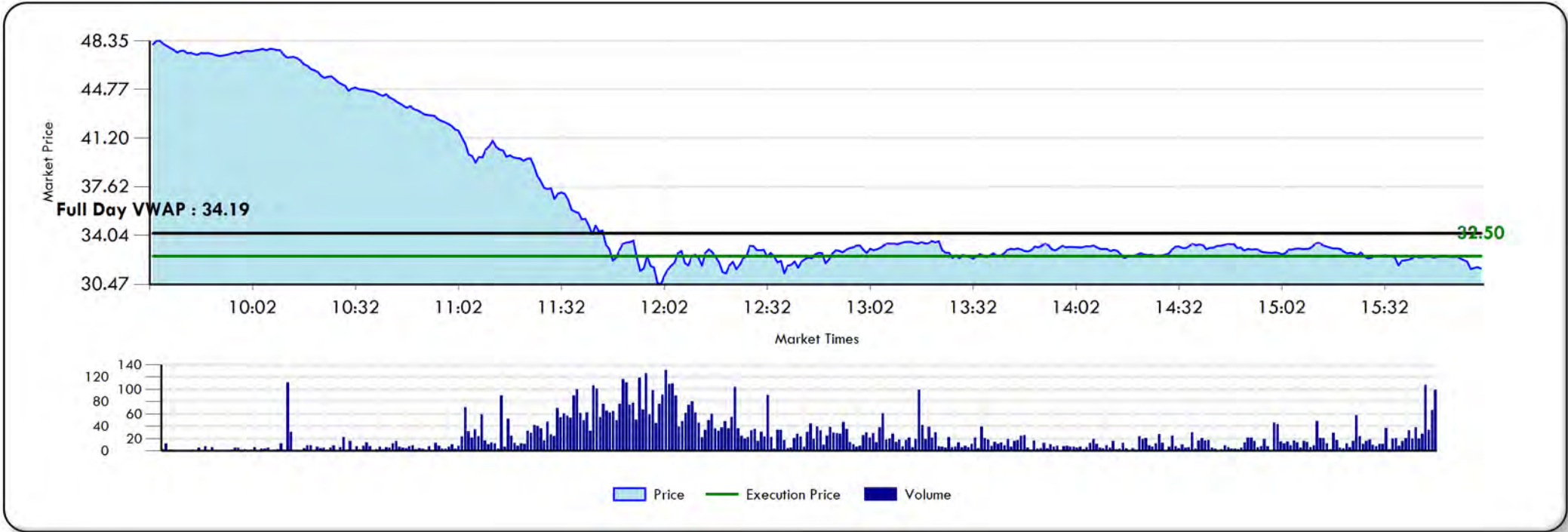


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TVTY - 2017/11/06

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	BROADCORT CAPITAL	11/06/2017 09:30:00	11/06/2017 16:00:00	16,489	32.5004	34.1903	+27,865	+168.99	0.32	0.19



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 12.65% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MULE - 2017/10/09

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 (%)
Buy	UBS GLOBAL ASSET MGMT	MERRILL LYNCH	10/09/2017 09:30:00	10/09/2017 16:00:00	14,451	22.0048	21.6031	+5,804	+40.17	1.04	0.34



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.64% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MXL - 2017/12/21

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	12/21/2017 09:30:00	12/21/2017 16:00:00	25,659	26.8000	26.5818	+5,599	+21.82	2.01	4.70



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.

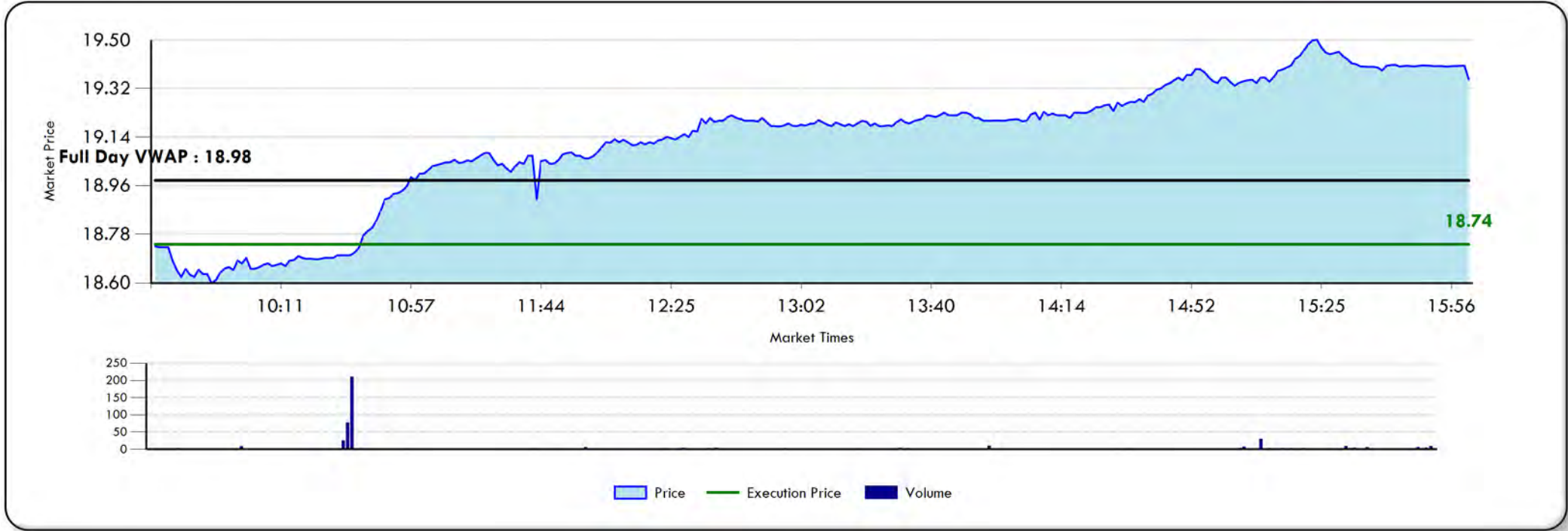


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NCI - 2017/11/28

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 (%)
Sell	DALTON, GREINER, HARTMAN, MAHER	LUMINEX TRADING	11/28/2017 09:30:00	11/28/2017 16:00:00	21,700	18.7410	18.9782	+5,147	+23.72	0.99	3.41



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.34% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

GGP - 2017/11/09

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 (%)
Buy	CENTERSQUARE	LIQUIDNET	11/09/2017 09:30:00	11/09/2017 16:00:00	11,410	22.3245	21.9910	+3,805	+33.35	1.65	0.10



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.73% of your market impact cost.

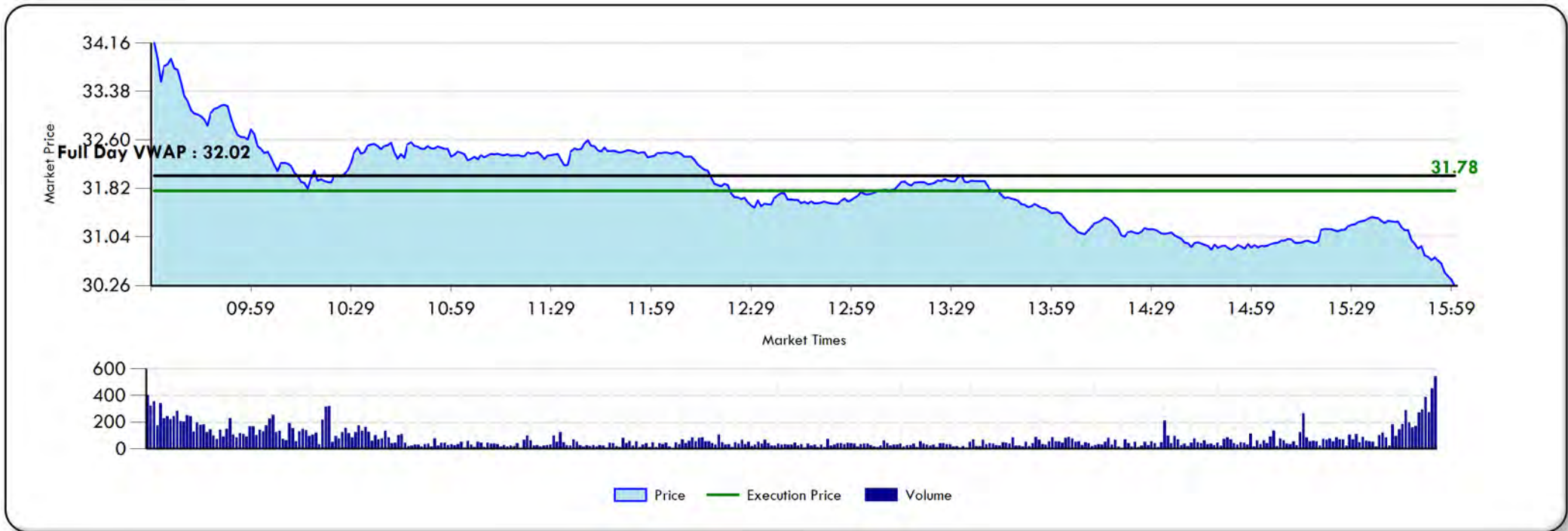


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TRADE LEVEL DETAIL - HIGH COST

TRIP - 2017/11/07

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	BROWN ADVISORY	SC BERNSTEIN	11/07/2017 09:30:00	11/07/2017 16:00:00	15,020	31.7763	32.0190	+3,645	+24.27	0.15	0.05



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.65% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VYGR - 2017/11/02

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	UBS GLOBAL ASSET MGMT	SC BERNSTEIN	11/02/2017 09:30:00	11/02/2017 16:00:00	6,193	19.9869	19.4390	+3,393	+54.79	1.08	1.06



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.

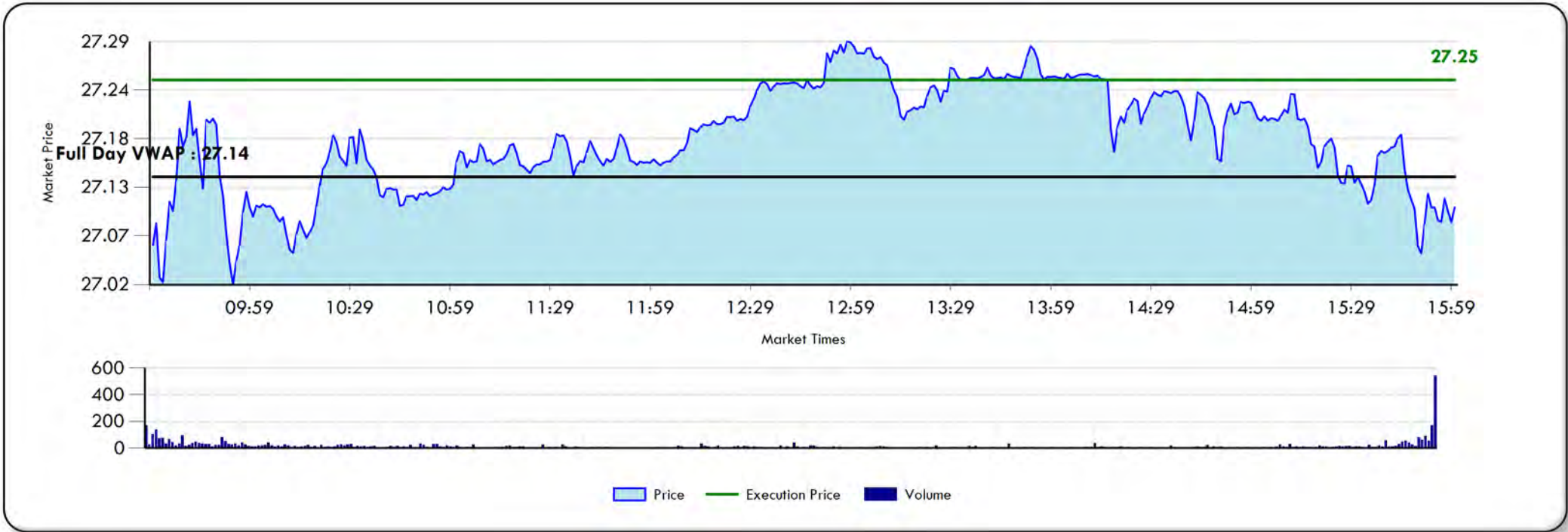


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

REVG - 2017/10/13

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	10/13/2017 09:30:00	10/13/2017 16:00:00	26,100	27.2500	27.1386	+2,909	+11.14	0.48	0.49



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.32% of your market impact cost.

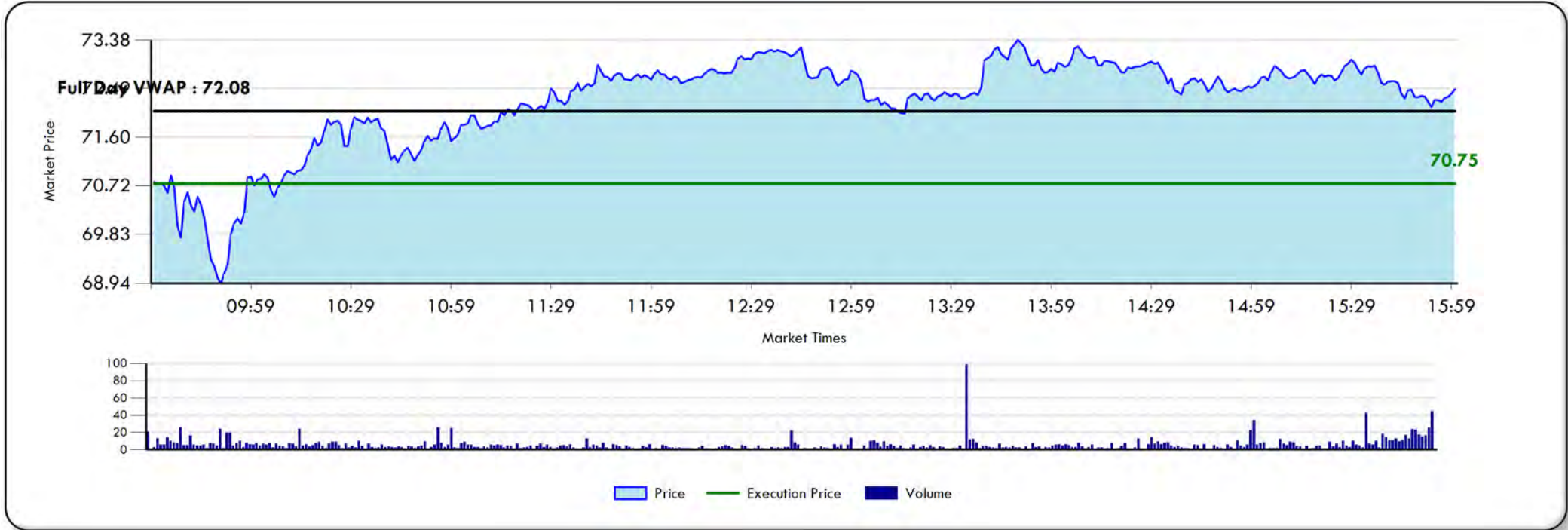


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TRADE LEVEL DETAIL - HIGH COST

DECK - 2017/10/27

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	RBC CAPITAL MARKETS	10/27/2017 09:30:00	10/27/2017 16:00:00	2,097	70.7492	72.0794	+2,789	+133.02	1.48	0.10



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.

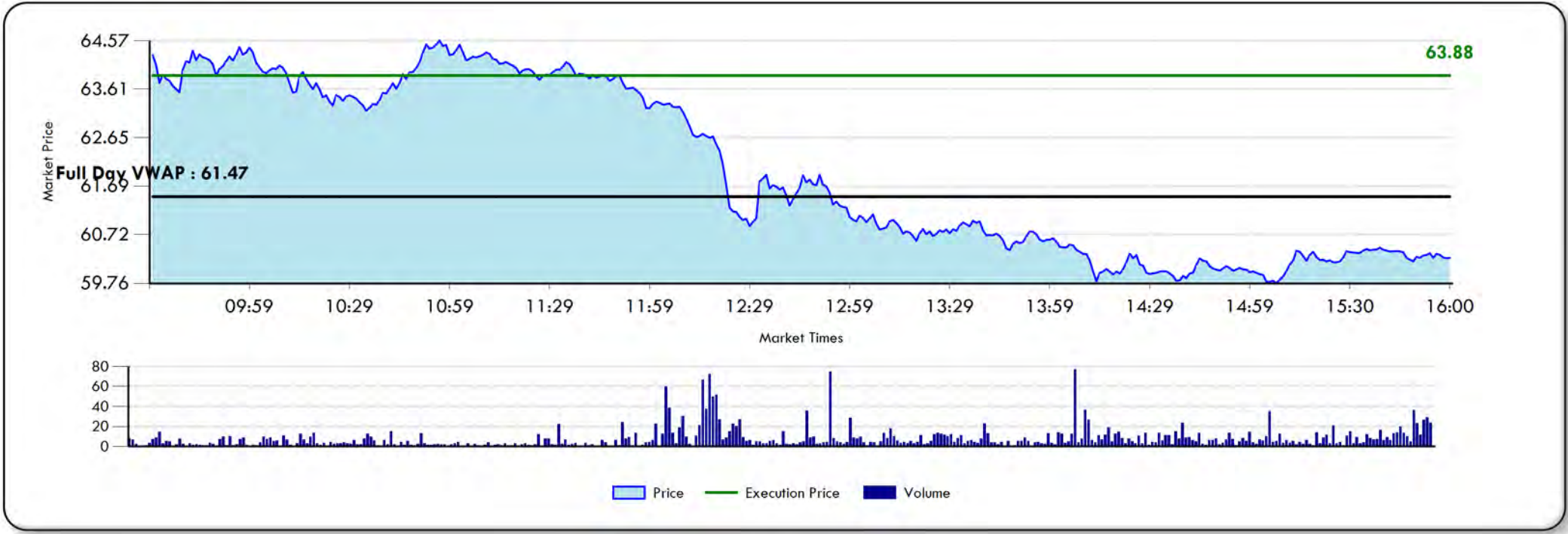


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

W - 2017/11/07

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	JEFFERIES & CO	11/07/2017 09:30:00	11/07/2017 16:00:00	1,063	63.8800	61.4733	+2,558	+240.67	1.41	0.03



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.16% of your market impact cost.

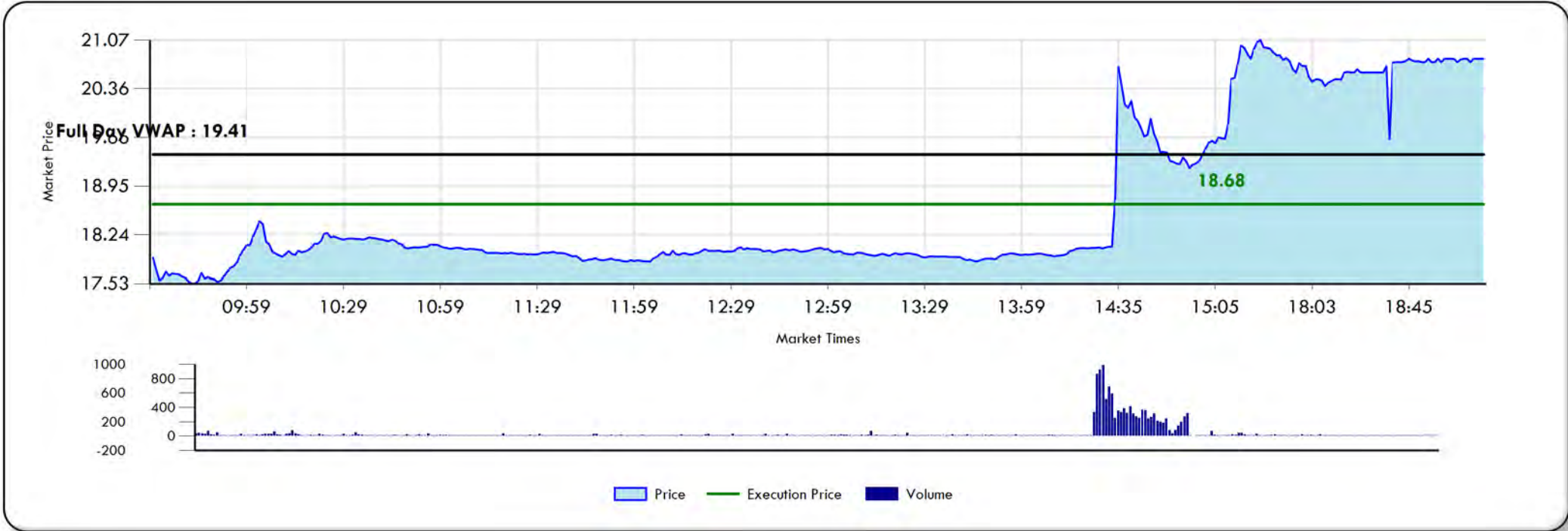


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TRADE LEVEL DETAIL - LOW COST

RGC - 2017/11/28

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	DALTON, GREINER, HARTMAN, MAHER	CONVERGEX	11/28/2017 09:30:00	11/28/2017 16:00:00	28,942	18.6826	19.4056	20,926	72.30	0.65	0.20



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 9.35% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ARNC - 2017/10/23

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	CITIGROUP	10/23/2017 09:30:00	10/23/2017 16:00:00	14,100	24.4584	25.1942	10,375	73.58	0.68	0.12



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.64% of your market impact savings.

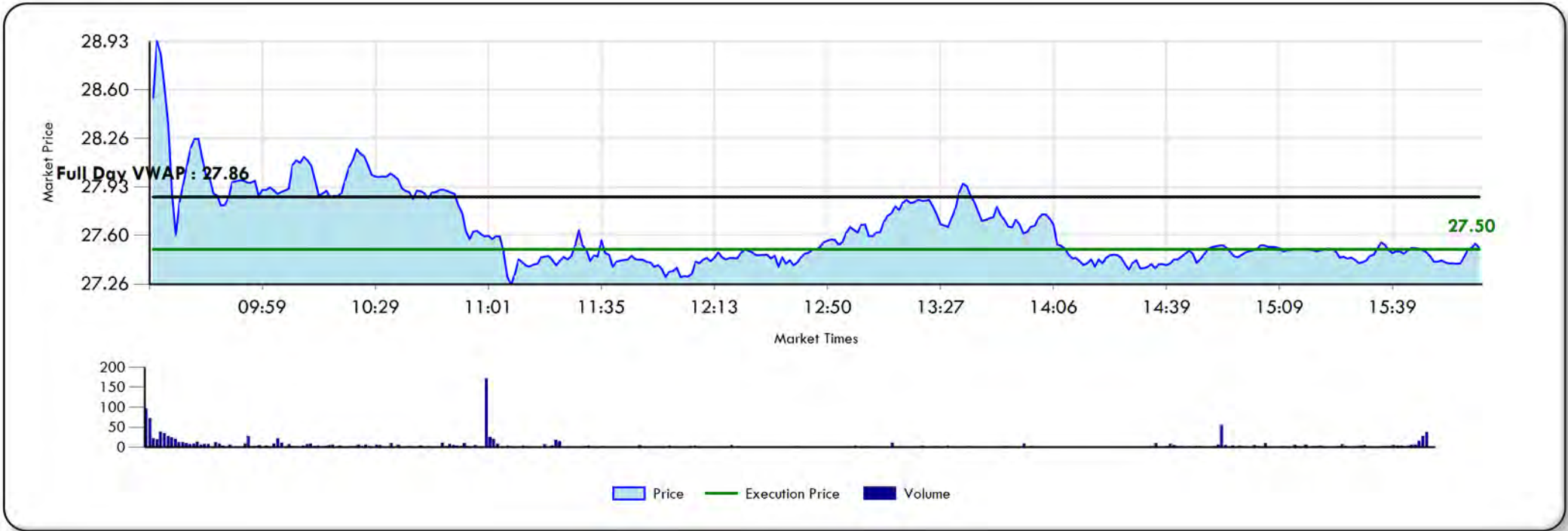


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TRHC - 2017/12/06

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	PERSHING	12/06/2017 09:30:00	12/06/2017 16:00:00	24,200	27.5000	27.8605	8,724	36.05	0.96	1.49



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.90% of your market impact savings.

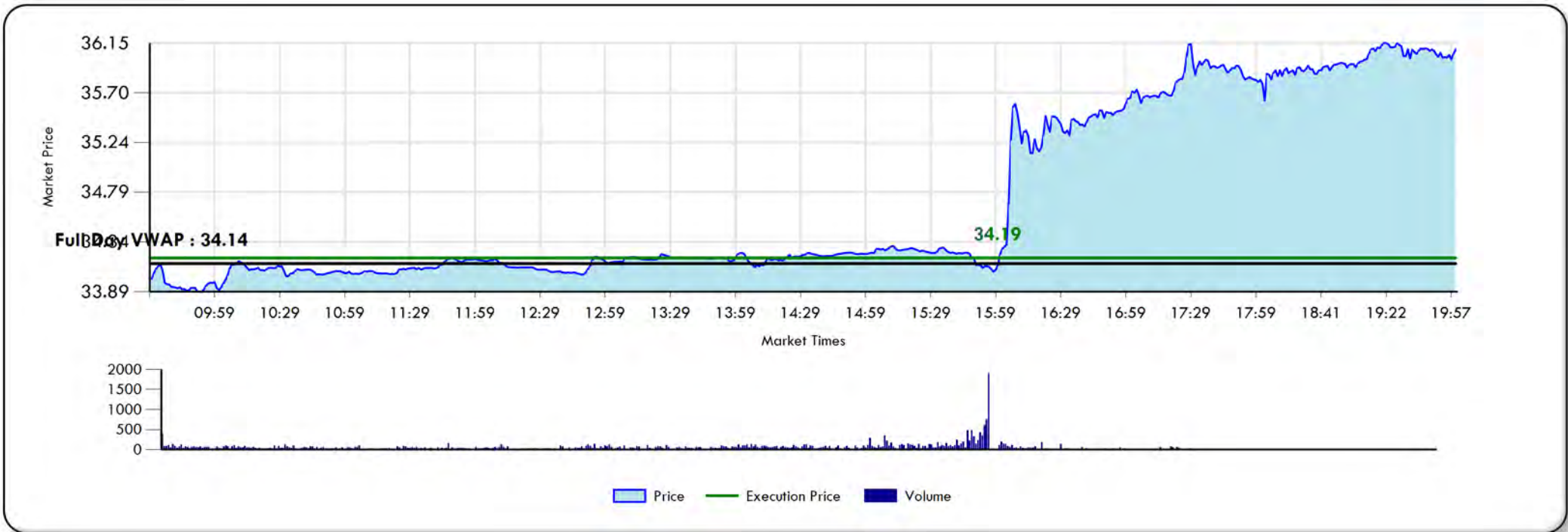


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

CSCO - 2017/11/15

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 (%)
Sell	HUBER CAPITAL MANAGEMENT	CITIGROUP	11/15/2017 09:30:00	11/15/2017 16:00:00	101,500	34.1912	34.1394	5,256	5.18	0.06	0.39



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.35% of your market impact savings.

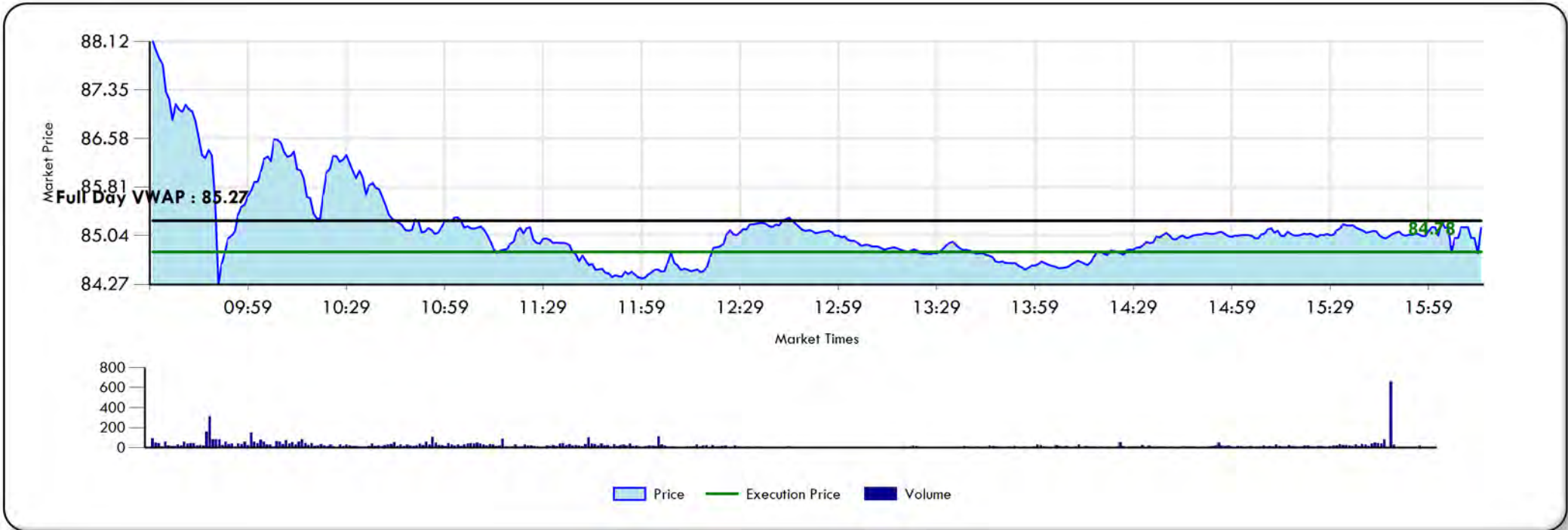


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

LLY - 2017/10/24

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	10/24/2017 09:30:00	10/24/2017 16:00:00	8,500	84.7784	85.2736	4,209	49.52	0.36	0.10



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.88% of your market impact savings.

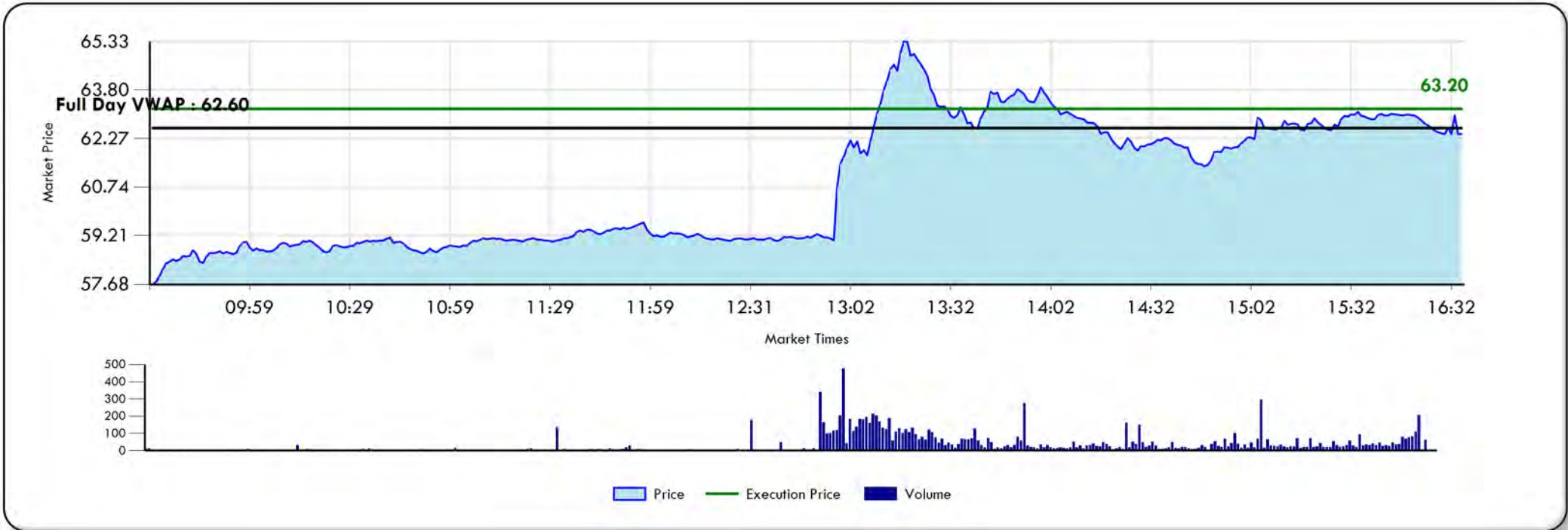


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MAC - 2017/11/09

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	CENTERSQUARE	LIQUIDNET	11/09/2017 09:30:00	11/09/2017 16:00:00	5,640	63.2031	62.5968	3,420	60.63	0.30	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.53% of your market impact savings.

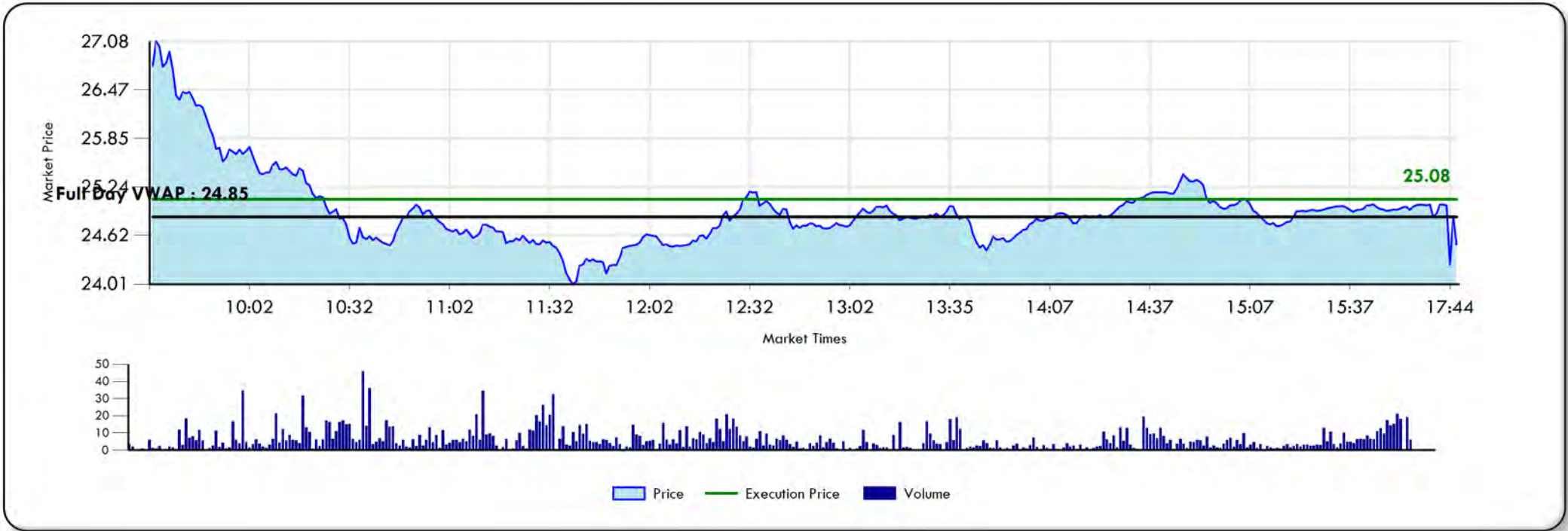


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

AYX - 2017/12/20

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	UBS GLOBAL ASSET MGMT	BROADCORT CAPITAL	12/20/2017 09:30:00	12/20/2017 16:00:00	15,044	25.0762	24.8529	3,359	22.33	0.46	0.64



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.50% of your market impact savings.

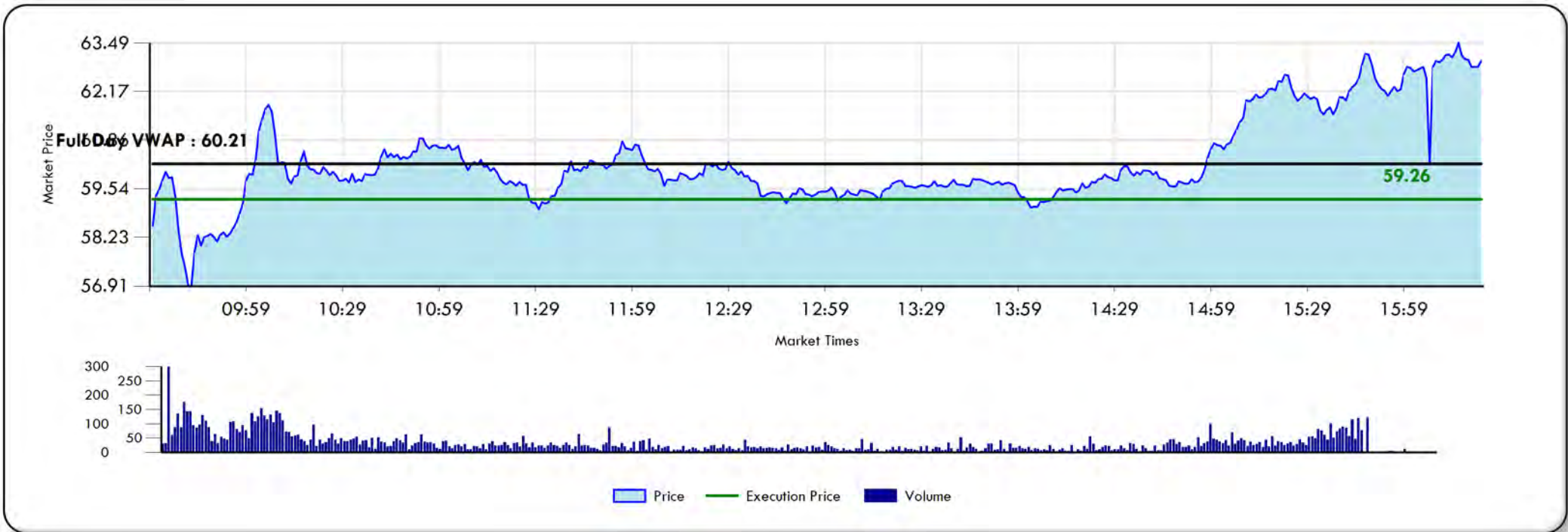


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

W - 2017/11/02

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	WEATHERBIE	WILLIAM BLAIR	11/02/2017 09:30:00	11/02/2017 16:00:00	3,487	59.2566	60.2144	3,340	95.78	0.42	0.03



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.49% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ABM - 2017/12/14

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	RBC CAPITAL MARKETS	12/14/2017 09:30:00	12/14/2017 16:00:00	8,027	37.1619	37.5592	3,189	39.73	0.72	0.34



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.42% of your market impact savings.

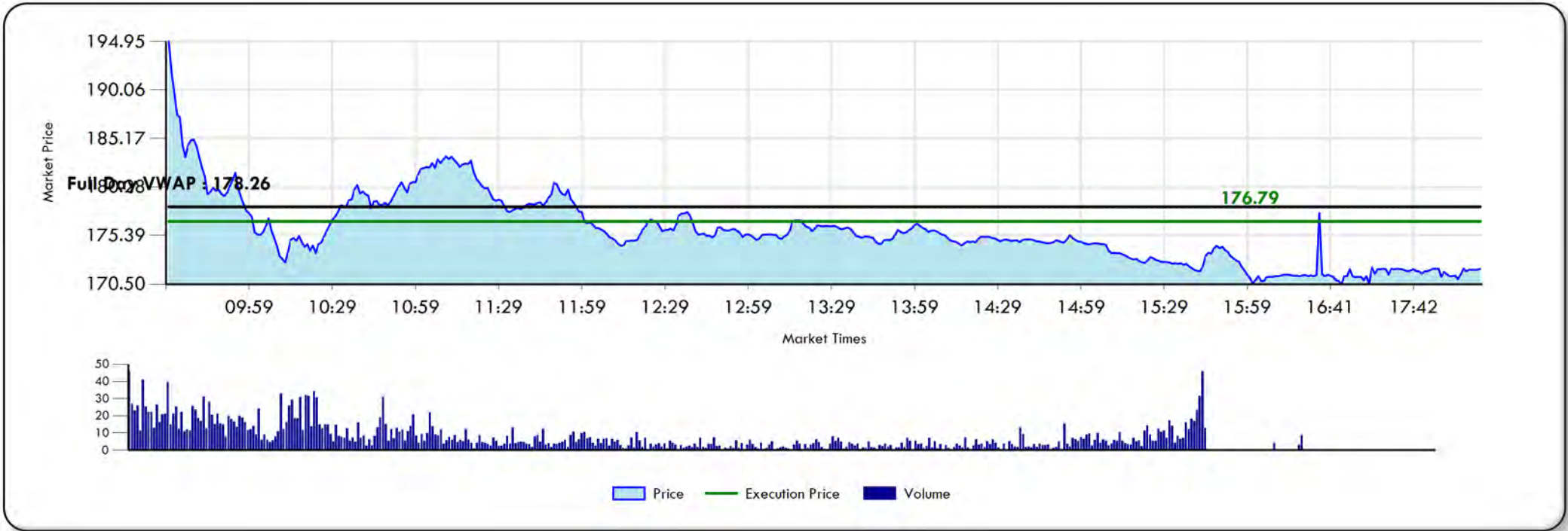


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

STMP - 2017/11/03

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	THEMIS TRADING LLC	11/03/2017 09:30:00	11/03/2017 16:00:00	1,914	176.7893	178.2575	2,810	146.82	0.14	0.06



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.26% of your market impact savings.

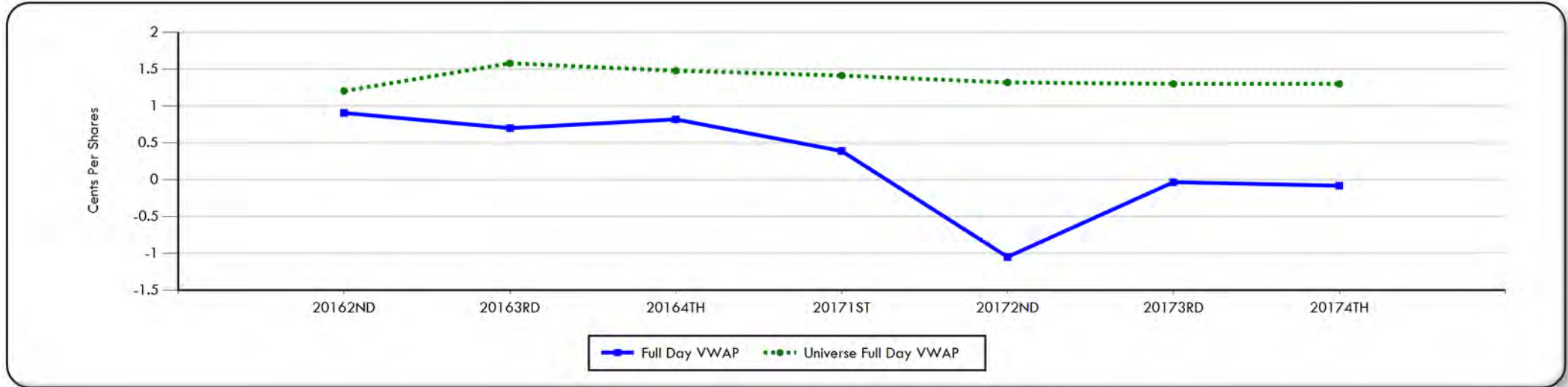


(+) = Cost

TRADE HISTORY

Trade History

Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP (cps)	Full Day VWAP Universe Rank (%)
			(cps)	(\$)		
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
20174TH	4,135,427	144,811,996	+2.63	108,628	0.09	80



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 December 31, 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 October 1, 2017 to December 31, 2017. The analysis included trading of 22,646,305 shares representing \$198.02 million in principal across 32 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 +7.13 bp or \$ +\$141,269 (7.06 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +3.98 bp or \$ +78,786 (0.21 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact cost was +1.09 bp or \$+21,576 (6.62 bp better than the Elkins/McSherry Universe) Your overall trading cost of +12.20 bp was 13.88 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 30 countries. 8 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 50 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : 0.02



(+) = Cost

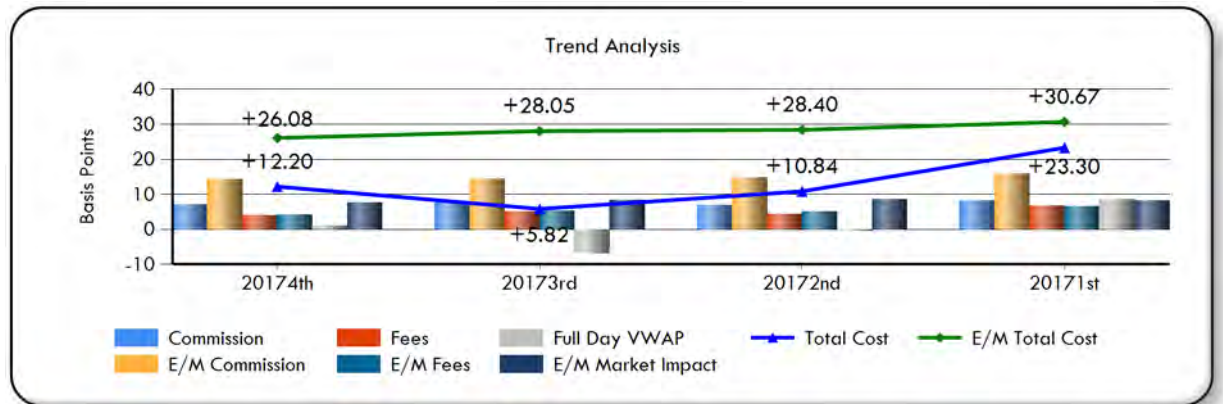
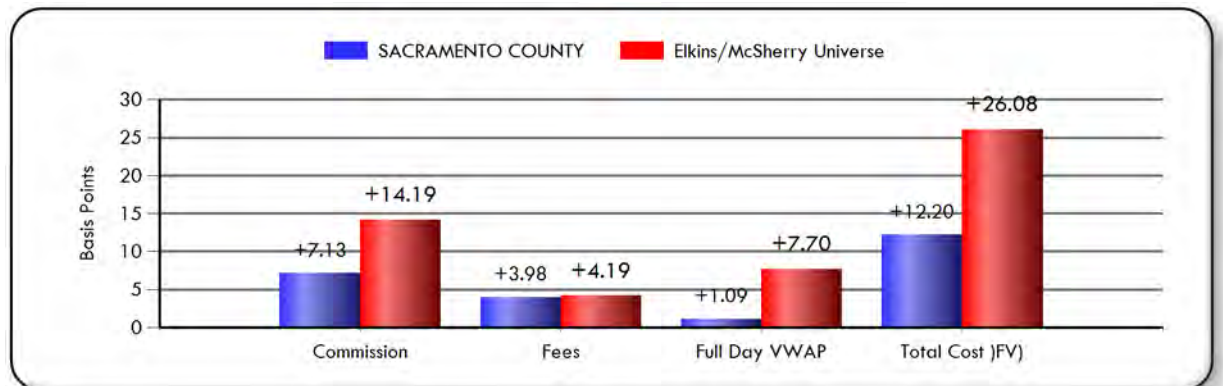
EXECUTIVE SUMMARY

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	+7.20	+14.27	+6.25	+6.72	+7.12	+1.15	+6.13	+15.07	12.45	0.05
Sell	+7.05	+14.09	+6.10	+0.75	+0.74	+1.02	+9.55	+8.82	15.56	-0.02
Total	+7.13	+14.19	+6.18	+3.98	+4.19	+1.09	+7.70	+12.20	13.88	0.02

TRADING COMPONENTS

	Buys	Sells
Trade Principal	107,153,982	90,864,298
Shares	13,606,956	9,039,349
Unique Names	237	178
Liquidity (% POV)	0.404	0.589
Avg. Order Size	10,467	10,610
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,300	852





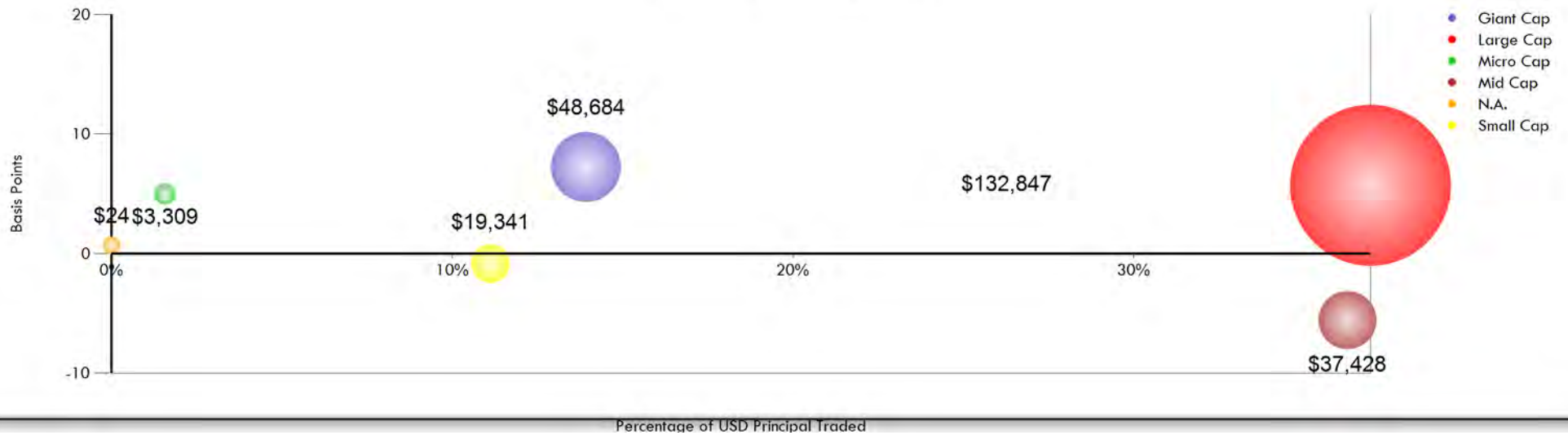
(+) = Cost

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	36.98 %	96,098	+7.54	+14.14	+5.71	+7.56	+18.14	8.80	0.02	\$5 Billion To \$25 Billion
Mid Cap	36.30 %	86,196	+7.39	+14.33	5.56	+8.37	+5.21	21.03	0.01	\$1 Billion To \$5 Billion
Giant Cap	13.95 %	145,383	+6.17	+13.66	+7.25	+6.10	+17.62	6.41	0.03	Over \$25 Billion
Small Cap	11.15 %	67,506	+6.42	+14.54	0.84	+7.84	+8.76	16.91	0.02	\$250 Million To \$1 Billion
Micro Cap	1.59 %	83,029	+5.49	+14.27	+5.00	+8.63	+10.49	12.43	0.08	Under \$250 Million
N.A.	0.03 %	51,721	+4.00	+13.88	+0.67	+5.00	+4.67	44.21	-0.11	

Total Cost by Market Cap: (USD)





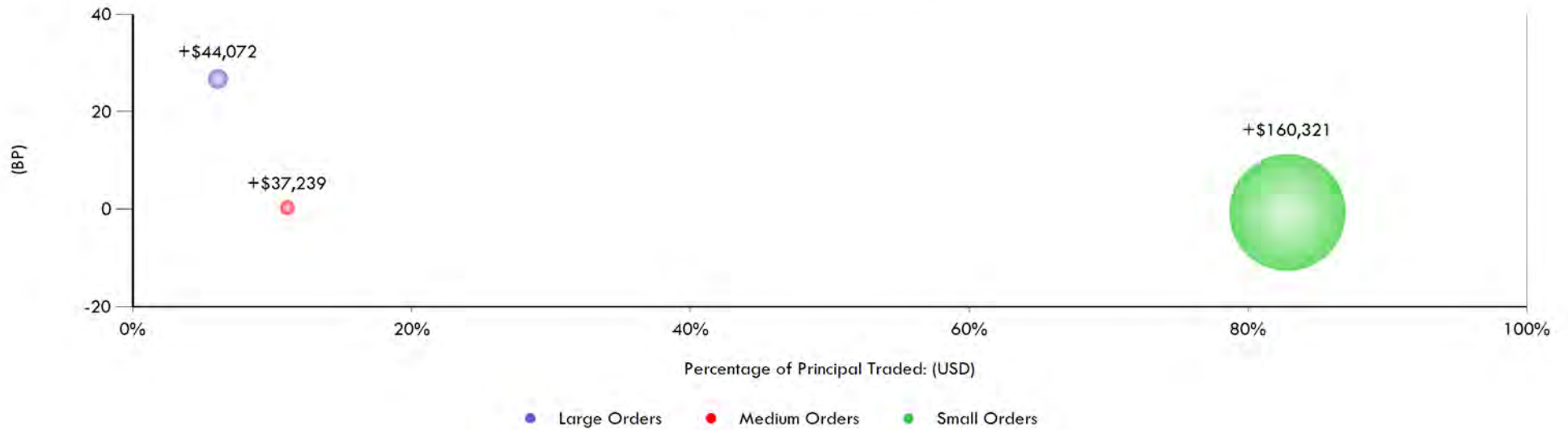
(+) = Cost

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	7	1,726,035	N/A	+9.66	+13.57	+26.69	+10.55	+36.39	+12.25	0.42	1M or Greater
Medium Orders	34	645,154	N/A	+7.49	+14.18	+0.28	+10.19	+16.96	16.61	0.18	Between 500k - 1M
Small Orders	2,111	77,689	N/A	+6.90	+14.24	0.69	+7.15	+9.77	15.45	-0.02	500K or Less

Total Cost By Order Size: (USD)





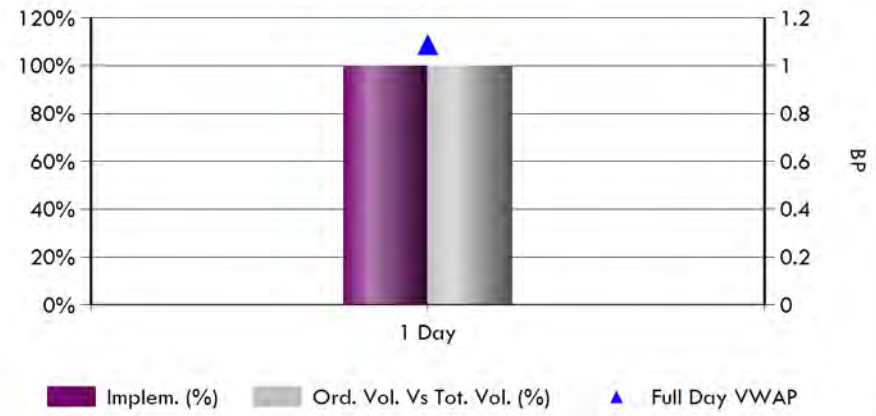
(+) = Cost

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%	+1.09	0.02

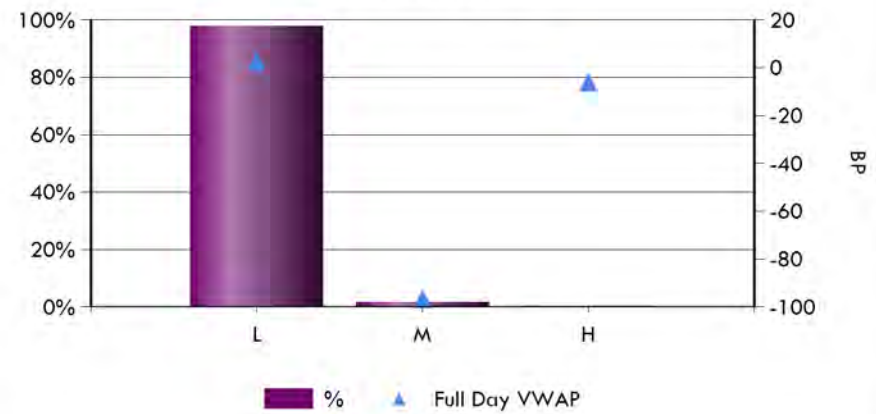
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	0%	5.96	0.12
0%~20% of daily vol.	L	98%	+2.79	0.01
20%~50% of daily vol.	M	2%	96.60	0.33

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										
FRANCE - BUYS	5	2.33%	+7.41	+13.88	+27.83	+30.00	+48.03	+5.00	+34.40	0.52
TURKEY	<1	0.33%	+10.00	+14.75	+0.00	+0.02	+38.00	+6.81	+26.42	0.89
THAILAND	<1	0.16%	+20.62	+15.95	+0.74	+0.88	+25.89	+4.56	+25.86	0.47
INDIA	1	0.65%	+11.59	+16.73	+11.56	+10.26	+32.10	+4.13	+24.13	0.19
FRANCE - SELLS	9	4.59%	+7.83	+14.02	+0.00	+0.00	+15.00	+5.15	+3.66	0.12
ITALY - SELLS	8	4.16%	+9.76	+12.71	+0.00	+0.00	+16.61	+11.96	+1.70	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										
U.K. - BUYS	9	4.66%	+4.41	+14.16	+47.06	+50.00	36.52	+3.32	52.54	0.11
IRELAND - SELLS	<1	0.47%	+8.61	+13.29	+0.02	+0.00	19.73	+27.07	51.46	-0.31
PORTUGAL	<1	0.43%	+4.00	+14.00	+0.00	+0.01	11.11	+10.83	31.95	-0.53
AUSTRIA	3	1.51%	+4.67	+13.96	+0.00	+0.03	11.57	+10.73	31.62	0.24
U.K. - SELLS	16	8.19%	+7.95	+14.41	+0.08	+0.00	3.40	+21.35	31.13	-0.16
SWITZERLAND	4	1.83%	+5.64	+14.45	+0.00	+0.05	12.19	+5.72	26.77	-0.46
ISRAEL	1	0.64%	+11.40	+20.45	+0.00	+0.08	10.84	+6.26	26.23	0.24
SPAIN	8	4.17%	+6.33	+14.17	+0.00	+0.01	8.10	+5.86	21.81	-0.24
ITALY - BUYS	2	0.78%	+3.19	+13.82	+10.00	+12.00	4.87	+4.15	21.66	-0.29
FINLAND	9	4.33%	+7.72	+13.72	+0.00	+0.02	2.57	+10.33	18.92	-0.13
GERMANY	4	2.09%	+6.27	+13.99	+0.00	+0.02	4.67	+6.30	18.71	0.10
NORWAY	5	2.67%	+5.86	+14.12	+0.00	+0.02	+0.13	+9.98	18.14	0.07
U.S.	13	6.61%	+1.73	+13.04	+0.12	+0.12	2.83	+3.69	17.83	-0.11
DENMARK	2	1.10%	+6.01	+13.80	+0.00	+0.01	+2.51	+9.30	14.58	-0.16
JAPAN	34	17.25%	+7.26	+14.27	+0.00	+0.02	+1.73	+8.63	13.94	0.05
AUSTRALIA	12	6.07%	+7.00	+15.17	+0.00	+1.28	+1.42	+5.82	13.85	-0.05
CZECH REPUBLIC	<1	0.11%	+15.00	+20.68	+0.00	+0.00	0.28	+5.24	11.20	-0.02
SINGAPORE	5	2.40%	+9.46	+14.18	+3.75	+3.52	2.10	+3.30	9.90	-0.03
CANADA	10	5.29%	+9.34	+14.66	+0.00	+0.02	+2.81	+6.37	8.90	0.15
MEXICO	<1	0.29%	+9.89	+15.20	+0.00	+0.00	0.42	+2.27	8.01	-0.28
KOREA - BUYS	<1	0.09%	+9.42	+15.19	+0.00	+0.00	+7.31	+8.67	7.13	0.00
SWEDEN	8	4.04%	+7.34	+14.11	+0.00	+0.02	+3.17	+2.17	5.79	-0.03
BELGIUM	2	1.19%	+6.74	+13.85	+0.00	+0.02	+8.22	+6.32	5.22	0.22

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										
IRELAND - BUYS	<1	0.24%	+8.29	+14.12	+100.15	+100.00	+5.19	+4.49	4.98	-0.21
NETHERLANDS	10	4.88%	+9.12	+13.82	+0.00	+0.22	+7.59	+6.01	3.34	0.12
NEW ZEALAND	<1	0.28%	+5.86	+14.02	+2.71	+0.01	+12.55	+9.85	2.76	0.18
SOUTH AFRICA - BUYS	<1	0.11%	+8.00	+15.07	+25.45	+23.67	+10.48	+7.84	2.65	0.41
HUNGARY	<1	0.43%	+15.00	+19.08	+0.00	+1.05	+7.11	+4.42	2.44	0.06
HONG KONG	11	5.58%	+7.45	+14.34	+10.78	+9.66	+6.75	+2.33	1.36	0.03
BRAZIL	<1	0.05%	+11.55	+15.45	+3.25	+2.09	+12.70	+11.25	1.29	0.84



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
LAZARD ASSET MANAGEM	73	386	36.95%	189,550	0.10	+9.28	+14.01	+8.54	+9.78	6.32	36.08	15.49	2.60
WILLIAM BLAIR & COMP	39	408	19.50%	94,625	0.15	+6.90	+14.49	+6.22	+7.01	8.44	16.14	17.40	+1.61
LSV ASSET MANAGEMENT	33	509	16.83%	65,478	-0.19	+4.50	+14.28	2.99	+6.93	19.83	19.23	27.69	22.33
S&P GLOBAL INFRAST-I	21	482	10.69%	43,909	-0.17	+1.79	+13.80	5.18	+5.22	22.55	17.28	12.03	5.15
CBRE CLARION (INTL R	32	367	16.04%	86,520	0.04	+8.80	+14.40	13.86	+6.19	25.87	13.37	17.69	11.74

NOTES

- Manager above made up 100.00 % of principal traded.



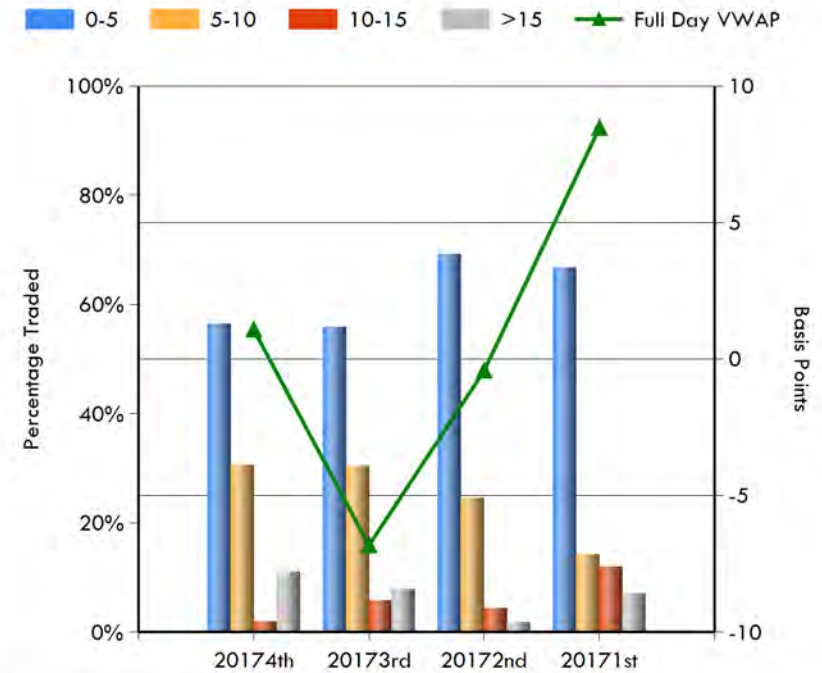
(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission Trends					
		Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	20173rd (bp)	20172nd (bp)	20171st (bp)
UBS	12,233	+6.84	+14.50	+6.09	+7.49	+5.50	+6.67
GOLDMAN SA	11,620	+9.55	+13.92	+6.16	+9.89	+7.72	+5.43
MERRILL LY	11,420	+6.67	+13.89	+5.94	+6.13	+5.01	+9.23
DEUTSCHE B	10,051	+8.90	+14.06	+5.88	+6.24	+5.07	+8.12
CREDIT SUI	9,957	+5.90	+13.96	+5.95	+8.54	+5.63	+9.54
SOCIETE GE	8,351	+6.48	+13.98	+6.11	+6.29	+5.91	+6.21
ITG	7,315	+5.53	+14.08	+6.18	+4.15	+6.63	+6.35
JP MORGAN	7,013	+9.58	+14.93	+6.62	+10.21	+6.43	+13.03
CITIGROUP	6,939	+5.41	+14.53	+6.28	+11.09	+5.37	+6.36
RBC DOMINI	5,005	+17.83	+14.66	+8.40	+16.26	+14.11	+5.59
MORGAN STA	4,325	+7.43	+14.23	+6.25	+6.35	+11.38	+7.31
DAIWA SECU	3,721	+7.74	+14.31	+6.04	+9.59	+9.75	+11.19
MITSUBISHI	3,610	+9.66	+14.27	+6.25	+9.98	+8.17	+10.20
CREDIT AGR	3,537	+9.39	+14.71	+6.29	+9.47	+9.31	+9.90
PERSHING	3,204	+10.62	+13.29	+6.52	+12.00	-	+20.00
INSTINET	2,763	+4.71	+14.49	+5.84	+4.61	+6.71	+4.65
BNP PARIBA	2,661	+7.70	+14.58	+6.19	+8.27	+7.22	+7.69
SKANDINAVI	2,474	+11.18	+13.72	+6.00	-	-	+14.99
JEFFERIES	2,331	+6.38	+14.02	+6.51	+9.16	+4.18	+8.73
MACQUARIE	2,227	+7.19	+14.62	+6.22	+8.88	+7.32	+10.45

Commission Category Trend





(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
LAZARD ASSET MANAGEM	73	386	36.95%	189,550	0.10	+9.28	+14.01	+8.54	+9.78	6.32	36.08	15.49	2.60
WILLIAM BLAIR & COMP	39	408	19.50%	94,625	0.15	+6.90	+14.49	+6.22	+7.01	8.44	16.14	17.40	+1.61
LSV ASSET MANAGEMENT	33	509	16.83%	65,478	-0.19	+4.50	+14.28	2.99	+6.93	19.83	19.23	27.69	22.33
CBRE CLARION (INTL R	32	367	16.04%	86,520	0.04	+8.80	+14.40	13.86	+6.19	25.86	13.37	17.69	11.74
S&P GLOBAL INFRAST-I	21	482	10.69%	43,909	-0.17	+1.79	+13.80	5.18	+5.21	22.54	17.28	12.03	5.15

NOTES

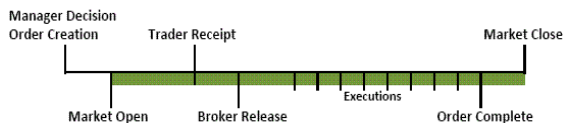
- Manager above made up 100.00 % of principal traded.



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
UBS	18	205	9.03%	87,191	-0.04	12,233	+6.84	+14.50	5.52	+8.43	21.64	14.92	23.30	13.83
MERRILL LYNCH	17	178	8.65%	96,228	0.13	11,420	+6.67	+13.89	+8.80	+6.54	5.02	8.03	19.03	+11.10
CREDIT SUISSE	17	184	8.52%	91,720	-0.19	9,957	+5.90	+13.96	2.65	+6.23	16.85	15.94	15.19	2.87
ITG	13	190	6.68%	69,639	-0.02	7,315	+5.53	+14.08	+4.06	+9.65	14.45	2.73	22.92	16.08
SOCIETE GENERALE	13	106	6.51%	121,611	0.10	8,351	+6.48	+13.98	+10.49	+7.51	4.52	28.18	25.94	+21.34
CITIGROUP	13	146	6.48%	87,888	-0.24	6,939	+5.41	+14.53	+0.32	+6.71	15.74	16.54	8.36	18.31
GOLDMAN SACHS	12	72	6.14%	168,933	0.20	11,620	+9.55	+13.92	+12.81	+12.55	4.04	14.83	19.70	2.01
DEUTSCHE BANK	11	83	5.70%	136,063	0.18	10,051	+8.90	+14.06	+6.47	+5.12	6.03	21.19	21.23	14.04
JP MORGAN CHASE	7	97	3.70%	75,490	0.00	7,013	+9.58	+14.93	+1.54	+7.58	11.50	13.56	6.94	+1.87
BARCLAYS	7	73	3.34%	90,594	0.13	2,199	+3.32	+13.69	+6.63	+8.63	12.30	22.10	42.89	11.72

NOTES

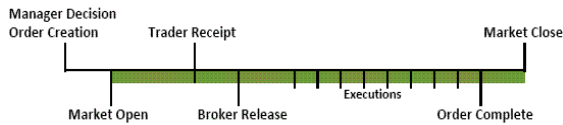
- Brokers above made up 64.75 % of principal traded.



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
INSTINET	6	79	2.97%	74,325	-0.03	2,763	+4.71	+14.49	+3.88	+11.95	18.01	8.07	12.56	+3.84
MORGAN STANLEY	6	102	2.94%	57,087	-0.12	4,325	+7.43	+14.23	1.33	+6.90	15.30	20.44	7.94	18.27
DAIWA SECURITIES	5	29	2.43%	165,746	0.15	3,721	+7.74	+14.31	+0.14	+6.90	13.03	3.55	1.86	11.53
CREDIT AGRICOLE	4	59	1.90%	63,875	0.03	3,537	+9.39	+14.71	+1.41	+5.13	9.30	10.94	5.25	15.56
MITSUBISHI UFJ SECS	4	23	1.89%	162,548	0.21	3,610	+9.66	+14.27	+3.15	+8.63	10.11	9.22	15.60	13.32
EXANE	4	31	1.88%	120,281	-0.03	1,127	+3.02	+14.06	4.00	+5.13	20.52	20.52	22.54	27.47
JEFFERIES & CO	4	41	1.85%	89,109	0.32	2,331	+6.38	+14.02	+16.78	+7.73	+0.43	13.34	201.47	18.35
BNP PARIBAS	3	31	1.74%	111,410	-0.17	2,661	+7.70	+14.58	10.35	+6.10	24.12	+5.57	23.73	3.51
MACQUARIE	3	44	1.56%	70,350	-0.01	2,227	+7.19	+14.62	+1.41	+6.64	13.32	15.54	8.45	18.50
PERSHING	3	11	1.52%	274,268	0.74	3,204	+10.62	+13.29	+36.67	+8.97	+24.94	+3.90	-	20.29

NOTES

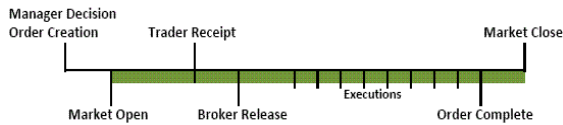
- Brokers above made up 20.68 % of principal traded.



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
RBC DOMINION SECS	3	22	1.42%	127,576	0.49	5,005	+17.83	+14.66	+13.39	+6.37	+10.17	6.61	18.54	+6.13
SCOTIA CAPITAL	2	54	1.25%	45,814	-0.25	964	+3.90	+14.66	9.93	+6.37	27.08	33.88	62.42	20.88
MIZUHO	2	28	1.19%	84,034	0.46	2,037	+8.66	+14.28	+3.71	+7.60	9.35	11.23	11.71	21.24
SKANDINAVISKA ENSKIL	2	7	1.12%	316,176	-0.52	2,474	+11.18	+13.72	27.40	+10.33	40.29	-	-	3.37
SC BERNSTEIN	2	26	0.99%	75,675	0.07	543	+2.76	+13.62	+10.25	+4.64	4.97	11.07	18.72	21.41
SMBC SECURITIES INC	2	20	0.86%	85,300	0.03	1,317	+7.72	+14.27	+4.66	+8.63	10.54	9.12	1.40	16.45
INVESTEC BANK	2	6	0.85%	280,747	-0.07	1,111	+6.60	+14.35	15.64	+17.57	40.92	-	14.12	0.26
CARNEGIE	1	9	0.62%	135,782	-0.16	833	+6.81	+14.12	3.26	+9.98	20.57	10.38	+3.82	10.09
LIQUIDNET	1	10	0.53%	104,307	-1.18	664	+6.37	+14.28	35.49	+5.54	49.00	417.13	6.59	26.10
ENSKILDA SECURITIES	<1	17	0.49%	57,520	-0.02	709	+7.25	+14.11	+2.12	+2.17	6.93	-	-	-

NOTES

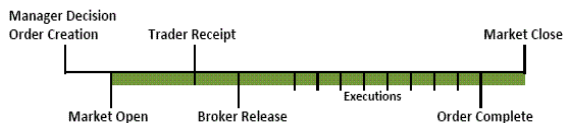
- Brokers above made up 9.32 % of principal traded.



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
AUTONOMOUS LLP	<1	3	0.47%	310,863	0.29	1,306	+14.00	+13.82	+5.74	+6.01	0.31	-	-	-
BANK J. VONTOBEL	<1	5	0.47%	185,412	-0.15	649	+7.00	+14.45	1.17	+5.72	14.39	-	-	+1.40
TD WATERHOUSE	<1	17	0.45%	52,799	0.50	150	+1.67	+14.66	+9.14	+6.37	10.24	28.62	36.47	42.17
WEEDEN & CO	<1	49	0.44%	17,807	-0.03	646	+7.40	+14.52	0.17	+5.17	13.37	9.76	9.65	8.04
STIFEL NICOLAUS & CO	<1	2	0.44%	434,353	0.20	31	+0.35	+14.16	377.85	+3.32	394.95	20.08	-	37.42
DBS VICKERS SECS	<1	6	0.42%	138,129	0.07	829	+10.00	+14.33	5.72	+2.41	11.45	0.10	13.65	32.12
HSBC BANK	<1	24	0.36%	29,328	-0.31	224	+3.18	+14.35	31.02	+7.24	49.21	29.13	71.14	27.07
JOH BERENBERG GOSSLE	<1	5	0.33%	130,110	-0.23	911	+14.00	+14.02	+1.11	+5.15	4.06	+21.00	13.71	+36.20
GREEN STREET	<1	5	0.27%	105,152	-0.39	631	+12.00	+13.64	1.65	+17.44	20.63	30.96	+16.39	+14.64
ABG SECURITIES	<1	10	0.24%	47,535	-0.52	579	+12.17	+14.11	29.26	+5.34	36.56	21.72	26.33	-

NOTES

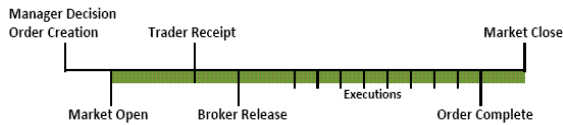
- Brokers above made up 3.88 % of principal traded.



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
PAVILION GLOBAL MKT	<1	6	0.21%	67,819	-0.39	122	+3.00	+14.66	14.34	+6.37	32.39	28.46	41.80	44.18
NOMURA	<1	5	0.13%	51,938	-0.07	260	+10.00	+16.73	1.55	+4.13	11.05	-	44.94	9.54
KAS ASSOCIATE	<1	5	0.12%	45,854	-0.44	275	+12.00	+14.12	+0.94	+2.67	3.86	39.91	+13.80	5.45
INVESTEC SECURITIES	<1	2	0.11%	113,057	0.41	181	+8.00	+15.07	+10.48	+7.84	2.65	+12.36	32.98	-
KEMPEN & CO	<1	1	0.09%	172,237	0.33	207	+12.00	+13.99	+13.19	+6.30	+4.88	-	-	32.59
ODDO SECS	<1	1	0.08%	166,632	0.82	233	+14.00	+14.02	+61.26	+5.15	+56.09	-	41.33	-
NBC CLEARING SERVICE	<1	1	0.08%	165,418	-0.11	848	+51.29	+14.66	+16.49	+6.37	+46.72	-	-	-
NESBITT BURNS	<1	3	0.08%	55,020	-0.70	110	+6.64	+14.66	9.74	+6.37	24.15	46.19	25.26	+56.79
NORDEA BANK	<1	1	0.08%	151,727	1.09	212	+14.00	+13.72	+31.63	+10.33	+21.56	-	-	-
PANMURE GORDON	<1	4	0.07%	37,109	0.04	119	+8.00	+14.16	+4.35	+3.32	4.73	5.76	-	-

NOTES

- Brokers above made up 1.06 % 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
SG SECURITIES	<1	5	0.06%	25,010	0.07	50	+4.00	+14.14	+3.09	+8.18	15.08	-	-	56.66
NATL FINANCIAL SERVS	<1	3	0.06%	36,631	-0.11	147	+13.38	+14.66	0.82	+6.37	8.49	-	-	-
LIBERUM CAPITAL LTD	<1	1	0.06%	109,643	1.01	77	+7.00	+14.41	+58.36	+21.35	+29.72	18.56	104.22	12.28
D CARNEGIE AG	<1	1	0.04%	83,133	-0.21	67	+8.00	+14.11	3.61	+2.17	11.91	-	22.76	+18.05
BANCO SANTANDER	<1	1	0.04%	71,363	-0.79	46	+6.47	+13.04	22.69	+3.69	32.83	+5.36	14.67	-
BTIG LLC	<1	1	0.03%	67,873	-0.39	51	+7.49	+13.04	26.78	+3.69	36.14	-	-	-
BANCO ITAU SA	<1	1	0.02%	45,185	N/A	52	+11.55	+15.45	0.09	+11.25	14.08	-	-	-
WELLS FARGO	<1	1	0.00%	2,188	0.03	1	+3.43	+13.04	8.01	+3.69	21.43	-	-	-

NOTES

- Brokers above made up 0.31 % 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
GRAND TOTAL	32	367	16.04%	86,520	0.04	27,943	+8.80	+14.40	13.86	+6.19	25.86	13.37	17.69	11.74
MERRILL LYNCH	4	56	2.12%	75,069	0.23	3,541	+8.42	+14.32	+2.61	+4.89	8.38	16.63	28.06	16.04
MITSUBISHI UFJ SECS	3	8	1.35%	335,359	0.20	2,683	+10.00	+14.27	+1.34	+8.63	11.58	11.53	12.35	16.55
CREDIT AGRICOLE	2	35	1.20%	67,999	-0.10	2,380	+10.00	+14.76	3.71	+4.78	13.82	10.03	3.49	21.82
DEUTSCHE BANK	2	28	1.09%	76,765	0.35	2,254	+10.49	+14.27	+5.26	+4.09	2.66	40.05	8.58	10.64
GOLDMAN SACHS	2	22	1.00%	90,441	0.21	912	+4.58	+14.28	+4.00	+6.62	12.20	12.15	11.93	17.67
DAIWA SECURITIES	2	12	1.00%	164,408	0.21	1,973	+10.00	+14.32	13.24	+4.40	21.22	+6.52	+2.09	11.99
UBS	2	31	0.96%	61,194	0.19	1,625	+8.57	+14.55	+5.47	+7.35	8.27	13.87	42.30	24.50
MORGAN STANLEY	2	29	0.84%	57,265	-0.22	1,360	+8.19	+14.66	5.44	+5.61	18.01	20.01	14.02	15.69
JP MORGAN CHASE	2	31	0.82%	52,619	-0.50	1,297	+7.95	+14.23	+1.63	+9.00	13.57	6.11	6.73	1.48
CITIGROUP	1	20	0.64%	63,525	-0.10	1,164	+9.16	+14.72	1.02	+4.69	11.65	22.50	5.39	17.41



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
GRAND TOTAL	73	386	36.95%	189,550	0.10	67,920	+9.28	+14.01	+8.54	+9.78	6.32	36.08	15.49	2.60
DEUTSCHE BANK	8	37	4.07%	217,769	0.23	7,229	+8.97	+14.01	+9.16	+5.13	4.09	15.33	26.59	12.36
MERRILL LYNCH	8	51	3.94%	153,066	-0.03	6,343	+8.13	+13.95	+16.09	+8.43	+1.83	1.27	20.64	+14.48
UBS	7	43	3.72%	171,406	0.10	6,448	+8.75	+14.51	3.64	+11.09	20.51	23.70	6.07	16.71
GOLDMAN SACHS	7	11	3.68%	663,236	0.27	8,870	+12.16	+13.61	+20.82	+17.22	+2.16	16.20	31.80	14.96
SOCIETE GENERALE	6	38	3.26%	170,066	0.21	4,524	+7.00	+13.99	+16.30	+8.85	+0.47	27.60	3.22	8.32
CREDIT SUISSE	6	32	3.24%	200,314	-0.15	5,619	+8.77	+13.97	3.18	+7.28	15.71	7.46	29.99	+20.08
ITG	6	44	2.95%	132,732	0.05	4,088	+7.00	+14.07	+16.34	+12.14	2.85	+19.25	28.23	20.72
BARCLAYS	5	9	2.31%	507,705	0.35	1,884	+4.12	+13.76	+14.56	+10.35	5.38	26.95	41.72	13.14
JP MORGAN CHASE	4	34	1.97%	114,684	0.17	3,710	+9.52	+14.10	0.30	+8.10	13.01	22.36	2.47	+20.18
PERSHING	3	4	1.30%	643,408	0.87	2,640	+10.26	+13.23	+44.26	+9.19	+32.00	-	-	-



(+) = Cost

TRADE CYCLE DETAIL

LSV ASSET MANAGEMENT PERFORMANCE (FULL DAY VWAP)



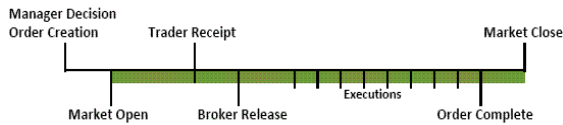
Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission+Fees+Full Day VWAP Vs. Universe (bp)	20173rd (bp)	20172nd (bp)	20171st (bp)
GRAND TOTAL	33	509	16.83%	65,478	-0.19	14,992	+4.50	+14.28	2.99	+6.93	19.83	19.23	27.69	22.33
CREDIT SUISSE	7	108	3.51%	64,398	-0.19	3,465	+4.98	+14.22	3.86	+6.27	19.42	24.89	19.22	16.87
ITG	5	56	2.43%	85,898	-0.04	2,119	+4.41	+14.20	+1.08	+8.20	16.93	+6.02	19.53	8.67
UBS	4	55	1.86%	67,135	-0.31	1,846	+5.00	+14.23	17.37	+7.52	34.24	+1.76	28.86	13.80
CITIGROUP	4	20	1.80%	178,281	0.23	1,426	+4.00	+14.73	+33.62	+5.89	+16.43	6.69	12.93	26.46
SOCIETE GENERALE	4	35	1.78%	100,474	-0.03	2,372	+6.74	+13.99	0.85	+6.64	14.71	37.56	3.94	18.02
MORGAN STANLEY	3	52	1.42%	53,959	-0.17	1,131	+4.03	+13.93	6.28	+7.58	24.03	30.44	37.62	27.27
SCOTIA CAPITAL	2	43	0.86%	39,563	-0.45	171	+1.00	+14.66	15.22	+6.37	35.27	34.09	43.04	44.22
INSTINET	1	25	0.55%	43,774	-0.15	329	+3.01	+14.27	2.15	+8.63	22.06	20.65	28.33	31.33
DEUTSCHE BANK	<1	12	0.45%	73,625	-0.72	353	+4.00	+13.99	13.78	+7.19	31.03	27.57	45.75	29.40
BARCLAYS	<1	41	0.43%	20,856	-0.23	257	+3.00	+14.20	12.18	+6.31	29.28	11.07	42.96	24.52



(+) = 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)	20173rd (bp)	20172nd (bp)	20171st (bp)
GRAND TOTAL	21	482	10.69%	43,909	-0.17	3,786	+1.79	+13.80	5.18	+5.21	22.54	17.28	12.03	5.15
CITIGROUP	4	82	2.26%	54,561	-0.91	1,038	+2.32	+13.84	20.76	+7.78	40.13	22.01	4.72	14.94
MERRILL LYNCH	3	51	1.72%	66,802	0.03	235	+0.69	+13.14	4.56	+3.74	20.87	20.91	22.31	1.08
CREDIT SUISSE	3	34	1.44%	84,045	-0.31	221	+0.77	+13.23	0.77	+3.72	16.85	35.12	+7.89	21.39
EXANE	3	20	1.32%	130,742	0.16	588	+2.25	+14.03	+2.57	+5.00	14.73	-	-	-
UBS	2	46	0.91%	39,128	-0.16	326	+1.81	+14.14	6.56	+5.04	23.92	20.73	15.05	31.28
INSTINET	1	25	0.65%	51,159	-0.02	508	+3.97	+14.97	+2.15	+5.86	15.63	61.82	22.92	+19.30
BARCLAYS	1	23	0.60%	51,691	-0.47	59	+0.49	+13.04	10.34	+3.69	26.69	16.89	-	3.73
RBC DOMINION SECS	<1	7	0.42%	117,985	1.08	132	+1.60	+14.66	+11.91	+6.37	7.54	-	24.21	-
ITG	<1	60	0.23%	7,505	-0.03	87	+1.93	+14.32	6.07	+5.69	24.33	14.08	+60.51	22.23
TD WATERHOUSE	<1	7	0.19%	52,542	1.57	59	+1.59	+14.66	+17.73	+6.37	1.73	-	-	-



(+) = 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/SAVIN GS	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)	20173rd (bp)	20172nd (bp)	20171st (bp)
GRAND TOTAL	39	408	19.50%	94,625	0.15	26,629	+6.90	+14.49	+6.22	+7.01	8.44	16.14	17.40	+1.61
UBS	3	30	1.57%	103,813	0.02	1,987	+6.38	+14.96	2.01	+5.85	16.21	17.20	12.80	3.72
SOCIETE GENERALE	3	33	1.47%	88,232	0.02	1,456	+5.00	+13.96	+11.25	+5.58	3.31	28.37	56.17	+79.29
DAIWA SECURITIES	3	17	1.43%	166,691	0.12	1,748	+6.17	+14.31	+9.44	+8.63	7.35	19.93	6.36	8.26
JEFFERIES & CO	3	34	1.41%	81,943	0.35	1,450	+5.20	+13.96	+20.36	+8.04	+2.29	1.64	10.75	-
GOLDMAN SACHS	3	27	1.30%	95,372	0.20	1,755	+6.81	+14.46	0.98	+4.84	13.25	16.93	18.07	10.94
BNP PARIBAS	2	21	1.14%	107,440	0.28	1,794	+7.95	+14.76	+10.44	+5.10	0.76	8.68	48.57	1.17
ITG	2	30	1.08%	71,019	-0.14	1,021	+4.79	+13.80	20.64	+6.97	38.48	30.08	13.42	13.30
SC BERNSTEIN	2	15	0.92%	121,965	0.07	500	+2.73	+13.57	+11.11	+4.79	4.27	11.07	18.72	20.09
MERRILL LYNCH	2	15	0.80%	105,987	0.89	1,252	+7.87	+14.01	+19.48	+7.63	+5.91	17.85	+43.57	+10.88
CITIGROUP	2	16	0.79%	97,604	0.21	1,346	+8.62	+16.51	+12.81	+6.23	1.33	14.95	3.29	+8.70



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
VALEO SA COMMON STOCK EUR1.0	26	80,620	5,609,763	5,609,763	0.34%	0.18	+26.31
UNICREDIT SPA COMMON STOCK	8	234,683	4,736,307	4,736,307	0.19%	0.67	+39.68
HUHTAMAKI OYJ COMMON STOCK	32	109,488	-3,066,454	4,728,077	2.22%	-0.11	6.58
LONDON STOCK EXCHANGE GROUP CO	21	78,531	3,976,816	3,976,816	1.40%	-0.29	6.22
WORLDPAY GROUP PLC COMMON STOC	4	608,424	3,278,550	3,278,550	3.59%	N/A	+21.69
BANKIA SA COMMON STOCK EUR1.0	27	685,010	-3,223,538	3,223,538	0.66%	-0.23	8.70
METSO OYJ COMMON STOCK	35	90,068	-194,265	3,154,245	1.10%	-0.23	+2.95
SPIRE HEALTHCARE GROUP PLC COM	5	727,017	2,750,495	2,750,495	4.39%	N/A	11.07
OMV AG COMMON STOCK	33	41,000	2,484,429	2,484,429	0.40%	-0.11	15.48
VIVENDI COMMON STOCK EUR5.5	6	87,447	-2,342,272	2,342,272	0.32%	0.89	+91.48

Names Most Traded - Total Orders (\$)

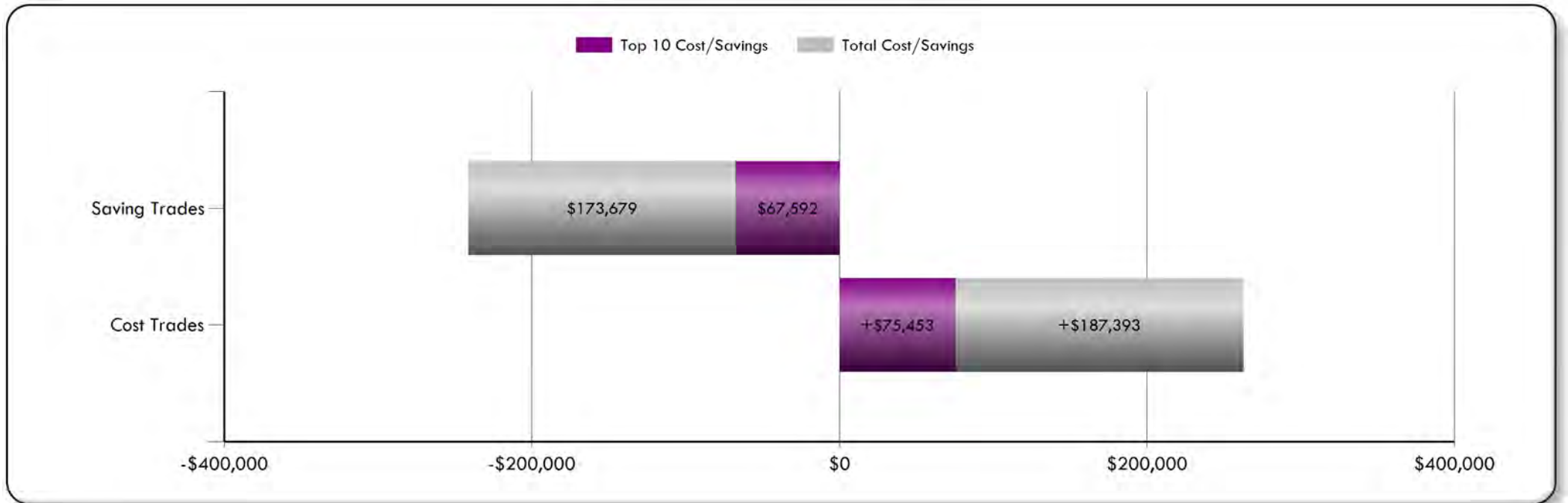
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
METRO INC COMMON STOCK	41	50,900	1,643,538	+1.54	0.35%	-0.26	8.15
LEGAL + GENERAL GROUP PLC COMM	37	165,000	-579,858	+4.31	0.07%	-0.01	+4.57
METSO OYJ COMMON STOCK	35	90,068	-194,265	+6.39	1.10%	-0.23	+2.95
EDP ENERGIAS DE PORTUGAL SA CO	35	238,400	-842,963	+4.00	0.12%	-0.53	11.11
OMV AG COMMON STOCK	33	41,000	2,484,429	+4.81	0.40%	-0.11	15.48
HUHTAMAKI OYJ COMMON STOCK	32	109,488	-3,066,454	+8.86	2.22%	-0.11	6.58
DOWA HOLDINGS CO LTD COMMON ST	31	43,000	-1,735,763	+4.96	0.36%	-0.04	+3.08
BANKIA SA COMMON STOCK EUR1.0	27	685,010	-3,223,538	+8.44	0.66%	-0.23	8.70
VALEO SA COMMON STOCK EUR1.0	26	80,620	5,609,763	+9.11	0.34%	0.18	+26.31
TAYLOR WIMPEY PLC COMMON STOCK	25	274,200	-725,231	+3.02	0.11%	-0.09	4.88



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	12,823,036	10	+82.33	28.71%
Cost Trades	104,391,647	1,027	+25.20	100.00%
Saving Trades	93,444,697	1,123	25.61	100.00%
10 Low Cost Trades	4,430,050	10	175.24	28.01%





(+) = Cost

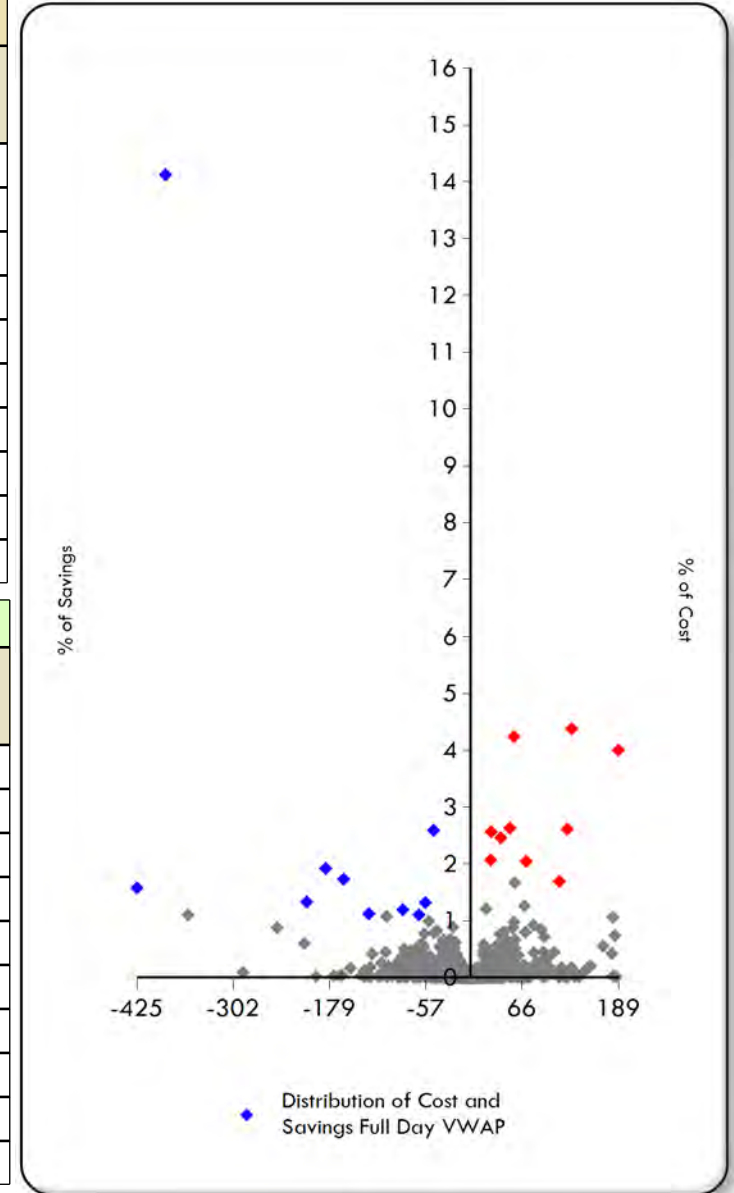
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	FRA	VIVENDI CO	20171117	902,183	4.38%	0.62	+129.27	LAZAR	MERRI
Sell	FRA	VALEO SA C	20171025	2,001,190	4.24%	0.57	+55.43	LAZAR	SOCIE
Buy	HKG	WH GROUP L	20171011	568,496	4.00%	1.21	+188.62	LSV A	CITIG
Sell	ITA	UNICREDIT	20171220	1,369,203	2.63%	1.05	+50.26	LAZAR	PERSH
Buy	FRA	VIVENDI CO	20171117	562,642	2.61%	0.58	+123.54	LAZAR	ITG
Sell	UK	WORLDPAY G	20171003	2,524,912	2.57%	N/A	+26.64	LAZAR	GOLDM
Sell	ITA	UNICREDIT	20171211	1,660,051	2.46%	0.51	+38.84	LAZAR	GOLDM
Sell	US	MEDTRONIC	20171009	2,087,521	2.07%	0.66	+25.97	LAZAR	BARCL
Sell	ITA	UNICREDIT	20171004	750,893	2.05%	1.28	+71.12	LAZAR	GOLDM
Buy	IND	PETRONET L	20171115	395,944	1.69%	1.11	+113.64	WILLI	JEFFE

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	UK	ASSURA PLC	20171204	843,176	14.12%	N/A	388.47	CBRE	STIFE
Buy	FIN	HUHTAMAKI	20171011	1,328,500	2.59%	-0.98	46.86	LAZAR	SKAND
Sell	AUS	OMV AG COM	20171013	256,109	1.92%	-1.19	184.26	LSV A	UBS
Buy	GER	CTS EVENTI	20171123	254,675	1.73%	-1.67	161.36	WILLI	ITG
Buy	UK	SHAFTESBUR	20171206	85,758	1.58%	N/A	424.73	CBRE	BNP P
Buy	ISR	FRUTAROM C	20171214	150,879	1.33%	-1.15	208.38	WILLI	UBS
Sell	SWI	FISCHER (G	20171108	558,242	1.32%	-2.21	57.34	LSV A	LIQUI
Sell	HKG	NEW WORLD	20171012	337,468	1.19%	-0.97	86.06	CBRE	DAIWA
Sell	AST	DEXUS REIT	20171212	212,162	1.12%	-2.85	129.37	CBRE	MERRI
Buy	US	ACCENTURE	20171221	403,082	1.10%	-1.05	65.58	LAZAR	CITIG





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VIVENDI COMMON STOCK EUR5.5 - 20171117

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	FRA	EUR	4834777	11/17/2017 09:00:00	11/17/2017 17:30:00	902,183	22.62	22.33	+11,514	+129.27	0.62	0.35



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.38% of your market impact cost.

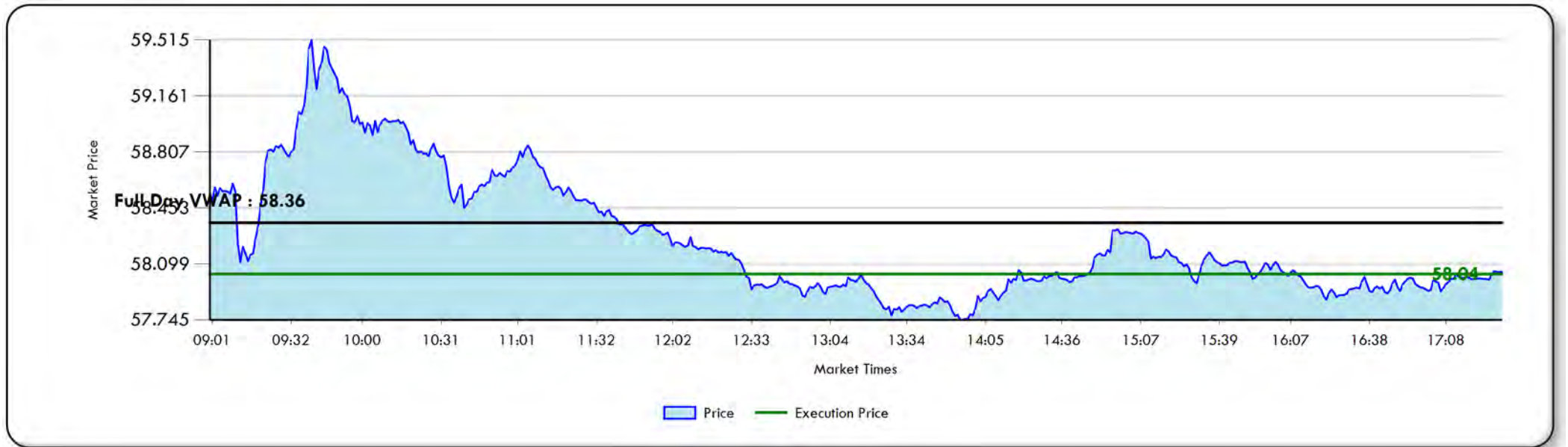


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TRADE LEVEL DETAIL - HIGH COST

VALEO SA COMMON STOCK EUR1.0 - 20171025

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	FRA	EUR	BDC5ST8	10/25/2017 09:00:00	10/25/2017 17:30:00	2,001,190	58.04	58.36	+11,154	+55.42	0.57	1.62



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.24% of your market impact cost.

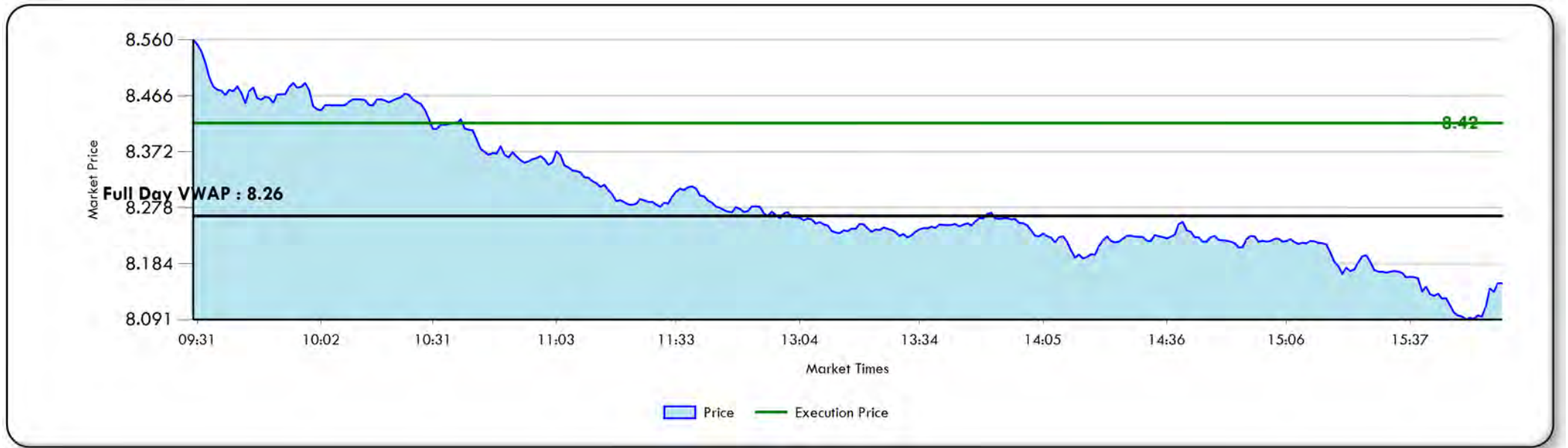


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WH GROUP LTD COMMON STOCK USD. - 20171011

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	CITIGROUP	HKG	HKD	BLLHKZ1	10/11/2017 09:30:00	10/11/2017 16:00:00	568,496	8.42	8.26	+10,524	+188.61	1.21	0.90



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.00% of your market impact cost.

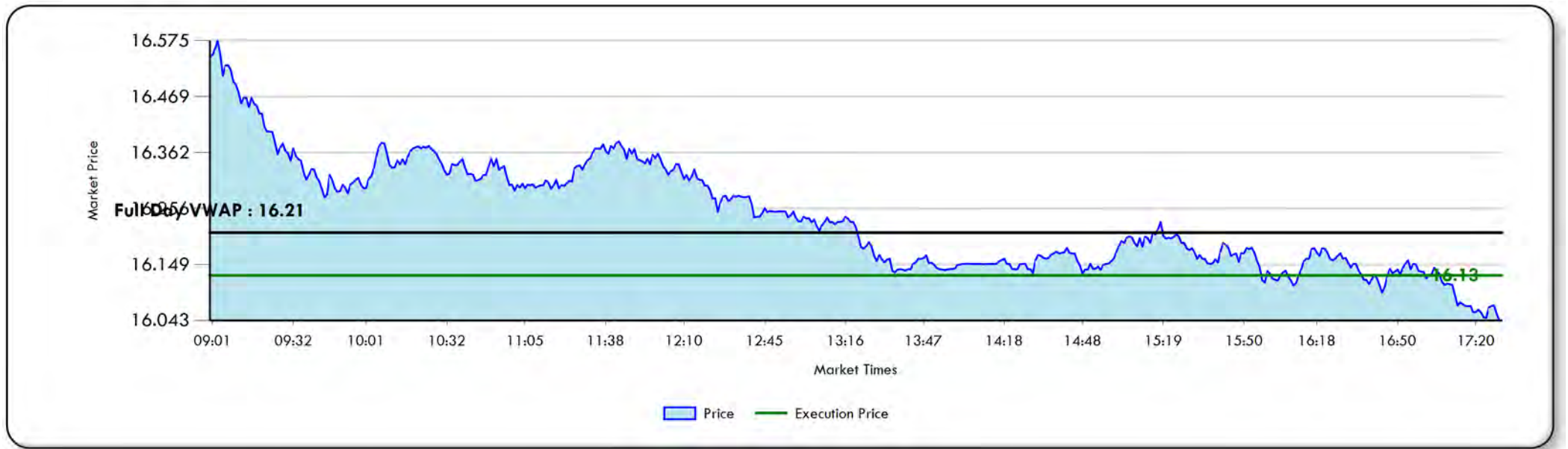


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

UNICREDIT SPA COMMON STOCK - 20171220

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	PERSHING	ITA	EUR	BYMXPS7	12/20/2017 09:00:00	12/20/2017 17:30:00	1,369,203	16.13	16.21	+6,917	+50.26	1.05	0.44



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.63% of your market impact cost.

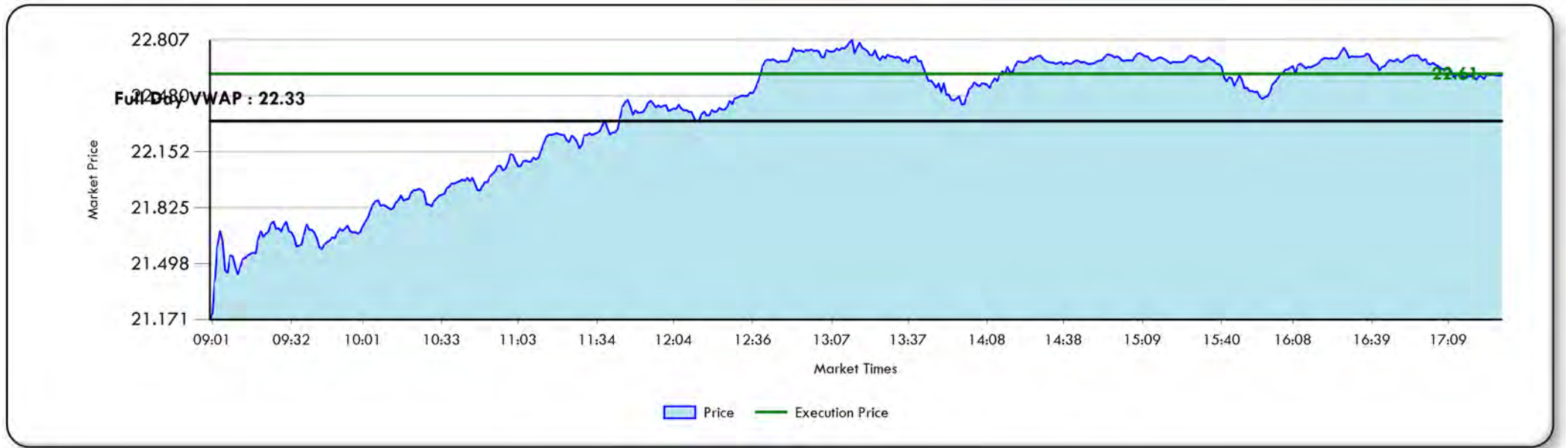


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VIVENDI COMMON STOCK EUR5.5 - 20171117

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	ITG	FRA	EUR	4834777	11/17/2017 09:00:00	11/17/2017 17:30:00	562,642	22.61	22.33	+6,866	+123.54	0.58	0.22



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.61% of your market impact cost.

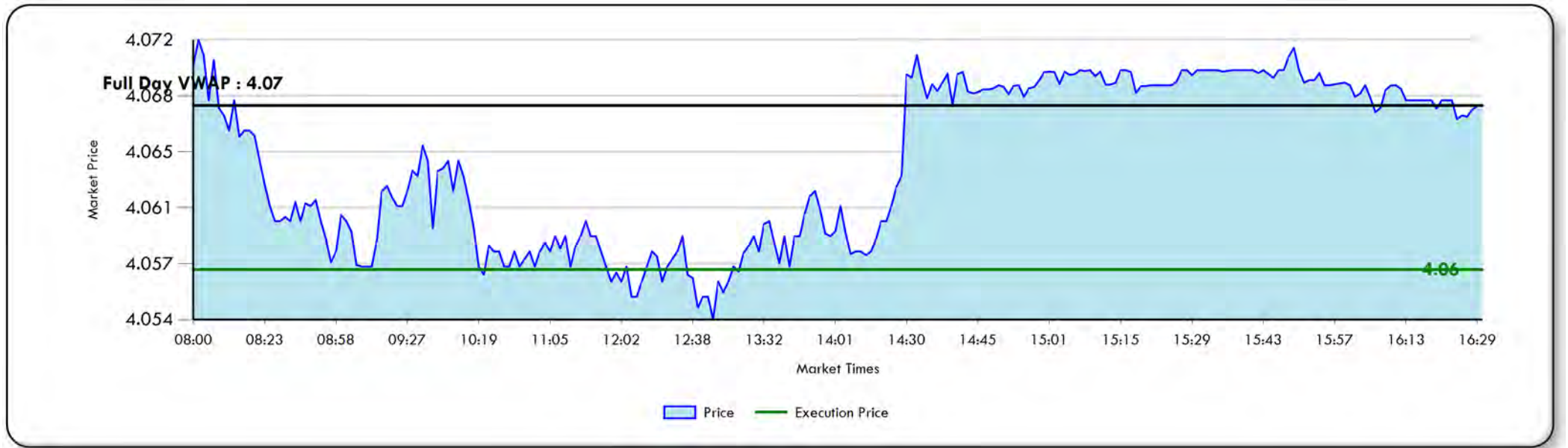


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TRADE LEVEL DETAIL - HIGH COST

WORLDPAY GROUP PLC COMMON STOC - 20171003

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	GOLDMAN SACHS	UK	GBP	BYK2V8	10/03/2017 08:00:00	10/03/2017 16:30:00	2,524,912	4.06	4.07	+6,743	+26.63	N/A	11.98



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.57% of your market impact cost.

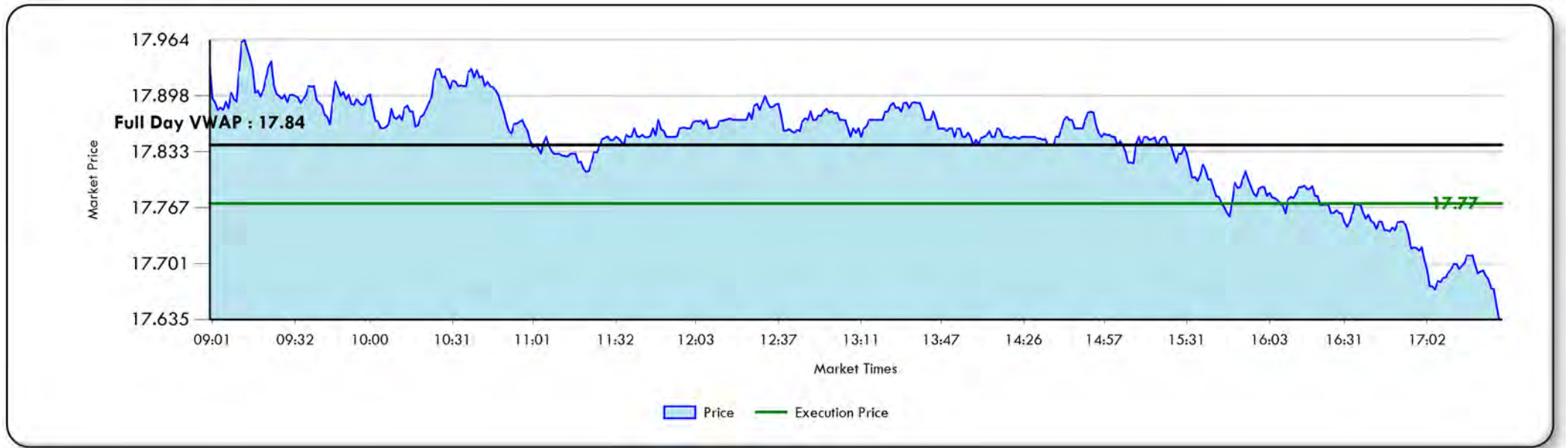


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TRADE LEVEL DETAIL - HIGH COST

UNICREDIT SPA COMMON STOCK - 20171211

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	GOLDMAN SACHS	ITA	EUR	BYMXPS7	12/11/2017 09:00:00	12/11/2017 17:30:00	1,660,051	17.77	17.84	+6,472	+38.83	0.51	0.51



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.46% of your market impact cost.

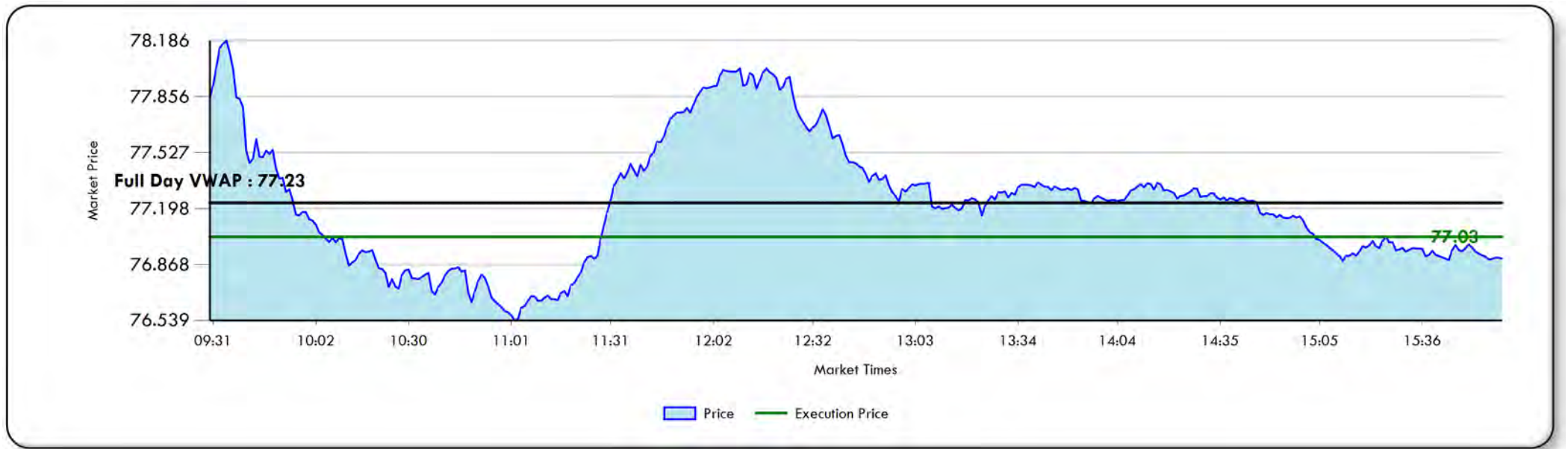


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TRADE LEVEL DETAIL - HIGH COST

MEDTRONIC PLC COMMON STOCK USD - 20171009

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	BARCLAYS	US	USD	BTN1Y11	10/09/2017 09:30:00	10/09/2017 16:00:00	2,087,521	77.03	77.23	+5,436	+25.97	0.66	0.22



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.07% of your market impact cost.

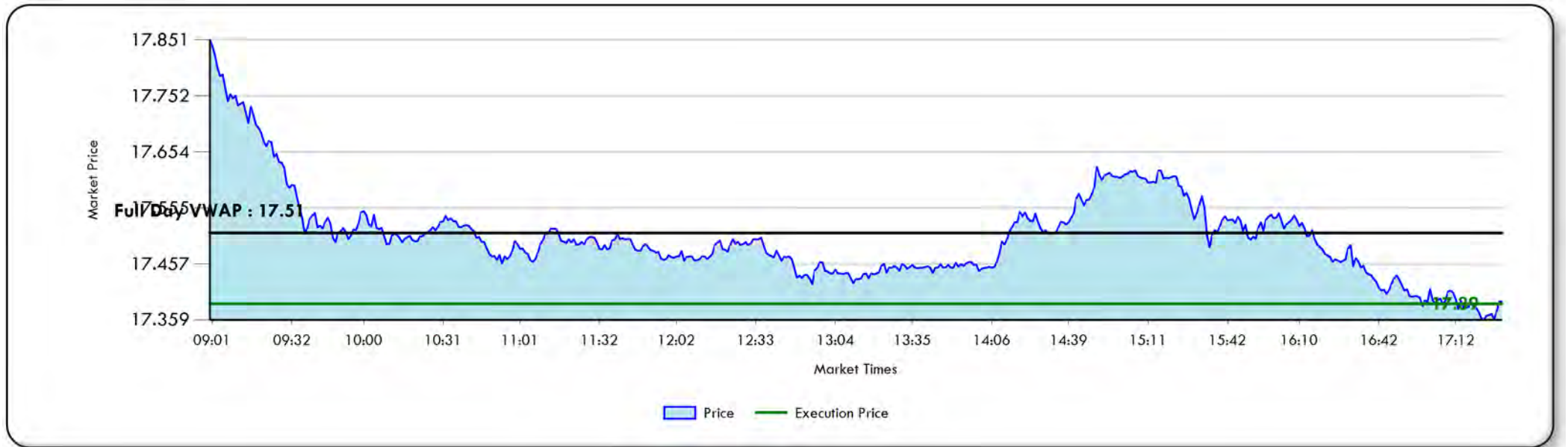


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

UNICREDIT SPA COMMON STOCK - 20171004

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	GOLDMAN SACHS	ITA	EUR	BYMXPS7	10/04/2017 09:00:00	10/04/2017 17:30:00	750,893	17.39	17.51	+5,379	+71.12	1.28	0.19



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.05% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PETRONET LNG LTD FOR COMMON ST - 20171115

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	JEFFERIES & CO	IND	INR	BOOKT68	11/15/2017 09:15:00	11/15/2017 15:30:00	395,944	259.39	256.47	+4,449	+113.63	1.11	1.52



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.69% of your market impact cost.

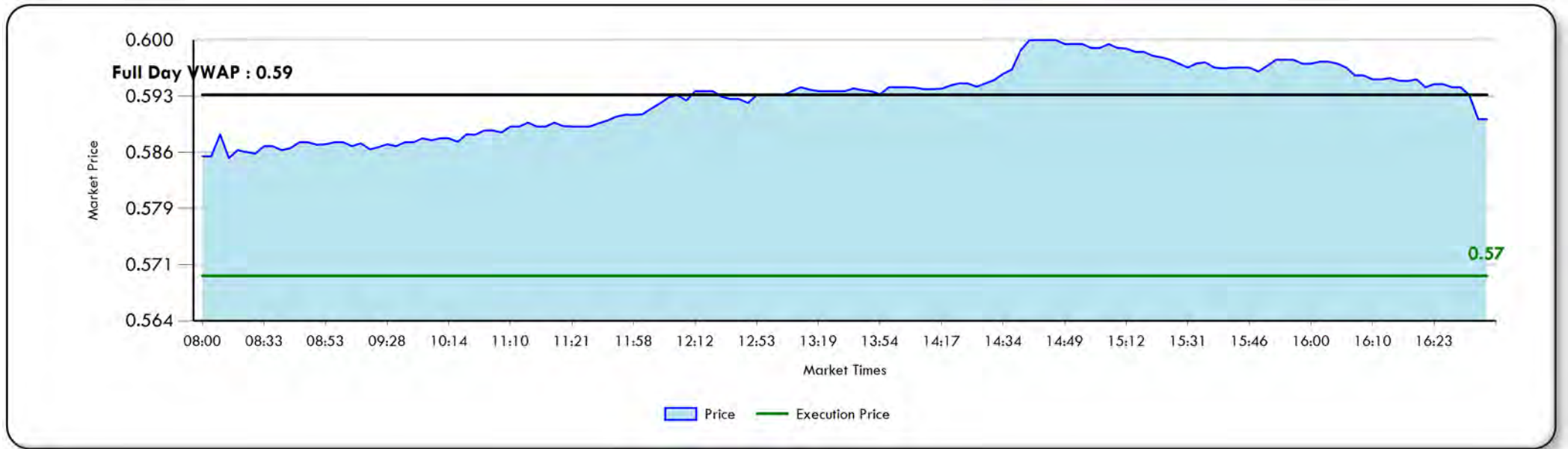


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ASSURA PLC REIT GBP.1 - 20171204

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)	STIFEL NICOLAUS & CO	UK	GBP	BVGBW W9	12/04/2017 08:00:00	12/04/2017 16:30:00	843,176	0.57	0.59	34,079	388.46	N/A	35.19



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 14.12% of your market impact cost.

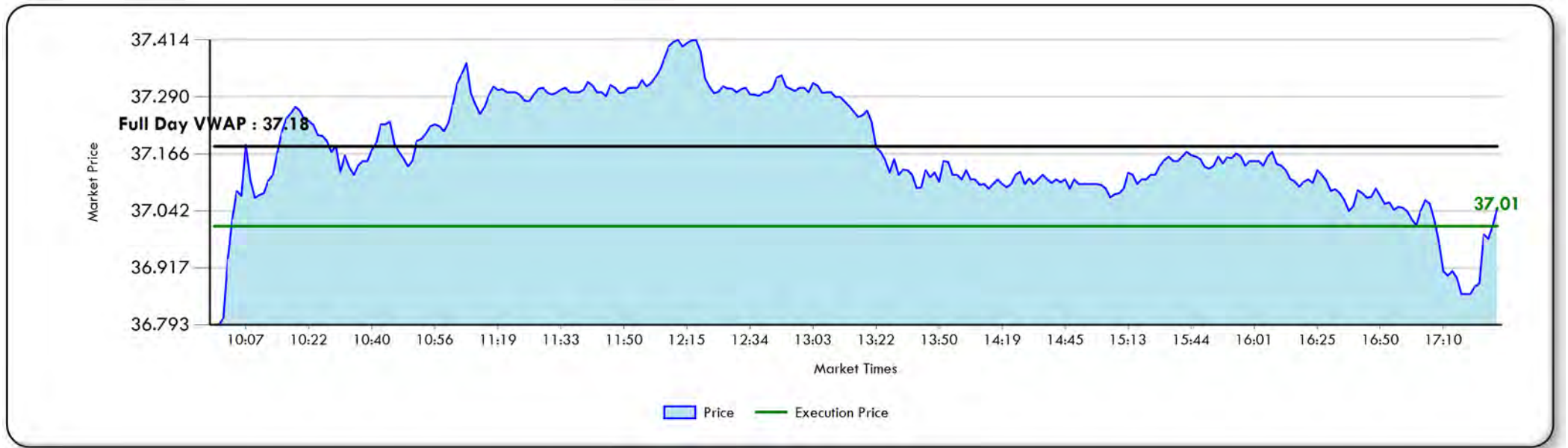


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

HUHTAMAKI OYJ COMMON STOCK - 20171011

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	SKANDINAVIS KA ENSKIL	FIN	EUR	4447476	10/11/2017 09:00:00	10/11/2017 17:30:00	1,328,500	37.01	37.18	6,255	46.85	-0.98	13.51



NOTES

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

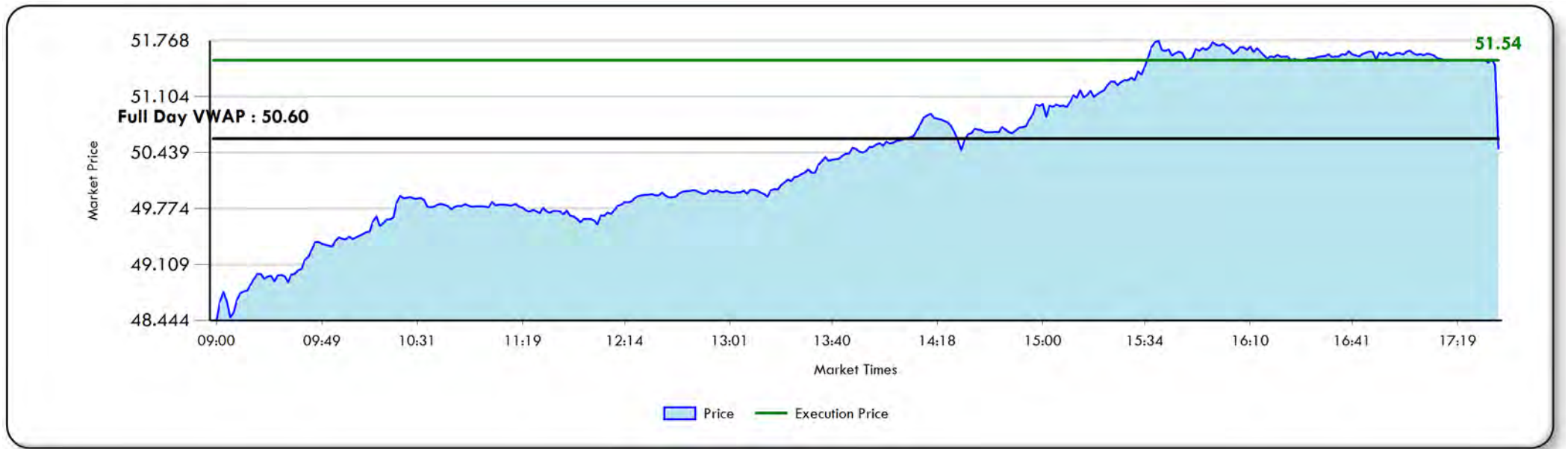


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

OMV AG COMMON STOCK - 20171013

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	UBS	AUS	EUR	4651459	10/13/2017 08:55:00	10/13/2017 17:35:00	256,109	51.54	50.60	4,634	184.26	-1.19	0.61



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.92% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

CTS EVENTIM AG + CO KGAA COMMO - 20171123

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	ITG	GER	EUR	5881857	11/23/2017 09:00:00	11/23/2017 17:30:00	254,675	39.13	39.78	4,177	161.35	-1.67	2.21



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.73% of your market impact cost.

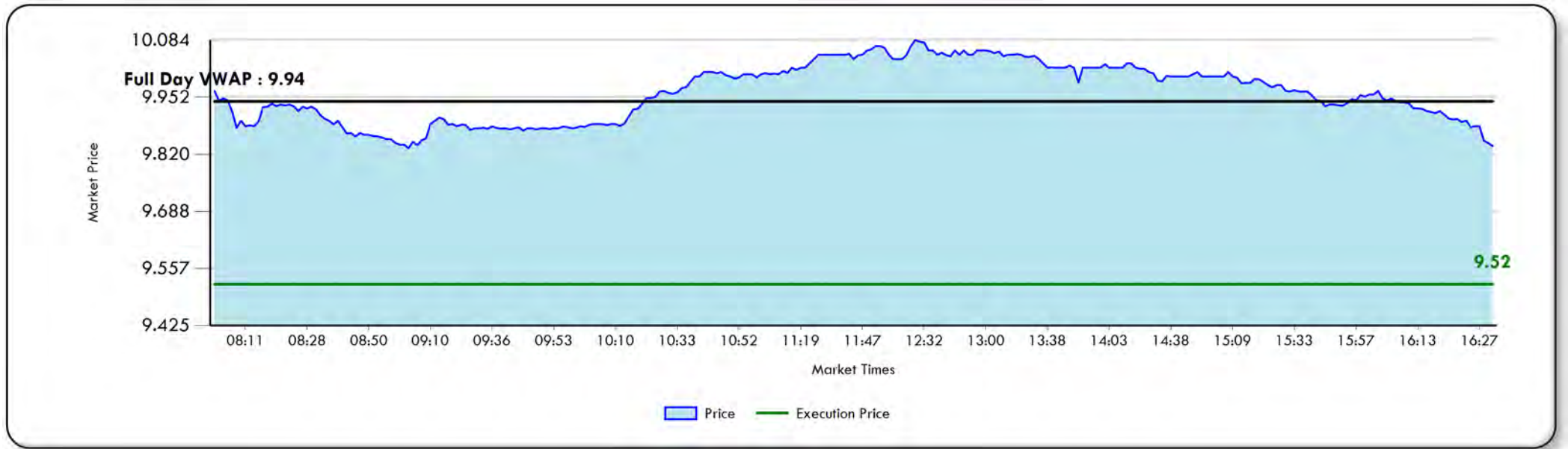


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SHAFESBURY PLC REIT GBP.25 - 20171206

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)	BNP PARIBAS	UK	GBP	0799096	12/06/2017 08:00:00	12/06/2017 16:30:00	85,758	9.52	9.94	3,804	424.72	N/A	1.02



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.58% of your market impact cost.

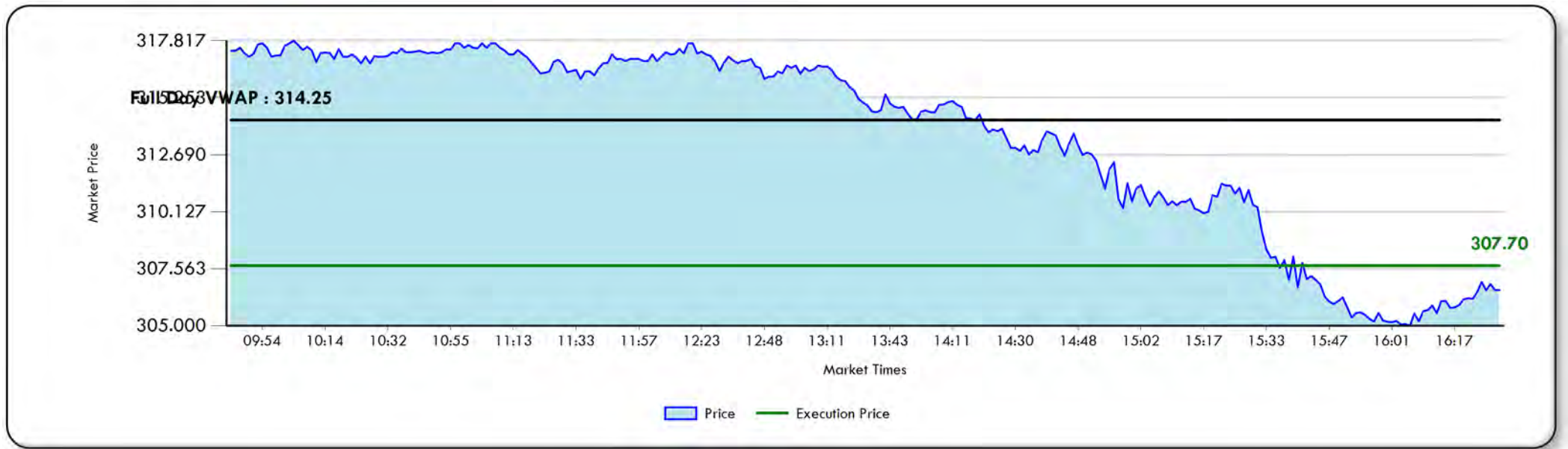


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FRUTAROM COMMON STOCK ILS1. - 20171214

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	UBS	ISR	ILS	6353418	12/14/2017 09:00:00	12/14/2017 16:30:00	150,879	307.70	314.25	3,211	208.38	-1.15	0.85



NOTES

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

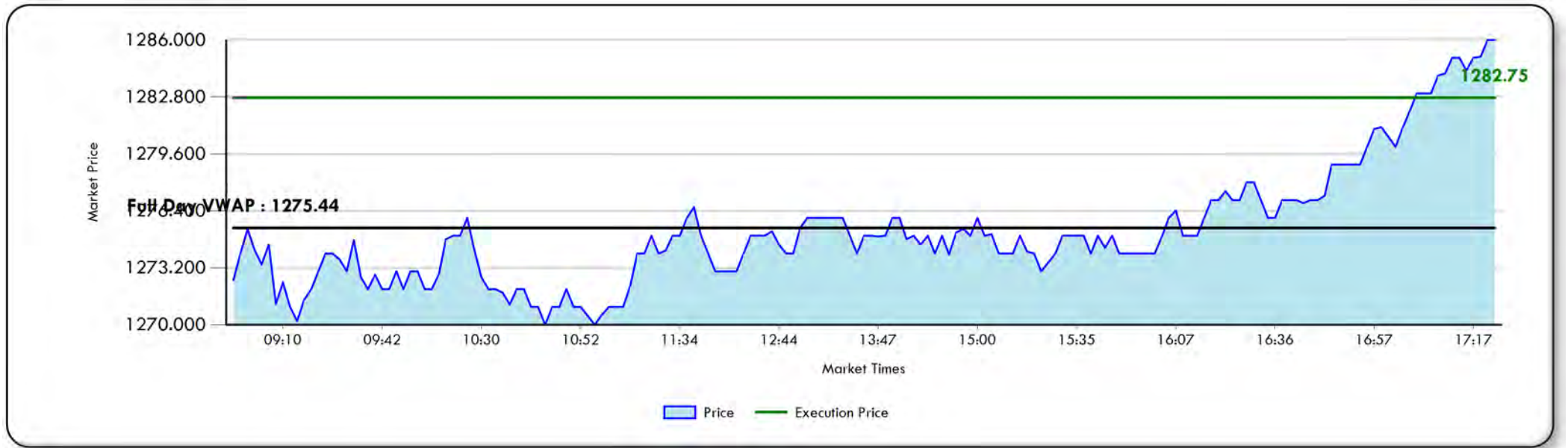


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FISCHER (GEORG) REG COMMON STO - 20171108

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	LIQUIDNET	SWI	CHF	4341783	11/08/2017 09:00:00	11/08/2017 17:20:00	558,242	1282.75	1275.44	3,183	57.33	-2.21	4.50



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.32% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NEW WORLD DEVELOPMENT COMMON S - 20171012

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	6633767	10/12/2017 09:30:00	10/12/2017 16:00:00	337,468	12.14	12.04	2,880	86.06	-0.97	0.75



NOTES

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

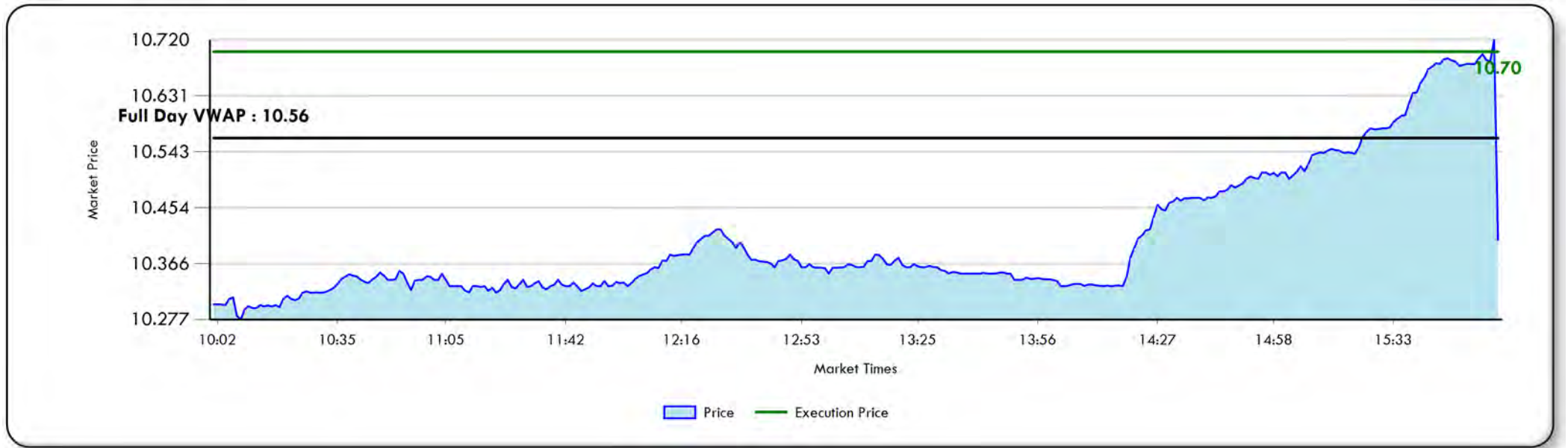


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DEXUS REIT - 20171212

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)	MERRILL LYNCH	AST	AUD	B033YN6	12/12/2017 10:00:00	12/12/2017 16:12:00	212,162	10.70	10.56	2,710	129.36	-2.85	0.78



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.12% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ACCENTURE PLC CL A COMMON STOC - 20171221

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	CITIGROUP	US	USD	B4BNMY3	12/21/2017 09:30:00	12/21/2017 16:00:00	403,082	155.03	156.05	2,661	65.58	-1.05	0.06



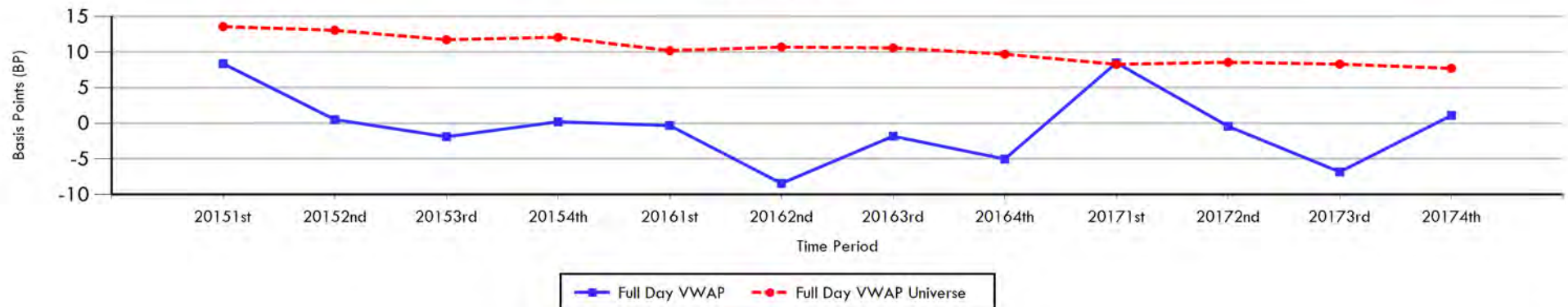
NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.10% 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)
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
20174th	198,018,280	+7.13	+14.19	+3.98	+4.19	+1.09	+7.70	13.88

TRADE HISTORY





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	5.97 BP	15.17 BP	1.28 BP	5.82 BP	22.27 BP
AUSTRIA	24.50 BP	13.96 BP	0.03 BP	10.73 BP	24.72 BP
BELGIUM	69.38 BP	13.85 BP	0.02 BP	6.32 BP	20.19 BP
BRAZIL	6.64 BP	15.45 BP	2.09 BP	11.25 BP	28.79 BP
CANADA	13.94 BP	14.66 BP	0.02 BP	6.37 BP	21.05 BP
CHILE	0.49 BP	17.54 BP	0.50 BP	6.33 BP	24.37 BP
CHINA	2.77 BP	14.42 BP	4.21 BP	3.06 BP	21.69 BP
COLOMBIA	0.84 BP	25.82 BP	0.82 BP	17.28 BP	43.92 BP
CZECH REPUBLIC	15.00 BP	20.68 BP	0.00 BP	5.24 BP	25.92 BP
DENMARK	56.18 BP	13.80 BP	0.01 BP	9.30 BP	23.11 BP
EGYPT	1.10 BP	33.26 BP	1.43 BP	12.53 BP	47.22 BP
FINLAND	18.53 BP	13.72 BP	0.02 BP	10.33 BP	24.07 BP
FRANCE - BUYS	49.90 BP	13.88 BP	30.00 BP	5.00 BP	48.88 BP
FRANCE - SELLS	53.91 BP	14.02 BP	0.00 BP	5.15 BP	19.17 BP
GERMANY	46.22 BP	13.99 BP	0.02 BP	6.30 BP	20.31 BP
GREECE	2.54 BP	15.80 BP	2.20 BP	21.93 BP	39.93 BP
HONG KONG	2.03 BP	14.34 BP	9.66 BP	2.33 BP	26.33 BP
HUNGARY	15.01 BP	19.08 BP	1.05 BP	4.42 BP	24.55 BP
INDIA	8.31 BP	16.73 BP	10.26 BP	4.13 BP	31.12 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDONESIA	0.41 BP	17.79 BP	8.82 BP	5.65 BP	32.26 BP
IRELAND - BUYS	0.39 BP	14.12 BP	100.00 BP	4.49 BP	118.61 BP
IRELAND - SELLS	4.83 BP	13.29 BP	0.00 BP	27.07 BP	40.36 BP
ISRAEL	6.35 BP	20.45 BP	0.08 BP	6.26 BP	26.79 BP
ITALY - BUYS	5.86 BP	13.82 BP	12.00 BP	4.15 BP	29.97 BP
ITALY - SELLS	6.45 BP	12.71 BP	0.00 BP	11.96 BP	24.67 BP
JAPAN	15.02 BP	14.27 BP	0.02 BP	8.63 BP	22.92 BP
KOREA - BUYS	61.45 BP	15.19 BP	0.00 BP	8.67 BP	23.86 BP
KOREA - SELLS	115.25 BP	18.90 BP	26.88 BP	4.89 BP	50.67 BP
LUXEMBOURG	11.51 BP	0.00 BP	0.00 BP	51.96 BP	51.96 BP
MALAYSIA	1.45 BP	14.92 BP	3.14 BP	2.53 BP	20.59 BP
MEXICO	2.20 BP	15.20 BP	0.00 BP	2.27 BP	17.47 BP
NETHERLANDS	33.94 BP	13.82 BP	0.22 BP	6.01 BP	20.05 BP
NEW ZEALAND	3.30 BP	14.02 BP	0.01 BP	9.85 BP	23.88 BP
NORWAY	13.23 BP	14.12 BP	0.02 BP	9.98 BP	24.12 BP
PERU	1.03 BP	19.00 BP	0.00 BP	9.11 BP	28.11 BP
PHILIPPINES - BUYS	0.39 BP	17.61 BP	29.50 BP	3.43 BP	50.54 BP
PHILIPPINES - SELLS	0.73 BP	21.86 BP	79.50 BP	1.88 BP	103.24 BP
POLAND	8.61 BP	14.75 BP	0.00 BP	7.10 BP	21.85 BP
PORTUGAL	8.22 BP	14.00 BP	0.01 BP	10.83 BP	24.84 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.03 BP	0.00 BP	0.01 BP	26.76 BP	26.77 BP
SINGAPORE	2.58 BP	14.18 BP	3.52 BP	3.30 BP	21.00 BP
SOUTH AFRICA - BUYS	9.84 BP	15.07 BP	23.67 BP	7.84 BP	46.58 BP
SOUTH AFRICA - SELLS	7.41 BP	13.99 BP	0.04 BP	5.87 BP	19.90 BP
SPAIN	7.16 BP	14.17 BP	0.01 BP	5.86 BP	20.04 BP
SWEDEN	15.03 BP	14.11 BP	0.02 BP	2.17 BP	16.30 BP
SWITZERLAND	57.61 BP	14.45 BP	0.05 BP	5.72 BP	20.22 BP
TAIWAN - BUYS	1.87 BP	15.43 BP	0.00 BP	2.78 BP	18.21 BP
TAIWAN - SELLS	2.43 BP	19.35 BP	28.45 BP	5.30 BP	53.10 BP
THAILAND	2.13 BP	15.95 BP	0.88 BP	4.56 BP	21.39 BP
TURKEY	2.52 BP	14.75 BP	0.02 BP	6.81 BP	21.58 BP
U.K. - BUYS	7.10 BP	14.16 BP	50.00 BP	3.32 BP	67.48 BP
U.K. - SELLS	8.06 BP	14.41 BP	0.00 BP	21.35 BP	35.76 BP
U.S.	46.81 BP	13.04 BP	0.12 BP	3.69 BP	16.85 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	15.96 BP	16.34 BP	7.99 BP	9.31 BP	33.64 BP

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SACRAMENTO COUNTY

US Fixed Income Analysis

Period End December 31, 2017



Sacramento County
Period End December 31, 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 October 01,2017 to December 31,2017. The analysis included trading of 649 trades in 254 different issues representing \$624,735,911 in principal across municipals, 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.

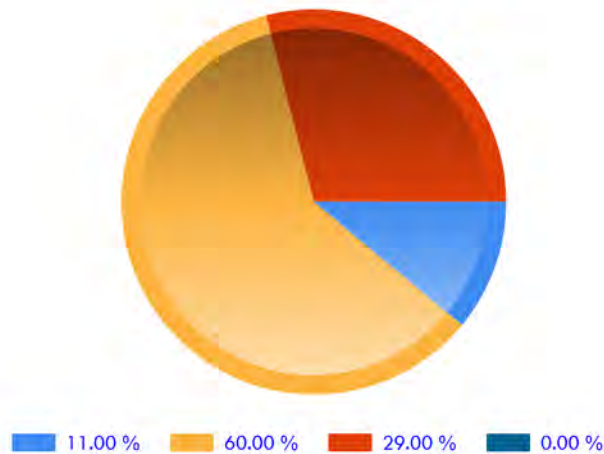
Results:

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	Q3 2017	Q2 2017	Q1 2017	Q4 2016
BUYS	307	302	161	+301.30	+9.82	+6.92	+89.07	+2.90	+5.81	+8.74	+7.88	+12.19
SELLS	318	347	173	338.60	10.65	+6.27	537.82	16.92	7.15	8.67	5.46	14.01
GRAND TOTAL	625	649	254	37.30	0.60	+6.59	448.75	7.19	0.96	0.14	+1.25	0.97

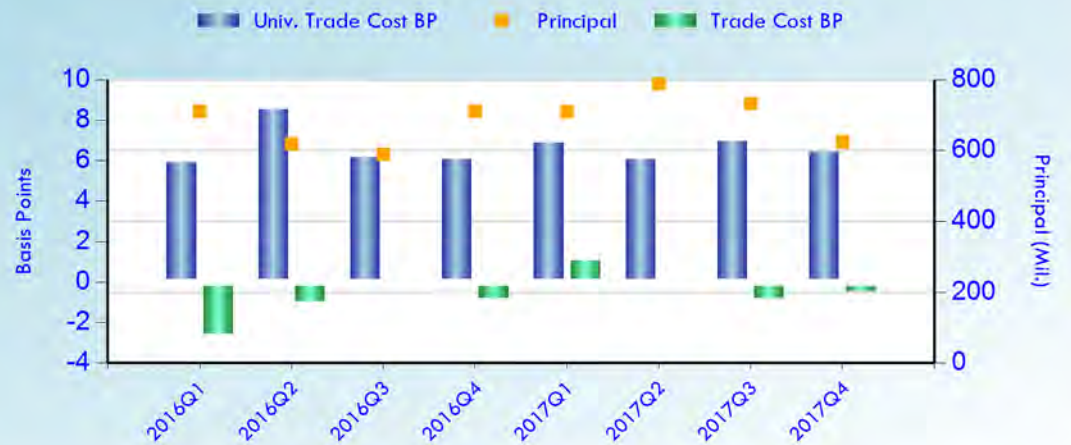
EXECUTIVE SUMMARY

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	Q3 2017	Q2 2017	Q1 2017	Q4 2016
Governments	373	258	83	+1.24	+0.03	+5.91	219.41	5.88	+0.10	+0.20	+0.12	+1.23
Mortgages	181	289	78	47.94	2.65	+4.31	125.80	6.96	2.35	1.17	+1.58	4.63
Corporates	69	99	90	+9.36	+1.35	+15.30	96.58	13.95	+6.87	+4.11	+6.12	+1.84
Municipals	2	3	3	+0.04	+0.24	+39.95	6.96	39.71	-	+34.00	-	19.52

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	291	573	244	26.99	0.93	+8.46	273.39	9.39
2~5	166	55	25	18.89	1.14	+4.95	101.11	6.09
5~10	109	17	13	+4.32	+0.39	+5.45	55.29	5.06
10~50	58	4	4	+4.27	+0.74	+4.01	18.96	3.27



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	373	258	83	+1.24	+0.03	+5.91	219.41	5.88
Corp-INVESTMENT GRADE	64	93	84	+8.99	+1.41	+14.17	81.30	12.76
Corp-High Yield	5	5	5	0.53	1.05	+27.25	14.29	28.30
Muni-INVESTMENT GRADE	2	3	3	+0.04	+0.24	+39.95	6.96	39.71
Mtge-INVESTMENT GRADE	<1	2	2	4.40	131.52	+11.94	4.80	143.46



EXECUTIVE SUMMARY

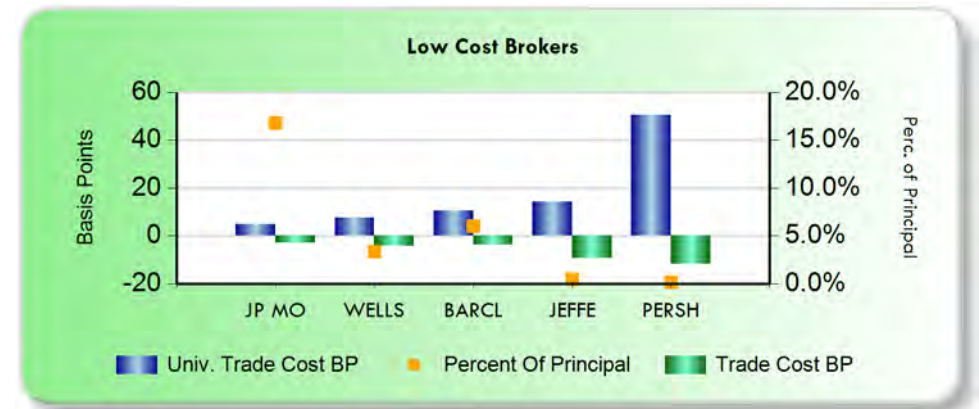
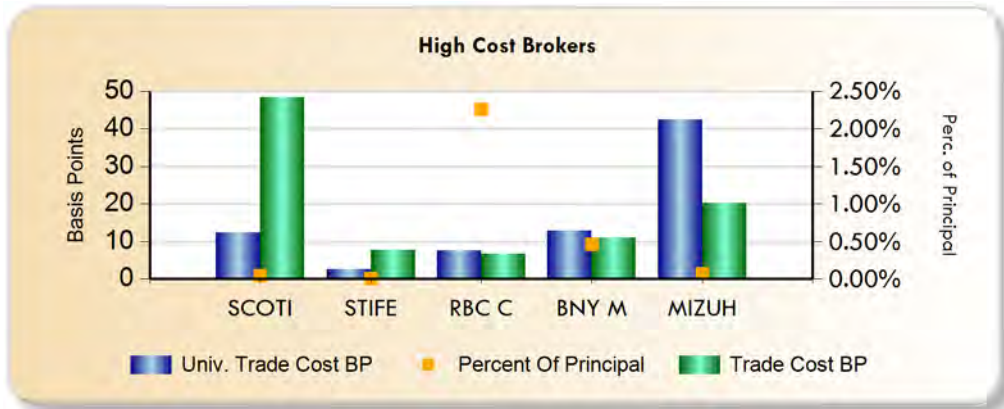
RATING SUMMARY

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	374.89	261	86	+1.42	+0.04	+5.92	220.66	5.88
N/A	171.87	260	54	40.38	2.35	+3.94	108.12	6.29
BBB	13.25	22	18	+0.70	+0.53	+14.79	18.90	14.26
BBB+	11.57	19	18	+1.37	+1.18	+10.86	11.19	9.68
BBB-	11.05	14	13	+7.78	+7.04	+14.73	8.49	7.69
N/A	8.85	28	23	2.26	2.56	+13.11	13.87	15.67
A+	8.46	9	9	3.40	4.02	+10.63	12.40	14.65
A	8.31	11	10	+6.85	+8.24	+22.28	11.67	14.04
A-	5.82	8	7	+1.62	+2.78	+11.33	4.97	8.55
BB+	5.05	5	5	0.53	1.05	+27.25	14.29	28.30



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)								
SCOTIA CAPITAL	<1	1	1	+1.47	+48.34	+12.36	+1.10	+35.98
STIFEL NICOLAUS & CO	<1	1	1	+0.04	+7.82	+2.60	+0.03	+5.22
RBC CAPITAL MARKETS	14	12	12	+9.59	+6.79	+7.52	1.03	0.73
BNY MELLON	3	3	3	+3.17	+10.94	+12.85	0.55	1.91
MIZUHO	<1	1	1	+0.90	+20.25	+42.37	0.99	22.12
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
JP MORGAN CHASE	105	60	31	30.74	2.93	+4.73	80.43	7.66
WELLS FARGO	21	49	32	9.08	4.33	+7.54	24.90	11.87
BARCLAYS	38	34	33	13.79	3.67	+10.59	53.57	14.26
JEFFERIES & CO	3	5	5	2.68	9.38	+14.27	6.77	23.65
PERSHING	<1	3	3	1.09	11.71	+50.58	5.79	62.29





COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country									
		Principal	No. of	No. of	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	Side	(Mil. \$)	Trades	Issues	(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	BUYS	307	302	161	+301.30	+9.82	+6.92	+89.07	+2.90
	SELLS	318	347	173	338.60	10.65	+6.27	537.82	16.92

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		Q3 2017	Q2 2017	Q1 2017	Q4 2016
METROPOLITAN WEST MG	413	182	69	36.91	0.89	+5.84	278.42	6.73	0.65	0.41	+1.15	0.87
NEUBERGER BERMAN	198	400	185	+0.73	+0.04	+8.16	161.07	8.12	2.33	+0.75	+1.51	1.36
BARCLAYS 1-10 YR TIP	13	67	25	1.12	0.86	+6.23	9.26	7.09	+1.53	2.32	2.44	+0.01

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		Q3 2017	Q2 2017	Q1 2017	Q4 2016
JP MORGAN CHASE	105	60	31	30.74	2.93	+4.73	80.43	7.66	1.28	0.27	+3.33	+0.16
NOMURA	101	85	53	13.51	1.34	+4.68	60.75	6.02	0.20	0.26	+0.69	1.73
GOLDMAN SACHS	96	81	58	10.18	1.06	+6.60	73.64	7.66	2.20	+0.50	1.12	0.65
BANK OF AMERICA	73	87	60	+6.74	+0.93	+8.05	51.88	7.12	+0.04	1.41	0.56	+0.16
BARCLAYS	38	34	33	13.79	3.67	+10.59	53.57	14.26	0.54	0.21	+1.22	+1.10
CREDIT SUISSE	32	26	21	+9.51	+2.95	+4.14	3.80	1.19	0.91	0.12	+3.00	7.64
CITIGROUP	24	68	48	3.53	1.44	+6.13	18.54	7.57	0.61	+1.26	+0.10	2.52
WELLS FARGO	21	49	32	9.08	4.33	+7.54	24.90	11.87	4.29	0.85	1.81	1.55
BNP PARIBAS	19	45	25	+4.92	+2.53	+3.94	2.74	1.41	3.23	6.63	0.47	2.42
RBS	18	6	5	3.69	2.00	+8.73	19.78	10.73	1.27	0.80	+0.55	0.69
DEUTSCHE BANK	18	15	13	1.01	0.57	+8.72	16.41	9.29	0.59	+1.52	+0.97	+5.13
MORGAN STANLEY	16	26	25	+9.56	+6.05	+9.26	5.06	3.21	3.19	0.56	+1.67	+3.49
RBC CAPITAL MARKETS	14	12	12	+9.59	+6.79	+7.52	1.03	0.73	1.66	+2.37	+1.90	8.01
BMO CAPITAL MARKETS	14	2	2	+0.17	+0.12	+0.81	0.96	0.69	+1.48	+1.17	+1.08	+0.70
HSBC BANK	13	6	6	+3.45	+2.73	+5.74	3.80	3.01	+1.99	+1.07	-	+2.17
UBS	4	11	10	+0.13	+0.35	+12.24	4.32	11.89	+0.93	4.65	+1.93	+1.98
BNY MELLON	3	3	3	+3.17	+10.94	+12.85	0.55	1.91	0.14	+5.13	+3.95	-
JEFFERIES & CO	3	5	5	2.68	9.38	+14.27	6.77	23.65	+0.61	+5.09	+17.01	0.19
US BANCORP	3	3	3	0.44	1.70	+13.09	3.84	14.79	-	-	+0.79	+52.79
PIERPONT SECURITIES	2	3	3	+0.41	+2.19	+12.90	2.02	10.71	+1.16	+4.82	12.69	+7.28

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	01F0426C FNCL 4.5 12/08	Mtge	11/06/2017 01/01/1900	METROPOLITAN WE BANK OF AMERICA	US	USD	8,966,812	106.875	106.290	+54.74	+49,082
B	912810RZ US TREASURY N/B 11/47 2.75	Govt	11/13/2017 11/15/2047	METROPOLITAN WE DEUTSCHE BANK	US	USD	5,105,800	98.000	97.602	+40.61	+20,735
B	912828M8 US TREASURY N/B 11/22 2	Govt	12/06/2017 11/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	5,211,937	99.750	99.400	+35.09	+18,288
B	9128283F US TREASURY N/B 11/27 2.25	Govt	12/12/2017 11/15/2027	METROPOLITAN WE NOMURA	US	USD	2,709,525	99.250	98.660	+59.45	+16,107
B	01F0326C FNCL 3.5 12/10	Mtge	11/07/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,639,946	102.922	102.301	+60.33	+15,926
B	912810RZ US TREASURY N/B 11/47 2.75	Govt	11/13/2017 11/15/2047	METROPOLITAN WE NOMURA	US	USD	3,483,900	98.000	97.602	+40.61	+14,149
B	912828M8 US TREASURY N/B 11/22 2	Govt	12/07/2017 11/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,117,187	99.750	99.340	+41.10	+12,813
B	02R0326B FGLMC 3.5 11/10	Mtge	10/05/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	1,709,021	102.953	102.299	+63.59	+10,867
B	02R0326C FGLMC 3.5 12/11	Mtge	11/07/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	1,708,762	102.938	102.304	+61.56	+10,519
B	912828M8 US TREASURY N/B 11/22 2	Govt	12/01/2017 11/30/2022	METROPOLITAN WE RBS	US	USD	6,176,630	99.623	99.460	+16.37	+10,110
B	01F0326B FNCL 3.5 11/10	Mtge	10/05/2017 12/31/2099	METROPOLITAN WE BNP PARIBAS	US	USD	2,351,318	102.902	102.478	+41.21	+9,689
B	912828M8 US TREASURY N/B 11/22 2	Govt	12/12/2017 11/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,645,551	99.480	99.190	+54.19	+8,917
B	01F0304B FNCL 3 11/10	Mtge	10/11/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,097,722	102.578	102.188	+38.08	+7,988
B	9128283C US TREASURY N/B 10/22 2	Govt	10/25/2017 10/31/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,319,239	100.322	99.737	+58.39	+7,703



S	9128283C US TREASURY N/B 10/22 2	Govt	12/27/2017 10/31/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	7,886,594	99.016	99.110	+9.53	+7,517
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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	01F0426C FNCL 4.5 12/10	Mtge	12/06/2017 01/01/1900	METROPOLITAN WE BANK OF AMERICA	US	USD	7,479,889	106.703	106.219	45.34	33,916
S	912810RY US TREASURY N/B 08/47 2.75	Govt	11/13/2017 08/15/2047	METROPOLITAN WE DEUTSCHE BANK	US	USD	5,133,971	97.977	97.540	44.56	22,876
S	9128282W US TREASURY N/B 09/22 1.875	Govt	12/06/2017 09/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	5,366,889	99.203	98.870	33.58	18,022
S	9128282R US TREASURY N/B 08/27 2.25	Govt	12/12/2017 08/15/2027	METROPOLITAN WE NOMURA	US	USD	2,773,164	99.219	98.653	56.99	15,803
S	912810RY US TREASURY N/B 08/47 2.75	Govt	11/13/2017 08/15/2047	METROPOLITAN WE NOMURA	US	USD	3,502,662	97.977	97.540	44.56	15,607
S	01F0326C FNCL 3.5 12/10	Mtge	12/11/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,637,942	102.844	102.258	57.00	15,037
S	9128282W US TREASURY N/B 09/22 1.875	Govt	12/07/2017 09/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,214,181	99.203	98.847	35.87	11,530
S	9128282S US TREASURY N/B 08/22 1.625	Govt	10/23/2017 08/31/2022	METROPOLITAN WE NOMURA	US	USD	3,097,070	98.633	98.300	33.70	10,437
S	9128283C US TREASURY N/B 10/22 2	Govt	12/01/2017 10/31/2022	METROPOLITAN WE RBS	US	USD	6,274,344	99.672	99.510	16.24	10,190
S	01F0406C FNCL 4 12/09	Mtge	11/13/2017 01/01/1900	METROPOLITAN WE BARCLAYS	US	USD	2,256,183	104.695	104.227	44.78	10,103
S	02R0326C FGLMC 3.5 12/11	Mtge	12/11/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,707,206	102.844	102.255	57.25	9,773
S	01F0304A FNCL 3 10/10	Mtge	10/11/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,100,039	102.691	102.226	45.32	9,518
S	01F0406C FNCL 4 12/09	Mtge	12/08/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,828,262	104.771	104.245	50.30	9,196
S	9128282W US TREASURY N/B 09/22 1.875	Govt	12/12/2017 09/30/2022	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,636,851	99.203	98.672	53.52	8,760
B	21H04261 G2SF 4.5 1/10	Mtge	12/14/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	8,480,171	105.344	105.450	10.09	8,553

Sacramento County
Period End December 31, 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	69	99	90	+9.36	+1.35	+15.30	96.58	13.95

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	373	258	83	+1.24	+0.03	+5.91	219.41	5.88

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	181	289	78	47.94	2.65	+4.31	125.80	6.96

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	2	3	3	+0.04	+0.24	+39.95	6.96	39.71



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	373	258	83	+1.24	+0.03	+5.91	219.41	5.88

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	171	259	53	41.28	2.41	+3.84	107.14	6.25
	9	28	23	2.26	2.56	+13.11	13.87	15.67
AA	<1	2	2	4.40	131.52	+11.94	4.80	143.46

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
BBB	13	22	18	+0.70	+0.53	+14.79	18.90	14.26
BBB+	12	19	18	+1.37	+1.18	+10.86	11.19	9.68
BBB-	11	14	13	+7.78	+7.04	+14.73	8.49	7.69
A+	8	9	9	3.40	4.02	+10.63	12.40	14.65
A	8	11	10	+6.85	+8.24	+22.28	11.67	14.04
A-	6	8	7	+1.62	+2.78	+11.33	4.97	8.55
BB+	5	5	5	0.53	1.05	+27.25	14.29	28.30
AA-	4	7	6	7.68	21.14	+13.28	12.51	34.42
AAA	<1	2	2	+0.18	+1.80	+4.95	0.32	3.16
AA+	<1	1	1	+1.58	+25.04	+38.35	0.84	13.31
N/A	<1	1	1	+0.90	+20.25	+42.37	0.99	22.12

RATING BY EACH BOND TYPE

MUNICIPALS - 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
AA+	1	2	2	+0.04	+0.41	+60.05	6.03	59.64
AAA	<1	1	1	+0.00	+0.00	+12.55	0.93	12.55

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
10/01/2017-12/31/2017	624,736	649	254	37.30	0.60	+6.59	448.75	7.19
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	2,857,429	2989		30.32	0.11	+6.76	1,960.73	6.86
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

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
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86
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	78	73	BLOOMBERGTERMINAL	72.57 %
	14	14	MARKETAXESS-TRADES	17.20 %
	7	7	ISSUE PRICE	10.22 %
GOVERNMENTS	256	82	BLOOMBERGTERMINAL	99.93 %
	2	1	ISSUE PRICE	0.07 %
MORTGAGES	227	33	TULLET PREBON	81.32 %
	62	46	BLOOMBERGTERMINAL	18.68 %
MUNICIPALS	3	3	MSRB-TRADES	100.00 %

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SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End December 31, 2017



Sacramento County
Period End December 31, 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 October 01,2017 to December 31,2017. The analysis included trading of 119 trades in 46 different issues representing \$47,359,236 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.

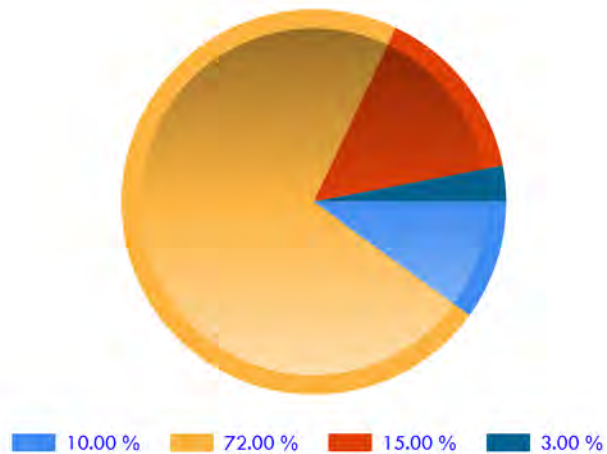
Results:

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	Q3 2017	Q2 2017	Q1 2017	Q4 2016
BUYS	23	64	28	+0.34	+0.15	+4.08	8.99	3.93	1.96	0.87	0.80	16.78
SELLS	25	55	26	22.30	9.10	+3.93	31.95	13.03	+5.23	+5.09	+6.72	+11.94
GRAND TOTAL	47	119	46	21.97	4.64	+4.00	40.93	8.64	+1.49	+1.65	+2.75	0.96

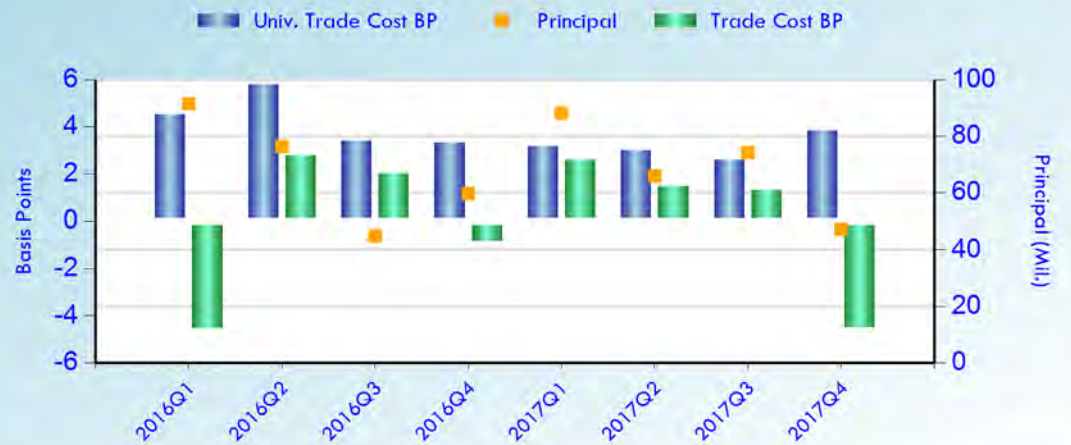
EXECUTIVE SUMMARY

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	Q3 2017	Q2 2017	Q1 2017	Q4 2016
Governments	34	80	20	+0.17	+0.05	+4.04	13.69	3.99	+1.09	+0.35	0.02	+5.81
Mortgages	7	10	8	21.09	29.94	+3.90	23.84	33.84	5.72	-	9.17	179.51
Corporates	5	25	16	1.29	2.85	+3.90	3.05	6.75	+4.20	+5.70	+9.80	+10.99
Municipals	2	4	2	+0.23	+1.53	+3.90	0.36	2.37	+0.00	-	-	-

Bonds by Principal Traded



Historical Trade Cost Trend

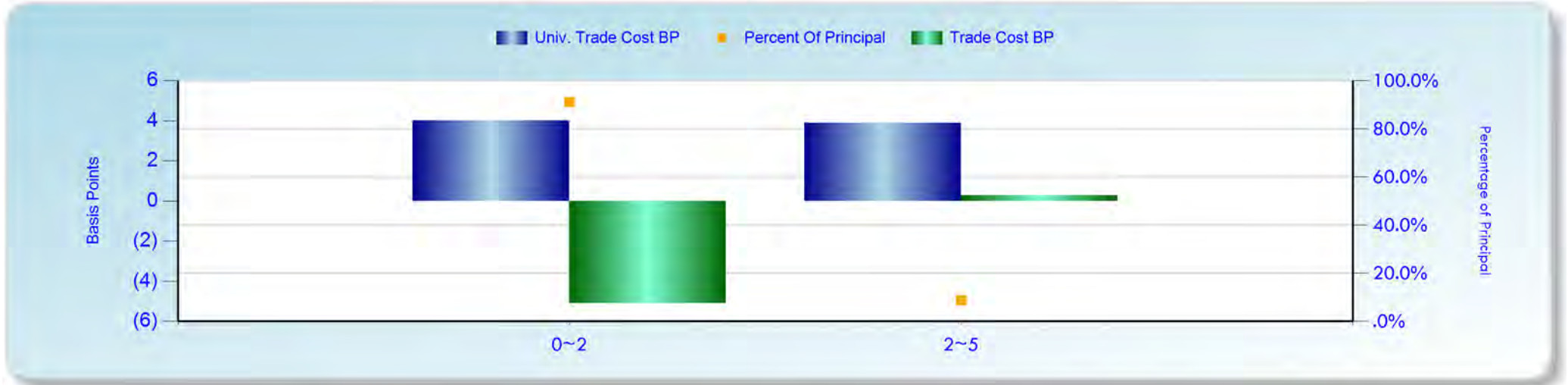




EXECUTIVE SUMMARY

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	43	117	45	22.08	5.11	+4.01	39.41	9.12
2~5	4	2	2	+0.11	+0.27	+3.90	1.52	3.63





EXECUTIVE SUMMARY

GRADING SUMMARY

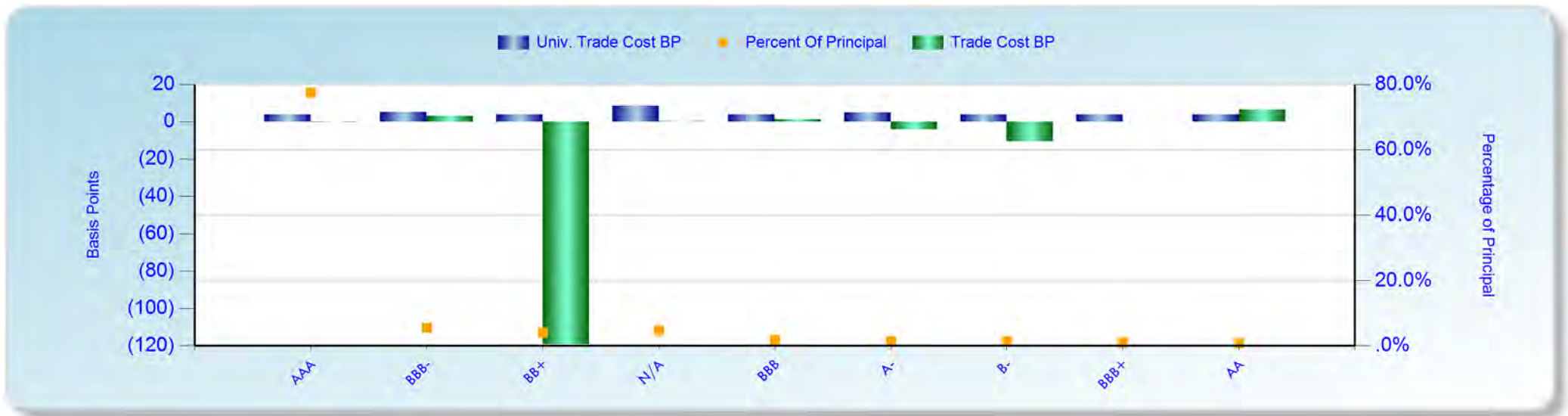
Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
Govt-INVESTMENT GRADE	34	79	19	+0.16	+0.05	+4.03	13.62	3.98
Mtge-INVESTMENT GRADE	4	5	4	+0.77	+2.11	+3.90	0.66	1.79
Corp-INVESTMENT GRADE	3	12	9	0.30	1.11	+3.90	1.36	5.01
Mtge-High Yield	2	1	1	22.54	119.17	+3.90	23.28	123.07
Muni-INVESTMENT GRADE	2	4	2	+0.23	+1.53	+3.90	0.36	2.37
Corp-High Yield	1	11	5	0.66	6.04	+3.90	1.08	9.94



EXECUTIVE SUMMARY

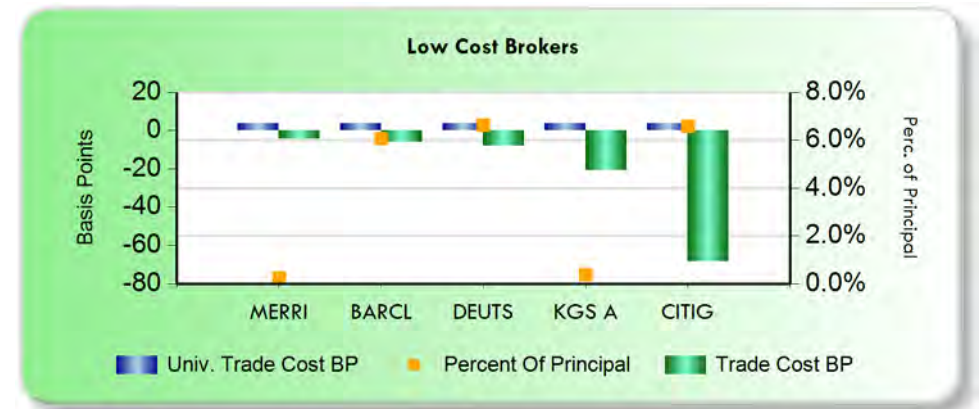
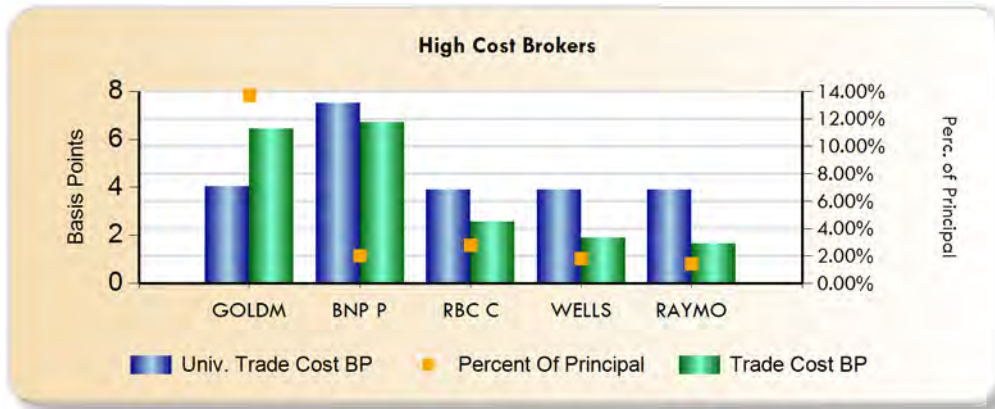
RATING SUMMARY

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	36.74	82	21	0.04	0.01	+3.90	14.37	3.91
BBB-	2.60	6	4	+0.81	+3.12	+5.24	0.55	2.12
BB+	1.89	1	1	22.54	119.17	+3.90	23.28	123.07
N/A	1.48	4	3	+0.68	+4.57	+3.90	+0.10	+0.67
BBB	<1	5	3	+0.12	+1.41	+3.90	0.21	2.49
N/A	<1	3	3	0.32	4.21	+4.73	0.67	8.94
A-	<1	3	3	0.29	4.08	+5.09	0.65	9.17
B-	<1	2	2	0.71	10.68	+3.90	0.97	14.58
BBB+	<1	1	1	+0.00	+0.00	+3.90	0.19	3.90
AA	<1	2	1	+0.27	+6.64	+3.90	+0.11	+2.74



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)								
GOLDMAN SACHS	6	13	9	+4.19	+6.45	+4.03	+1.57	+2.42
BNP PARIBAS	<1	2	2	+0.65	+6.71	+7.52	0.08	0.81
RBC CAPITAL MARKETS	1	6	4	+0.34	+2.57	+3.90	0.18	1.33
WELLS FARGO	<1	2	2	+0.16	+1.90	+3.90	0.17	2.00
RAYMOND JAMES	<1	4	2	+0.11	+1.66	+3.90	0.15	2.24
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
MERRILL LYNCH	<1	1	1	0.05	4.34	+3.90	0.10	8.24
BARCLAYS	3	6	6	1.76	6.14	+3.90	2.88	10.04
DEUTSCHE BANK	3	9	7	2.49	7.93	+3.90	3.72	11.83
KGS ALPHACAPITAL MKT	<1	1	1	0.37	20.62	+3.90	0.44	24.52
CITIGROUP	3	5	4	21.34	68.48	+3.90	22.55	72.38



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		Q3 2017	Q2 2017	Q1 2017	Q4 2016
UNITED STATES	46	116	43	22.96	4.97	+3.90	40.96	8.87	+1.48	+1.65	+2.75	1.79
LUXEMBOURG	1	2	2	+0.98	+8.40	+7.63	+0.09	+0.77	-	-	-	-
ARGENTINA	<1	1	1	+0.01	+3.12	+17.95	0.07	14.83	-	-	-	+98.99

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	22	62	26	.28	0.13	+3.90	8.81	4.03
	SELLS	24	54	25	22.68	9.34	+3.90	32.15	13.24
LUXEMBOURG	SELLS	<1	1	1	+0.38	+16.52	+7.63	+0.20	+8.89
	BUYS	<1	1	1	+0.60	+6.42	+7.63	0.11	1.21
ARGENTINA	BUYS	<1	1	1	+0.01	+3.12	+17.95	0.07	14.83

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	Q3 2017	Q2 2017	Q1 2017	Q4 2016
PRUDENTIAL INVESTMEN	47	119	46	21.97	4.64	+4.00	40.93 8.64	+1.49	+1.65	+2.75	0.96

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		Q3 2017	Q2 2017	Q1 2017	Q4 2016
GOLDMAN SACHS	6	13	9	+4.19	+6.45	+4.03	+1.57	+2.42	1.23	+2.07	1.83	+8.01
JP MORGAN CHASE	6	13	11	0.56	0.97	+3.90	2.79	4.87	0.81	+1.14	+16.69	5.64
MORGAN STANLEY	5	14	10	0.89	1.71	+4.02	2.98	5.73	0.11	+2.24	+4.01	+0.43
NOMURA	4	11	5	+0.14	+0.34	+3.90	1.52	3.56	+1.11	+1.88	+0.27	0.86
TD SECURITIES	3	8	6	+0.11	+0.35	+3.90	1.12	3.55	+2.52	0.63	0.76	-
DEUTSCHE BANK	3	9	7	2.49	7.93	+3.90	3.72	11.83	8.53	4.97	2.68	+20.96
CITIGROUP	3	5	4	21.34	68.48	+3.90	22.55	72.38	0.69	0.94	1.42	25.28
BANK OF AMERICA	3	6	4	+0.09	+0.30	+3.90	1.11	3.60	+2.20	+5.18	0.39	+4.64
BARCLAYS	3	6	6	1.76	6.14	+3.90	2.88	10.04	+4.04	+3.98	+5.85	+14.74
UBS	2	4	4	0.45	2.09	+3.90	1.30	5.99	+6.03	+2.78	+17.44	+28.08
CREDIT SUISSE	2	5	5	+0.26	+1.23	+3.90	0.55	2.67	+8.77	-	+2.39	+10.74
RBC CAPITAL MARKETS	1	6	4	+0.34	+2.57	+3.90	0.18	1.33	+4.95	+5.08	+14.09	+102.21
BNP PARIBAS	<1	2	2	+0.65	+6.71	+7.52	0.08	0.81	-	18.99	+3.73	+12.09
JEFFERIES & CO	<1	6	4	+0.00	0.03	+3.90	0.37	3.93	+7.07	+15.79	+53.68	+77.12
WELLS FARGO	<1	2	2	+0.16	+1.90	+3.90	0.17	2.00	+10.58	+7.31	+2.51	12.65
CITADEL SECURITIES	<1	2	2	0.11	1.29	+3.90	0.43	5.19	-	-	-	-
RAYMOND JAMES	<1	4	2	+0.11	+1.66	+3.90	0.15	2.24	-	-	+2.56	-
BNY MELLON	<1	1	1	+0.00	+0.00	+3.90	0.08	3.90	+4.73	+0.00	21.79	+8.30
KGS ALPHACAPITAL MKT	<1	1	1	0.37	20.62	+3.90	0.44	24.52	-	-	-	-
MERRILL LYNCH	<1	1	1	0.05	4.34	+3.90	0.10	8.24	+3.81	-	+7.64	-

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	36254CAV GS MORTGAGE SECURITIES TRUST	Mtge	10/02/2017 08/10/2050	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	531,700	102.250	102.800	+53.79	+2,860
B	9128283F US TREASURY N/B 11/27 2.25	Govt	11/13/2017 11/15/2027	PRUDENTIAL INVE NOMURA	US	USD	632,615	98.846	98.610	+23.89	+1,511
B	9128283F US TREASURY N/B 11/27 2.25	Govt	11/16/2017 11/15/2027	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	594,726	99.121	98.880	+24.32	+1,447
B	9128283J US TREASURY N/B 11/24 2.125	Govt	11/30/2017 11/30/2024	PRUDENTIAL INVE CREDIT SUISSE	US	USD	1,651,538	98.895	98.820	+7.54	+1,245
S	17290YAR CITIGROUP COMMERCIAL MORTGAG	Mtge	10/03/2017 05/10/2049	PRUDENTIAL INVE CITIGROUP	US	USD	607,265	101.211	101.350	+13.74	+834
S	9128283F US TREASURY N/B 11/27 2.25	Govt	11/14/2017 11/15/2027	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	1,374,091	98.855	98.910	+5.52	+758
S	9128282R US TREASURY N/B 08/27 2.25	Govt	10/27/2017 08/15/2027	PRUDENTIAL INVE MORGAN STANLEY	US	USD	650,280	98.527	98.630	+10.42	+678
B	BZ163Z7 ROMANIA SR UNSECURED REGS 10	Govt	10/03/2017 10/29/2035	PRUDENTIAL INVE BNP PARIBAS	LUX	EUR	934,072	106.125	106.057	+6.42	+599
B	9128282R US TREASURY N/B 08/27 2.25	Govt	10/02/2017 08/15/2027	PRUDENTIAL INVE CITIGROUP	US	USD	496,523	99.305	99.190	+11.55	+573
B	00507UAS ALLERGAN FUNDING SCS COMPANY	Corp	12/01/2017 03/15/2025	PRUDENTIAL INVE MORGAN STANLEY	US	USD	304,569	101.523	101.380	+14.09	+429
S	13057QAG CALIFORNIA RESOURCES CRP SEC	Corp	12/01/2017 12/15/2022	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	18,687	74.750	76.313	+209.04	+391
S	BJV4412 REPUBLIC OF SLOVENIA SR UNSE	Govt	11/20/2017 02/18/2024	PRUDENTIAL INVE GOLDMAN SACHS	LUX	USD	228,100	114.050	114.238	+16.52	+377
B	9128282R US TREASURY N/B 08/27 2.25	Govt	10/20/2017 08/15/2027	PRUDENTIAL INVE NOMURA	US	USD	474,712	98.898	98.820	+7.93	+377
S	9128282W US TREASURY N/B 09/22 1.875	Govt	10/30/2017 09/30/2022	PRUDENTIAL INVE NOMURA	US	USD	611,059	99.359	99.420	+6.11	+373



S	912828XB US TREASURY N/B 05/25 2.125	Govt	10/27/2017 05/15/2025	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	986,953	98.695	98.733	+3.78	+373
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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	81375WAB SECURITIZED ASSET BACKED REC	Mtge	11/17/2017 02/25/2034	PRUDENTIAL INVE CITIGROUP	US	USD	1,891,199	98.281	97.110	119.17	22,538
S	9128282R US TREASURY N/B 08/27 2.25	Govt	11/13/2017 08/15/2027	PRUDENTIAL INVE NOMURA	US	USD	646,812	98.750	98.520	23.29	1,507
S	831594AG REPUBLIC OF SLOVENIA SR UNSE	Govt	11/16/2017 02/18/2024	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	698,659	114.160	113.966	17.04	1,190
S	95000XAF WELLS FARGO COMMERCIAL MORTG	Mtge	10/27/2017 09/15/2050	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	256,835	102.734	102.260	46.18	1,186
B	9128282R US TREASURY N/B 08/27 2.25	Govt	10/27/2017 08/15/2027	PRUDENTIAL INVE BARCLAYS	US	USD	797,723	98.484	98.630	14.79	1,180
B	806GDD5 REPUBLIC OF ARGENTINA	Govt	11/02/2017 12/31/2033	PRUDENTIAL INVE MORGAN STANLEY	US	EUR	73,221	114.250	116.069	159.25	1,166
S	91831AAC VALEANT PHARMACEUTICALS COMP	Corp	11/07/2017 04/15/2025	PRUDENTIAL INVE CREDIT SUISSE	US	USD	64,500	86.000	85.054	109.99	709
B	46647PAL JPMORGAN CHASE + CO SR UNSEC	Corp	11/03/2017 11/15/2048	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	390,000	100.000	100.171	17.13	668
S	12595EAD COMM MORTGAGE TRUST COMM 201	Mtge	10/20/2017 09/10/2050	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	514,628	102.926	102.800	12.22	629
S	912810RX US TREASURY N/B 05/47 3	Govt	10/19/2017 05/15/2047	PRUDENTIAL INVE BARCLAYS	US	USD	274,357	103.531	103.310	21.37	586
B	9128282R US TREASURY N/B 08/27 2.25	Govt	10/06/2017 08/15/2027	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	544,263	98.957	99.030	7.37	401
S	95000XAF WELLS FARGO COMMERCIAL MORTG	Mtge	10/25/2017 09/15/2050	PRUDENTIAL INVE KGS ALPHACAPITA	US	USD	178,746	102.141	101.930	20.62	369
S	9128282R US TREASURY N/B 08/27 2.25	Govt	10/24/2017 08/15/2027	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	251,573	98.656	98.520	13.81	347
B	9128282R US TREASURY N/B 08/27 2.25	Govt	10/13/2017 08/15/2027	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	1,316,751	99.754	99.780	2.62	344
B	9128283C US TREASURY N/B 10/22 2	Govt	10/30/2017 10/31/2022	PRUDENTIAL INVE NOMURA	US	USD	604,716	99.953	100.010	5.69	344



AGENCIES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous.\$)	BP
CORPORATES	5	25	16	1.29	2.85	+3.90	3.05	6.75

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	34	80	20	+0.17	+0.05	+4.04	13.69	3.99

GOVERNMENTS



BOND TYPE PERFORMANCE

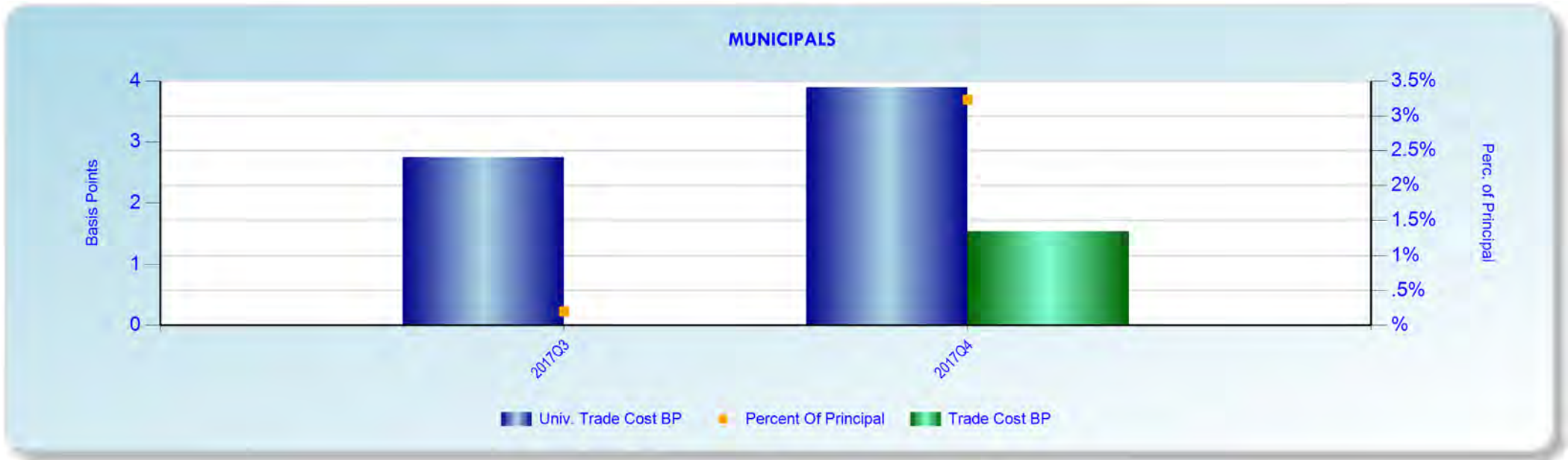
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
MORTGAGES	7	10	8	21.09	29.94	+3.90	23.84	33.84

MORTGAGES



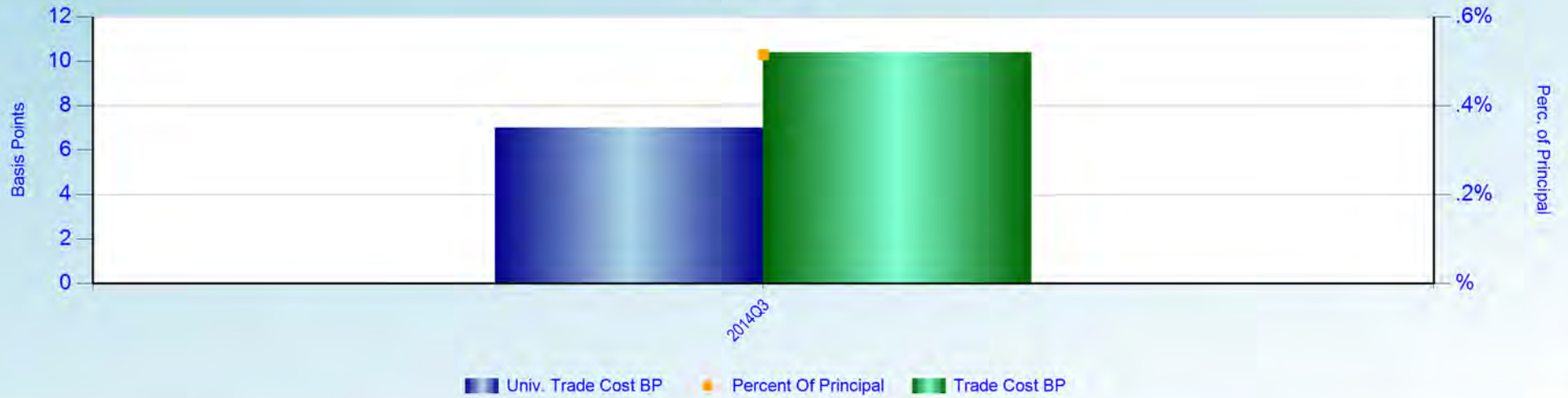
BOND TYPE PERFORMANCE

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	2	4	2	+0.23	+1.53	+3.90	0.36	2.37





UNCLASSIFIED



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	33	77	17	0.82	0.25	+3.90	13.71	4.15
BBB-	<1	1	1	+0.60	+6.42	+7.63	0.11	1.21
A-	<1	1	1	+0.38	+16.52	+7.63	+0.20	+8.89
N/A	<1	1	1	+0.01	+3.12	+17.95	0.07	14.83

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	5	4	+0.77	+2.11	+3.90	0.66	1.79
BB+	2	1	1	22.54	119.17	+3.90	23.28	123.07
	1	4	3	+0.68	+4.57	+3.90	+0.10	+0.67

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
BBB	<1	5	3	+0.12	+1.41	+3.90	0.21	2.49
N/A	<1	2	2	0.33	4.67	+3.90	0.60	8.57
B-	<1	2	2	0.71	10.68	+3.90	0.97	14.58
BBB-	<1	3	2	+0.25	+4.57	+3.90	+0.04	+0.67
BBB+	<1	1	1	+0.00	+0.00	+3.90	0.19	3.90
A-	<1	2	2	0.67	13.77	+3.90	0.86	17.67
AA-	<1	1	1	+0.00	+0.00	+3.90	0.14	3.90
B	<1	4	1	0.32	13.08	+3.90	0.41	16.98
BB-	<1	2	1	0.22	20.93	+3.90	0.27	24.83
CCC+	<1	3	1	+0.59	+80.20	+3.90	+0.56	+76.30

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
BBB-	1	2	1	0.04	0.34	+3.90	0.47	4.24
AA	<1	2	1	+0.27	+6.64	+3.90	+0.11	+2.74

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	33	77	17	0.82	0.25	+3.90	13.71	4.15
LUXEMBOURG	1	2	2	+0.98	+8.40	+7.63	+0.09	+0.77
ARGENTINA	<1	1	1	+0.01	+3.12	+17.95	0.07	14.83

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	7	10	8	21.09	29.94	+3.90	23.84	33.84

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	5	25	16	1.29	2.85	+3.90	3.05	6.75

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	2	4	2	+0.23	+1.53	+3.90	0.36	2.37

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
10/01/2017-12/31/2017	47,359	119	46	21.97	4.64	+4.00	40.93	8.64
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	275,858	643		+24.27	+0.88	+3.25	65.38	2.37
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

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
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44
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	20	11	BLOOMBERGTERMINAL	57.16 %
	3	3	ISSUE PRICE	26.24 %
	2	2	MARKETAXESS-TRADES	16.60 %
GOVERNMENTS	78	18	BLOOMBERGTERMINAL	98.69 %
	2	2	ISSUE PRICE	1.31 %
MORTGAGES	10	8	BLOOMBERGTERMINAL	100.00 %
MUNICIPALS	4	2	MSRB-TRADES	100.00 %

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