



## ITEM 09

### Executive Staff

Richard Stensrud  
Chief Executive Officer

Steve Davis  
Chief Investment Officer

Robert L. Gaumer  
General Counsel

Kathryn T. Regalia  
Chief Operations Officer

John W. Gobel, Sr.  
Chief Benefits Officer

**For Agenda of:**  
May 11, 2017

May 5, 2017

**TO:** President and Members  
Board of Retirement

**FROM:** JR Pearce  
Investment Officer

**SUBJECT:** Review of Trading Activity and Commission Recapture Program for  
First Quarter 2017

### **Recommendation:**

**It is recommended that your Board receives and file the attached trading cost analysis reports prepared by Elkins/McSherry and the commission recapture report from State Street.**

### **Background/Discussion:**

SCERS' policy governing trading of securities is outlined in Policy No. 2001-01 'Directed Brokerage Transaction and Commission Policy' ("Policy"). The Policy requires SCERS' investment managers to direct trades in a manner, which achieves best trading execution and lowers SCERS' brokerage commission costs. The Policy also includes the authority to direct commissions to brokers who participate in SCERS' commission recapture program if they will achieve the best execution. SCERS benefits from the recapture program by receiving a portion of the commissions directed from our managers in the form of a rebate. State Street Global Markets ("SSGM") administers the commission recapture program on behalf of SCERS.

SCERS utilizes Elkins/McSherry ("EM"), owned by State Street Bank, to track equity and fixed income trading activity on SCERS' total portfolio and to monitor each manager's trade execution performance. EM calculates and analyzes a manager's trade activity and compares the results with similar managers across EM's universe of approximately 1,400 institutional investors (pension funds, investment managers, banks, and brokers).

EM's trade analysis report will highlight potential manager trading issues and discussion points. If an investment manager is out of compliance over two or more quarters, Staff will review with the manager and hold them accountable. The EM trading activity reports will analyze and compare the following:

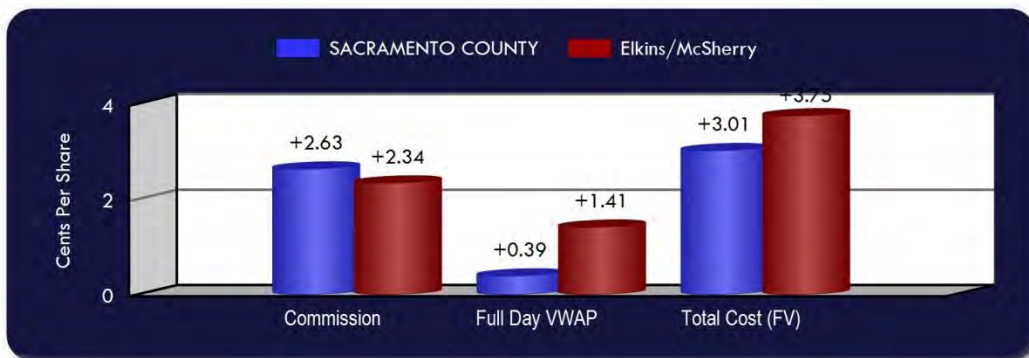
1. Commission Costs; both trade cost and any soft dollar costs.
2. Market Impact Cost; a trade performance measurement, which measures the difference between the manager's trade price and the market's volume-weighted average price (VWAP). VWAP is the average daily price of a security weighted by the volume of shares traded that day.
3. Total Trading Costs; equals commission costs plus market impact costs.

The trading comparisons are then aggregated and analyzed against the EM universe. Industry metrics used to measure trade performance include "cps" (cents per share) and "bps" (basis points = 1/100<sup>th</sup> of one % point).

**Trading Cost Summary:**

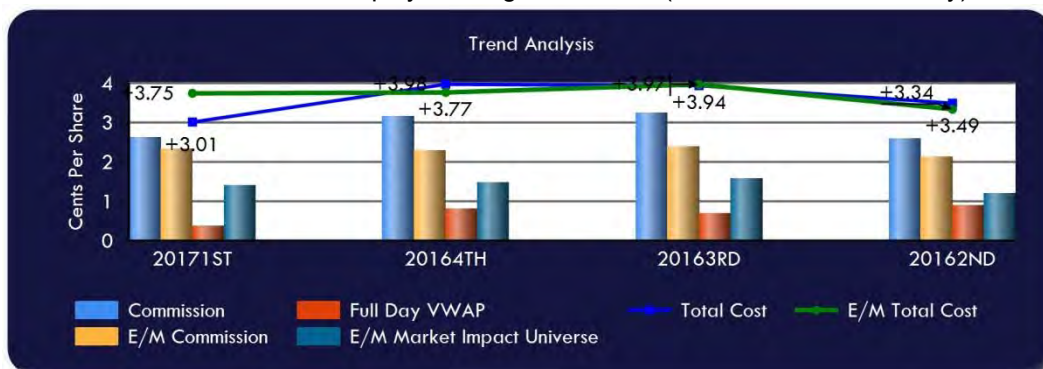
**US EQUITY:** During the quarter, SCERS' US equity portfolio traded 4.0 million shares representing approximately \$140.1 million on the AMEX, NASDAQ and NYSE exchanges, and ranked in the 58th percentile against the EM US Equity universe. SCERS generated a total trading cost of +3.01 cps, which is 0.73 cps less than the EM US Equity universe as follows: commission cost of +2.63 cps versus +2.34 cps and market impact cost (difference from VWAP) of +0.39 cps versus +1.41 cps. SCERS' market impact cost was better than 74% of the EM US Equity universe.

Exhibit: SCERS' US Equity Trading Cost Performance (source: Elkins McSherry)



During the quarter, a majority of SCERS' US Equity managers experienced unfavorable commission costs compared to the US Equity trading universe (+2.34 cps). CenterSquare, Broiwn Advisory, Wetherbies, DGHM, Wedge Capital, DGHM, and Eagle Capital, had commission costs more than the universe (+2.34 cps) at +3.26 cps, +2.62 cps, +3.31 cps, +3.93 cps, +2.91 cps, and +3.00 cps, respectively. However, as shown below, SCERS' US Equity managers have generally experienced higher commission costs than the universe.

Exhibit: SCERS' US Equity Trading Cost Trend (source: Elkins McSherry)



The managers with the highest commission costs during the quarter, and in general, were SCERS' US small cap managers, and SCERS' US REIT manager, CenterSquare. As noted in previous reports, related to SCERS' US small cap managers, Weatherbie, DGHM, Wedge Capital and UBS Global Asset Management, it is typical for active small-cap managers to incur additional commission costs by utilizing soft dollar relationships to direct trades to broker-dealers in exchange for brokerage research. Obtaining brokerage research can be an effective and necessary means for small cap investment managers to execute their investment strategies. Commission costs are generally higher due to the additional approximate 2.0 cps added to pay for research, but it is also expected that market impact costs should be lower. The benchmark rate of 2.0 cps for the US equity trading universe does incorporate a range of market capitalization managers, so the US small cap manager commission costs in SCERS' portfolio can be higher to a degree.

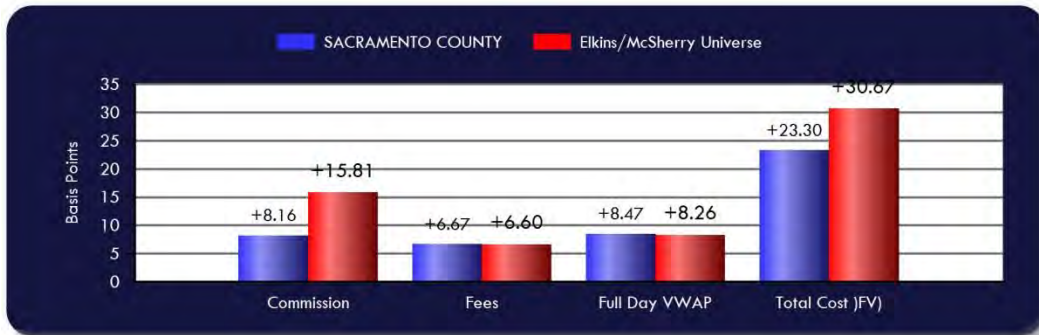
According to Elkins McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.52 cps, which is higher than several of SCERS' US Small Cap managers, except DGHM. DGHM commission cost at +3.93 cps was the highest among the managers and exceeded the universe of +2.34 cps. Staff will follow up with DGHM. However, to understand the commission costs paid by SCERS' managers, Staff and Verus believe it may be prudent at some time to re-engage a formal third party audit and review of the commission costs, which SCERS has performed in the past.

During the quarter, the majority of SCERS' US Equity managers experienced favorable market impact costs compared to the US Equity trading universe (+1.41 cps), except for Huber Capital (+1.60 cps), Wedge Capital (+1.51 cps), and UBS Global (+3.25 cps). Staff will review the costs with the managers.

**INTERNATIONAL EQUITY:** During the quarter, SCERS' International Equity portfolio traded 26.4 million shares representing approximately \$19.3 million across 31 countries. SCERS generated a total trading cost of +23.30 bps, which is +7.37 bps lower than the EM International Equity universe, as follows: commission cost (+8.16 bps), fees (country taxes, tariffs, and other exchange charges) (+6.67 bps), and market impact cost (+8.47 bps). This compares favorably to the EM International Equity universe's commission cost, fee

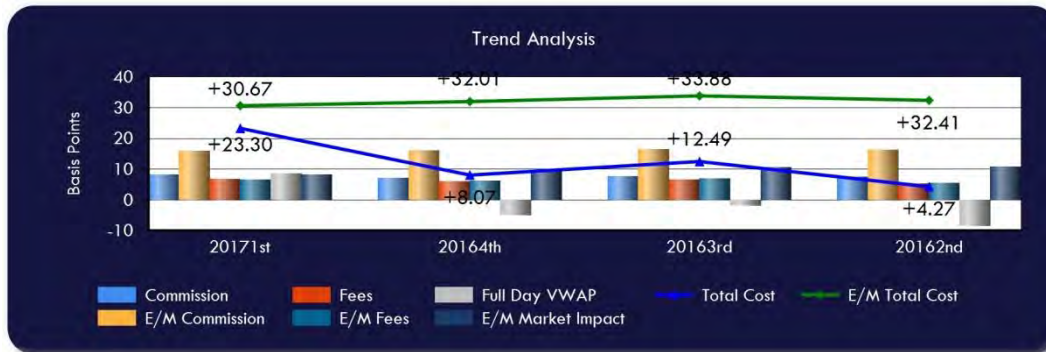
cost, market impact cost, and total trading cost, of +15.81 bps, +6.60 bps, +8.269 bps, and +30.67 bps, respectively.

Exhibit: SCERS' International Equity Trading Cost Performance (source: Elkins McSherry)



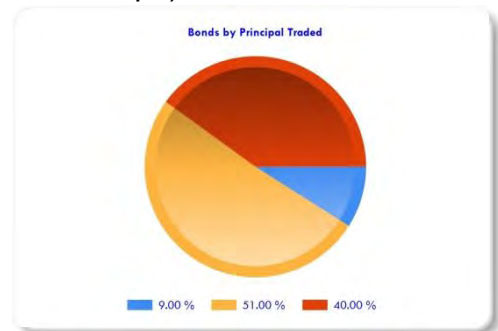
All of SCERS' International Equity managers generated commission costs (ranging from +1.63 bps to +11.03 bps), significantly less than the commission costs of the EM International Equity universe (ranging from +14.84 bps to +18.17 bps). This result is consistent with the previous quarters' lower trade costs than the EM peer group universe, as shown below.

Exhibit: SCERS' International Equity Trading Cost Trend (source: Elkins McSherry)



During the quarter, three of SCERS' International Equity managers experienced unfavorable market impact costs, as follows: Lazard Asset Management (+11.92 bps versus +8.30 bps), William Blair (+14.16 bps versus +9.30 bps), and S&P Global Infrastructure (+16.14 bps versus +7.02 bps).

**US FIXED INCOME:** During the quarter, SCERS' US Fixed Income managers conducted 779 trades totaling approximately \$710.3 million, across mortgages, governments, corporates, and municipals. For the quarter, SCERS' US Fixed Income trading cost was +1.25 bps, which was +5.82 bps lower than the EM US Fixed Income universe of +7.07 bps, and specifically





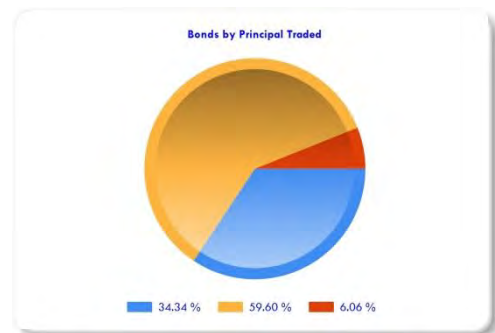
lower in Governments (by +7.18 bps), Mortgages (by +3.93 bps), and Corporates (by +6.54 bps). This result is consistent with the previous quarters' lower trade costs than the EM peer group universe, as shown below.

Exhibit: SCERS' US Fixed Income Trading Cost Trend (source: Elkins McSherry)



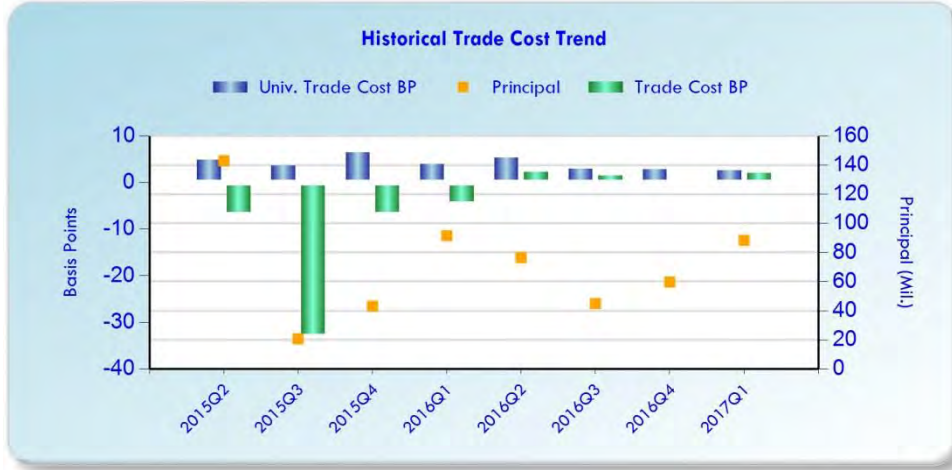
SCERS traded \$361 million in Governments, \$285 million in Mortgages, and \$64 million in Corporates. SCERS' domestic US Core Plus Fixed Income managers had trading costs below the US Fixed Income universe; TCW/MetWest (+1.15 bps versus +7.15 bps) and NeubergerBerman (+1.51 bps versus +6.96 bps).

**INTERNATIONAL FIXED INCOME:** SCERS' dedicated Global Fixed Income manager is Brandywine. SCERS is invested in Brandywine's commingled fund and their trading activity is not covered by EM. However, Prudential, one of SCERS' Core Fixed Income managers, is permitted per the investment management agreement to invest up to 20% in international bonds or non-US denominated bonds. Therefore, EM produces a special global fixed income report to capture Prudential's domestic and international trades.



During the quarter, Prudential conducted 207 international trades totaling approximately \$88.3 million, as follows: \$52 million in Governments, \$30 million in Corporates, and \$6 million in Mortgages. Prudential's total trading cost was +2.75 bps, which was +0.57 bps lower than the EM peer group cost of +3.32 bps; and specifically, lower in Governments (by +3.34 bps) and Mortgages (by +12.50 bps), but was higher in Corporates (by +6.47 bps). This result is consistent with the previous quarters' lower trade costs than the EM peer group universe, as shown below.

Exhibit: SCERS' Global Fixed Income Trading Cost Trend (source: Elkins McSherry)



**Commission Recapture:**

SCERS' commission recapture program is administered by State Street and is designed to allow SCERS' investment managers opportunities to direct trades to a specialized list of brokerage firms within the program. SCERS' investment managers are instructed to trade with brokerage partners in the commission recapture program when it is beneficial in lowering overall trading costs and achieving "best execution." A portion of the commissions paid to SCERS' select list of brokers (approximately 60%) is then rebated for SCERS' benefit.

During the quarter, SCERS' commission recapture program generated \$11,471 in commission rebates. For the year-to-date 2017, SCERS has earned \$11,471 in rebates. As a comparison, SCERS earned rebates of \$61,946 in 2016, \$47,309 in 2015, and \$105,736 in 2014. The rebates decreased in 2015 due to the termination of Barings Asset Management in 2014, which was an active participant in the SCERS commission recapture program.

We would be happy to answer any questions.

Respectfully submitted,

Concur:

JR Pearce  
 Investment Officer

Richard Stensrud  
 Chief Executive Officer

Steve Davis  
 Chief Investment Officer

Attachments



## SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End March 31, 2017





## REPORT CONTENTS

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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 U.S. equity executions from January 1 , 2017 to March 31, 2017. The analysis included trading of 3,961,231 shares representing \$140.14 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"> <li>Your commission cost was +2.63 cps (+7.43 bp) or +\$104,144 (+0.29 cps (+0.83 bp) worse than the Elkins/McSherry All Trading Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact cost was +0.39 cps (+1.09 bp) or 1.02 cps (2.90 bp) better than the Elkins/McSherry Universe</li> <li>Your overall trading cost of +3.01 cps (+8.52 bp) was 0.73 cps (2.07 bp) better than the Elkins/McSherry Universe</li> <li>Full Day VWAP Universe Rank: 74%</li> <li>Total Cost Universe Rank: 58%</li> </ul>	<ul style="list-style-type: none"> <li>E-Score Rank : 61</li> <li>E-Score : 0.51</li> </ul>

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	75 %	+1.41
				25 %	+0.35
					+3.09



(+) = Cost

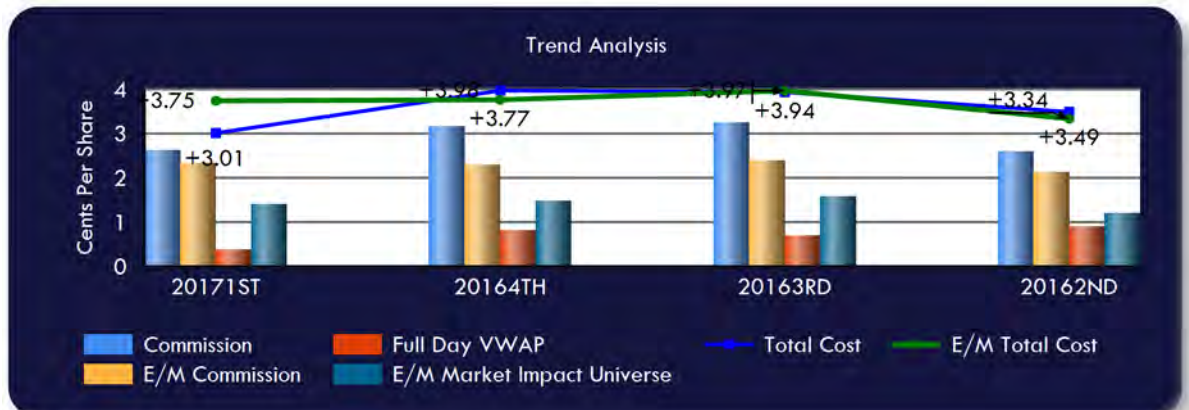
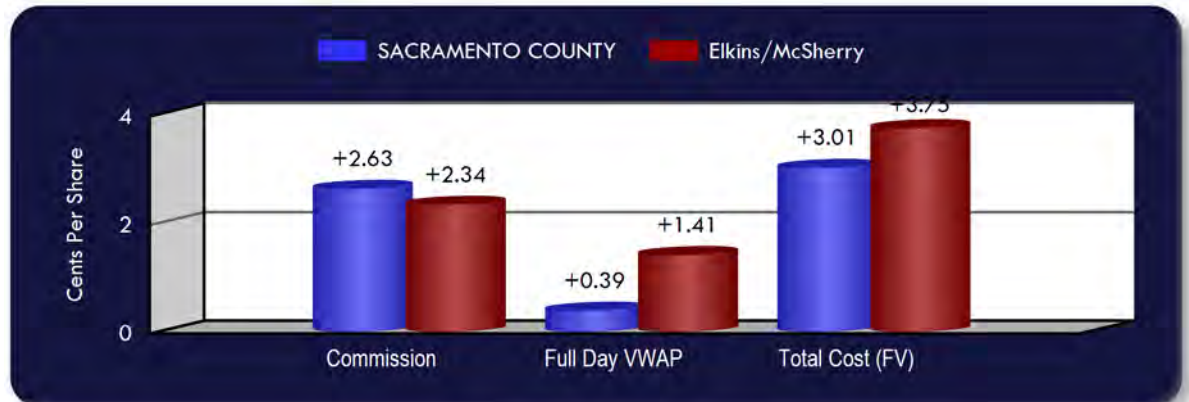
**EXECUTIVE SUMMARY**

**TOTAL PORTFOLIO COST PERFORMANCE**

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)	E - Score (Rank)	E -Score
Buys	+2.51	+2.34	+3.52	0.08	+1.41	+2.43	1.32	62	0.49
Sells	+2.74	+2.34	+3.52	+0.85	+1.41	+3.59	0.15	59	0.53
Total	+2.63	+2.34	+3.52	+0.39	+1.41	+3.01	0.73	61	0.51

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	68,934,537	71,202,651
Shares	1,968,305	1,992,926
Unique Names	525	188
Liquidity (% ADV)	0.042	0.065
Avg. Execution Size	1,674	2,562
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,176	778



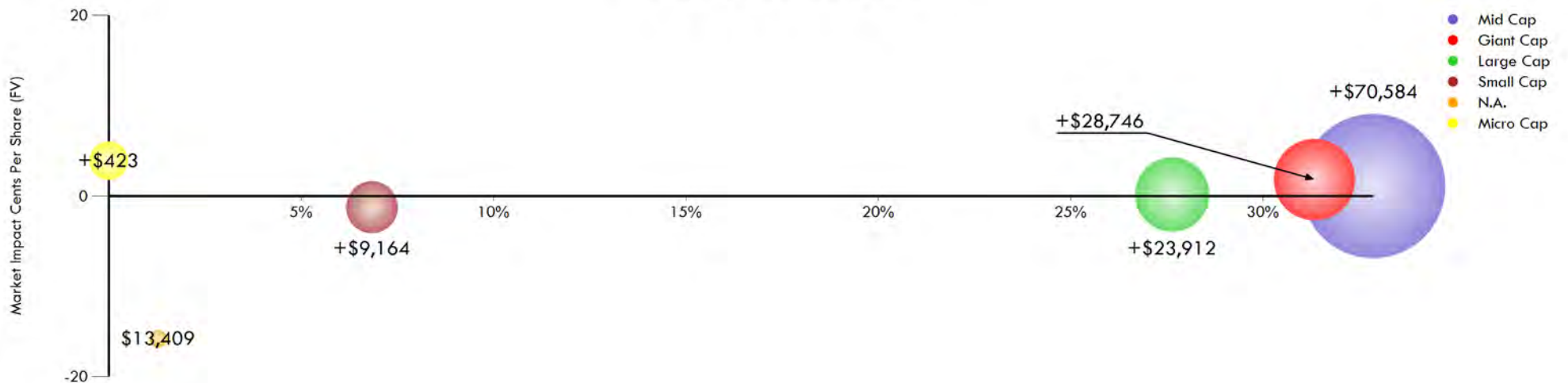
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EXECUTIVE SUMMARY

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	32.87 %	2,411	+3.18	+2.34	+1.10	+0.94	48 %	+4.29	+1.01	63	0.49	\$1 B TO \$5 B
Giant Cap	31.34 %	2,588	+1.27	+2.34	+1.81	+1.93	51 %	+3.09	1.18	63	0.49	Over \$25 B
Large Cap	27.64 %	1,240	+2.85	+2.34	+0.16	+1.41	70 %	+3.01	0.73	58	0.55	\$5 B TO \$25 B
Small Cap	6.85 %	1,932	+3.13	+2.34	1.24	+0.74	82 %	+1.89	1.19	65	0.45	\$250 M TO \$1 B
N.A.	1.29 %	5,114	+2.02	+2.34	15.82	+1.41	99 %	13.80	17.54	16	1.35	
Micro Cap	0.01 %	7,187	+2.00	+2.34	+3.89	+0.80	14 %	+5.89	+2.75	71	0.37	Under \$250 M

Total Cost by Market Cap: (USD)





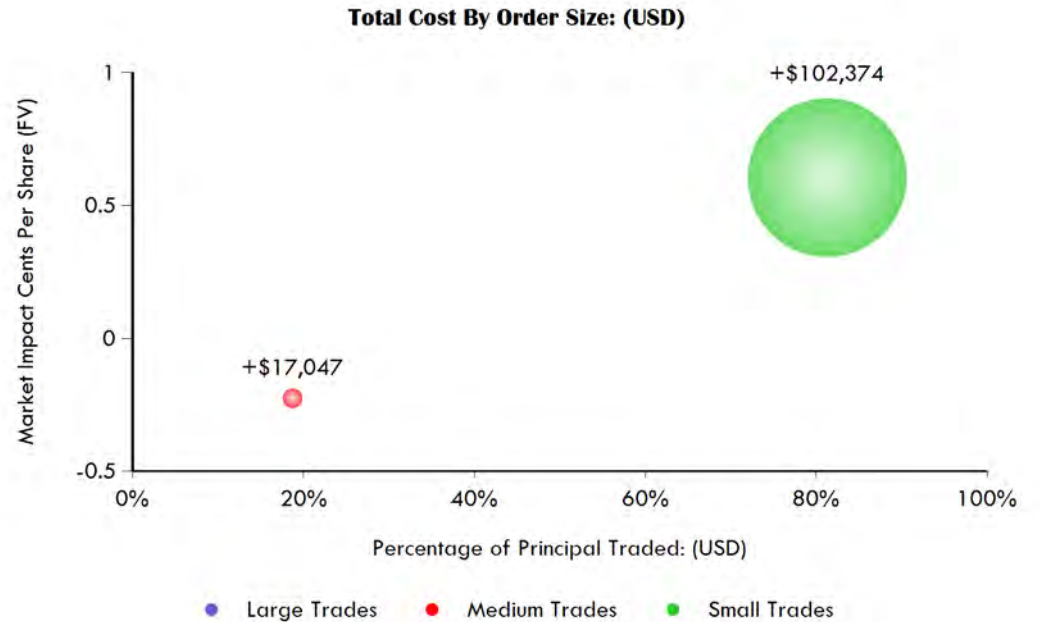


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**EXECUTIVE SUMMARY**

**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)			
Med. Orders	61	17,119	N/A	+1.86	+2.34	0.23	+1.41	84 %	+1.63	2.11	64	0.47	10K-50K
Small Orders	1,893	1,541	N/A	+2.91	+2.34	+0.60	+1.41	69 %	+3.51	0.24	60	0.52	10K or Less







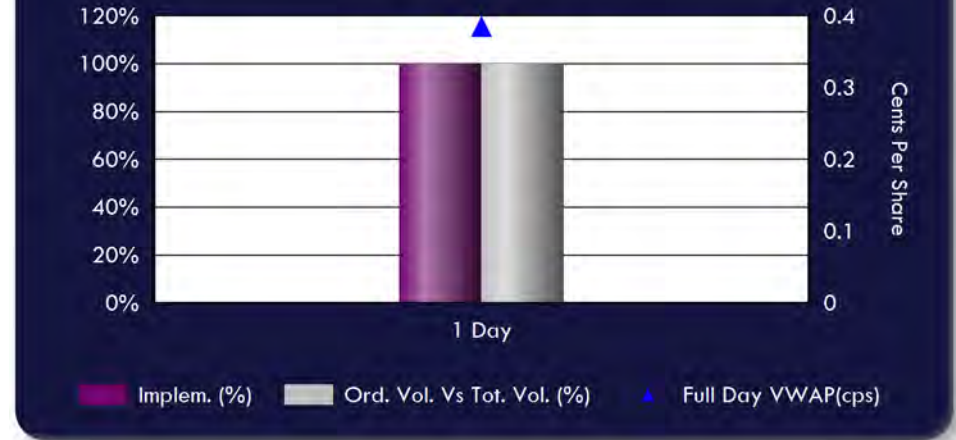
(+) = Cost

**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%	+0.39	61	0.51

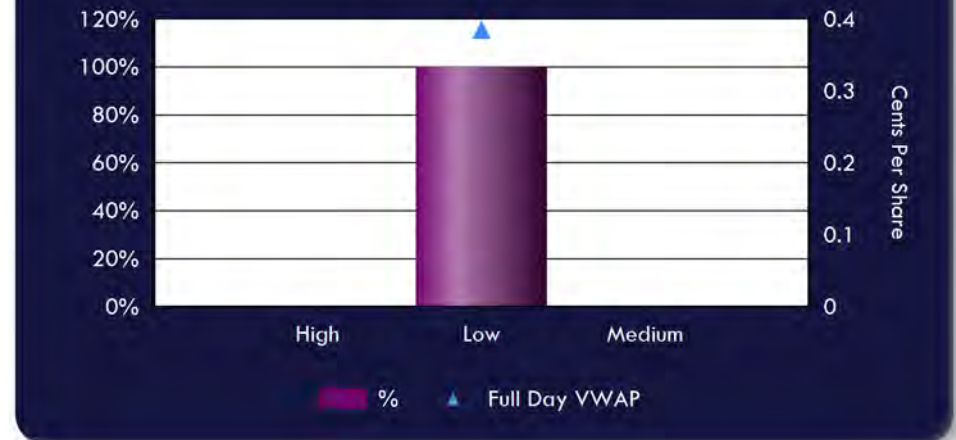
**Implementation Days**



**TRADE DIFFICULTY**

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
0%~20% of daily vol.	L	100%	+0.39	61	0.51

**Avg. % of Daily Volume**





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**EXECUTIVE SUMMARY**

**COMMISSION REVIEW**

Top 10 Broker

Broker	Total Commission (\$)	Commission 20171st (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Commission Trends		
					20164TH (cps)	20163RD (cps)	20162ND (cps)
JP MORGAN	10,078	+3.19	+2.34	+3.52	+3.34	+3.64	+1.02
CAPITAL IN	8,945	+3.42	+2.34	+3.52	+3.60	+3.41	+3.24
LIQUIDNET	7,925	+2.74	+2.34	+3.52	+2.96	+3.08	+3.05
ITG	6,484	+3.72	+2.34	+3.52	+3.87	+3.83	+3.86
UBS	5,923	+1.54	+2.34	+3.52	+1.14	+1.47	+1.82
WEEDEN & C	4,554	+2.98	+2.34	+3.52	+3.06	+3.28	+3.58
RBC CAPITA	3,931	+3.26	+2.34	+3.52	+3.28	+3.27	+3.01
MERRILL LY	3,616	+1.69	+2.34	+3.52	+2.49	+2.06	+2.76
CONVERGEX	3,590	+4.45	+2.34	+3.52	+4.94	+4.88	+4.47
WELLS FARG	3,489	+3.59	+2.34	+3.52	+3.68	+4.11	+3.35

**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	20164TH (%)	20163RD (%)	20162ND (%)
CENTERSQUARE	37	1,701	1,061,439	51	0.66	+3.26	+2.34	+0.68	68 %	+0.20	-	-	-
HUBER CAPITAL MANAGE	24	5,697	717,827	65	0.45	+0.84	+2.34	+1.60	46 %	1.30	56	98	85
BROWN ADVISORY	22	1,824	311,899	69	0.40	+2.62	+2.34	+0.30	77 %	0.82	99	31	92
WEATHERBIE	19	3,007	550,276	61	0.51	+3.31	+2.34	0.34	84 %	0.78	62	33	46
DALTON, GREINER, HAR	11	3,019	480,040	65	0.45	+3.93	+2.34	2.39	94 %	2.20	25	90	92
ALLIANCE R 3000 CAPI	10	413	194,249	57	0.57	+0.45	+2.34	0.01	80 %	3.31	16	86	30
WEDGE CAPITAL MGMT L	8	2,832	359,724	70	0.38	+2.91	+2.34	+1.51	49 %	+0.67	91	24	7
UBS GLOBAL ASSET MGM	7	2,829	260,302	65	0.46	+2.33	+2.34	+3.25	22 %	+1.83	4	34	24
EAGLE CAPITAL MANAGE	2	12,738	25,475	42	0.79	+3.00	+2.34	19.33	99 %	20.08	99	1	91

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

NOTES

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**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	20164TH (%)	20163RD (%)
UBS	15	3,837	383,671	66	0.44	5,923	+1.54	+2.34	+0.51	71 %	1.70	14	96	89
JP MORGAN CHASE	13	2,447	315,602	51	0.66	10,078	+3.19	+2.34	0.08	80 %	0.63	92	94	69
CAPITAL INSTL SVCS	12	3,356	261,742	57	0.56	8,945	+3.42	+2.34	3.96	96 %	4.29	73	24	92
LIQUIDNET	10	1,404	289,322	57	0.57	7,925	+2.74	+2.34	2.67	94 %	3.68	99	90	74
ITG	7	2,050	174,239	56	0.58	6,484	+3.72	+2.34	+1.60	46 %	+1.58	28	53	41
CITATION FINL GROUP	7	268	123,808	57	0.57	619	+0.50	+2.34	+0.23	78 %	3.02	95	-	99
MERRILL LYNCH	7	4,372	214,219	67	0.43	3,616	+1.69	+2.34	+2.77	27 %	+0.72	5	65	88
CITIGROUP	6	3,371	188,791	61	0.51	2,911	+1.54	+2.34	+3.77	18 %	+1.57	92	20	23
THEMIS TRADING LLC	5	2,908	162,838	67	0.43	3,367	+2.07	+2.34	+1.47	50 %	0.21	41	4	13
GOLDMAN SACHS	5	4,975	179,117	56	0.59	1,838	+1.03	+2.34	2.24	93 %	4.96	93	95	9

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

**NOTES**

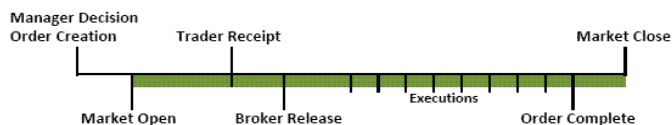
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(+) = Cost

**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	20164TH (%)	20163RD (%)	20162ND (%)
MORGAN STANLEY	5	2,124	142,329	63	0.48	2,969	+2.09	+2.34	+1.39	50 %	0.27	94	24	1
SC BERNSTEIN	4	1,672	51,843	75	0.32	1,000	+1.93	+2.34	+22.96	1 %	+21.15	99	95	47
RAYMOND JAMES	3	1,837	71,639	47	0.72	1,896	+2.65	+2.34	2.01	93 %	3.11	81	17	69
WELLS FARGO	3	2,162	97,276	55	0.59	3,489	+3.59	+2.34	+3.43	20 %	+3.27	84	45	95
BROADCORT CAPITAL	3	2,163	54,069	73	0.34	1,897	+3.51	+2.34	+2.88	27 %	+2.64	94	4	33
RBC CAPITAL MARKETS	3	3,015	120,596	67	0.42	3,931	+3.26	+2.34	+3.34	21 %	+2.86	9	60	93
CONVERGEX	2	1,967	80,662	67	0.43	3,590	+4.45	+2.34	1.63	91 %	0.93	82	92	85
STIFEL NICOLAUS & CO	2	1,930	55,977	63	0.49	2,234	+3.99	+2.34	+5.76	7 %	+6.00	87	70	97
WILLIAM BLAIR	2	3,145	66,047	72	0.36	2,604	+3.94	+2.34	+3.69	19 %	+3.89	97	34	95
CREDIT SUISSE	2	1,959	31,340	68	0.41	756	+2.41	+2.34	+4.14	15 %	+2.81	22	85	4

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

**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	20164TH (%)	20163RD (%)	20162ND (%)
LUMINEX TRADING	2	1,300	23,405	59	0.54	69	+0.29	+2.34	6.41	98 %	9.86	96	91	99
ISI GROUP INC	2	2,724	49,032	62	0.50	1,811	+3.69	+2.34	+7.24	5 %	+7.19	97	41	95
BARCLAYS	2	1,495	41,855	59	0.54	1,293	+3.09	+2.34	+1.69	45 %	+1.04	91	90	91
JEFFERIES & CO	1	1,164	43,075	62	0.50	1,460	+3.39	+2.34	5.99	98 %	6.34	91	17	54
PERSHING	1	4,035	68,596	83	0.22	2,058	+3.00	+2.34	1.49	91 %	2.23	-	-	4
WEEDEN & CO	1	5,086	152,575	68	0.42	4,554	+2.98	+2.34	0.93	90 %	1.69	94	79	32
SEAPORT GROUP SECS	1	5,394	43,150	78	0.27	2,054	+4.76	+2.34	1.70	92 %	0.69	95	-	91
KEYBANC	1	1,819	43,667	61	0.51	1,589	+3.64	+2.34	0.27	84 %	0.38	63	92	96
OPPENHEIMER & CO INC	1	5,454	38,178	85	0.19	1,471	+3.85	+2.34	3.05	95 %	2.94	1	80	55
JONES TRADING	1	5,182	93,275	80	0.25	1,866	+2.00	+2.34	0.19	83 %	1.94	99	68	13

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

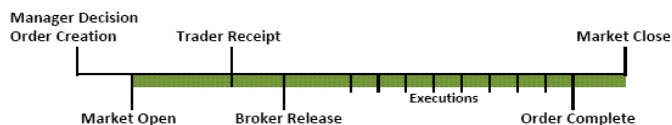
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(+) = Cost

**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	20164TH (%)	20163RD (%)	20162ND (%)
HIBERNIA SOUTHCOAST	1	2,693	16,160	67	0.43	808	+5.00	+2.34	13.29	99 %	12.04	-	-	-
DEUTSCHE BANK	<1	3,799	41,790	12	1.51	413	+0.99	+2.34	7.58	98 %	10.34	99	93	78
NEEDHAM & CO INC	<1	2,885	20,195	46	0.74	808	+4.00	+2.34	2.81	95 %	2.55	99	80	99
STEPHENS & CO INC	<1	2,730	19,108	68	0.41	797	+4.17	+2.34	+1.45	50 %	+1.87	2	26	24
CRAIG - HALLUM	<1	3,956	15,824	80	0.26	633	+4.00	+2.34	4.09	96 %	3.83	2	-	-
APEX CLEARING CORP	<1	2,738	27,375	59	0.54	548	+2.00	+2.34	+6.41	6 %	+4.67	1	-	98
BAIRD, ROBERT W	<1	1,003	14,044	49	0.69	572	+4.08	+2.34	1.81	92 %	1.48	77	99	90
LEERINK SWANN	<1	3,404	17,020	61	0.52	681	+4.00	+2.34	6.65	98 %	6.40	86	88	84
PIPER JAFFRAY	<1	3,011	12,045	53	0.62	466	+3.87	+2.34	+2.62	29 %	+2.75	84	96	97
WUNDERLICH SECUR	<1	4,859	14,576	77	0.29	523	+3.59	+2.34	+3.76	18 %	+3.60	99	54	90

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

**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	20164TH (%)	20163RD (%)	20162ND (%)
CJS SECURITIES	<1	1,040	5,200	66	0.44	250	+4.81	+2.34	9.56	99 %	8.50	99	-	-
BARRINGTON RESEARCH	<1	1,457	10,199	68	0.42	459	+4.50	+2.34	0.51	86 %	+0.24	5	-	-
GREEN STREET	<1	2,446	9,784	47	0.72	432	+4.41	+2.34	3.88	96 %	3.21	6	5	92
STATE STREET BANK	<1	1,945	13,613	57	0.57	251	+1.84	+2.34	+5.83	7 %	+3.92	28	22	56
KEEFE BRUYETTE WOODS	<1	747	11,200	72	0.37	392	+3.50	+2.34	2.08	93 %	2.32	87	70	78
SCOTIA CAPITAL	<1	1,683	15,151	60	0.52	530	+3.50	+2.34	+8.57	2 %	+8.32	-	-	1
TELSEY ADVISORY GR	<1	2,821	8,464	78	0.28	403	+4.76	+2.34	+5.17	10 %	+6.18	99	98	1
MACQUARIE	<1	2,949	2,949	93	0.10	103	+3.50	+2.34	+1.11	56 %	+0.87	96	90	-
CANTOR FITZGERALD	<1	963	4,815	28	1.06	96	+2.00	+2.34	25.68	99 %	27.43	1	31	71
COWEN & CO	<1	2,315	4,630	85	0.20	185	+4.00	+2.34	+2.12	37 %	+2.38	91	6	1

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

**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	20164TH (%)	20163RD (%)
CANACCORD GENUITY	<1	5,247	5,247	60	0.52	210	+4.00	+2.34	12.18	99 %	11.93	93	99	-
MAXIM GROUP	<1	2,600	7,800	76	0.31	273	+3.50	+2.34	0.91	90 %	1.15	99	8	-
ABEL NOSER CORP	<1	1,100	1,100	31	0.98	11	+1.00	+2.34	8.93	98 %	11.68	-	-	-
AUTREPAT-STK	<1	421	843	2	2.45	0	+0.00	+2.34	+43.69	1 %	+39.95	-	-	-
BTIG LLC	<1	128	128	65	0.46	3	+2.00	+2.34	7.24	98 %	8.98	99	1	94
AUTREPAT-DISTRIBUT	<1	36	36	5	1.92	0	+0.00	+2.34	494.84	99 %	498.59	1	-	-

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.52	+2.34	+1.54	+1.67	+1.41

**NOTES**

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(+) = Cost

TRADE CYCLE DETAIL

ALLIANCE R 3000 CAPITAL MANAGEM 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	20164TH (%)	20163RD (%)	20162ND (%)
<b>Grand Total</b>	10	413	194,249	57	0.57	871	+0.45	+2.34	0.01	80 %	3.31	16	86	30
CITATION FINL GROUP	7	268	123,808	57	0.57	619	+0.50	+2.34	+0.23	78 %	3.02	95	-	99
JP MORGAN CHASE	2	20,952	41,903	70	0.38	251	+0.60	+2.34	6.53	98 %	9.68	12	-	63
GOLDMAN SACHS	1	13,957	27,913	40	0.83	0	+0.00	+2.34	+8.73	2 %	+4.98	99	-	99
AUTREPAT-STK	<1	389	389	2	2.45	0	+0.00	+2.34	+43.69	1 %	+39.95	-	-	-
MERRILL LYNCH	<1	100	200	72	0.36	1	+0.50	+2.34	+3.33	22 %	+0.09	-	-	-
AUTREPAT-DISTRIBUT	<1	36	36	5	1.92	0	+0.00	+2.34	494.84	99 %	498.59	1	-	-



(+) = 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	20164TH (%)	20163RD (%)	20162ND (%)
Grand Total	22	1,824	311,899	69	0.40	8,187	+2.62	+2.34	+0.30	77 %	0.82	99	31	92
CAPITAL INSTL SVCS	7	2,857	105,709	71	0.38	3,128	+2.96	+2.34	+2.38	34 %	+1.59	99	10	66
SC BERNSTEIN	4	1,134	29,482	80	0.26	397	+1.35	+2.34	+15.76	1 %	+13.37	99	95	82
MORGAN STANLEY	3	1,627	24,407	69	0.40	396	+1.62	+2.34	+0.59	69 %	1.53	99	91	99
JP MORGAN CHASE	2	750	21,754	63	0.48	542	+2.49	+2.34	10.58	99 %	11.84	90	97	84
LUMINEX TRADING	2	1,599	20,785	58	0.55	62	+0.30	+2.34	7.00	98 %	10.45	96	91	99
RAYMOND JAMES	<1	6,783	13,566	28	1.05	475	+3.50	+2.34	21.85	99 %	22.09	1	90	42
WILLIAM BLAIR	<1	2,959	14,796	71	0.38	518	+3.50	+2.34	+0.97	59 %	+0.73	99	1	99
CREDIT SUISSE	<1	1,418	11,341	69	0.40	348	+3.07	+2.34	10.52	99 %	11.20	7	88	97
ISI GROUP INC	<1	8,184	32,737	72	0.36	1,146	+3.50	+2.34	+9.75	2 %	+9.50	99	99	99
ITG	<1	1,434	8,605	67	0.43	172	+2.00	+2.34	8.75	98 %	10.49	1	7	99
UBS	<1	847	2,540	54	0.61	89	+3.50	+2.34	24.66	99 %	24.91	-	67	1
STIFEL NICOLAUS & CO	<1	2,422	9,686	87	0.16	339	+3.50	+2.34	0.10	81 %	0.35	91	97	14
MERRILL LYNCH	<1	4,489	4,489	97	0.05	157	+3.50	+2.34	1.58	91 %	1.82	-	-	1
BAIRD, ROBERT W	<1	398	3,187	68	0.41	112	+3.50	+2.34	7.23	98 %	7.48	89	32	76
MACQUARIE	<1	2,949	2,949	93	0.10	103	+3.50	+2.34	+1.11	56 %	+0.87	96	90	-
JEFFERIES & CO	<1	554	1,108	95	0.06	39	+3.50	+2.34	3.42	96 %	3.66	1	46	86
BARCLAYS	<1	912	2,737	81	0.25	96	+3.50	+2.34	3.05	95 %	3.29	96	71	-
TELSEY ADVISORY GR	<1	682	1,364	80	0.25	48	+3.50	+2.34	+7.91	4 %	+7.66	-	-	1
STEPHENS & CO INC	<1	529	529	16	1.35	19	+3.50	+2.34	18.12	99 %	18.36	-	-	-
BTIG LLC	<1	128	128	65	0.46	3	+2.00	+2.34	7.24	98 %	8.98	99	1	94



(+) = Cost

TRADE CYCLE DETAIL

CENTERSQUARE Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20164TH (%)	20163RD (%)	20162ND (%)
Grand Total	37	1,701	1,061,439	51	0.66	34,650	+3.26	+2.34	+0.68	68 %	+0.20	-	-	-
LIQUIDNET	9	1,317	252,816	55	0.59	6,685	+2.64	+2.34	2.35	94 %	3.45	-	-	-
JP MORGAN CHASE	6	1,795	140,019	42	0.79	5,981	+4.27	+2.34	+0.79	65 %	+1.31	-	-	-
CITIGROUP	2	1,371	47,988	53	0.63	2,238	+4.66	+2.34	+5.62	7 %	+6.54	-	-	-
WELLS FARGO	2	2,365	70,947	52	0.64	2,561	+3.61	+2.34	+4.57	12 %	+4.43	-	-	-
UBS	2	2,340	65,532	66	0.44	2,707	+4.13	+2.34	+3.53	20 %	+3.91	-	-	-
MORGAN STANLEY	2	2,644	108,390	58	0.56	2,537	+2.34	+2.34	+1.46	50 %	+0.05	-	-	-
CAPITAL INSTL SVCS	2	1,871	54,264	43	0.78	2,119	+3.91	+2.34	0.18	82 %	0.02	-	-	-
RAYMOND JAMES	2	1,276	44,673	55	0.60	953	+2.13	+2.34	+3.91	16 %	+2.30	-	-	-
ITG	1	1,006	31,187	45	0.74	935	+3.00	+2.34	0.11	81 %	0.86	-	-	-
BARCLAYS	1	1,565	39,118	56	0.58	1,197	+3.06	+2.34	+2.03	38 %	+1.34	-	-	-
STIFEL NICOLAUS & CO	1	1,499	26,983	52	0.64	1,185	+4.39	+2.34	+7.03	5 %	+7.68	-	-	-
DEUTSCHE BANK	<1	3,799	41,790	12	1.51	413	+0.99	+2.34	7.58	98 %	10.34	-	-	-
KEYBANC	<1	1,623	32,467	60	0.52	1,085	+3.34	+2.34	1.20	90 %	1.61	-	-	-
ISI GROUP INC	<1	1,058	11,636	58	0.56	464	+3.98	+2.34	+4.74	11 %	+4.98	-	-	-
RBC CAPITAL MARKETS	<1	5,440	32,640	47	0.71	1,306	+4.00	+2.34	+4.31	14 %	+4.57	-	-	-
GOLDMAN SACHS	<1	1,774	12,415	63	0.48	517	+4.17	+2.34	0.65	87 %	0.23	-	-	-
JEFFERIES & CO	<1	1,712	18,836	60	0.52	719	+3.82	+2.34	1.36	91 %	1.29	-	-	-
CREDIT SUISSE	<1	7,140	7,140	64	0.47	357	+5.00	+2.34	+8.96	2 %	+10.21	-	-	-
GREEN STREET	<1	2,446	9,784	47	0.72	432	+4.41	+2.34	3.88	96 %	3.21	-	-	-
BAIRD, ROBERT W	<1	1,430	5,720	50	0.66	255	+4.47	+2.34	+4.14	15 %	+4.86	-	-	-





(+) = 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	20164TH (%)	20163RD (%)	20162ND (%)
MERRILL LYNCH	<1	4,020	4,020	39	0.85	0	+0.00	+2.34	19.02	99 %	22.77	-	-	-
LUMINEX TRADING	<1	524	2,620	61	0.51	7	+0.25	+2.34	1.74	92 %	5.24	-	-	-
AUTREPAT-STK	<1	454	454	2	2.45	0	+0.00	+2.34	+43.70	1 %	+39.95	-	-	-



(+) = 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	20164TH (%)	20163RD (%)	20162ND (%)
Grand Total	11	3,019	480,040	65	0.45	18,876	+3.93	+2.34	2.39	94 %	2.20	25	90	92
CONVERGEX	2	1,967	80,662	67	0.43	3,590	+4.45	+2.34	1.63	91 %	0.93	82	90	85
RBC CAPITAL MARKETS	2	2,717	84,235	76	0.31	2,495	+2.96	+2.34	+3.22	22 %	+2.44	39	57	93
CAPITAL INSTL SVCS	2	7,629	76,294	41	0.81	2,934	+3.85	+2.34	10.31	99 %	10.21	55	80	92
SEAPORT GROUP SECS	1	5,394	43,150	78	0.27	2,054	+4.76	+2.34	1.70	92 %	0.69	95	-	91
HIBERNIA SOUTHCOAST	1	2,693	16,160	67	0.43	808	+5.00	+2.34	13.29	99 %	12.04	-	-	-
LIQUIDNET	<1	2,549	25,490	84	0.20	1,020	+4.00	+2.34	0.94	90 %	0.69	99	8	86
WEEDEN & CO	<1	3,859	92,626	50	0.67	3,242	+3.50	+2.34	2.18	93 %	2.42	97	83	95
KEYBANC	<1	2,800	11,200	63	0.48	504	+4.50	+2.34	+2.42	33 %	+3.17	96	90	93
CJS SECURITIES	<1	1,040	5,200	66	0.44	250	+4.81	+2.34	9.56	99 %	8.50	99	-	-
STEPHENS & CO INC	<1	2,373	7,118	76	0.30	320	+4.50	+2.34	3.94	96 %	3.19	16	60	97
BARRINGTON RESEARCH	<1	1,457	10,199	68	0.42	459	+4.50	+2.34	0.51	86 %	+0.24	5	-	-
WILLIAM BLAIR	<1	3,650	7,300	92	0.11	329	+4.50	+2.34	+1.76	43 %	+2.52	98	80	1
ISI GROUP INC	<1	1,553	4,659	43	0.77	202	+4.33	+2.34	4.13	96 %	3.55	74	-	92
TELSEY ADVISORY GR	<1	7,100	7,100	76	0.31	355	+5.00	+2.34	+4.64	12 %	+5.90	99	98	-
WUNDERLICH SECUR	<1	847	847	20	1.23	42	+5.00	+2.34	+57.68	1 %	+58.94	94	54	92
MAXIM GROUP	<1	2,600	7,800	76	0.31	273	+3.50	+2.34	0.91	90 %	1.15	-	-	-



(+) = 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	20164TH (%)	20163RD (%)	20162ND (%)
<b>Grand Total</b>	2	12,738	25,475	42	0.79	764	+3.00	+2.34	19.33	99 %	20.08	99	1	91
CAPITAL INSTL SVCS	2	12,738	25,475	42	0.79	764	+3.00	+2.34	19.33	99 %	20.08	-	-	96



(+) = 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	20164TH (%)	20163RD (%)	20162ND (%)
<b>Grand Total</b>	24	5,697	717,827	65	0.45	6,054	+0.84	+2.34	+1.60	46 %	1.30	56	98	85
UBS	12	4,597	298,827	66	0.44	2,540	+0.85	+2.34	+0.11	78 %	2.79	9	97	88
CITIGROUP	4	7,676	130,500	68	0.42	261	+0.20	+2.34	+3.51	20 %	0.03	95	67	50
GOLDMAN SACHS	3	5,883	105,900	66	0.45	212	+0.20	+2.34	0.64	87 %	4.18	99	99	-
MERRILL LYNCH	3	7,171	100,400	76	0.31	602	+0.60	+2.34	+1.55	48 %	1.59	90	99	98
JP MORGAN CHASE	2	8,060	80,600	44	0.77	2,418	+3.00	+2.34	+7.78	4 %	+7.04	91	94	99
ABEL NOSER CORP	<1	1,100	1,100	31	0.98	11	+1.00	+2.34	8.93	98 %	11.68	-	-	-
CANTOR FITZGERALD	<1	500	500	3	2.28	10	+2.00	+2.34	91.15	99 %	92.89	-	-	-





(+) = Cost

**TRADE CYCLE DETAIL**

**UBS GLOBAL ASSET MGMT 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	20164TH (%)	20163RD (%)	20162ND (%)
<b>Grand Total</b>	7	2,829	260,302	65	0.46	6,064	+2.33	+2.34	+3.25	22 %	+1.83	4	34	24
MERRILL LYNCH	3	3,387	101,622	58	0.55	2,716	+2.67	+2.34	+5.60	7 %	+4.53	4	8	83
PERSHING	1	4,035	68,596	83	0.22	2,058	+3.00	+2.34	1.49	91 %	2.23	-	-	4
APEX CLEARING CORP	<1	2,738	27,375	59	0.54	548	+2.00	+2.34	+6.41	6 %	+4.67	1	-	98
CREDIT SUISSE	<1	1,837	12,859	70	0.39	51	+0.40	+2.34	+14.40	1 %	+11.06	58	90	1
JP MORGAN CHASE	<1	4,968	14,903	75	0.33	253	+1.70	+2.34	+3.02	26 %	+0.98	73	99	79
GOLDMAN SACHS	<1	1,538	6,150	55	0.59	76	+1.24	+2.34	+0.18	78 %	2.33	1	2	1
SC BERNSTEIN	<1	2,899	5,797	84	0.20	23	+0.40	+2.34	+0.82	63 %	2.53	-	-	69
MORGAN STANLEY	<1	881	8,809	61	0.52	35	+0.40	+2.34	2.70	94 %	6.05	1	67	1
PIPER JAFFRAY	<1	1,581	1,581	47	0.71	47	+3.00	+2.34	+23.45	1 %	+22.70	-	-	92
WELLS FARGO	<1	2,204	6,612	57	0.56	198	+3.00	+2.34	1.71	92 %	2.46	1	-	-
JEFFERIES & CO	<1	2,274	4,548	61	0.51	50	+1.10	+2.34	7.08	98 %	9.72	97	1	98
STATE STREET BANK	<1	483	1,450	77	0.30	7	+0.50	+2.34	2.65	94 %	5.89	45	1	95



(+) = Cost

TRADE CYCLE DETAIL

WEATHERBIE 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	20164TH (%)	20163RD (%)	20162N D (%)
Grand Total	19	3,007	550,276	61	0.51	18,202	+3.31	+2.34	0.34	84 %	0.78	62	33	46
THEMIS TRADING LLC	5	2,908	162,838	67	0.43	3,367	+2.07	+2.34	+1.47	50 %	0.21	41	4	13
ITG	5	2,801	134,447	58	0.56	5,378	+4.00	+2.34	+2.66	28 %	+2.92	24	54	33
WILLIAM BLAIR	1	3,139	43,951	68	0.41	1,758	+4.00	+2.34	+4.93	10 %	+5.19	53	83	97
OPPENHEIMER & CO INC	1	4,502	27,014	86	0.18	1,081	+4.00	+2.34	3.96	96 %	3.70	1	68	76
NEEDHAM & CO INC	<1	2,885	20,195	46	0.74	808	+4.00	+2.34	2.81	95 %	2.55	99	83	99
CRAIG - HALLUM	<1	3,956	15,824	80	0.26	633	+4.00	+2.34	4.09	96 %	3.83	2	-	-
LEERINK SWANN	<1	3,404	17,020	61	0.52	681	+4.00	+2.34	6.65	98 %	6.40	86	88	97
LIQUIDNET	<1	2,754	11,016	46	0.73	220	+2.00	+2.34	14.01	99 %	15.76	95	92	58
JP MORGAN CHASE	<1	3,854	11,562	77	0.29	462	+4.00	+2.34	16.39	99 %	16.13	96	-	-
CITIGROUP	<1	2,576	10,303	51	0.65	412	+4.00	+2.34	1.58	91 %	1.32	99	99	6
GOLDMAN SACHS	<1	4,860	19,439	22	1.20	778	+4.00	+2.34	28.98	99 %	28.73	1	99	95
STIFEL NICOLAUS & CO	<1	1,702	6,808	51	0.65	272	+4.00	+2.34	+24.84	1 %	+25.09	15	20	56
STEPHENS & CO INC	<1	3,820	11,461	66	0.44	458	+4.00	+2.34	+5.69	7 %	+5.95	1	23	1
PIPER JAFFRAY	<1	3,488	10,464	57	0.57	419	+4.00	+2.34	0.52	86 %	0.27	84	99	98
STATE STREET BANK	<1	3,041	12,163	54	0.61	243	+2.00	+2.34	+6.84	5 %	+5.09	27	29	26
WELLS FARGO	<1	4,028	8,056	47	0.71	322	+4.00	+2.34	+13.62	1 %	+13.87	1	24	99
BAIRD, ROBERT W	<1	2,569	5,137	29	1.04	205	+4.00	+2.34	5.08	97 %	4.83	99	1	89
CANTOR FITZGERALD	<1	1,079	4,315	32	0.96	86	+2.00	+2.34	18.10	99 %	19.84	18	42	75
COWEN & CO	<1	2,315	4,630	85	0.20	185	+4.00	+2.34	+2.12	37 %	+2.38	95	96	6
JONES TRADING	<1	4,175	4,175	100	0.00	84	+2.00	+2.34	0.03	80 %	1.78	99	94	-



(+) = Cost

**TRADE CYCLE DETAIL**

**WEATHERBIE 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	20164TH (%)	20163RD (%)	20162ND (%)
CANACCORD GENUITY	<1	5,247	5,247	60	0.52	210	+4.00	+2.34	12.18	99 %	11.93	93	99	-
MERRILL LYNCH	<1	3,488	3,488	44	0.77	140	+4.00	+2.34	13.67	99 %	13.42	-	-	-
MORGAN STANLEY	<1	723	723	36	0.90	0	+0.00	+2.34	+68.48	1 %	+64.74	6	-	96



(+) = Cost

**TRADE CYCLE DETAIL**

**WEDGE CAPITAL MGMT LLP 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	20164TH (%)	20163RD (%)	20162ND (%)
<b>Grand Total</b>	8	2,832	359,724	70	0.38	10,474	+2.91	+2.34	+1.51	49 %	+0.67	91	24	7
BROADCORT CAPITAL	3	2,163	54,069	73	0.34	1,897	+3.51	+2.34	+2.88	27 %	+2.64	42	30	64
JONES TRADING	<1	5,241	89,100	77	0.29	1,782	+2.00	+2.34	0.20	83 %	1.94	99	-	66
WELLS FARGO	<1	1,166	11,661	67	0.42	408	+3.50	+2.34	7.63	98 %	7.87	99	69	8
WEEDEN & CO	<1	9,992	59,949	81	0.24	1,312	+2.19	+2.34	+1.00	58 %	0.56	96	-	18
JEFFERIES & CO	<1	845	18,583	55	0.60	653	+3.51	+2.34	10.56	99 %	10.79	2	1	93
RAYMOND JAMES	<1	6,700	13,400	56	0.58	469	+3.50	+2.34	1.66	91 %	1.91	-	2	94
WUNDERLICH SECUR	<1	6,865	13,729	97	0.05	481	+3.50	+2.34	+0.43	73 %	+0.18	99	-	86
SC BERNSTEIN	<1	5,521	16,564	31	0.99	580	+3.50	+2.34	+43.52	1 %	+43.28	97	-	11
STIFEL NICOLAUS & CO	<1	4,167	12,500	86	0.18	438	+3.50	+2.34	2.85	95 %	3.09	97	26	99
KEEFE BRUYETTE WOODS	<1	747	11,200	72	0.37	392	+3.50	+2.34	2.08	93 %	2.32	91	68	78
SCOTIA CAPITAL	<1	1,683	15,151	60	0.52	530	+3.50	+2.34	+8.57	2 %	+8.32	-	-	1
UBS	<1	4,193	16,772	83	0.21	587	+3.50	+2.34	0.44	84 %	0.68	-	-	97
OPPENHEIMER & CO INC	<1	11,164	11,164	81	0.25	391	+3.50	+2.34	0.84	89 %	1.09	-	94	84
JP MORGAN CHASE	<1	1,215	4,861	48	0.70	170	+3.50	+2.34	23.39	99 %	23.64	-	3	53
GOLDMAN SACHS	<1	7,300	7,300	87	0.17	256	+3.50	+2.34	0.87	89 %	1.11	-	2	8
RBC CAPITAL MARKETS	<1	1,240	3,721	73	0.35	130	+3.50	+2.34	2.55	94 %	2.80	95	37	-





(+) = 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)
BAC	20	309,300	7,081,138	+0.83	0.01%	0.51	+3.82
CSCO	17	130,700	4,404,236	+1.07	0.03%	0.41	+4.23
EVC	42	130,256	772,647	+3.34	0.62%	0.57	1.64
ORCL	14	124,600	5,292,550	+0.79	0.06%	0.28	0.85
CUZ	11	115,890	939,069	+2.26	0.22%	0.46	+0.36
FI	17	84,100	982,094	+3.07	0.41%	0.33	+0.10
CMO	10	65,100	684,178	+2.00	0.89%	0.29	+0.27
PTEN	7	62,378	1,678,523	+4.21	0.31%	0.53	0.15
MPW	14	56,450	733,254	+2.83	0.08%	0.53	2.73
QEP	6	52,500	683,829	+2.00	0.23%	0.23	+1.96

**Names Most Traded - Total Orders**

							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
DVA	21	35,104	2,318,704	+2.69	0.11%	0.48	3.21
BAC	20	309,300	7,081,138	+0.83	0.01%	0.51	+3.82
TJX	19	28,624	2,185,462	+3.20	0.04%	0.35	3.31
CSCO	17	130,700	4,404,236	+1.07	0.03%	0.41	+4.23
ORCL	14	124,600	5,292,550	+0.79	0.06%	0.28	0.85
TMO	14	16,619	2,557,166	+2.25	0.06%	0.39	+22.02
EW	13	26,176	2,353,591	+1.66	0.06%	0.34	+3.91
AYI	12	10,033	2,090,011	+1.88	0.07%	0.27	+15.29
SBUX	10	35,665	1,980,875	+3.48	0.03%	0.63	6.49
PTEN	7	62,378	1,678,523	+4.21	0.31%	0.53	0.15



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	4,288,582	10	+53.49	16.48%
Cost Trades	68,234,369	880	+12.59	100.00%
Saving Trades	71,902,819	1,074	15.27	100.00%
10 Low Cost Trades	3,995,254	10	61.27	19.74%





(+) = Cost

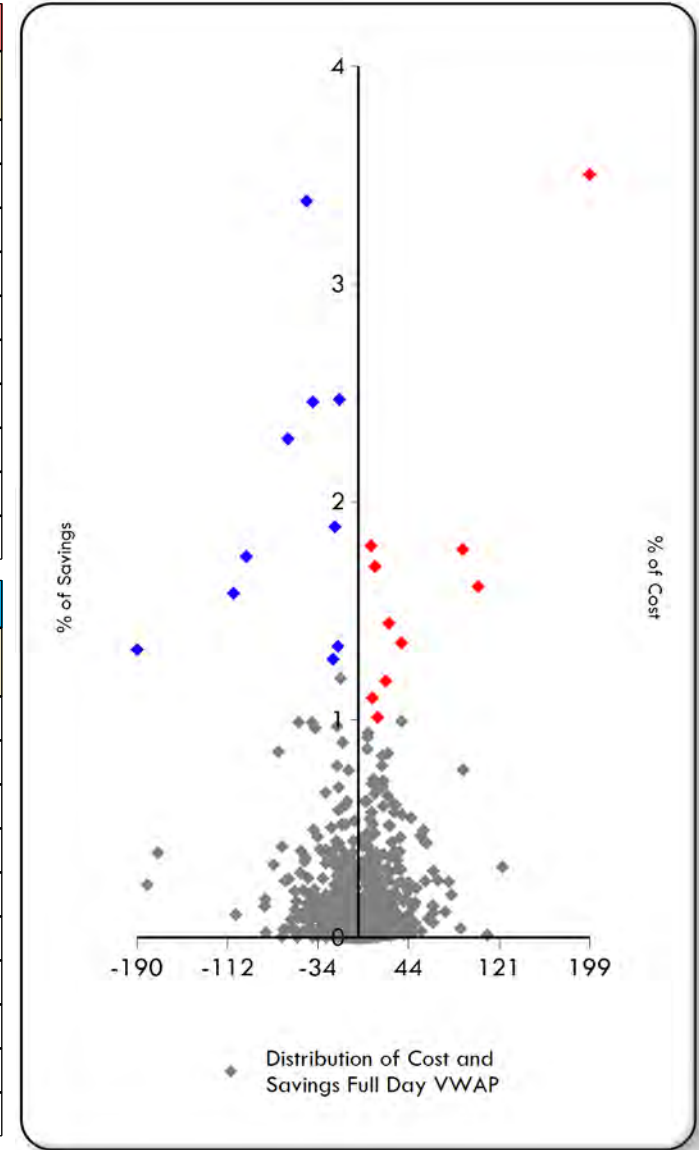
**TRADE LEVEL DETAILS**

**10 High Cost Trades (Full Day VWAP)**

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	VSTO	2017/01/12	3,300	3.50	1.90	+199.35	WEDGE CAPI	SC BERNSTE
Sell	UA	2017/01/31	30,596	1.80	0.26	+11.03	BROWN ADVI	ISI GROUP
Buy	TMO	2017/01/31	3,716	1.78	0.73	+89.98	BROWN ADVI	CAPITAL IN
Sell	BAC	2017/01/10	22,000	1.70	0.77	+14.54	HUBER CAPI	JP MORGAN
Buy	AYI	2017/01/09	2,926	1.61	0.24	+103.34	BROWN ADVI	SC BERNSTE
Sell	MJN	2017/02/02	10,244	1.44	0.22	+26.48	BROWN ADVI	MORGAN STA
Sell	GME	2017/02/28	6,809	1.35	0.57	+37.36	DALTON, GR	RBC CAPITA
Sell	BAC	2017/01/10	9,300	1.18	1.27	+23.81	HUBER CAPI	UBS
Sell	PTEN	2017/03/17	16,983	1.10	0.72	+12.18	UBS GLOBAL	MERRILL LY
Sell	BAC	2017/01/12	11,300	1.01	1.82	+16.83	HUBER CAPI	JP MORGAN

**10 Low Cost Trades (Full Day VWAP)**

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	GOOS	2017/03/16	13,144	3.38	2.01	44.39	WEATHERBIE	GOLDMAN SA
Buy	INVH	2017/02/01	26,410	2.47	2.05	16.13	CENTERSQUA	DEUTSCHE B
Buy	GOOS	2017/03/16	10,890	2.46	1.77	38.95	WEATHERBIE	THEMIS TRA
Sell	BRSS	2017/03/07	6,540	2.29	1.05	60.38	DALTON, GR	CAPITAL IN
Sell	DISH	2017/02/09	16,225	1.88	0.74	20.04	EAGLE CAPI	CAPITAL IN
Buy	TTD	2017/02/17	3,131	1.75	1.24	96.29	WEATHERBIE	NEEDHAM &
Sell	STMP	2017/02/24	2,540	1.58	0.70	107.28	WEATHERBIE	THEMIS TRA
Sell	SBUX	2017/01/27	13,307	1.34	1.17	17.36	BROWN ADVI	RAYMOND JA
Sell	AGN	2017/02/06	1,200	1.32	1.35	190.24	HUBER CAPI	UBS
Sell	FTI	2017/01/13	10,203	1.28	1.20	21.63	ALLIANCE R	JP MORGAN





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VSTO - 2017/01/12

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEDGE CAPITAL MGMT LLP	SC BERNSTEIN	01/12/2017 09:30:00	01/12/2017 16:00:00	3,300	31.7629	29.7694	+6,579	+199.35	1.90	0.03



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.50% of your market impact cost.





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

UA - 2017/01/31

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	ISI GROUP INC	01/31/2017 09:30:00	01/31/2017 16:00:00	30,596	19.2165	19.3268	+3,375	+11.03	0.26	0.06



NOTES

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

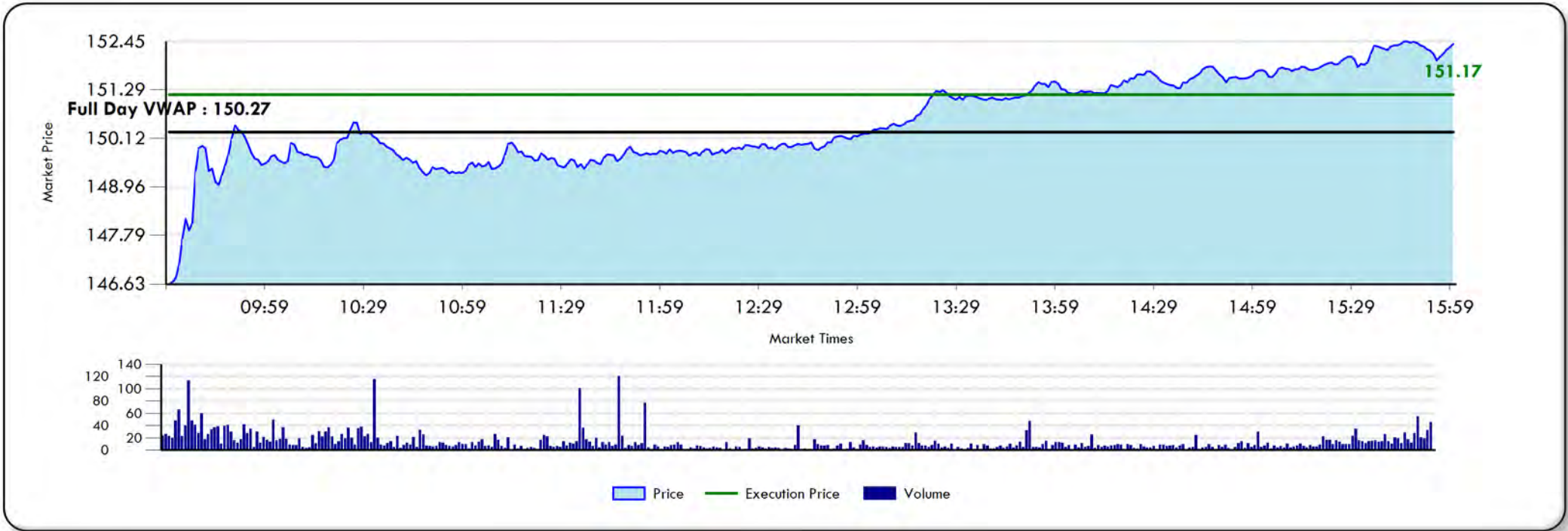


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TMO - 2017/01/31

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	01/31/2017 09:30:00	01/31/2017 16:00:00	3,716	151.1736	150.2738	+3,344	+89.98	0.73	0.07



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.78% of your market impact cost.

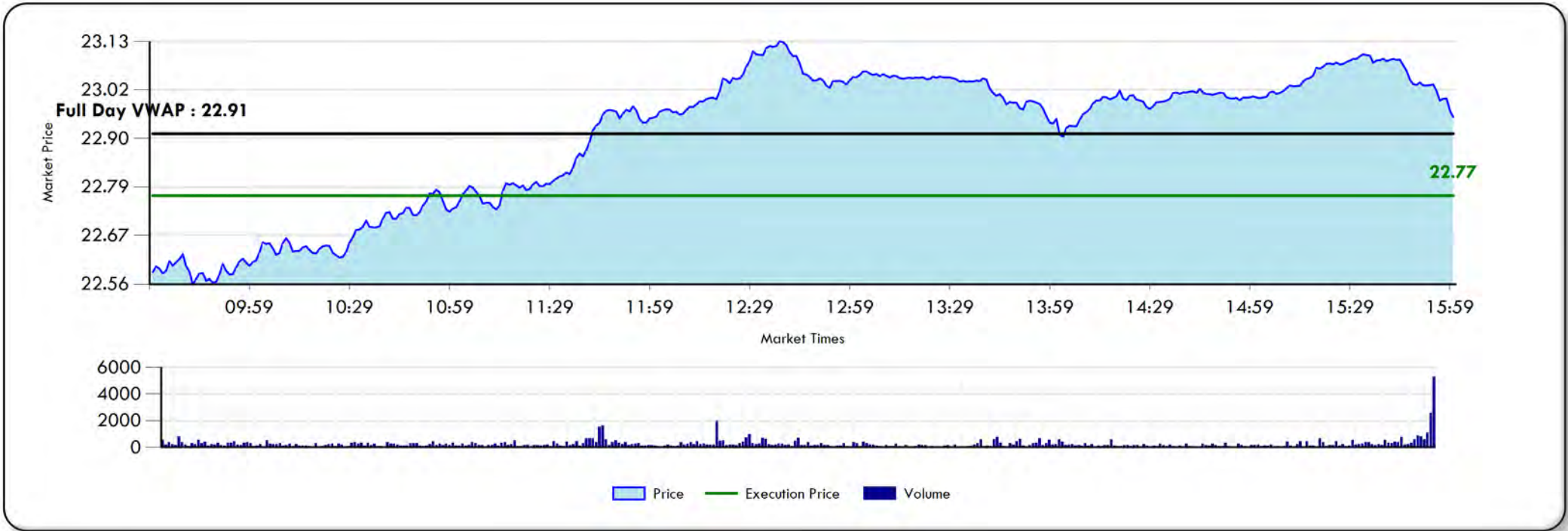


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAC - 2017/01/10

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	JP MORGAN CHASE	01/10/2017 09:30:00	01/10/2017 16:00:00	22,000	22.7673	22.9127	+3,198	+14.54	0.77	0.02



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.70% of your market impact cost.



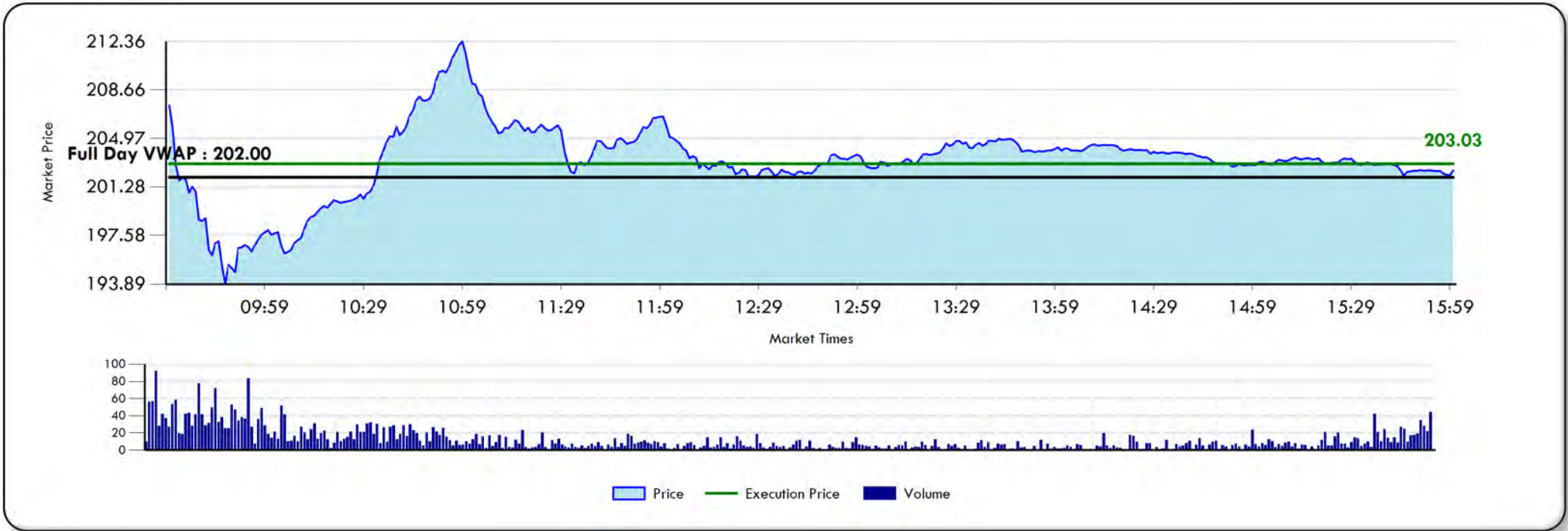


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AYI - 2017/01/09

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	BROWN ADVISORY	SC BERNSTEIN	01/09/2017 09:30:00	01/09/2017 16:00:00	2,926	203.0307	201.9973	+3,024	+103.34	0.24	0.06



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.61% of your market impact cost.





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MJN - 2017/02/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	BROWN ADVISORY	MORGAN STANLEY	02/02/2017 09:30:00	02/02/2017 16:00:00	10,244	84.9059	85.1707	+2,713	+26.48	0.22	0.05



NOTES

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

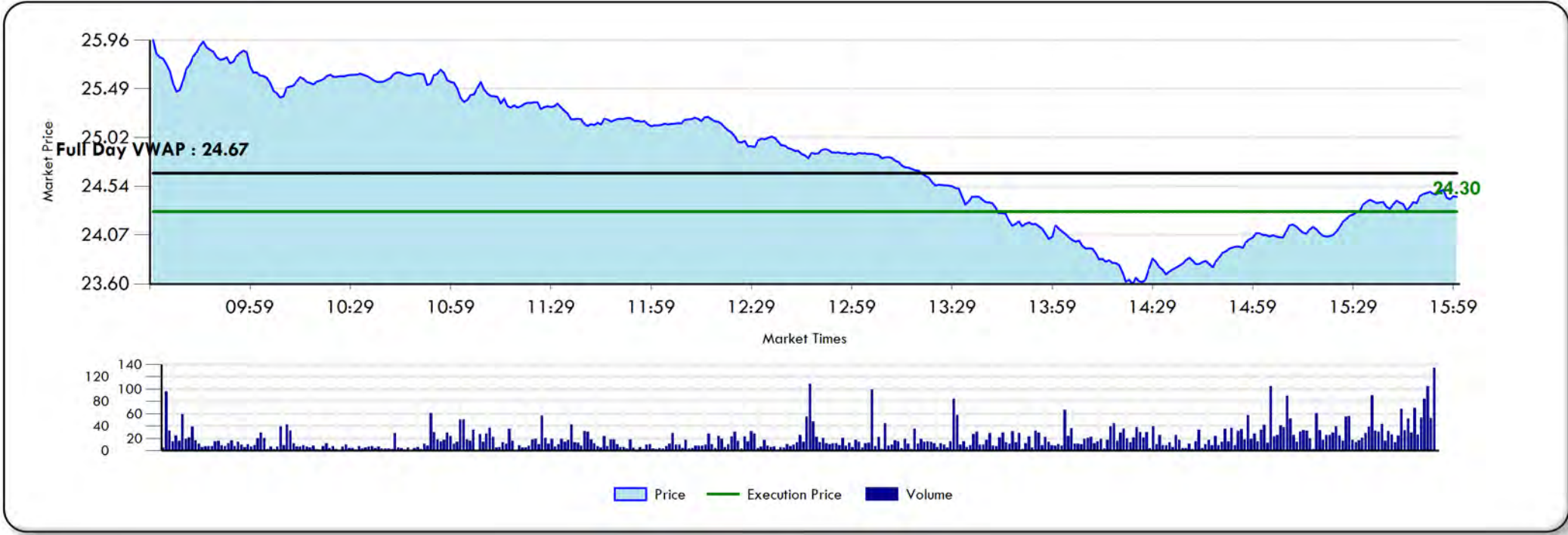


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

GME - 2017/02/28

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	RBC CAPITAL MARKETS	02/28/2017 09:30:00	02/28/2017 16:00:00	6,809	24.2961	24.6697	+2,544	+37.36	0.57	0.09



NOTES

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

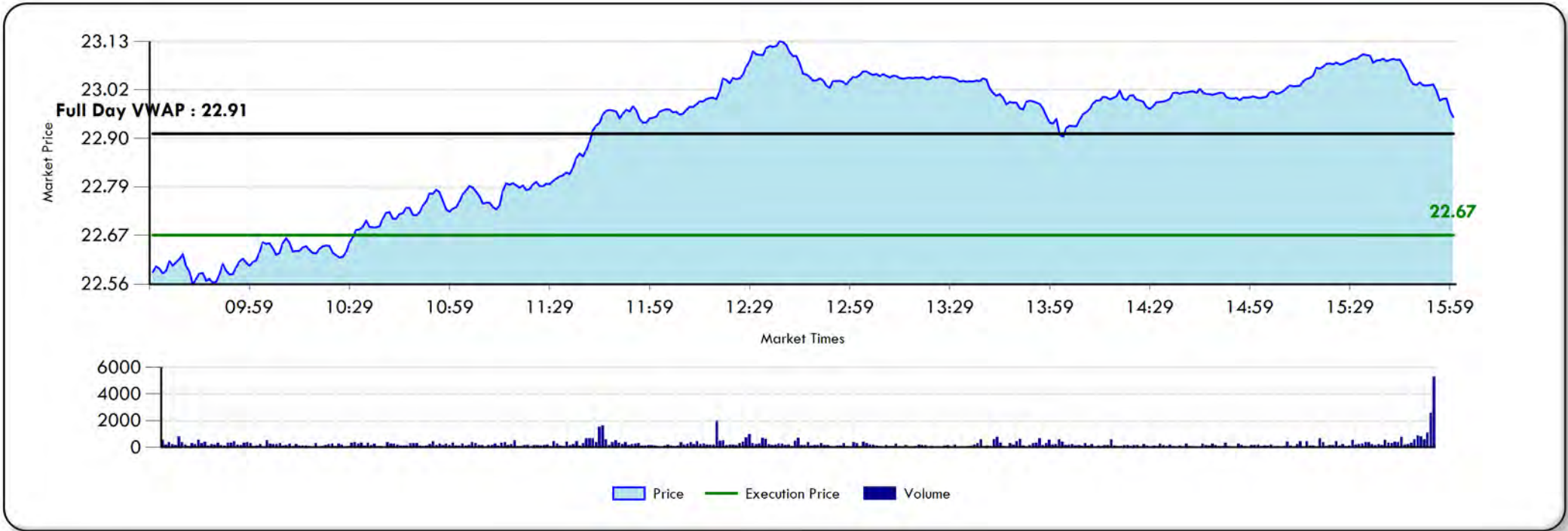


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAC - 2017/01/10

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	UBS	01/10/2017 09:30:00	01/10/2017 16:00:00	9,300	22.6746	22.9127	+2,214	+23.81	1.27	0.01



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.18% of your market impact cost.





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PTEN - 2017/03/17

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	MERRILL LYNCH	03/17/2017 09:30:00	03/17/2017 16:00:00	16,983	25.7226	25.8444	+2,068	+12.18	0.72	0.55



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.10% of your market impact cost.





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAC - 2017/01/12

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	HUBER CAPITAL MANAGEMENT	JP MORGAN CHASE	01/12/2017 09:30:00	01/12/2017 16:00:00	11,300	22.6706	22.8389	+1,902	+16.83	1.82	0.01



NOTES

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

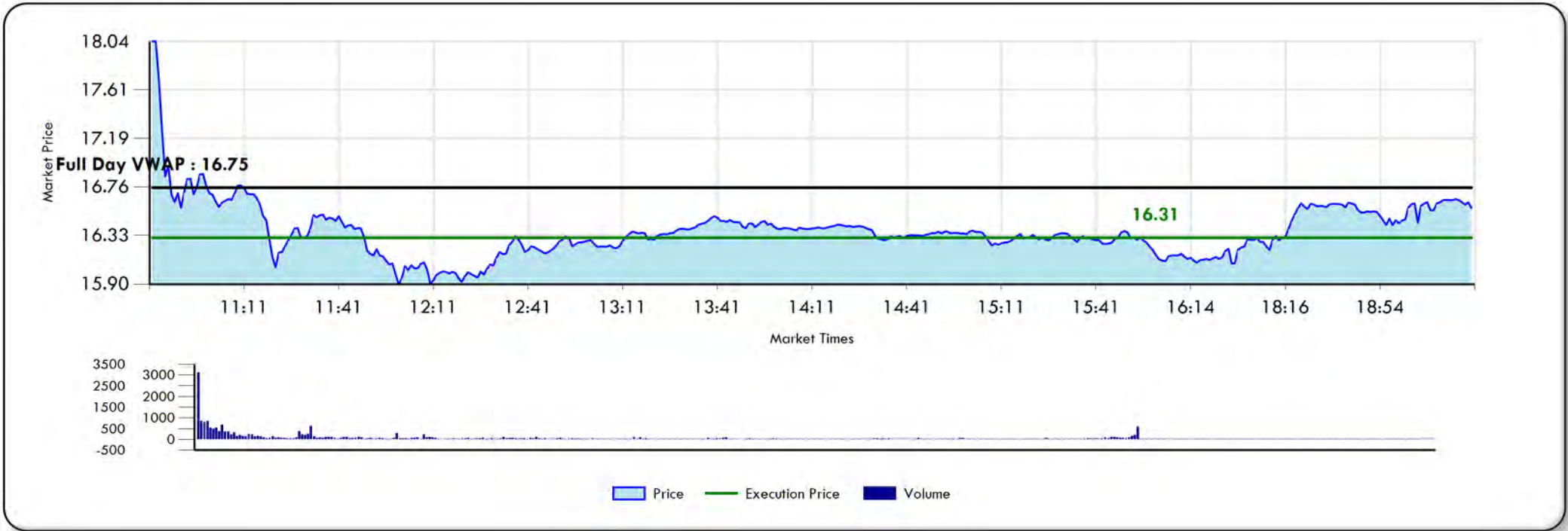


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GOOS - 2017/03/16

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	GOLDMAN SACHS	03/16/2017 09:30:00	03/16/2017 16:00:00	13,144	16.3067	16.7506	5,834	44.39	2.01	0.06



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.38% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INVH - 2017/02/01

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	DEUTSCHE BANK	02/01/2017 09:30:00	02/01/2017 16:00:00	26,410	20.0000	20.1614	4,261	16.13	2.05	0.09



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.47% of your market impact savings.



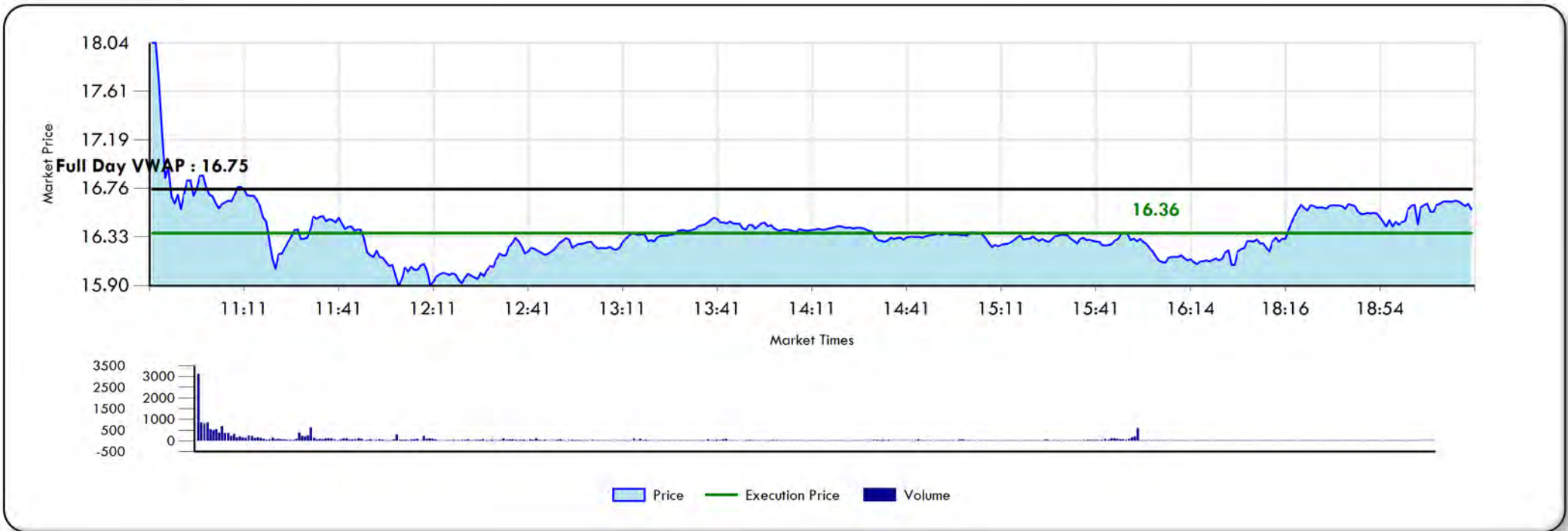


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GOOS - 2017/03/16

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	03/16/2017 09:30:00	03/16/2017 16:00:00	10,890	16.3611	16.7506	4,242	38.95	1.77	0.05



NOTES

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



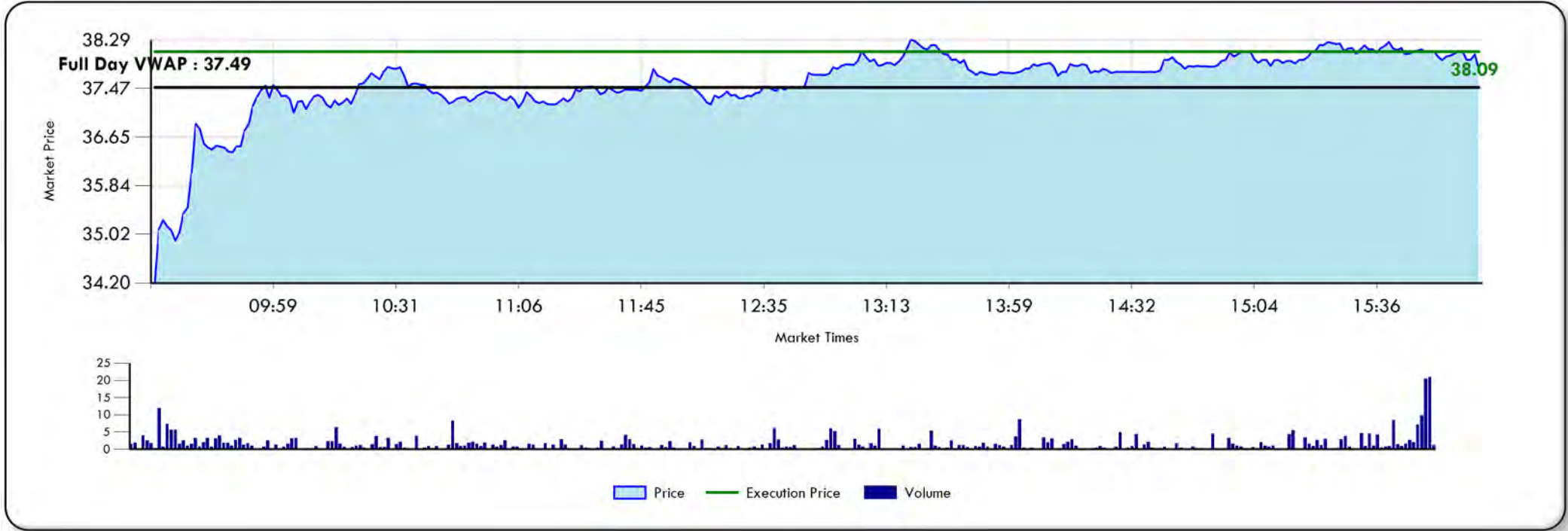


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BRSS - 2017/03/07

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	DALTON, GREINER, HARTMAN, MAHER	CAPITAL INSTL SVCS	03/07/2017 09:30:00	03/07/2017 16:00:00	6,540	38.0910	37.4872	3,949	60.38	1.05	1.43



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.29% of your market impact savings.

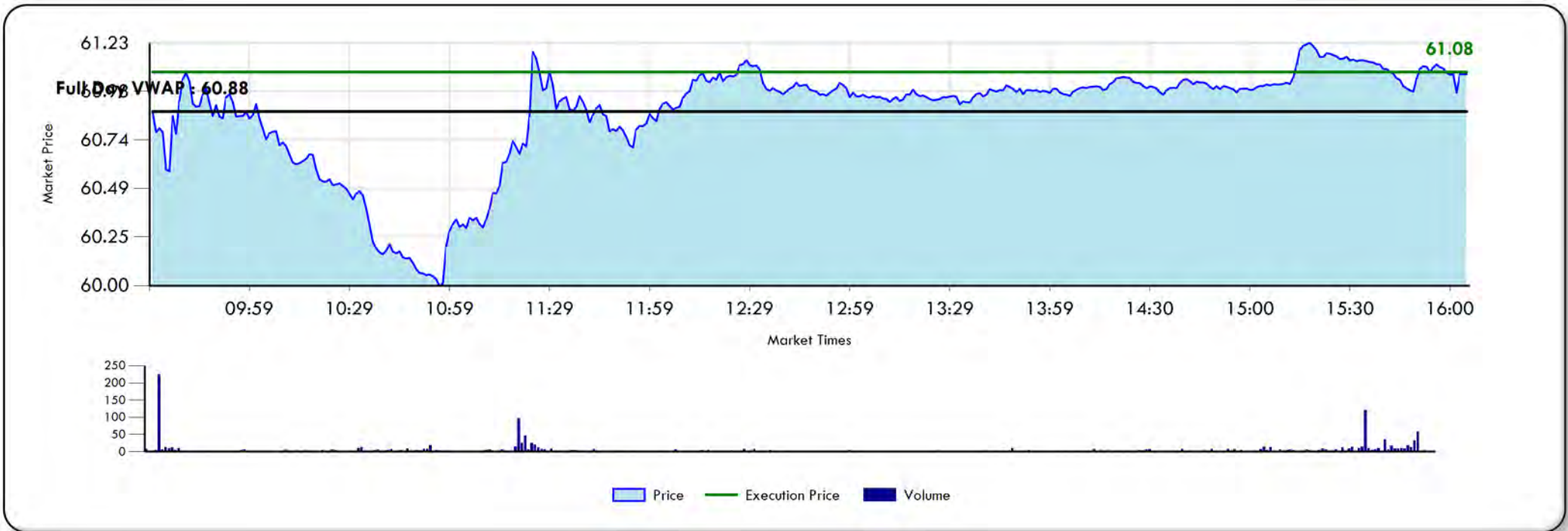


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DISH - 2017/02/09

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	EAGLE CAPITAL MANAGEMENT	CAPITAL INSTL SVCS	02/09/2017 09:30:00	02/09/2017 16:00:00	16,225	61.0819	60.8815	3,251	20.04	0.74	0.92



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.

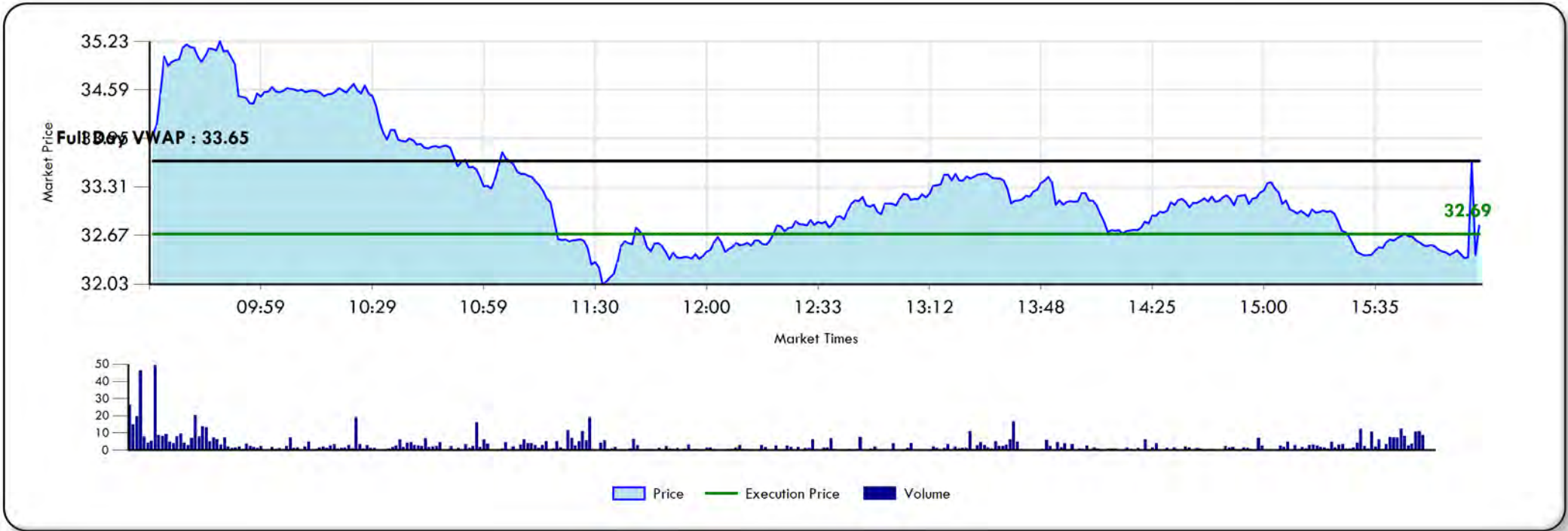


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TTD - 2017/02/17

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	NEEDHAM & CO INC	02/17/2017 09:30:00	02/17/2017 16:00:00	3,131	32.6870	33.6499	3,015	96.29	1.24	0.30



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.75% of your market impact savings.





(+) = Cost

TRADE LEVEL DETAIL - LOW COST

STMP - 2017/02/24

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 (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	02/24/2017 09:30:00	02/24/2017 16:00:00	2,540	132.1226	131.0498	2,725	107.28	0.70	0.39



NOTES

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



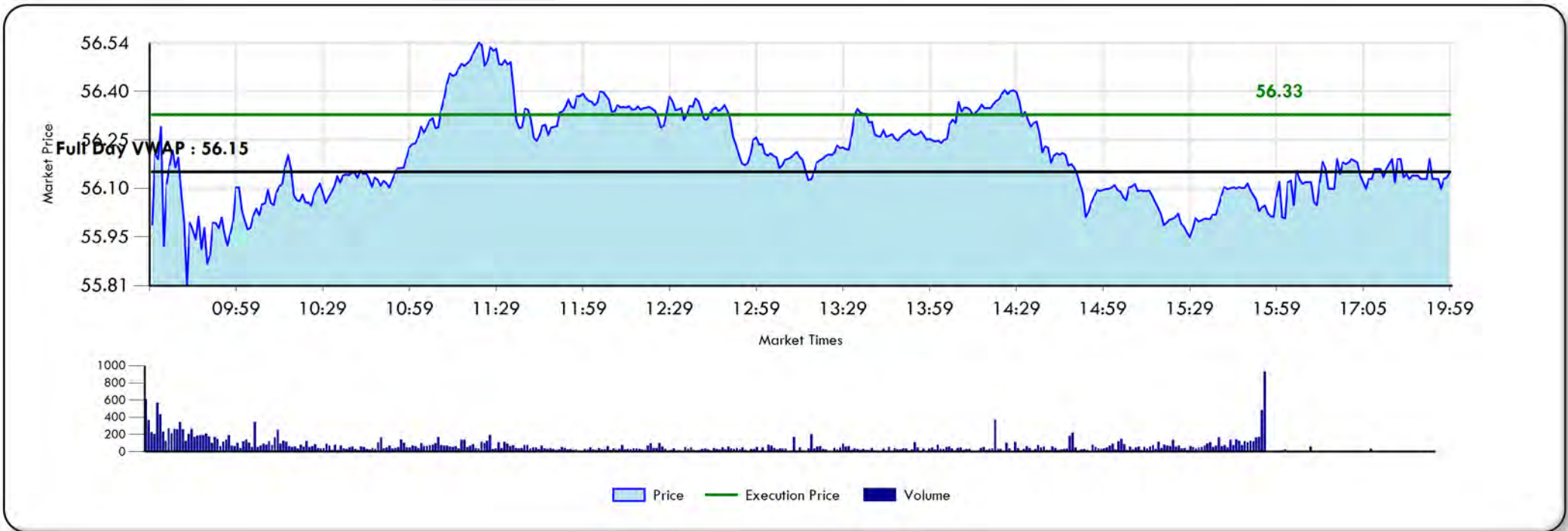


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SBUX - 2017/01/27

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	BROWN ADVISORY	RAYMOND JAMES	01/27/2017 09:30:00	01/27/2017 16:00:00	13,307	56.3254	56.1518	2,310	17.36	1.17	0.05



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

AGN - 2017/02/06

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	HUBER CAPITAL MANAGEMENT	UBS	02/06/2017 09:30:00	02/06/2017 16:00:00	1,200	234.2221	232.3197	2,283	190.24	1.35	0.04



NOTES

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

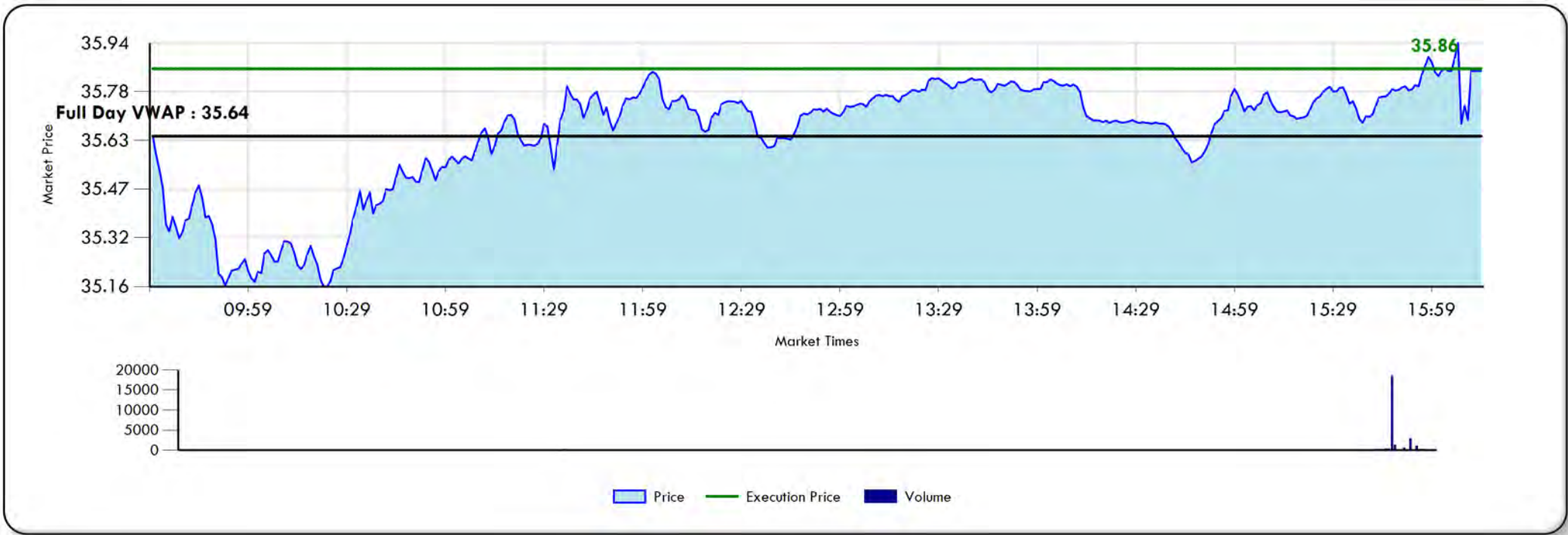


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FTI - 2017/01/13

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 (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	01/13/2017 09:30:00	01/13/2017 16:00:00	10,203	35.8575	35.6412	2,207	21.63	1.20	0.07



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.28% of your market impact savings.

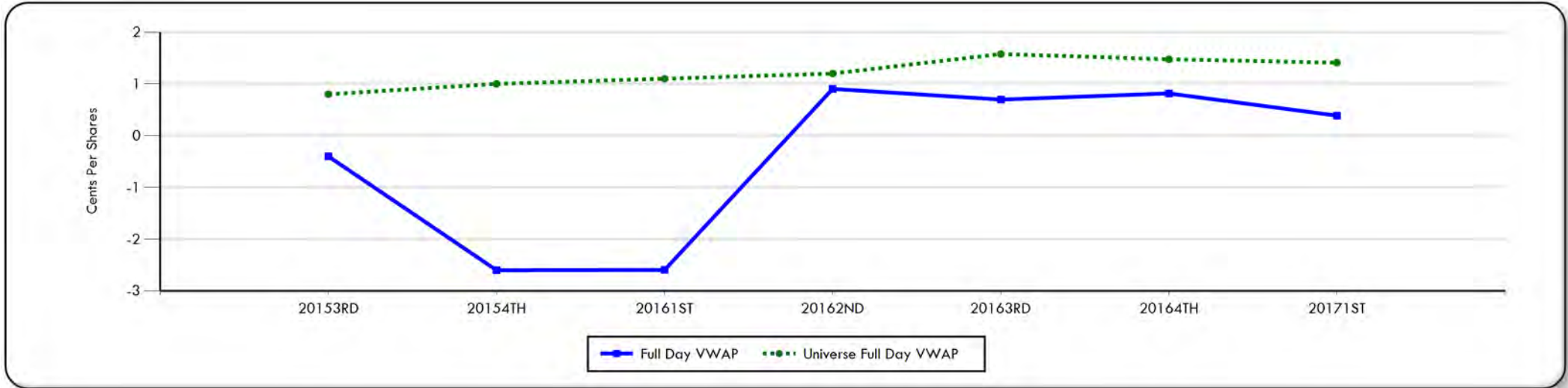




(+) = Cost

**TRADE HISTORY**

Trade History						
Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP	Full Day VWAP Universe Rank
			(cps)	(\$)		
20153RD	3,703,701	131,933,893	+3.26	120,764	0.40	70
20154TH	4,115,237	141,230,488	+3.13	128,699	2.60	86
20161ST	3,048,612	94,866,660	+3.15	96,160	2.60	89
20162ND	5,778,580	199,522,932	+2.59	149,738	+0.90	59
20163RD	3,727,750	130,612,069	+3.24	120,906	+0.70	67
20164TH	3,691,765	124,133,249	+3.16	116,656	+0.82	65
20171ST	3,961,231	140,137,188	+2.63	104,144	+0.39	74



**Note on Universes:**

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## SACRAMENTO COUNTY

US Fixed Income Analysis

Period End March 31, 2017



Sacramento County  
Period End March 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 January 01,2017 to March 31,2017. The analysis included trading of 779 trades in 281 different issues representing \$710,310,834 in principal across mortgages, governments and corporates.

### Methodology:

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

### Results:

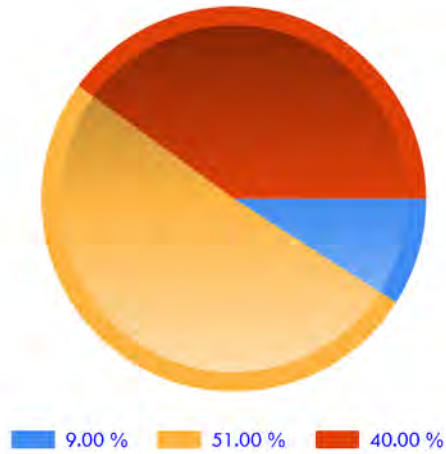
Buy/Sell	GRAND TOTAL PERFORMANCE							TRADE COST HISTORICAL PERFORMANCE				
	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q4 2016	Q3 2016	Q2 2016	Q1 2016
BUYS	357	391	170	+281.39	+7.88	+7.71	+5.94	+0.17	+12.19	+2.63	0.90	+3.79
SELLS	353	388	179	192.78	5.46	+6.42	419.53	11.88	14.01	3.11	1.27	8.27
GRAND TOTAL	710	779	281	+88.61	+1.25	+7.07	413.59	5.82	0.97	0.25	1.10	2.72



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	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Governments	361	204	77	+4.38	+0.12	+7.30	259.45 7.18	+1.23	+0.07	0.11	+0.15
Mortgages	285	484	126	+44.87	+1.58	+5.51	112.08 3.93	4.63	1.31	1.17	3.23
Corporates	64	91	78	+39.36	+6.12	+12.66	42.06 6.54	+1.84	+8.03	4.93	16.25

Bonds by Principal Traded



Historical Trade Cost Trend

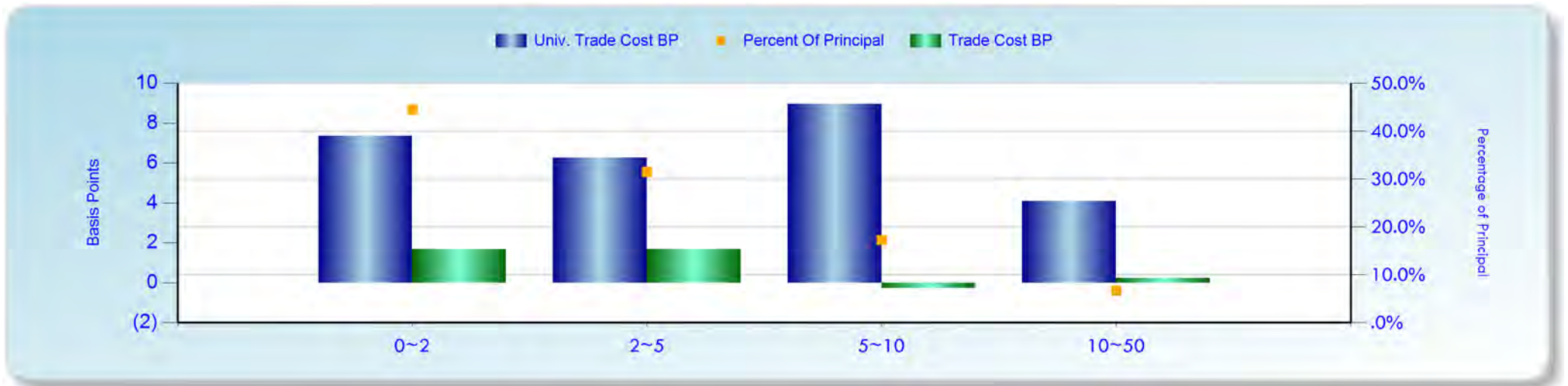




EXECUTIVE SUMMARY

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	316	680	269	+53.26	+1.68	+7.35	179.33	5.67
2~5	224	77	43	+37.70	+1.68	+6.27	102.74	4.59
5~10	122	18	13	3.47	0.28	+8.96	113.25	9.24
10~50	48	4	4	+1.13	+0.24	+4.08	18.27	3.84

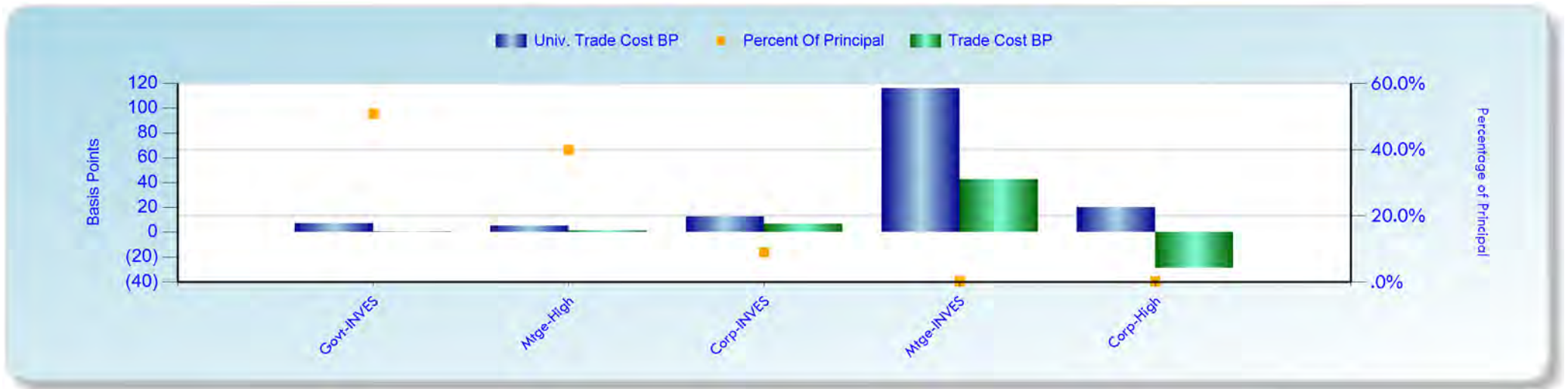




**EXECUTIVE SUMMARY**

**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	361	204	77	+4.38	+0.12	+7.30	259.45	7.18
Mtge-High Yield	283	481	123	+39.56	+1.40	+5.03	102.98	3.63
Corp-INVESTMENT GRADE	63	85	74	+41.96	+6.62	+12.56	37.63	5.94
Mtge-INVESTMENT GRADE	1	3	3	+5.32	+42.76	+115.96	9.10	73.20
Corp-High Yield	<1	6	4	2.60	28.65	+20.11	4.43	48.76



EXECUTIVE SUMMARY

RATING SUMMARY

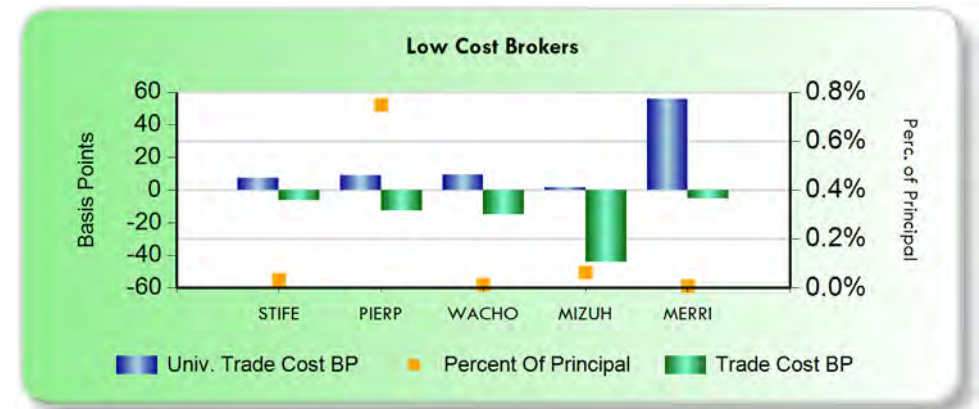
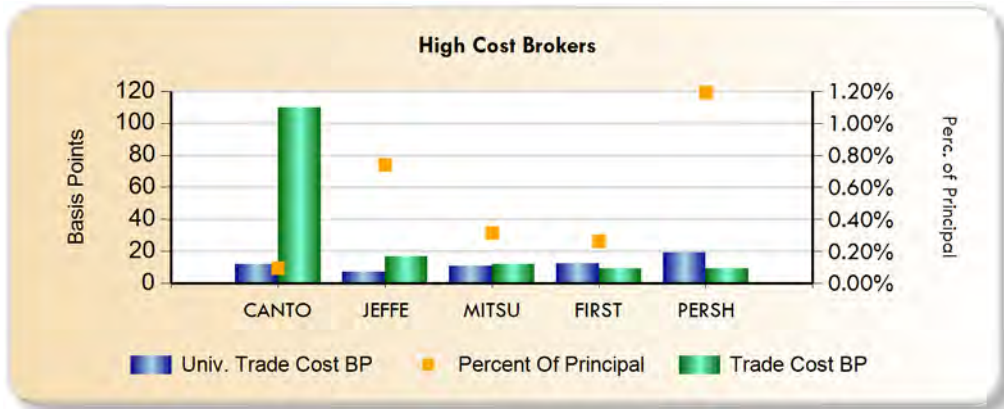
Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
AAA	366.48	211	83	+14.34	+0.39	+7.70	267.84	7.31
NR	283.46	481	123	+39.56	+1.40	+5.03	102.98	3.63
BBB+	16.47	21	18	+4.81	+2.92	+8.16	8.62	5.24
BBB	11.26	19	16	+2.54	+2.26	+15.66	15.10	13.40
A	7.72	9	9	+4.30	+5.57	+13.76	6.32	8.19
A-	7.49	10	10	+9.05	+12.08	+14.07	1.49	1.99
AA-	7.34	8	6	+4.86	+6.63	+13.67	5.16	7.04
A+	3.76	4	3	+4.83	+12.85	+12.54	+0.12	+0.31
AA	2.76	4	3	+4.91	+17.77	+14.00	+1.04	+3.77
BBB-	2.01	4	4	+0.27	+1.36	+14.21	2.59	12.85





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
<b>5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)</b>								
CANTOR FITZGERALD	<1	1	1	+7.51	+109.92	+12.18	+6.67	+97.74
JEFFERIES & CO	5	7	7	+8.96	+17.01	+7.24	+5.15	+9.77
MITSUBISHI UFJ SECS	2	8	8	+2.70	+12.04	+10.77	+0.29	+1.27
FIRST TENNESSEE	2	1	1	+1.71	+9.14	+12.54	0.64	3.40
PERSHING	8	8	8	+7.82	+9.23	+19.38	8.60	10.15
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
STIFEL NICOLAUS & CO	<1	1	1	0.15	6.26	+7.44	0.33	13.70
PIERPONT SECURITIES	5	3	3	6.76	12.69	+8.90	11.49	21.59
WACHOVIA BANK	<1	1	1	0.15	14.91	+9.49	0.24	24.40
MIZUHO	<1	1	1	2.00	43.98	+1.42	2.06	45.40
MERRILL LYNCH	<1	1	1	0.03	5.06	+56.01	0.36	61.07







**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	SELLS	353	388	179	192.78	5.46	+6.42	419.53	11.88
	BUYS	357	391	170	+281.39	+7.88	+7.71	+5.94	+0.17

**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		Q4 2016	Q3 2016	Q2 2016	Q1 2016
METROPOLITAN WEST MG	468	219	87	+53.91	+1.15	+7.15	280.64	6.00	0.87	0.16	0.41	2.90
NEUBERGER BERMAN	237	536	217	+35.97	+1.51	+6.96	129.31	5.45	1.36	0.20	2.07	3.00
BARCLAYS 1-10 YR TIP	5	24	9	1.27	2.44	+4.54	3.64	6.98	+0.01	2.57	2.88	+7.29

### 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		Q4 2016	Q3 2016	Q2 2016	Q1 2016
GOLDMAN SACHS	112	118	70	12.55	1.12	+6.75	88.19	7.87	0.65	+1.61	+2.13	1.53
CREDIT SUISSE	101	52	31	+30.45	+3.00	+4.46	14.76	1.46	7.64	1.12	0.55	+1.24
JP MORGAN CHASE	94	43	36	+31.43	+3.33	+6.65	31.35	3.32	+0.16	0.91	11.27	5.63
NOMURA	63	102	69	+4.38	+0.69	+8.57	49.99	7.88	1.73	1.29	1.79	7.17
CITIGROUP	52	94	69	+0.53	+0.10	+8.08	41.80	7.98	2.52	2.51	0.80	1.56
BARCLAYS	50	47	33	+6.12	+1.22	+7.07	29.26	5.85	+1.10	1.86	+2.28	3.96
BANK OF AMERICA	44	52	39	2.46	0.56	+5.91	28.43	6.47	+0.16	2.36	1.49	4.85
RBS	26	11	8	+1.46	+0.55	+6.76	16.38	6.21	0.69	-	-	1.28
BNP PARIBAS	26	76	46	1.22	0.47	+7.93	21.98	8.40	2.42	+2.33	3.85	8.67
MORGAN STANLEY	24	21	19	+3.99	+1.67	+12.46	25.71	10.79	+3.49	+6.63	+0.98	7.76
WELLS FARGO	20	72	43	3.64	1.81	+5.66	14.98	7.47	1.55	1.38	2.05	1.28
BMO CAPITAL MARKETS	20	8	8	+2.14	+1.08	+1.67	1.18	0.59	+0.70	+0.97	-	+0.39
DEUTSCHE BANK	20	14	10	+1.94	+0.97	+6.84	11.66	5.87	+5.13	1.12	2.83	+2.26
RBC CAPITAL MARKETS	18	7	6	+3.34	+1.90	+13.48	20.36	11.58	8.01	+1.81	0.15	13.94
PERSHING	8	8	8	+7.82	+9.23	+19.38	8.60	10.15	0.13	+1.92	12.73	1.52
UBS	7	13	11	+1.32	+1.93	+5.22	2.24	3.29	+1.98	+7.24	2.61	+2.84
PIERPONT SECURITIES	5	3	3	6.76	12.69	+8.90	11.49	21.59	+7.28	-	-	-
JEFFERIES & CO	5	7	7	+8.96	+17.01	+7.24	+5.15	+9.77	0.19	+3.63	+6.14	1.97
MITSUBISHI UFJ SECS	2	8	8	+2.70	+12.04	+10.77	+0.29	+1.27	12.97	2.43	+28.17	6.66
US BANCORP	2	3	3	+0.17	+0.79	+7.09	1.32	6.30	+52.79	-	0.57	3.05

**TRADE DETAILS**

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
<b>15 Highest Cost Trades</b>											
S	912828U2 US TREASURY N/B 11/26 2	Govt	03/15/2017 11/15/2026	METROPOLITAN WE BARCLAYS	US	USD	11,160,664	94.984	95.715	+76.90	+85,822
B	01F04264 FNCL 4.5 4/09	Mtge	03/07/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	4,022,667	106.844	106.292	+51.69	+20,792
B	01F04063 FNCL 4 3/10	Mtge	02/07/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,620,343	104.938	104.483	+43.33	+15,687
B	01F03042 FNCL 3 2/11	Mtge	01/17/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,648,629	102.859	102.278	+56.49	+14,963
B	912810RV US TREASURY N/B 02/47 3	Govt	03/23/2017 02/15/2047	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,454,593	99.844	99.430	+41.46	+14,323
B	21H03062 GNMA II TBA 30 YR 3 JUMBOS	Mtge	01/18/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,579,272	101.109	100.730	+37.52	+13,430
B	01F03043 FNCL 3 3/11	Mtge	02/10/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,645,812	102.750	102.234	+50.25	+13,294
B	01F04263 FNCL 4.5 3/09	Mtge	02/06/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,403,858	107.547	107.156	+36.39	+12,387
B	912828U8 US TREASURY N/B 12/21 2	Govt	01/12/2017 12/31/2021	METROPOLITAN WE GOLDMAN SACHS	US	USD	14,679,275	100.750	100.668	+8.17	+11,993
B	01F03044 FNCL 3 4/11	Mtge	03/10/2017 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,619,257	101.719	101.262	+44.89	+11,757
B	01F03041 FNCL 3 1/11	Mtge	01/06/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,644,203	102.688	102.235	+44.08	+11,654
B	01F04062 FNCL 4 2/10	Mtge	01/12/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,639,750	105.500	105.168	+31.44	+11,444
B	01F04262 FNCL 4.5 2/10	Mtge	01/18/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,403,364	107.531	107.188	+31.89	+10,854
S	21H03263 G2SF 3.5 3/11	Mtge	03/15/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	1,407,333	102.352	103.140	+77.03	+10,841





B	01F03062 FNMA TBA 30 YR 3 SINGLE FAMI	Mtge	01/10/2017 01/01/1900	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,860,625	99.500	99.138	+36.43	+10,422
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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
<b>15 Lowest Cost Trades</b>											
B	912828V9 US TREASURY N/B 02/27 2.25	Govt	03/15/2017 02/15/2027	METROPOLITAN WE BARCLAYS	US	USD	11,011,374	97.102	97.841	76.14	83,835
S	01F04262 FNCL 4.5 2/10	Mtge	02/06/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,409,422	107.723	107.221	46.62	15,893
S	01F03042 FNCL 3 2/11	Mtge	02/10/2017 01/01/1900	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,650,137	102.918	102.348	55.43	14,690
S	912810RU US TREASURY N/B 11/46 2.875	Govt	03/23/2017 11/15/2046	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,443,126	97.263	96.857	41.78	14,385
S	01F03062 FNMA TBA 30 YR 3 SINGLE FAMI	Mtge	02/08/2017 01/01/1900	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,392,430	99.631	99.209	42.39	14,381
S	01F04061 FNCL 4 1/11	Mtge	01/12/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,643,793	105.617	105.208	38.76	14,124
S	01F03043 FNCL 3 3/11	Mtge	03/10/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,624,085	101.906	101.362	53.42	14,019
S	01F03061 FNMA TBA 30 YR 3 SINGLE FAMI	Mtge	01/10/2017 01/01/1900	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,864,948	99.650	99.188	46.40	13,294
S	01F03063 FNCL 3 3/12	Mtge	03/06/2017 01/01/1900	Multiple Mgrs. GOLDMAN SACHS	US	USD	3,380,559	98.559	98.192	37.24	12,591
S	01F03263 FNCL 3.5 3/11	Mtge	03/06/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,316,367	101.818	101.288	52.11	12,070
B	21H03264 G2SF 3.5 4/11	Mtge	03/15/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	1,404,648	102.156	102.950	77.70	10,914
S	01F04063 FNCL 4 3/10	Mtge	03/07/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,605,384	104.504	104.196	29.51	10,640
S	912810RU US TREASURY N/B 11/46 2.875	Govt	03/30/2017 11/15/2046	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,403,998	97.500	96.791	72.73	10,211
S	01F03061 FNMA TBA 30 YR 3 SINGLE FAMI	Mtge	01/10/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,489,697	99.588	99.188	40.15	9,997
S	01F03063 FNCL 3 3/12	Mtge	03/06/2017 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,464,697	98.588	98.192	40.21	9,910



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	64	91	78	+39.36	+6.12	+12.66	42.06	6.54

**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	361	204	77	+4.38	+0.12	+7.30	259.45	7.18

**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	285	484	126	+44.87	+1.58	+5.51	112.08	3.93

**MORTGAGES**







MUNICIPALS





**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	361	204	77	+4.38	+0.12	+7.30	259.45	7.18

**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
NR	283	481	123	+39.56	+1.40	+5.03	102.98	3.63
AAA	<1	2	2	+6.49	+90.26	+191.61	7.29	101.35
BBB-	<1	1	1	1.17	22.39	+12.22	1.81	34.61

**RATING BY EACH BOND TYPE**

**CORPORATES - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost		Univ. Trade		Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP	
BBB+	16	21	18	+4.81	+2.92	+8.16	8.62	5.24	
BBB	11	19	16	+2.54	+2.26	+15.66	15.10	13.41	
A	8	9	9	+4.30	+5.57	+13.76	6.32	8.19	
A-	7	10	10	+9.05	+12.08	+14.07	1.49	1.99	
AA-	7	8	6	+4.86	+6.63	+13.67	5.16	7.04	
AAA	4	5	4	+3.47	+7.79	+10.27	1.10	2.48	
A+	4	4	3	+4.83	+12.85	+12.54	+0.12	+0.31	
AA	3	4	3	+4.91	+17.77	+14.00	+1.04	+3.77	
BBB-	1	3	3	+1.45	+9.72	+14.91	0.77	5.18	
BB+	<1	2	2	0.81	12.39	+12.53	1.64	24.92	
AA+	<1	2	2	+1.74	+26.95	+30.41	0.22	3.46	
BB	<1	3	1	0.28	17.78	+56.01	1.16	73.79	
CCC+	<1	1	1	1.51	162.00	+12.73	1.62	174.73	

### 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
01/01/2017-03/31/2017	710,311	779	281	+88.61	+1.25	+7.07	413.59	5.82
Year-Ending 2017	710,311	779		+88.61	+1.25	+7.07	413.59	5.82
10/01/2016-12/31/2016	711,667	646	221	68.72	0.97	+6.26	514.24	7.23
07/01/2016-09/30/2016	589,731	684	203	14.71	0.25	+6.35	389.30	6.60
04/01/2016-06/30/2016	619,130	801	269	67.81	1.10	+8.74	608.75	9.84
01/02/2016-03/31/2016	710,978	1117	262	193.39	2.72	+6.08	625.45	8.80
Year-Ending 2016	2,631,505	3248		344.62	1.31	+6.81	2,137.74	8.12
10/01/2015-12/31/2015	820,526	980	212	138.86	1.69	+8.52	837.57	10.21
07/01/2015-09/30/2015	992,841	1625	204	225.86	2.27	+3.74	596.77	6.01
04/01/2015-06/30/2015	1,141,971	1504	246	310.14	2.72	+7.36	1,150.64	10.08
01/01/2015-03/31/2015	944,141	1100	191	8.38	0.09	+6.57	628.26	6.66
Year-Ending 2015	3,899,478	5209		683.23	1.75	+6.49	3,213.25	8.24
10/01/2014-12/31/2014	676,216	885	213	+41.55	+0.61	+5.86	354.40	5.25
07/01/2014-09/30/2014	905,295	785	133	+534.89	+5.91	+6.85	85.46	0.94
04/01/2014-06/30/2014	727,152	957	240	48.64	0.67	+7.04	560.46	7.71
01/02/2014-03/31/2014	920,513	1033	210	131.04	1.42	+6.54	733.34	7.96
Year-Ending 2014	3,229,176	3660		+396.76	+1.23	+6.60	1,733.66	5.37
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07
07/01/2013-09/30/2013	778,379	825	214	+21.56	+0.28	+6.25	465.02	5.97
04/01/2013-06/30/2013	937,180	803	217	51.74	0.55	+7.82	784.80	8.37
01/02/2013-03/31/2013	635,964	613	190	+89.06	+1.40	+8.12	427.14	6.72
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86
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



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
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	51	47	BLOOMBERGTERMINAL	51.05 %
	26	26	ISSUE PRICE	37.34 %
	14	12	MARKETAXESS-SUMMARYDATA	11.61 %
GOVERNMENTS	200	74	BLOOMBERGTERMINAL	99.37 %
	4	4	ISSUE PRICE	0.63 %
MORTGAGES	309	44	TULLET PREBON	70.10 %
	175	82	BLOOMBERGTERMINAL	29.90 %

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## SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End March 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 world's largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an unmatched 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 January 1, 2017 to March 31, 2017. The analysis included trading of 26,367,694 shares representing \$193.29 million in principal across 31 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"> <li>Your commission cost was +8.16 bp or \$ +\$157,639 (7.65 bp better than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your fee cost was +6.67 bp or \$ +128,887 (+0.07 bp worse than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact cost was +8.47 bp or \$+163,803 (+0.21 bp worse than the Elkins/McSherry Universe)</li> <li>Your overall trading cost of +23.30 bp was 7.37 bp better than the Elkins/McSherry Universe.</li> <li>Sacramento County trading was higher than the Elkins/McSherry Universe in 10 countries and lower than the Elkins/McSherry Universe in 21 countries.</li> <li>16 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 51 of your brokers had lower trading cost.</li> </ul>	<ul style="list-style-type: none"> <li>E - Score : 0.15</li> </ul>



(+) = Cost

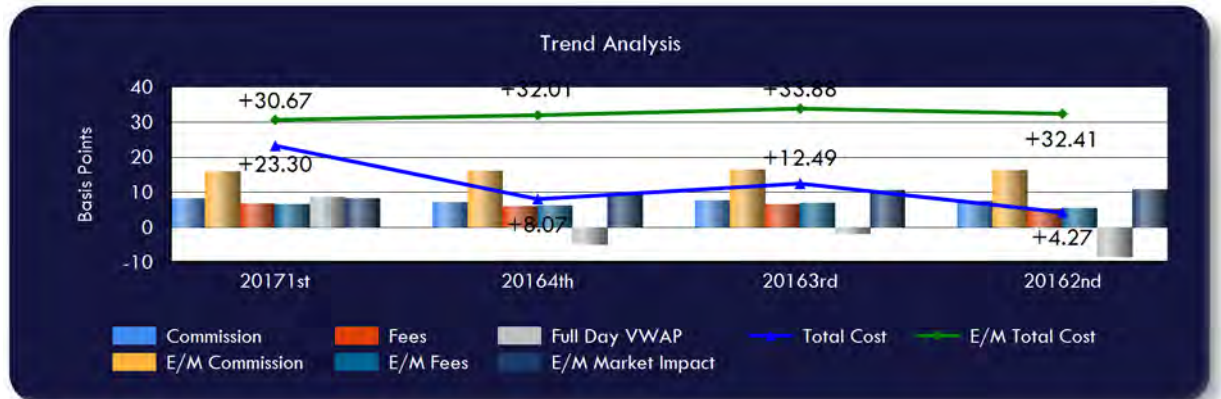
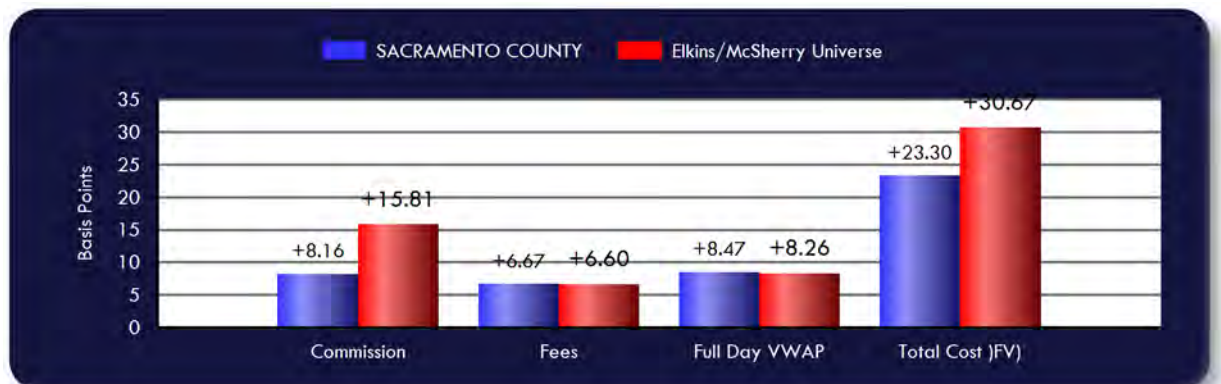
**EXECUTIVE SUMMARY**

**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	+7.91	+15.91	+7.45	+11.12	+11.08	+5.30	+7.42	+24.34	10.06	0.06
Sell	+8.45	+15.68	+7.72	+1.31	+1.22	+12.27	+9.27	+22.03	4.14	0.25
<b>Total</b>	<b>+8.16</b>	<b>+15.81</b>	<b>+7.57</b>	<b>+6.67</b>	<b>+6.60</b>	<b>+8.47</b>	<b>+8.26</b>	<b>+23.30</b>	<b>7.37</b>	<b>0.15</b>

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	105,515,793	87,771,272
Shares	13,058,553	13,309,141
Unique Names	252	175
Liquidity (% POV)	0.373	0.571
Avg. Order Size	12,250	14,690
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,066	906





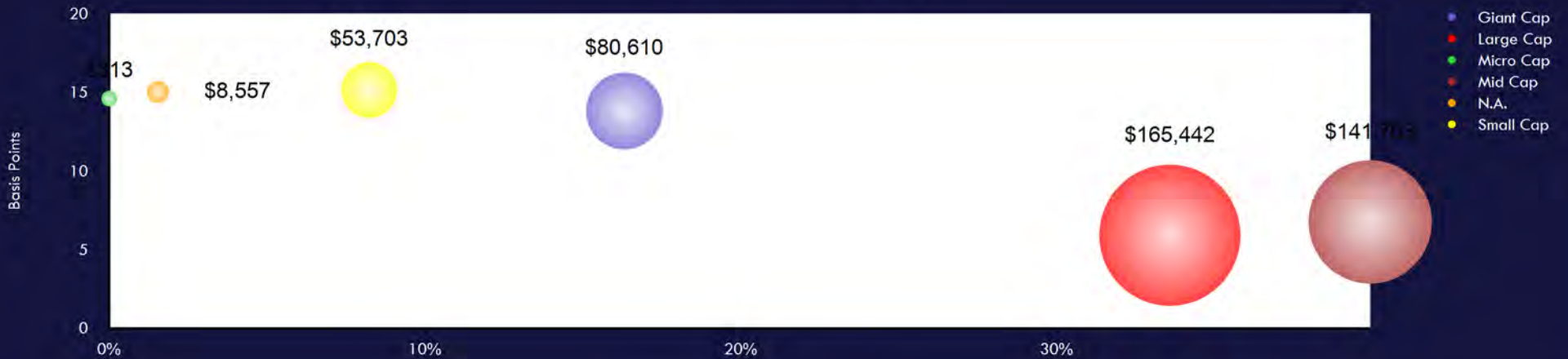
(+) = Cost

**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)		
Mid Cap	39.99 %	85,034	+8.86	+15.54	+6.77	+9.20	+18.33	9.17	0.19	\$1 Billion to \$5 Billion
Large Cap	33.65 %	127,274	+8.18	+16.55	+5.92	+8.02	+25.44	10.61	0.12	\$5 Billion to \$25 Billion
Giant Cap	16.38 %	124,653	+5.04	+15.45	+13.82	+6.06	+25.47	2.88	0.13	Over \$25 Billion
Small Cap	8.30 %	59,878	+9.97	+15.12	+15.15	+9.78	+33.44	+2.38	0.09	\$250 Million to \$1 Billion
N.A.	1.61 %	124,439	+12.51	+14.09	+15.02	+4.51	+27.53	+8.87	0.22	
Micro Cap	0.07 %	26,824	+8.77	+15.61	+14.61	+12.19	+23.38	4.43	0.14	Under \$250 Million

**Total Cost by Market Cap: (USD)**







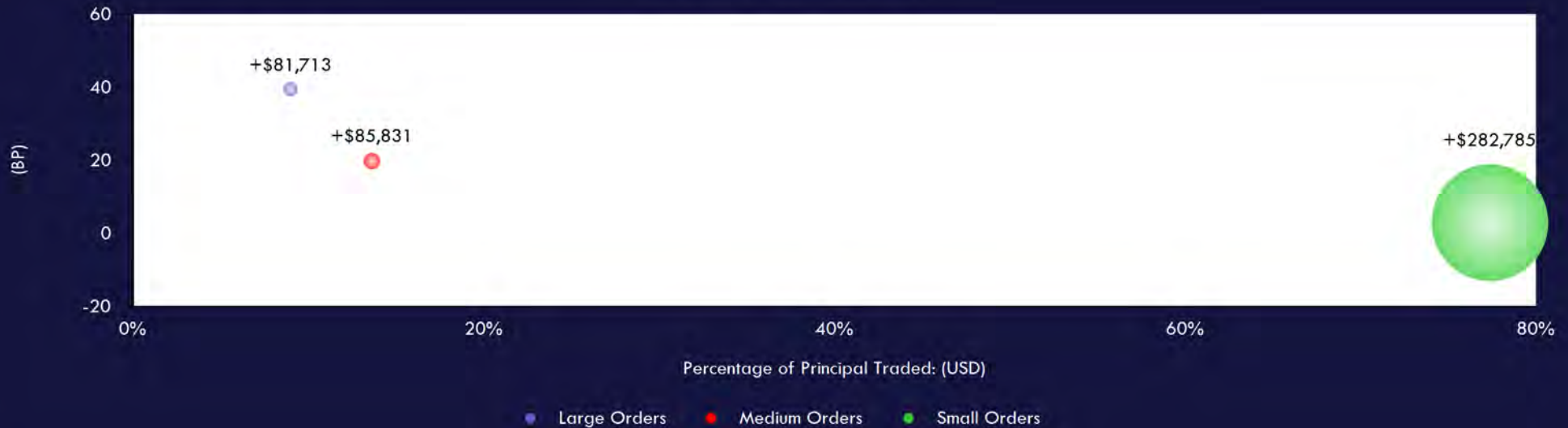
(+) = Cost

**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	10	1,737,242	N/A	+6.04	+14.88	+39.49	+9.38	+46.94	+20.95	0.79	1M or Greater
Medium Orders	40	658,673	N/A	+9.21	+16.53	+19.72	+6.96	+32.58	+5.32	0.26	Between 500k - 1M
Small Orders	1,922	77,819	N/A	+8.22	+15.79	+2.88	+8.36	+18.89	12.92	0.05	500K or Less

**Total Cost By Order Size: (USD)**





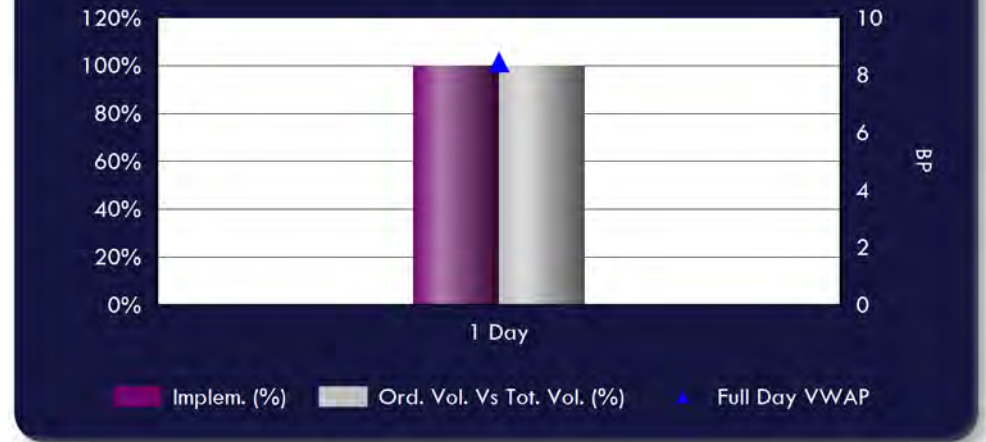
(+) = Cost

**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%	+8.47	0.15

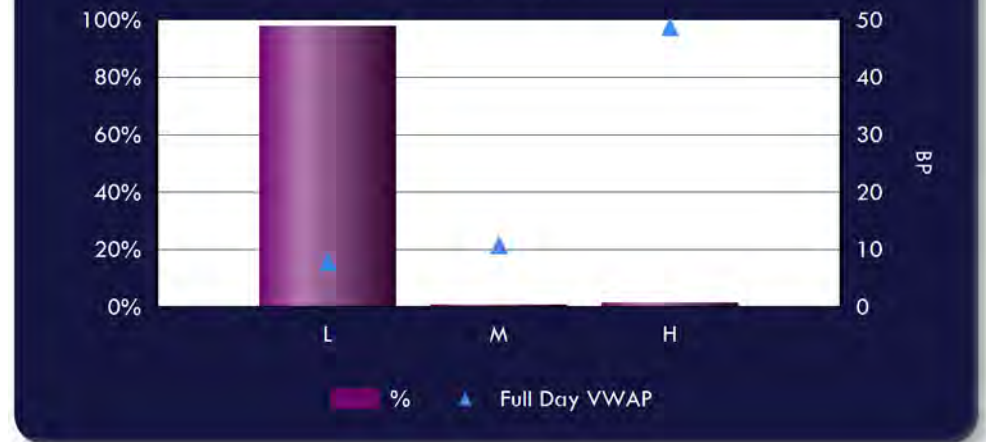
**Implementation Days**



**TRADE DIFFICULTY**

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	1%	+48.81	2.70
0%~20% of daily vol.	L	98%	+7.89	0.11
20%~50% of daily vol.	M	1%	+10.83	-0.03

**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)		
<b>HIGHEST COST COUNTRIES - Total Cost Universe Difference</b>										
NETHERLANDS	8	4.32%	+8.89	+14.09	+0.00	+0.06	+43.85	+4.51	+34.08	0.41
IRELAND - BUYS	<1	0.25%	+9.55	+13.30	+100.14	+100.00	+32.36	+5.43	+23.31	0.52
SWITZERLAND	8	4.00%	+10.17	+13.72	+0.00	+0.01	+32.49	+6.27	+22.66	0.32
BELGIUM	<1	0.11%	+5.00	+13.90	+0.00	+0.00	+35.11	+11.86	+14.35	1.63
GERMANY	7	3.53%	+9.06	+14.08	+0.00	+0.00	+22.28	+6.10	+11.15	-0.05
FRANCE - BUYS	2	0.78%	+6.90	+13.77	+30.00	+20.00	+9.88	+4.83	+8.17	0.42
INDONESIA	<1	0.07%	+25.00	+18.26	+4.80	+9.46	+11.39	+7.79	+5.68	-0.31
AUSTRIA	<1	0.15%	+9.00	+13.59	+0.00	+0.01	+21.04	+14.01	+2.43	-0.17
TURKEY	<1	0.21%	+16.07	+15.01	+0.00	+0.00	+4.04	+3.93	+1.17	0.03
ISRAEL	<1	0.39%	+20.00	+17.50	+0.00	+0.09	+8.95	+10.77	+0.59	0.13

## 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)		
<b>LOWEST COST COUNTRIES - Total Cost Universe Difference</b>										
IRELAND - SELLS	1	0.64%	+10.72	+14.87	+0.13	+0.00	+6.86	+37.42	34.59	0.45
ITALY - SELLS	1	0.55%	+6.91	+13.67	+0.00	+0.00	5.83	+20.21	32.80	-0.28
DENMARK	1	0.61%	+7.94	+13.81	+0.00	+0.01	4.57	+14.46	24.90	-0.14
U.K. - SELLS	6	2.91%	+6.33	+14.41	+0.09	+0.00	+7.95	+24.05	24.10	0.21
NORWAY	1	0.61%	+10.22	+18.79	+0.00	+0.02	+2.32	+13.14	19.41	-0.01
HONG KONG	19	9.91%	+11.10	+23.43	+10.76	+10.21	1.75	+4.02	17.54	0.05
JAPAN	32	16.63%	+7.60	+15.61	+0.00	+0.01	+2.88	+12.19	17.33	0.08
U.K. - BUYS	17	8.66%	+7.39	+14.47	+50.29	+50.00	2.08	+7.80	16.68	-0.03
NEW ZEALAND	<1	0.29%	+11.83	+15.49	+0.00	+0.02	+2.94	+15.55	16.29	-0.18
MEXICO	<1	0.36%	+19.78	+16.87	+0.00	+0.00	15.38	+3.55	16.02	-0.24
FINLAND	3	1.34%	+13.68	+12.73	+0.00	+0.01	5.88	+10.40	15.33	-0.28
FRANCE - SELLS	6	2.87%	+10.35	+13.87	+0.00	+0.00	3.72	+7.66	14.90	-0.15
AUSTRALIA	14	7.17%	+10.49	+14.72	+0.00	+0.06	+0.33	+6.88	10.84	0.03
SPAIN	2	0.80%	+3.26	+13.96	+0.00	+0.00	+9.39	+8.16	9.48	0.73
SWEDEN	10	4.99%	+11.03	+14.38	+0.00	+0.00	+0.18	+4.10	7.27	-0.11
KOREA - SELLS	1	0.57%	+12.15	+17.07	+30.00	+26.29	+3.66	+8.87	6.42	0.04
CANADA	16	8.53%	+6.57	+17.17	+0.00	+0.02	+15.04	+9.79	5.37	0.51
BRAZIL	<1	0.31%	+17.31	+16.43	+3.25	+1.71	+9.89	+16.86	4.55	0.29
ITALY - BUYS	9	4.63%	+6.17	+13.28	+10.00	+12.00	+14.76	+9.14	3.49	0.25
SINGAPORE	6	3.33%	+8.70	+16.43	+3.15	+3.45	+9.11	+4.55	3.48	-0.09
U.S.	20	10.50%	+2.30	+14.99	+0.09	+0.09	+15.84	+4.25	1.10	0.40





(+) = Cost

**TRADE CYCLE DETAIL**

**1 HIGHEST 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
WILLIAM BLAIR & COMP	30	449	15.61%	67,203	0.19	+11.03	+15.62	+14.16	+9.30	+1.61	17.96	13.85	19.97

**NOTES**

- Managers above made up 15.61 % of principal traded.



(+) = Cost

**TRADE CYCLE DETAIL**

**4 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
LAZARD ASSET MANAGEM	70	369	36.31%	190,221	0.14	+8.90	+14.84	+11.92	+8.30	2.60	17.96	15.96	27.17
S&P GLOBAL INFRAST-I	20	329	10.33%	60,676	0.73	+1.63	+15.94	+16.14	+7.03	5.15	22.76	+6.25	37.97
CBRE CLARION (INTL R	42	358	21.56%	116,388	0.02	+10.82	+18.17	+3.20	+7.49	11.73	35.90	33.74	32.80
LSV ASSET MANAGEMENT	31	467	16.19%	67,006	-0.07	+4.31	+14.94	2.61	+8.98	22.33	29.17	36.40	24.56

**NOTES**

- Manager above made up 84.39 % of principal traded.



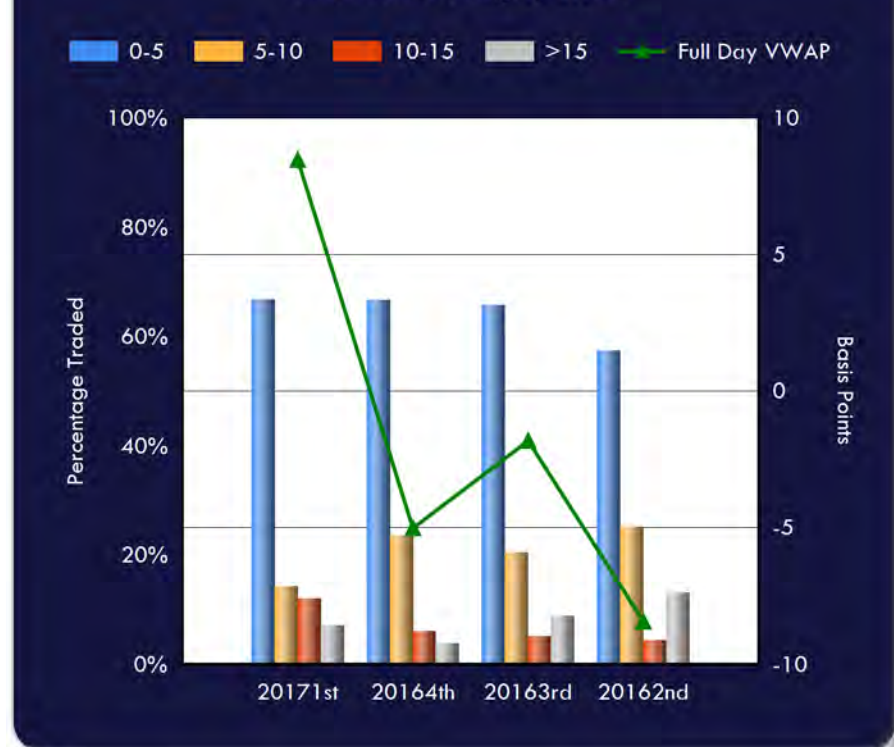
(+) = Cost

**COMMISSION REVIEW**

**COMMISSION REVIEW - Top 20 Brokers (Commission \$)**

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20164th (bp)	20163rd (bp)	20162nd (bp)
CREDIT SUI	22,666	+9.54	+15.76	+7.62	+8.14	+7.63	+7.80
MERRILL LY	18,466	+9.23	+14.36	+7.21	+7.22	+6.90	+7.07
JP MORGAN	14,150	+13.03	+17.58	+7.46	+11.48	+9.21	+10.16
UBS	11,362	+6.67	+15.28	+7.47	+7.11	+9.23	+6.30
MACQUARIE	9,934	+10.45	+18.17	+7.29	+8.74	+10.49	+7.45
MORGAN STA	5,809	+7.31	+16.74	+7.59	+4.58	+8.36	+7.12
CITIGROUP	5,771	+6.36	+17.20	+7.82	+5.70	+7.52	+4.70
GOLDMAN SA	5,339	+5.43	+15.41	+7.26	+7.52	+3.76	+9.65
DAIWA SECU	5,075	+11.19	+17.24	+7.64	+6.58	+11.18	+8.55
DEUTSCHE B	5,075	+8.12	+14.97	+7.16	+7.58	+9.06	+10.52
BARCLAYS	4,572	+4.57	+14.58	+6.89	+5.90	+4.55	+3.63
RBC DOMINI	4,031	+5.59	+17.17	+10.31	+3.22	+8.41	+11.67
SOCIETE GE	3,909	+6.21	+13.97	+7.01	+6.36	+6.33	+5.34
CREDIT AGR	3,227	+9.90	+16.84	+7.66	+11.46	+11.52	+10.63
ITG	2,627	+6.35	+15.19	+7.70	+4.69	+4.95	+5.27
CLSA SINGA	2,477	+4.79	+14.69	+7.32	-	-	-
CIBC WORLD	2,456	+22.91	+17.17	+10.31	-	-	-
NESBITT BU	2,203	+26.03	+17.17	+10.31	-	+4.81	+30.59
MIZUHO	2,169	+10.20	+15.61	+7.61	+8.78	+10.98	+9.75
SMBC SECUR	2,012	+10.06	+15.61	+7.61	+10.31	+10.43	+8.31

**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)	20164th (bp)	20163rd (bp)	20162nd (bp)
LAZARD ASSET MANAGEM	70	369	36.31%	190,221	0.14	+8.90	+14.84	+11.92	+8.30	2.60	17.96	15.96	27.17
CBRE CLARION (INTL R	42	358	21.56%	116,388	0.02	+10.82	+18.17	+3.20	+7.49	11.74	35.90	33.74	32.80
LSV ASSET MANAGEMENT	31	467	16.19%	67,006	-0.07	+4.31	+14.94	2.61	+8.98	22.33	29.17	36.40	24.56
WILLIAM BLAIR & COMP	30	449	15.61%	67,203	0.19	+11.03	+15.62	+14.16	+9.30	+1.61	17.96	13.85	19.97
S&P GLOBAL INFRAS-T-I	20	329	10.33%	60,676	0.73	+1.63	+15.94	+16.14	+7.02	5.15	22.76	+6.25	37.97

**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)	20164th (bp)	20163rd (bp)	20162nd (bp)
CREDIT SUISSE	24	221	12.30%	107,563	0.08	22,666	+9.54	+15.76	+10.60	+7.28	2.87	22.25	22.78	12.61
MERRILL LYNCH	20	135	10.35%	148,232	0.31	18,466	+9.23	+14.36	+26.03	+9.58	+11.10	8.57	13.23	36.65
UBS	17	204	8.81%	83,450	0.10	11,362	+6.67	+15.28	+2.81	+8.17	13.83	42.07	14.75	24.78
JP MORGAN CHASE	11	109	5.62%	99,630	0.03	14,150	+13.03	+17.58	+12.71	+6.18	+1.87	16.29	35.64	23.72
BARCLAYS	10	74	5.18%	135,291	0.37	4,572	+4.57	+14.58	+4.33	+5.98	11.72	33.89	50.72	50.16
GOLDMAN SACHS	10	107	5.09%	91,922	0.52	5,339	+5.43	+15.41	+17.33	+9.50	2.01	17.14	3.72	76.95
MACQUARIE	10	46	4.92%	206,649	0.06	9,934	+10.45	+18.17	5.20	+5.85	18.50	26.85	26.49	19.66
CITIGROUP	9	117	4.70%	77,612	0.16	5,771	+6.36	+17.20	0.38	+7.10	18.31	20.50	33.50	20.93
MORGAN STANLEY	8	128	4.11%	62,072	0.07	5,809	+7.31	+16.74	0.06	+7.40	18.27	20.48	25.86	27.84
RBC DOMINION SECS	7	20	3.73%	360,711	0.95	4,031	+5.59	+17.17	+27.52	+9.79	+6.13	57.15	22.75	37.42

**NOTES**

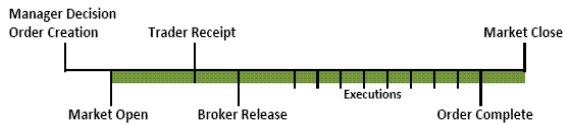
- Brokers above made up 64.80 % of principal traded.



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
SOCIETE GENERALE	6	67	3.26%	93,915	0.14	3,909	+6.21	+13.97	+38.49	+9.11	+21.34	15.19	16.23	46.15
DEUTSCHE BANK	6	94	3.23%	66,501	0.10	5,075	+8.12	+14.97	+2.69	+9.68	14.04	16.25	3.80	8.31
CLSA SINGAPORE	5	27	2.68%	191,520	-0.17	2,477	+4.79	+14.69	7.29	+7.56	27.65	-	-	-
LIQUIDNET	5	11	2.38%	417,575	-0.50	1,623	+3.53	+15.08	9.95	+4.55	26.10	17.74	+4.01	14.31
DAIWA SECURITIES	5	47	2.35%	96,496	0.20	5,075	+11.19	+17.24	+4.44	+10.33	11.53	113.49	21.72	0.65
ITG	4	75	2.14%	55,179	-0.15	2,627	+6.35	+15.19	+0.26	+8.49	16.08	14.27	19.75	30.71
INSTINET	4	64	2.14%	64,627	0.45	1,925	+4.65	+16.91	+25.63	+9.67	+3.84	28.65	38.96	19.33
CREDIT AGRICOLE	3	36	1.69%	90,574	-0.08	3,227	+9.90	+16.84	1.78	+7.60	15.56	10.42	1.01	13.00
HSBC BANK	2	38	1.25%	63,704	-0.25	894	+3.69	+14.57	7.28	+9.03	27.07	56.52	50.87	59.44
MIZUHO	2	17	1.10%	125,113	-0.04	2,169	+10.20	+15.61	3.63	+12.19	21.24	19.07	30.13	27.54

**NOTES**

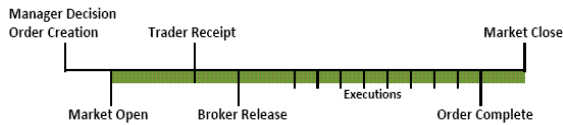
- Brokers above made up 22.21 % of principal traded.



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
SMBC SECURITIES INC	2	21	1.03%	95,192	0.23	2,012	+10.06	+15.61	+1.30	+12.19	16.45	16.41	11.98	69.21
BNP PARIBAS	2	27	0.88%	62,952	0.34	1,308	+7.69	+19.31	+14.60	+6.76	3.51	+7.77	10.58	18.67
SC BERNSTEIN	2	33	0.84%	49,344	-0.02	560	+3.44	+16.76	+0.47	+8.68	21.41	21.27	6.09	20.13
GOODBODY STOCKBROKER	1	18	0.77%	83,123	0.39	1,635	+10.93	+14.61	+8.00	+32.06	27.61	+20.86	-	97.09
SCOTIA CAPITAL	1	28	0.72%	49,480	-0.14	335	+2.42	+16.60	+1.68	+8.34	20.88	68.99	+20.79	31.15
TD WATERHOUSE	1	13	0.69%	102,628	-0.59	456	+3.42	+17.17	18.61	+9.79	42.17	39.07	4.99	7.79
CIBC WORLD MARKETS	1	6	0.55%	178,662	0.20	2,456	+22.91	+17.17	+19.29	+9.79	+15.22	-	-	-
KAS ASSOCIATE	<1	2	0.49%	470,716	-0.20	1,130	+12.00	+14.38	+1.03	+4.10	5.45	-	-	-
MITSUBISHI UFJ SECS	<1	16	0.47%	57,109	0.16	932	+10.20	+15.61	+4.29	+12.19	13.32	25.68	27.84	19.36
NESBITT BURNS	<1	3	0.44%	282,083	0.96	2,203	+26.03	+17.17	+57.74	+9.79	+56.79	-	+3.27	+5.32

**NOTES**

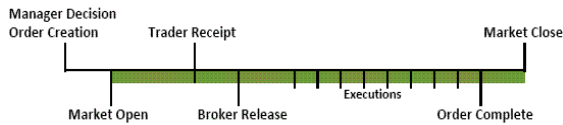
- Brokers above made up 6.89 % of principal traded.



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
EXANE	<1	12	0.43%	68,860	-0.68	514	+6.22	+13.95	12.61	+7.13	27.47	32.78	25.60	15.61
TORONTO DOMINION	<1	7	0.39%	107,336	-0.53	110	+1.47	+17.17	13.50	+9.79	39.02	-	-	-
MEDIOBANCA	<1	8	0.38%	90,905	0.12	1,091	+15.00	+13.37	0.56	+11.66	12.14	-	26.64	+1.77
CITATION FINL GROUP	<1	3	0.37%	239,660	-1.38	216	+3.00	+14.99	53.52	+4.25	69.75	26.13	11.32	11.98
SVENSKA HANDELSBANKE	<1	10	0.34%	66,339	0.08	995	+15.00	+14.38	+4.38	+4.10	+0.90	24.04	-	+6.99
CARNEGIE	<1	8	0.32%	76,219	-0.12	915	+15.00	+12.73	1.95	+10.40	10.09	17.04	15.43	33.14
DAVY STOCKBROKERS	<1	5	0.30%	116,118	0.31	871	+15.00	+14.47	+8.73	+7.80	+51.57	-	31.49	22.42
CLSA AMERICAS	<1	3	0.30%	193,065	1.94	55	+0.95	+14.99	+25.28	+4.25	+6.90	-	-	-
LIBERUM CAPITAL LTD	<1	8	0.29%	69,312	N/A	832	+15.00	+14.47	5.14	+7.80	12.28	-	66.79	16.08
DBS VICKERS SECS	<1	7	0.27%	73,876	-0.60	517	+10.00	+20.78	17.40	+4.22	32.12	15.92	19.10	-

**NOTES**

- Brokers above made up 3.38 % of principal traded.

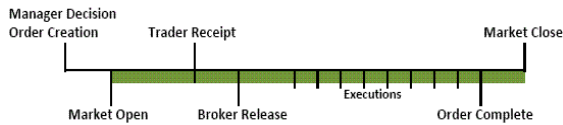




(+) = Cost

**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)	20164th (bp)	20163rd (bp)	20162nd (bp)
JEFFERIES & CO	<1	7	0.27%	73,453	-0.17	449	+8.73	+14.05	5.08	+7.54	18.35	9.10	20.11	4.11
PERSHING	<1	2	0.21%	206,702	-0.20	827	+20.00	+16.87	19.87	+3.55	20.29	+11.46	279.88	57.76
JOH BERENBERG GOSSLE	<1	2	0.18%	172,267	0.25	517	+15.00	+14.08	+41.38	+6.10	+36.20	59.30	9.95	3.38
NATIXIS	<1	1	0.18%	339,228	0.17	475	+14.00	+13.77	+5.01	+4.83	+10.41	-	-	20.96
KEPLER EQUITIES	<1	5	0.15%	59,249	0.06	444	+15.00	+13.87	+3.03	+7.66	3.50	2.46	+8.34	-
D CARNEGIE AG	<1	2	0.15%	143,501	0.57	431	+15.00	+14.19	+24.80	+7.56	+18.05	+14.18	-	14.15
GREEN STREET	<1	6	0.13%	42,895	0.54	309	+12.00	+14.17	+23.76	+7.20	+14.64	32.61	66.13	61.47
NUMIS SECURITIES	<1	4	0.13%	64,156	0.94	385	+15.00	+14.41	+11.74	+24.05	11.52	23.35	-	11.50
BANK J. VONTOBEL	<1	4	0.13%	62,803	0.09	377	+15.00	+13.72	+6.40	+6.27	+1.40	-	+66.28	52.42
CIMB SECURITIES	<1	2	0.13%	122,602	-0.19	490	+20.00	+23.43	9.06	+4.02	15.94	19.14	-	2.26

**NOTES**

- Brokers above made up 1.66 % 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
PAVILION GLOBAL MKT	<1	17	0.12%	14,111	-0.76	72	+3.00	+17.17	20.20	+9.79	44.18	15.67	41.70	22.63
REDBURN PARTNERS LLP	<1	10	0.10%	19,828	-0.60	297	+15.00	+14.47	19.28	+7.80	25.98	-	17.84	23.53
INVESTEC BANK	<1	3	0.10%	65,636	0.00	295	+15.00	+14.47	+6.81	+7.80	0.26	6.99	-	-
FORSYTH BARR LTD	<1	2	0.09%	89,992	-0.65	360	+20.00	+15.49	7.27	+15.55	18.33	139.21	-	-
SG SECURITIES	<1	2	0.08%	79,635	-0.72	96	+6.00	+15.61	34.85	+12.19	56.66	15.07	-	7.32
PAREL	<1	3	0.08%	53,060	0.34	239	+15.00	+13.67	+7.72	+20.21	11.16	-	-	-
CANACCORD GENUITY	<1	2	0.08%	79,042	-0.03	186	+11.74	+14.47	5.65	+7.80	15.97	27.17	-	35.01
CANACCORD ADAMS	<1	1	0.07%	143,404	-0.03	273	+19.01	+17.17	0.22	+9.79	8.19	15.28	-	-
BANCO PACTUAL	<1	1	0.07%	130,018	-0.07	280	+21.55	+16.43	28.71	+16.86	38.91	-	-	-
BRADESCO	<1	1	0.06%	108,592	0.59	234	+21.55	+16.43	+26.94	+16.86	+16.74	+2.21	-	59.60

**NOTES**

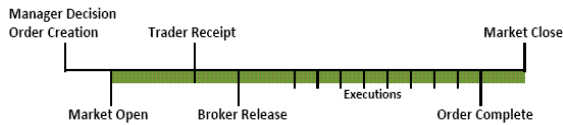
- Brokers above made up 0.87 % of principal traded.



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
STIFEL NICOLAUS & CO	<1	1	0.06%	107,570	-0.57	129	+12.00	+14.47	27.27	+7.80	37.42	17.40	-	-
WEEDEN & CO	<1	13	0.05%	6,728	0.02	14	+1.59	+14.98	+9.79	+4.36	8.04	15.66	+2.49	12.13
ING BANK	<1	1	0.03%	61,864	-0.13	87	+14.00	+14.09	0.24	+4.51	4.90	-	-	-
NOMURA	<1	1	0.03%	53,640	0.48	64	+12.00	+15.61	+6.27	+12.19	9.54	-	12.58	-
KEMPEN & CO	<1	2	0.03%	24,511	-0.89	59	+12.00	+13.72	24.59	+6.27	32.59	-	70.49	40.97
AUTREPAT-STK	<1	1	0.01%	12,469	N/A	0	+0.00	+14.47	+65.74	+7.80	6.53	+94.15	400.13	86.09
SKANDINAVISKA ENSKIL	<1	1	0.00%	6,530	-0.10	10	+14.99	+12.73	+4.78	+10.40	3.37	5.51	-	-

**NOTES**

- Brokers above made up 0.20 % 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
<b>GRAND TOTAL</b>	42	358	21.56%	116,388	0.02	45,103	+10.82	+18.17	+3.20	+7.49	11.74	35.90	33.74	32.81
JP MORGAN CHASE	7	57	3.64%	123,289	-0.05	9,606	+13.67	+19.07	+10.06	+5.97	1.48	20.77	36.17	15.29
MACQUARIE	5	25	2.57%	198,940	-0.17	4,576	+9.20	+20.90	8.92	+4.73	24.93	31.63	33.71	18.48
DAIWA SECURITIES	3	30	1.78%	114,427	0.22	3,433	+10.00	+16.87	+5.67	+10.87	11.99	146.02	22.78	+21.19
MORGAN STANLEY	3	37	1.67%	87,274	0.19	3,609	+11.18	+19.46	+0.72	+5.90	15.69	31.89	14.00	18.81
GOLDMAN SACHS	3	23	1.62%	135,845	-0.17	2,208	+7.07	+15.78	+0.34	+9.35	17.67	13.94	141.48	11.56
CITIGROUP	2	22	1.20%	105,323	0.21	1,965	+8.48	+21.60	+0.30	+5.02	17.41	33.19	57.30	17.29
SMBC SECURITIES INC	2	20	1.00%	96,688	0.23	1,934	+10.00	+15.61	+0.76	+12.19	17.05	16.18	9.35	89.01
MIZUHO	2	14	0.99%	136,739	0.01	1,914	+10.00	+15.61	+0.13	+12.19	17.68	11.60	36.92	28.38
INSTINET	2	14	0.97%	134,527	0.19	1,257	+6.67	+16.76	+27.92	+10.99	+6.92	20.82	33.30	28.30
CREDIT SUISSE	2	7	0.93%	255,742	-0.24	2,685	+15.00	+22.66	7.03	+4.27	18.46	31.38	49.90	24.24

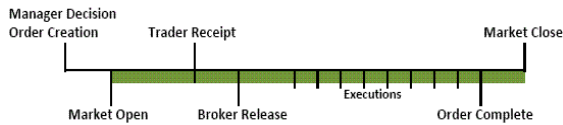




(+) = Cost

**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)	20164th (bp)	20163rd (bp)	20162nd (bp)
<b>GRAND TOTAL</b>	70	369	36.31%	190,221	0.14	62,484	+8.90	+14.84	+11.92	+8.30	2.60	17.96	15.96	27.18
MERRILL LYNCH	17	80	8.74%	211,274	0.35	16,152	+9.56	+14.28	+29.14	+9.67	+14.48	+12.99	20.13	24.95
CREDIT SUISSE	9	37	4.46%	232,989	0.19	11,676	+13.54	+14.51	+27.72	+6.67	+20.08	20.99	+4.45	5.17
RBC DOMINION SECS	7	13	3.45%	512,887	1.05	3,131	+4.70	+17.17	+31.28	+9.79	+8.99	57.15	24.69	+47.42
CLSA SINGAPORE	5	27	2.68%	191,520	-0.17	2,477	+4.79	+14.69	7.29	+7.56	27.65	-	-	-
UBS	4	31	2.31%	143,988	-0.03	3,774	+8.45	+15.05	0.34	+9.79	16.71	67.09	+8.60	33.27
LIQUIDNET	4	3	2.06%	1,329,402	-0.65	1,075	+2.69	+15.09	15.05	+4.50	32.01	20.61	+1.06	49.94
SOCIETE GENERALE	4	33	1.97%	115,598	-0.06	2,670	+7.00	+13.82	+6.69	+7.41	8.32	3.65	24.30	11.29
BARCLAYS	3	8	1.50%	362,697	-0.18	3,034	+10.46	+14.25	2.81	+6.51	13.14	24.56	1.38	-
CITIGROUP	3	22	1.40%	123,371	-0.34	2,555	+9.41	+15.40	10.01	+8.19	24.24	6.50	20.66	+1.27
MACQUARIE	3	10	1.39%	269,289	0.34	3,719	+13.81	+14.56	1.13	+7.65	9.47	9.73	11.05	-



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
<b>GRAND TOTAL</b>	31	467	16.19%	67,006	-0.07	13,496	+4.31	+14.94	2.61	+8.98	22.33	29.17	36.40	24.56
CREDIT SUISSE	10	120	5.42%	87,226	0.06	5,109	+4.88	+15.10	+1.92	+8.53	16.87	18.22	24.59	8.05
UBS	6	79	2.89%	70,795	0.11	2,796	+5.00	+14.78	+2.46	+6.58	13.80	21.48	27.82	26.11
HSBC BANK	2	35	1.20%	66,340	-0.25	697	+3.00	+14.47	7.16	+9.26	27.77	57.68	58.42	59.44
BARCLAYS	2	33	1.20%	70,032	-0.13	693	+3.00	+14.47	5.11	+8.05	24.52	38.44	58.81	54.47
MORGAN STANLEY	2	23	0.86%	72,562	-0.23	668	+4.00	+13.35	7.37	+8.72	27.27	36.88	43.49	74.10
TD WATERHOUSE	1	12	0.65%	104,585	-0.66	154	+1.23	+17.17	20.95	+9.79	46.70	39.07	25.19	6.96
CITIGROUP	1	19	0.58%	59,328	-0.21	465	+4.13	+14.44	8.14	+7.36	26.46	31.09	33.14	10.12
GOODBODY STOCKBROKER	<1	11	0.41%	72,706	0.56	800	+10.00	+14.87	+8.94	+37.42	33.23	-	-	-
DEUTSCHE BANK	<1	30	0.40%	26,006	-0.07	312	+4.00	+13.84	12.00	+6.95	29.40	9.62	+2.99	1.60
TORONTO DOMINION	<1	7	0.39%	107,336	-0.53	110	+1.47	+17.17	13.50	+9.79	39.02	-	-	-



(+) = 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)	20164th (bp)	20163rd (bp)	20162nd (bp)
<b>GRAND TOTAL</b>	20	329	10.33%	60,676	0.73	3,259	+1.63	+15.94	+16.14	+7.02	5.15	22.76	+6.25	37.98
GOLDMAN SACHS	5	54	2.36%	84,652	1.13	652	+1.43	+15.28	+35.21	+8.10	+13.45	16.45	+8.05	110.00
BARCLAYS	4	25	2.27%	175,595	1.02	230	+0.52	+14.99	+14.94	+4.25	3.73	-	-	-
DEUTSCHE BANK	2	26	1.27%	94,076	0.09	561	+2.29	+13.94	+5.14	+11.82	18.76	62.50	14.96	38.98
CITIGROUP	2	48	1.22%	49,069	0.82	293	+1.24	+16.27	+7.60	+7.49	14.94	7.54	37.75	51.78
INSTINET	1	31	0.70%	43,768	1.13	368	+2.71	+17.86	+40.46	+6.30	+19.30	23.59	100.07	80.04
MORGAN STANLEY	<1	40	0.49%	23,835	0.52	93	+0.98	+14.98	+12.84	+5.02	6.26	9.03	+8.27	44.71
UBS	<1	11	0.39%	69,317	0.07	208	+2.73	+21.89	6.96	+5.59	31.28	4.56	49.05	36.77
CREDIT SUISSE	<1	7	0.35%	97,630	0.03	205	+3.00	+22.63	+2.34	+4.60	21.39	7.77	12.47	19.13
MACQUARIE	<1	6	0.35%	113,422	-0.36	200	+2.94	+17.59	43.06	+4.91	62.11	41.71	3.03	30.43
MERRILL LYNCH	<1	20	0.28%	27,351	0.29	132	+2.42	+14.15	+22.67	+12.10	1.08	37.24	+3.64	29.67



(+) = Cost

**TRADE CYCLE DETAIL**

**WILLIAM BLAIR & COMPANY PERFORMANCE (FULL DAY VWAP)**



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission + Fees + Full Day VWAP Vs. Universe (bp)	20164th (bp)	20163rd (bp)	20162nd (bp)
<b>GRAND TOTAL</b>	30	449	15.61%	67,203	0.19	33,297	+11.03	+15.62	+14.16	+9.30	+1.61	17.96	13.85	19.97
UBS	4	57	2.29%	77,745	0.28	3,126	+7.05	+14.53	+13.25	+9.70	3.72	11.53	2.43	2.57
CREDIT SUISSE	2	50	1.14%	44,199	0.02	2,991	+13.53	+16.14	+1.92	+7.01	7.54	40.04	19.33	18.42
SOCIETE GENERALE	2	29	1.11%	74,211	0.47	1,076	+5.00	+14.19	+100.52	+12.59	+79.29	19.30	11.35	37.59
ITG	2	31	0.87%	54,170	-0.07	664	+3.95	+15.14	+3.73	+8.28	13.30	18.99	32.46	61.02
SC BERNSTEIN	2	32	0.83%	50,092	0.00	557	+3.47	+16.79	+1.85	+8.75	20.09	21.27	6.09	20.13
GOLDMAN SACHS	1	28	0.74%	51,109	0.30	1,487	+10.39	+16.15	+7.58	+13.00	10.94	19.58	23.87	27.80
BNP PARIBAS	1	22	0.65%	57,470	0.40	940	+7.43	+20.81	+18.56	+6.72	1.17	6.69	25.06	28.25
MACQUARIE	1	5	0.60%	231,784	0.59	1,438	+12.41	+15.17	+23.39	+6.98	+13.61	6.29	7.82	22.88
DEUTSCHE BANK	<1	16	0.52%	62,412	0.31	1,470	+14.72	+16.42	+21.41	+14.64	+5.22	31.27	8.75	+11.84
JP MORGAN CHASE	<1	10	0.46%	89,281	-0.10	1,205	+13.49	+15.14	2.91	+10.06	14.60	10.58	310.18	10.27





(+) = Cost

**TRADE DETAIL ANALYSIS**

**Largest Principal Volume Traded**

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
BT GROUP PLC COMMON STOCK GBP.	19	1,530,357	-1,562,847	6,746,712	0.54%	0.28	+6.36
MEDTRONIC PLC COMMON STOCK USD	3	60,460	-4,607,025	4,607,025	0.28%	-0.44	12.52
ALIMENTATION COUCHE TARD B CO	24	92,880	4,230,538	4,230,538	0.53%	0.14	+22.94
SINO LAND CO COMMON STOCK	22	2,351,900	2,781,458	3,997,646	2.12%	0.06	3.35
UNICREDIT SPA COMMON STOCK	6	288,065	-3,922,219	3,922,219	0.25%	0.19	+17.74
ACTELION LTD REG COMMON STOCK	4	14,366	3,755,099	3,755,099	0.28%	0.58	+65.13
HEXAGON AB B SHS COMMON STOCK	23	80,022	-3,156,095	3,156,095	0.94%	-0.49	18.25
SYMRISE AG COMMON STOCK	19	52,025	3,126,002	3,126,002	1.03%	-0.06	2.18
COCA COLA EUROPEAN PARTNERS CO	25	87,430	-3,110,963	3,110,963	10.11%	0.22	+15.02
JAMES HARDIE INDUSTRIES CDI CD	31	200,412	2,927,524	2,927,524	0.57%	-0.15	3.43

**Names Most Traded - Total Orders (\$)**

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
SAMPO OYJ A SHS COMMON STOCK	36	41,566	1,064,634	+13.55	0.34%	-0.37	9.11
JAMES HARDIE INDUSTRIES CDI CD	31	200,412	2,927,524	+13.30	0.57%	-0.15	3.43
ENSIGN ENERGY SERVICES INC COM	29	54,800	379,288	+6.07	0.88%	-0.52	14.27
SSE PLC COMMON STOCK GBP.5	28	123,736	-2,109,172	+2.94	0.19%	-0.30	7.89
WILMAR INTERNATIONAL LTD COMMO	28	564,800	1,484,821	+5.36	0.32%	-0.02	+5.33
ROCHE HOLDING AG GENUSSCHEIN C	26	8,800	-2,202,170	+4.81	0.03%	-0.09	2.43
KAKEN PHARMACEUTICAL CO LTD CO	25	22,800	-1,212,362	+4.79	0.48%	-0.28	8.84
COCA COLA EUROPEAN PARTNERS CO	25	87,430	-3,110,963	+12.51	10.11%	0.22	+15.02
ALIMENTATION COUCHE TARD B CO	24	92,880	4,230,538	+4.28	0.53%	0.14	+22.94
ORIX JREIT INC REIT	24	1,440	-2,243,787	+9.43	0.49%	-0.13	4.66



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	10,350,277	10	+190.91	41.36%
Cost Trades	98,897,158	955	+24.94	100.00%
Saving Trades	94,151,397	1,014	24.77	100.00%
10 Low Cost Trades	8,447,522	10	92.50	20.19%





(+) = Cost

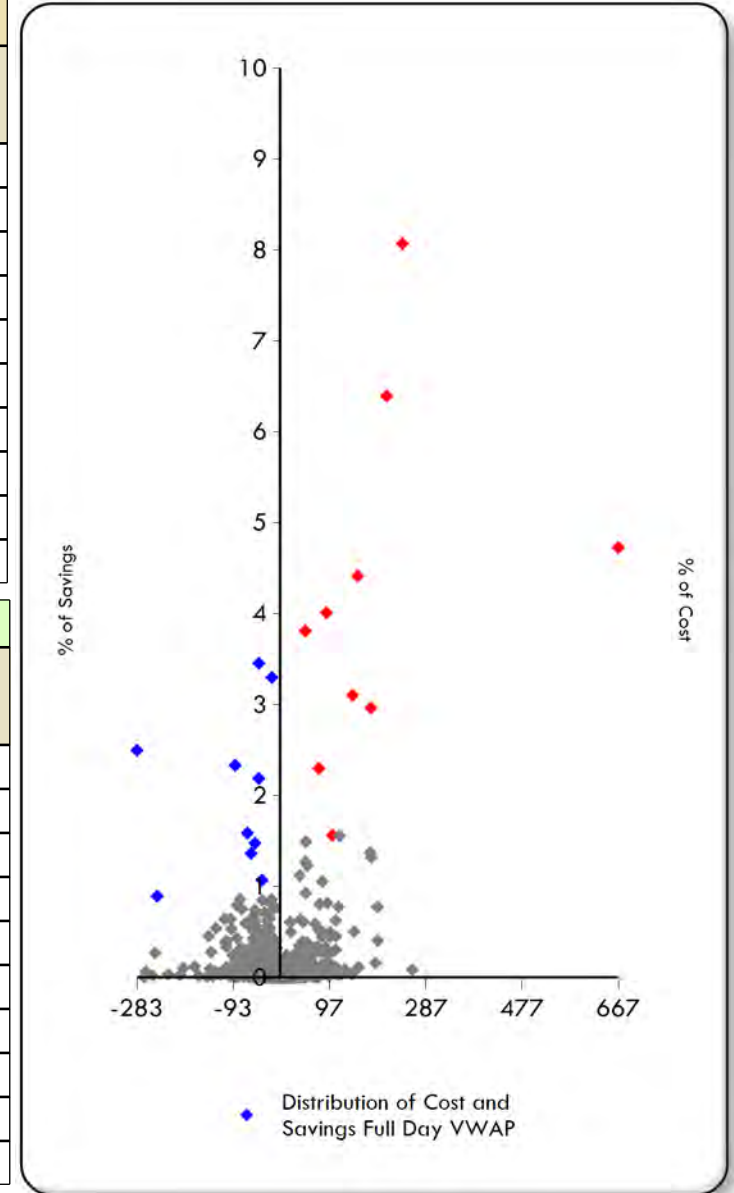
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Sell	SWI	ACTELION L	20170131	1,113,810	8.07%	2.10	+240.56	LAZAR	MERRI
Buy	NTH	ARCELORMIT	20170210	1,058,718	6.39%	1.36	+209.73	LAZAR	CREDI
Sell	GER	AURELIUS E	20170330	225,085	4.73%	0.84	+666.66	WILLI	SOCIE
Sell	US	SIGNET JEW	20170112	969,884	4.41%	2.50	+152.41	LAZAR	MERRI
Sell	US	ENBRIDGE I	20170227	1,485,041	4.01%	2.02	+90.99	S&P G	GOLDM
Sell	CAN	MACDONALD	20170126	2,622,864	3.81%	2.73	+49.23	LAZAR	RBC D
Buy	SGP	HONGKONG L	20170314	753,296	3.11%	N/A	+142.31	CBRE	JP MO
Buy	NTH	ARCELORMIT	20170210	574,790	2.97%	1.19	+178.73	LAZAR	SOCIE
Sell	CAN	ALIMENTATI	20170109	1,021,309	2.30%	1.35	+76.05	LAZAR	RBC D
Buy	ITA	SNAM SPA C	20170331	525,479	1.57%	2.34	+102.45	S&P G	DEUTS

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	ITA	UNICREDIT	20170228	1,432,011	3.46%	-0.45	42.43	LAZAR	SOCIE
Buy	US	MEDTRONIC	20170120	3,541,270	3.30%	-0.70	16.42	LAZAR	LIQUI
Buy	UK	CONVATEC G	20170329	151,596	2.50%	N/A	282.77	LAZAR	MERRI
Buy	SWE	HEXAGON AB	20170323	458,189	2.34%	-1.72	89.15	LAZAR	DEUTS
Sell	CAN	ALIMENTATI	20170106	911,764	2.19%	-2.44	42.57	LAZAR	RBC D
Buy	UK	PRUDENTIAL	20170313	428,616	1.59%	-1.47	64.96	LAZAR	CLSA
Sell	SGP	SATS LTD C	20170331	522,687	1.48%	-0.61	50.14	S&P G	MACQU
Buy	US	ACCENTURE	20170124	415,194	1.37%	-1.92	57.75	LAZAR	CITAT
Buy	CAN	NATIONAL B	20170111	522,683	1.07%	-1.22	36.04	LAZAR	RBC D
Buy	NTH	ARCELORMIT	20170313	63,512	0.90%	-2.67	242.79	LAZAR	CLSA



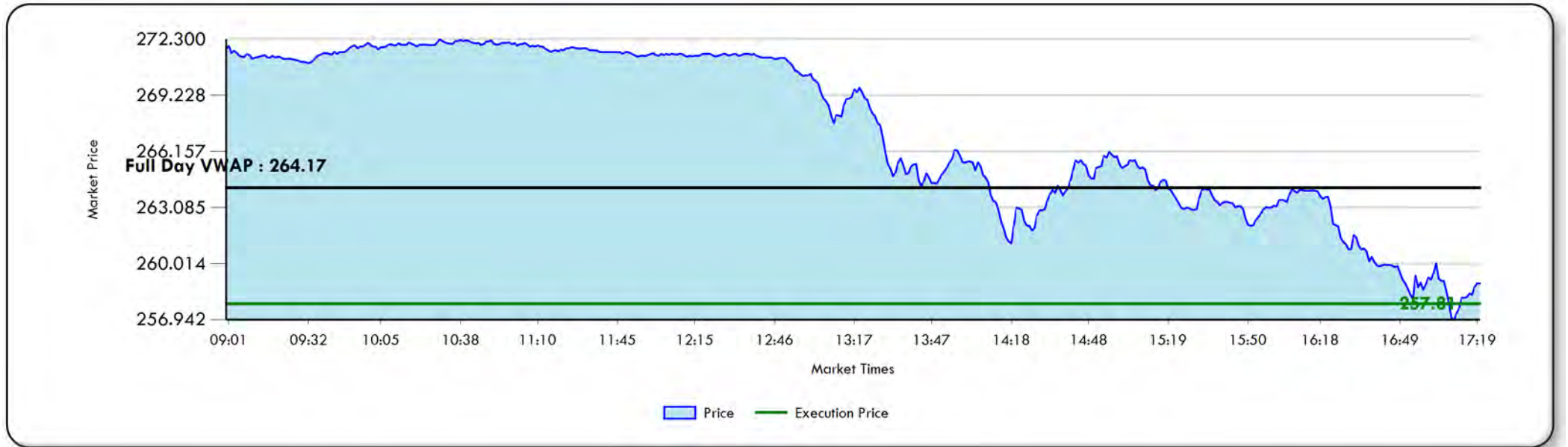


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ACTELION LTD REG COMMON STOCK - 20170131

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	MERRILL LYNCH	SWI	CHF	B1YD5Q2	01/31/2017 09:00:00	01/31/2017 17:20:00	1,113,810	257.81	264.17	+27,454	+240.55	2.10	0.16



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 8.07% of your market impact cost.





(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**ARCELORMITTAL COMMON STOCK - 20170210**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	CREDIT SUISSE	NTH	EUR	B03XPL1	02/10/2017 09:00:00	02/10/2017 17:30:00	1,058,718	8.17	8.00	+21,748	+209.72	1.36	0.25



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 6.39% of your market impact cost.

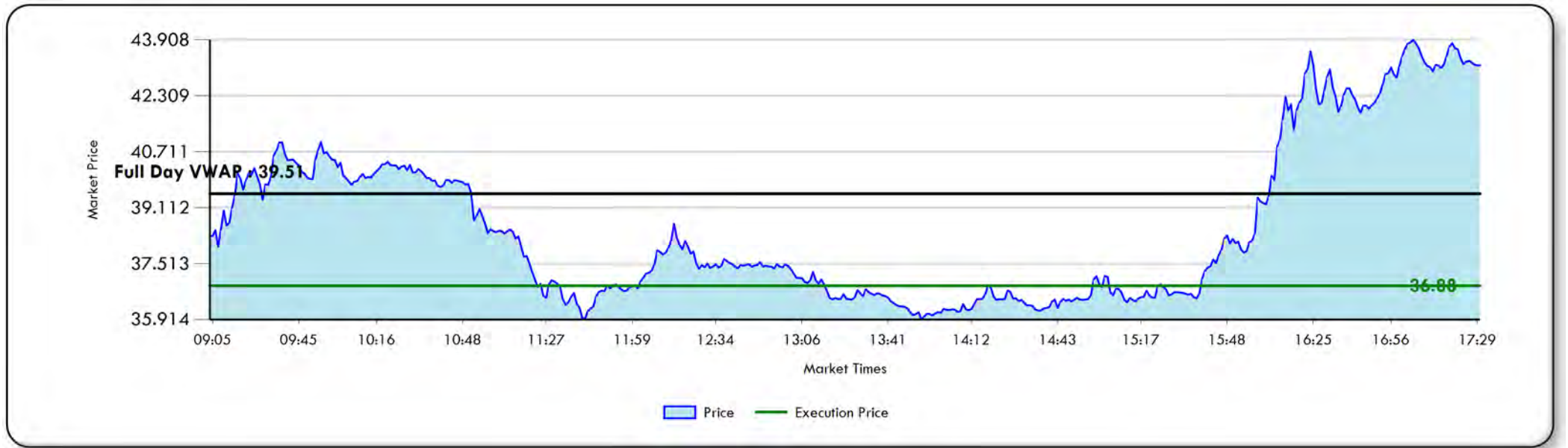


(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**AURELIUS EQUITY OPPORTUNITIE C - 20170330**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	GER	EUR	B17NLM7	03/30/2017 09:00:00	03/30/2017 17:30:00	225,085	36.88	39.51	+16,077	+666.66	0.84	0.16



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.73% of your market impact cost.

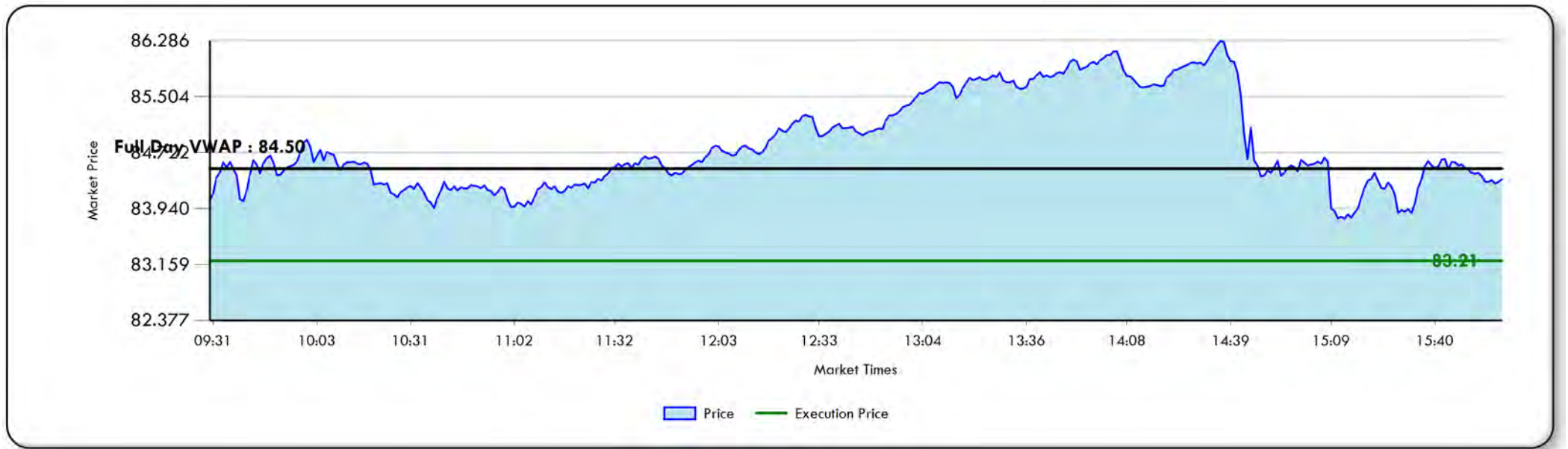


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TRADE LEVEL DETAIL - HIGH COST

SIGNET JEWELERS LTD COMMON STO - 20170112

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	MERRILL LYNCH	US	USD	B3CTNK6	01/12/2017 09:30:00	01/12/2017 16:00:00	969,884	83.21	84.50	+15,011	+152.40	2.50	0.32



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.41% of your market impact cost.



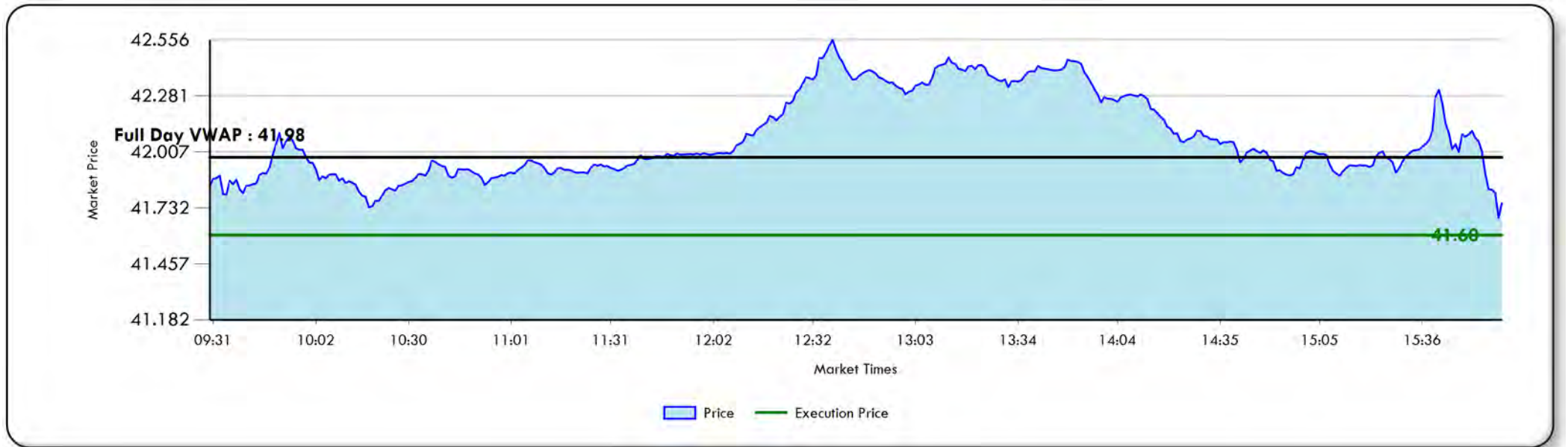


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**TRADE LEVEL DETAIL - HIGH COST**

**ENBRIDGE INC COMMON STOCK - 20170227**

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	S&P GLOBAL INFRAST-INDEX	GOLDMAN SACHS	US	USD	2478906	02/27/2017 09:30:00	02/27/2017 16:00:00	1,485,041	41.60	41.98	+13,637	+90.99	2.02	0.09



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.01% of your market impact cost.



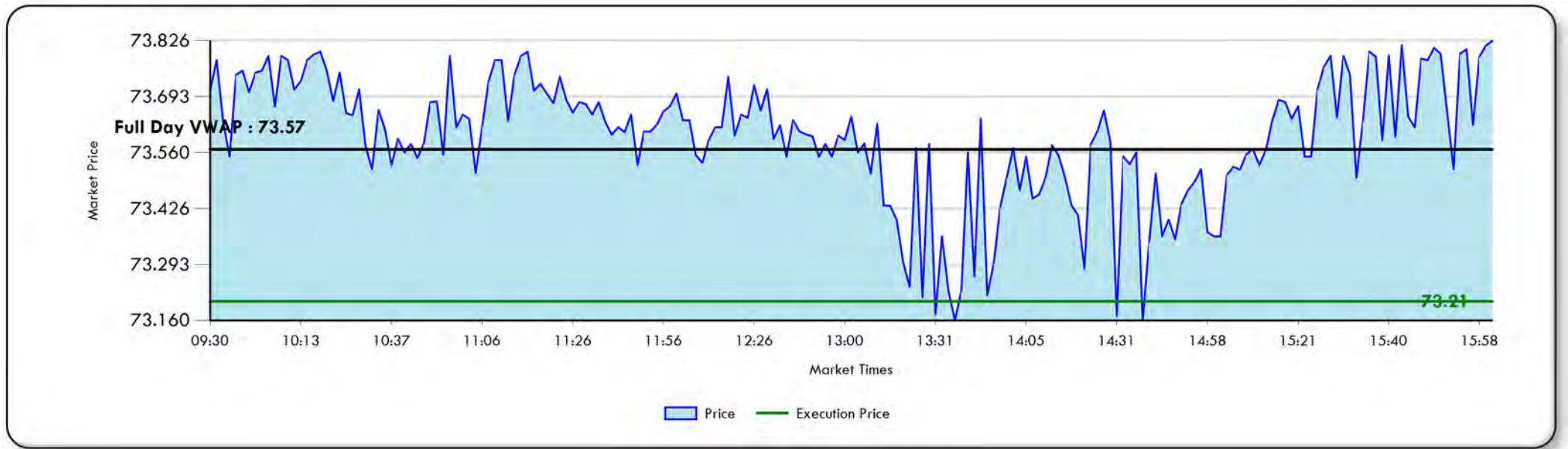


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MACDONALD DETWILER + ASSOC CO - 20170126

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	RBC DOMINION SECS	CAN	CAD	2610883	01/26/2017 09:30:00	01/26/2017 16:00:00	2,622,864	73.21	73.57	+12,977	+49.23	2.73	54.23



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.81% of your market impact cost.

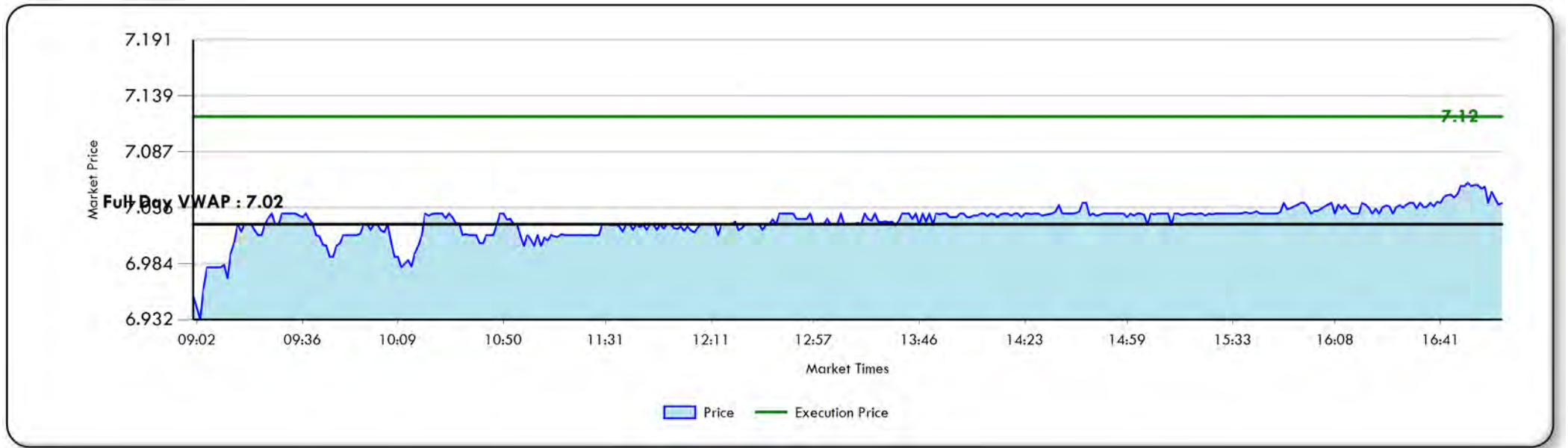


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TRADE LEVEL DETAIL - HIGH COST

HONGKONG LAND HOLDINGS LTD COM - 20170314

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)	JP MORGAN CHASE	SGP	USD	6434915	03/14/2017 09:00:00	03/14/2017 17:00:00	753,296	7.12	7.02	+10,569	+142.30	N/A	5.89



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.11% of your market impact cost.



(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**ARCELORMITTAL COMMON STOCK - 20170210**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	NTH	EUR	B03XPL1	02/10/2017 09:00:00	02/10/2017 17:30:00	574,790	8.14	8.00	+10,093	+178.73	1.19	0.14



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.97% of your market impact cost.



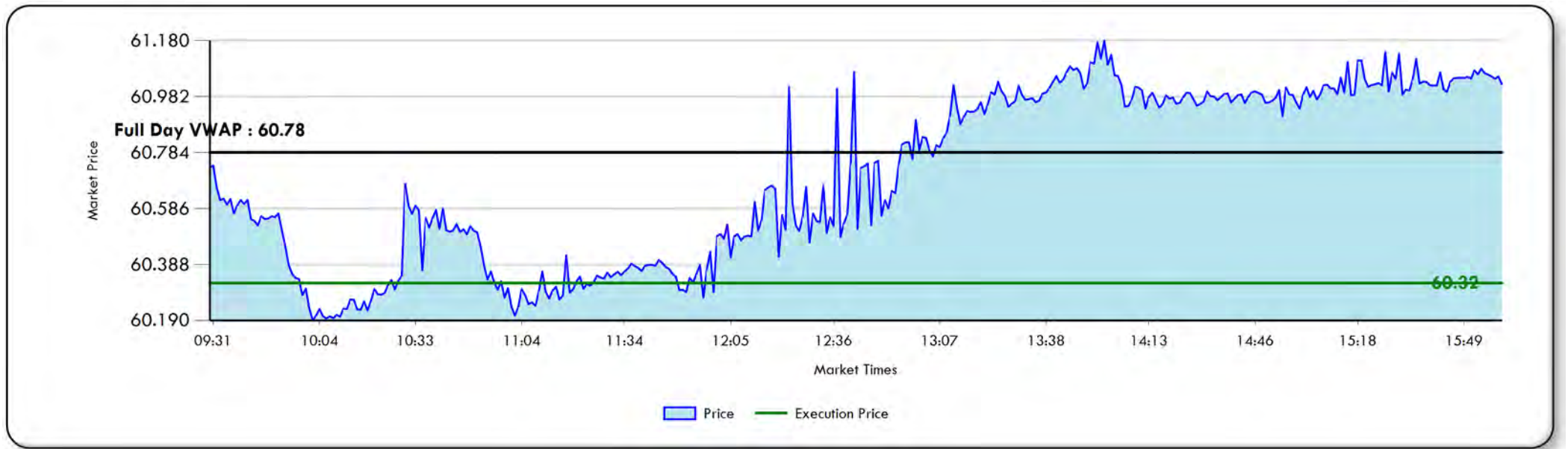


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**TRADE LEVEL DETAIL - HIGH COST**

**ALIMENTATION COUCHE TARD B CO - 20170109**

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	RBC DOMINION SECS	CAN	CAD	2011646	01/09/2017 09:30:00	01/09/2017 16:00:00	1,021,309	60.32	60.78	+7,827	+76.04	1.35	4.04



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.30% of your market impact cost.



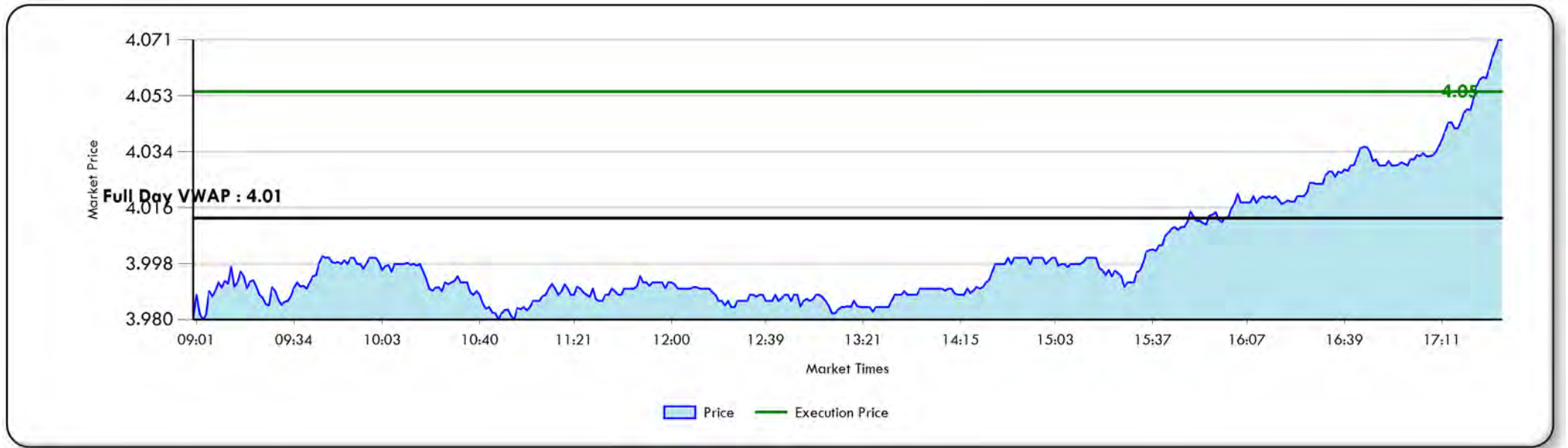


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TRADE LEVEL DETAIL - HIGH COST

SNAM SPA COMMON STOCK - 20170331

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	S&P GLOBAL INFRAST-INDEX	DEUTSCHE BANK	ITA	EUR	7251470	03/31/2017 09:00:00	03/31/2017 17:30:00	525,479	4.05	4.01	+5,329	+102.44	2.34	1.45



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.57% of your market impact cost.

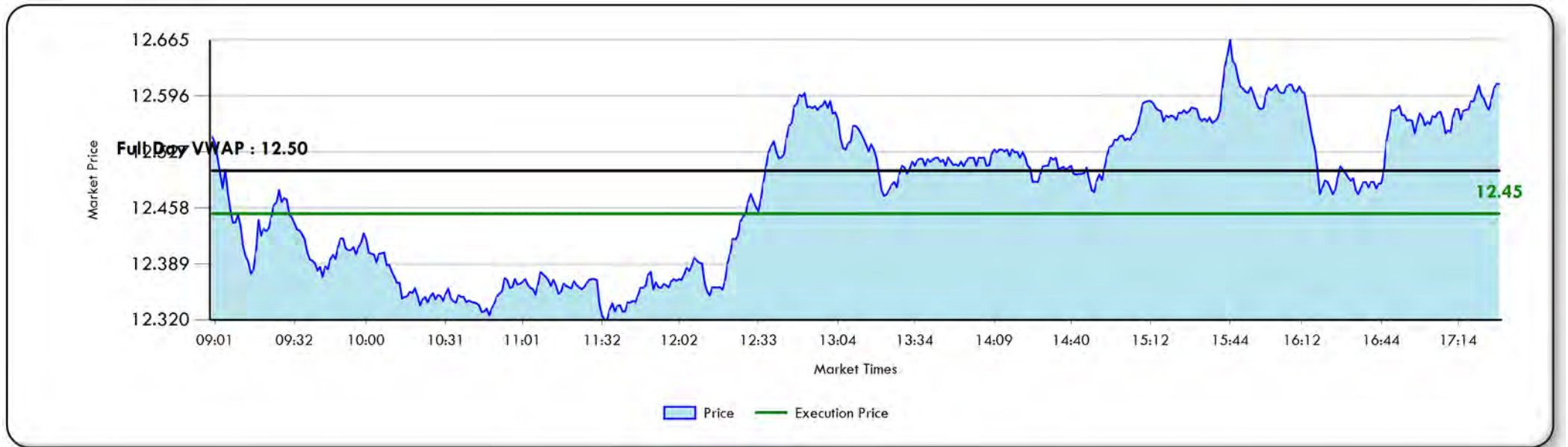


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

UNICREDIT SPA COMMON STOCK - 20170228

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	ITA	EUR	BYMXPS7	02/28/2017 09:00:00	02/28/2017 17:30:00	1,432,011	12.45	12.50	6,103	42.43	-0.45	0.64



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.46% of your market impact cost.

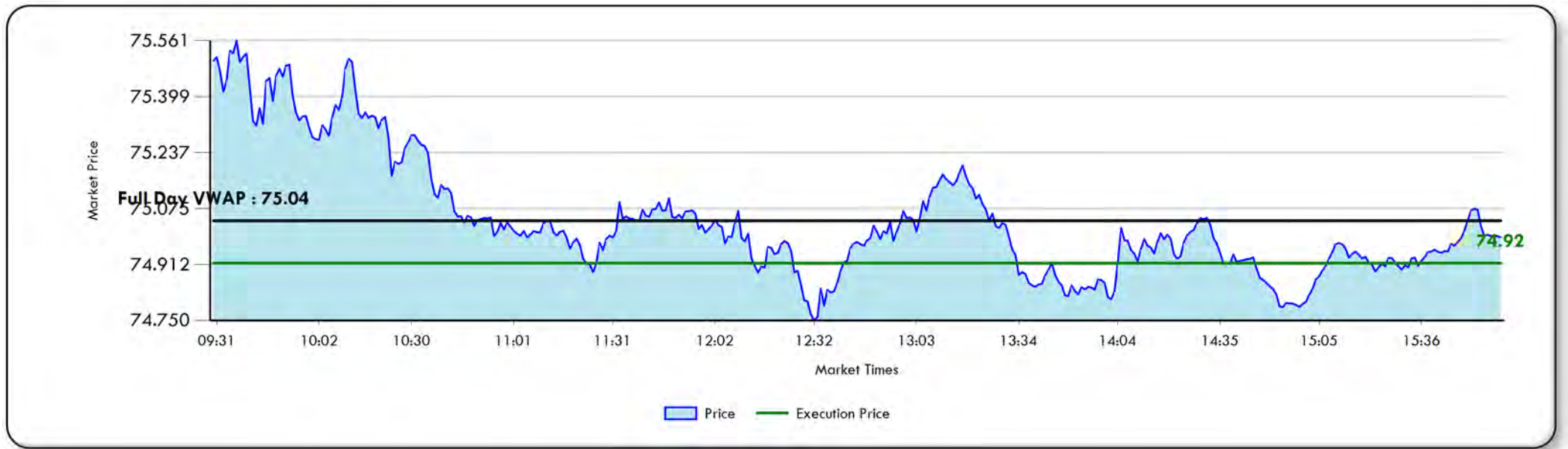


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MEDTRONIC PLC COMMON STOCK USD - 20170120

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	LIQUIDNET	US	USD	BTN1Y11	01/20/2017 09:30:00	01/20/2017 16:00:00	3,541,270	74.92	75.04	5,824	16.41	-0.70	0.59



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.30% of your market impact cost.



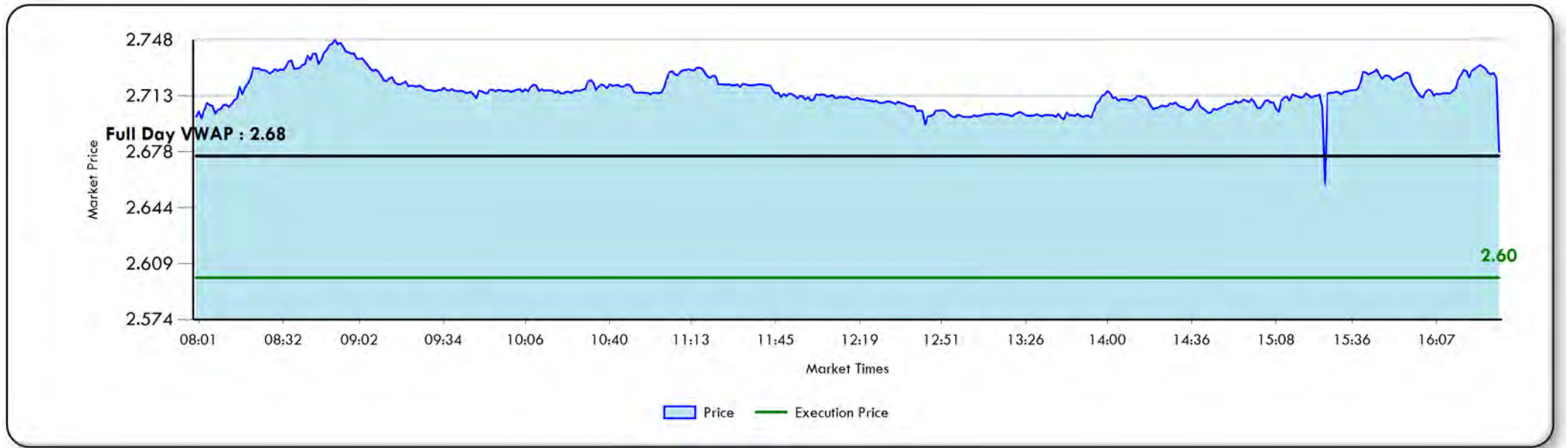


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TRADE LEVEL DETAIL - LOW COST

CONVATEC GROUP PLC COMMON STOC - 20170329

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	UK	GBP	BD3VFW7	03/29/2017 08:00:00	03/29/2017 16:30:00	151,596	2.60	2.68	4,411	282.76	N/A	0.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.50% of your market impact cost.



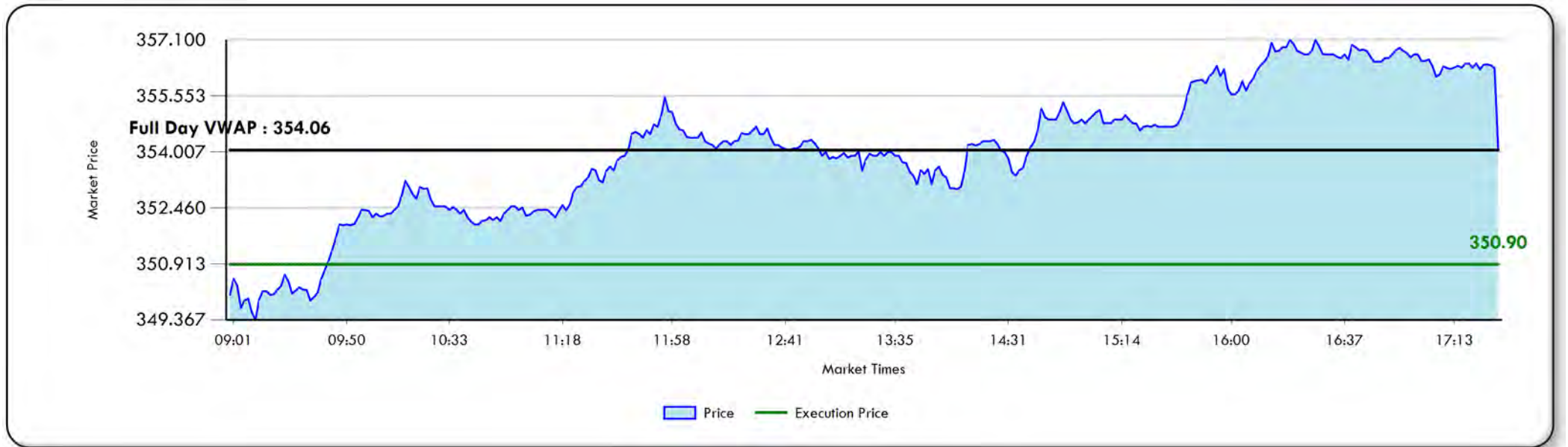


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

HEXAGON AB B SHS COMMON STOCK - 20170323

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	DEUTSCHE BANK	SWE	SEK	B1XF2L2	03/23/2017 09:00:00	03/23/2017 17:30:00	458,189	350.90	354.06	4,121	89.14	-1.72	3.35



NOTES

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

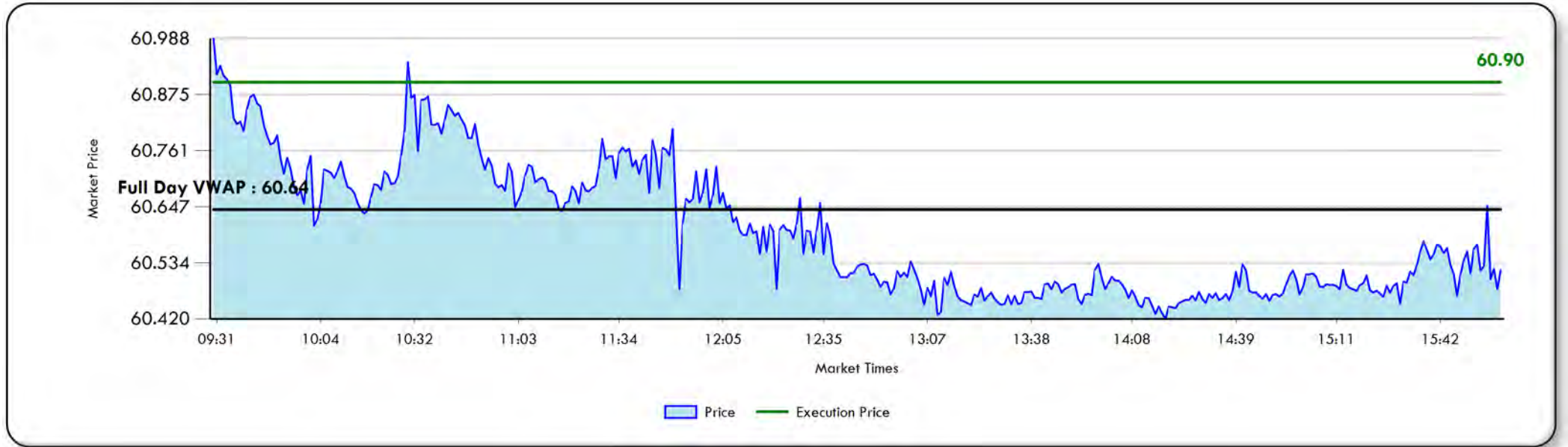


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**ALIMENTATION COUCHE TARD B CO - 20170106**

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	RBC DOMINION SECS	CAN	CAD	2011646	01/06/2017 09:30:00	01/06/2017 16:00:00	911,764	60.90	60.64	3,865	42.57	-2.44	1.95



**NOTES**

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.19% of your market impact cost.

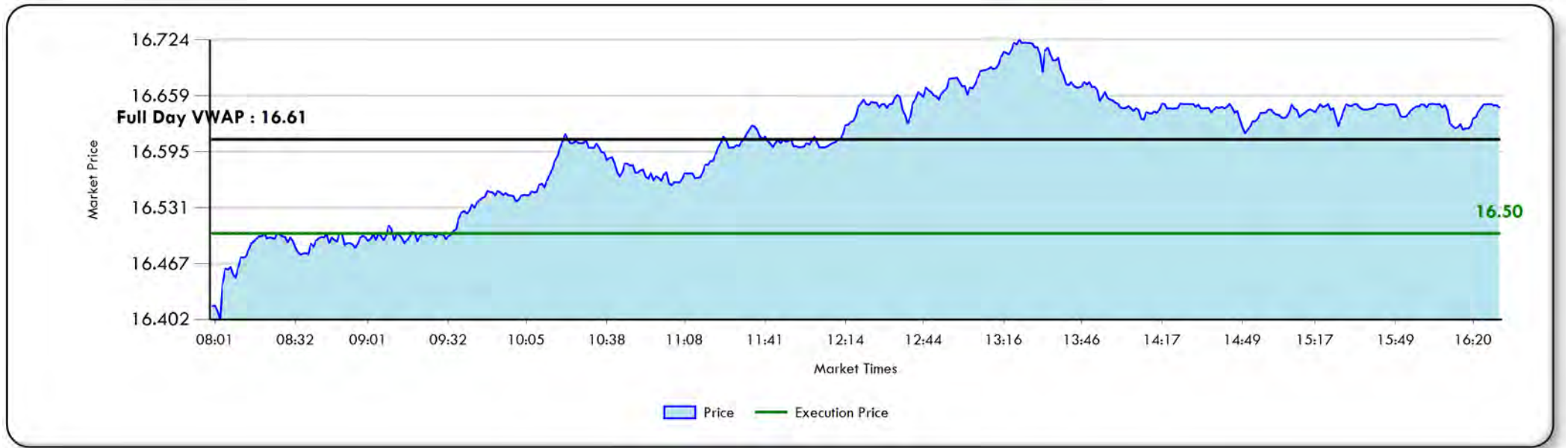


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TRADE LEVEL DETAIL - LOW COST

PRUDENTIAL PLC COMMON STOCK GB - 20170313

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	CLSA SINGAPORE	UK	GBP	0709954	03/13/2017 08:00:00	03/13/2017 16:30:00	428,616	16.50	16.61	2,803	64.96	-1.47	0.51



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.59% of your market impact cost.





(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SATS LTD COMMON STOCK - 20170331

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	S&P GLOBAL INFRAST-INDEX	MACQUARIE	SGP	SGD	6243586	03/31/2017 09:00:00	03/31/2017 17:00:00	522,687	4.83	4.81	2,608	50.14	-0.61	2.77



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.48% of your market impact cost.



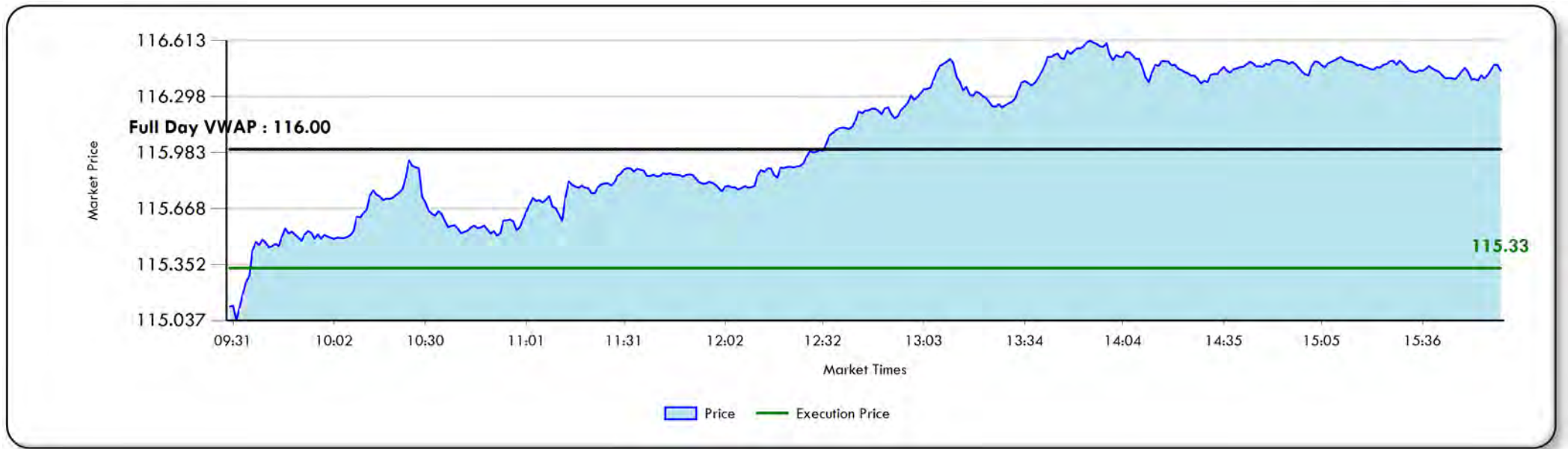


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TRADE LEVEL DETAIL - LOW COST

ACCENTURE PLC CL A COMMON STOC - 20170124

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	CITATION FINL GROUP	US	USD	B4BNMY3	01/24/2017 09:30:00	01/24/2017 16:00:00	415,194	115.33	116.00	2,411	57.74	-1.92	0.14



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.37% of your market impact cost.

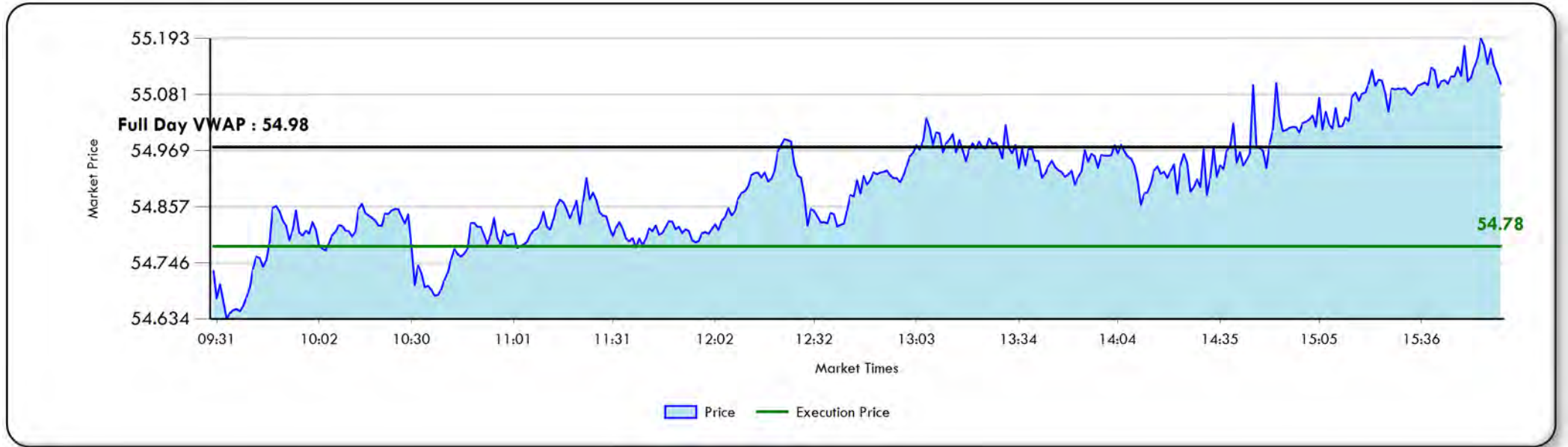


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TRADE LEVEL DETAIL - LOW COST

NATIONAL BANK OF CANADA COMMON - 20170111

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	RBC DOMINION SECS	CAN	CAD	2077303	01/11/2017 09:30:00	01/11/2017 16:00:00	522,683	54.78	54.98	1,891	36.03	-1.22	0.97



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.07% of your market impact cost.

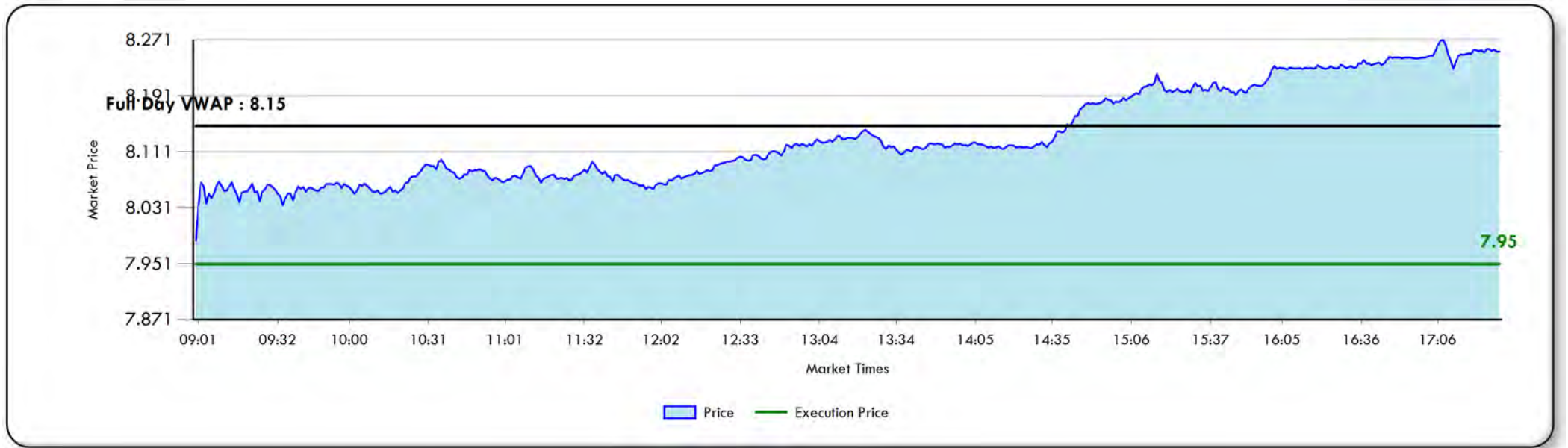


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ARCELORMITAL COMMON STOCK - 20170313

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	CLSA SINGAPORE	NTH	EUR	B03XPL1	03/13/2017 09:00:00	03/13/2017 17:30:00	63,512	7.95	8.15	1,580	242.78	-2.67	0.04



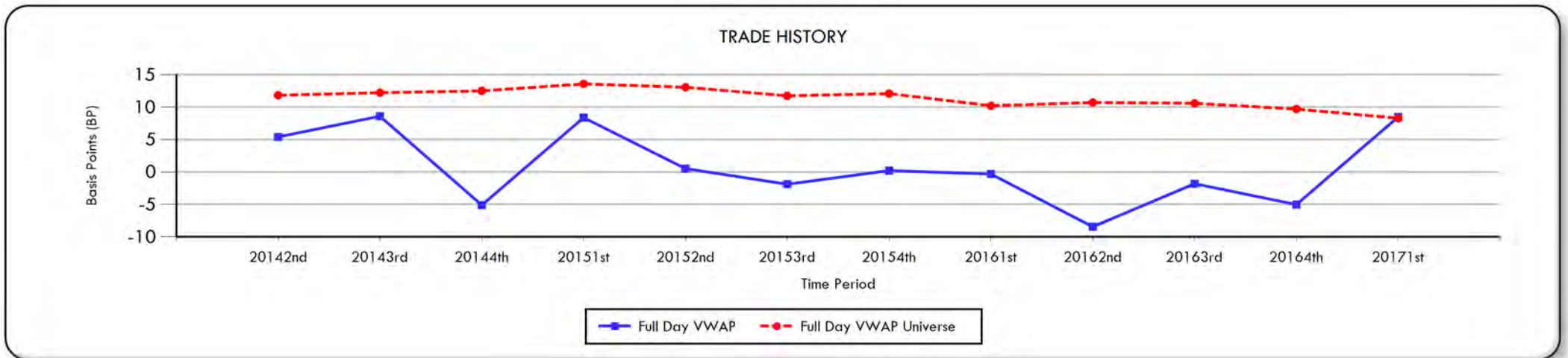
NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.90% 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)
20142nd	202,889,836	+9.35	+16.34	+5.26	+6.84	+5.39	+11.79	14.98
20143rd	241,057,898	+9.95	+17.56	+6.32	+7.26	+8.57	+12.20	12.19
20144th	506,158,401	+5.52	+17.06	+2.16	+2.30	5.11	+12.48	29.27
20151st	128,681,090	+9.88	+16.54	+6.39	+6.57	+8.36	+13.55	12.03
20152nd	105,915,243	+8.16	+17.11	+6.69	+6.43	+0.51	+13.04	21.21
20153rd	125,280,679	+8.08	+15.73	+6.43	+6.85	1.90	+11.72	21.69
20154th	149,071,955	+8.39	+15.71	+3.87	+4.30	+0.20	+12.06	19.60
20161st	122,988,471	+7.80	+15.62	+4.75	+5.22	0.33	+10.19	18.81
20162nd	188,544,188	+7.40	+16.20	+5.32	+5.52	8.45	+10.68	28.14
20163rd	170,434,065	+7.69	+16.36	+6.62	+6.96	1.82	+10.56	21.39
20164th	200,915,200	+7.12	+16.08	+5.97	+6.25	5.02	+9.68	23.94
20171st	193,287,065	+8.16	+15.81	+6.67	+6.60	+8.47	+8.26	7.37







**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	5.03 BP	14.72 BP	0.06 BP	6.88 BP	21.66 BP
AUSTRIA	13.82 BP	13.59 BP	0.01 BP	14.01 BP	27.61 BP
BELGIUM	65.63 BP	13.90 BP	0.00 BP	11.86 BP	25.76 BP
BRAZIL	4.81 BP	16.43 BP	1.71 BP	16.86 BP	35.00 BP
CANADA	12.73 BP	17.17 BP	0.02 BP	9.79 BP	26.98 BP
CHILE	0.54 BP	14.35 BP	0.39 BP	8.79 BP	23.53 BP
CHINA	1.78 BP	14.05 BP	10.19 BP	4.02 BP	28.26 BP
COLOMBIA	1.26 BP	28.00 BP	0.60 BP	14.02 BP	42.62 BP
CZECH REPUBLIC	22.19 BP	18.27 BP	0.00 BP	6.35 BP	24.62 BP
DENMARK	50.38 BP	13.81 BP	0.01 BP	14.46 BP	28.28 BP
EGYPT	1.00 BP	29.89 BP	0.03 BP	8.88 BP	38.80 BP
FINLAND	13.37 BP	12.73 BP	0.01 BP	10.40 BP	23.14 BP
FRANCE - BUYS	42.15 BP	13.77 BP	20.00 BP	4.83 BP	38.60 BP
FRANCE - SELLS	42.91 BP	13.87 BP	0.00 BP	7.66 BP	21.53 BP
GERMANY	39.11 BP	14.08 BP	0.00 BP	6.10 BP	20.18 BP
GREECE	4.16 BP	14.77 BP	2.78 BP	24.75 BP	42.30 BP
HONG KONG	1.47 BP	23.43 BP	10.21 BP	4.02 BP	37.66 BP
HUNGARY	12.11 BP	18.57 BP	1.24 BP	5.96 BP	25.77 BP
INDIA	6.89 BP	20.57 BP	10.00 BP	7.23 BP	37.80 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDONESIA	0.42 BP	18.26 BP	9.46 BP	7.79 BP	35.51 BP
IRELAND - BUYS	7.20 BP	13.30 BP	100.00 BP	5.43 BP	118.73 BP
IRELAND - SELLS	0.52 BP	14.87 BP	0.00 BP	37.42 BP	52.29 BP
ISRAEL	5.18 BP	17.50 BP	0.09 BP	10.77 BP	28.36 BP
ITALY - BUYS	5.71 BP	13.28 BP	12.00 BP	9.14 BP	34.42 BP
ITALY - SELLS	3.70 BP	13.67 BP	0.00 BP	20.21 BP	33.88 BP
JAPAN	14.72 BP	15.61 BP	0.01 BP	12.19 BP	27.81 BP
KOREA - BUYS	74.52 BP	16.56 BP	0.00 BP	11.36 BP	27.92 BP
KOREA - SELLS	77.17 BP	17.07 BP	26.29 BP	8.87 BP	52.23 BP
LUXEMBOURG	9.83 BP	0.00 BP	0.00 BP	55.98 BP	55.98 BP
MALAYSIA	1.65 BP	18.39 BP	3.23 BP	5.40 BP	27.02 BP
MEXICO	1.93 BP	16.87 BP	0.00 BP	3.55 BP	20.42 BP
NETHERLANDS	29.20 BP	14.09 BP	0.06 BP	4.51 BP	18.66 BP
NEW ZEALAND	3.14 BP	15.49 BP	0.02 BP	15.55 BP	31.06 BP
NORWAY	8.47 BP	18.79 BP	0.02 BP	13.14 BP	31.95 BP
PERU	0.58 BP	20.24 BP	1.05 BP	16.97 BP	38.26 BP
PHILIPPINES	0.77 BP	20.11 BP	18.38 BP	11.61 BP	50.10 BP
POLAND	5.87 BP	18.84 BP	0.00 BP	8.22 BP	27.06 BP
PORTUGAL	2.17 BP	14.33 BP	0.02 BP	16.81 BP	31.16 BP
RUSSIA	0.08 BP	20.00 BP	0.00 BP	25.03 BP	45.03 BP

**Elkins/McSherry Global Universe**

Country	Price	Commission	Fees	Market Impact	Total
SINGAPORE	2.20 BP	16.43 BP	3.45 BP	4.55 BP	24.43 BP
SOUTH AFRICA - BUYS	7.68 BP	15.36 BP	23.17 BP	9.00 BP	47.53 BP
SOUTH AFRICA - SELLS	5.94 BP	14.51 BP	0.01 BP	9.68 BP	24.20 BP
SPAIN	7.31 BP	13.96 BP	0.00 BP	8.16 BP	22.12 BP
SWEDEN	13.82 BP	14.38 BP	0.00 BP	4.10 BP	18.48 BP
SWITZERLAND	53.45 BP	13.72 BP	0.01 BP	6.27 BP	20.00 BP
TAIWAN - BUYS	2.01 BP	19.88 BP	0.00 BP	4.38 BP	24.26 BP
TAIWAN - SELLS	2.38 BP	18.89 BP	26.67 BP	8.44 BP	54.00 BP
THAILAND	1.75 BP	17.95 BP	0.97 BP	7.12 BP	26.04 BP
TURKEY	4.75 BP	15.01 BP	0.00 BP	3.93 BP	18.94 BP
U.K. - BUYS	3.86 BP	14.47 BP	50.00 BP	7.80 BP	72.27 BP
U.K. - SELLS	7.52 BP	14.41 BP	0.00 BP	24.05 BP	38.46 BP
U.S.	40.09 BP	14.99 BP	0.09 BP	4.25 BP	19.33 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 54	14.08 BP	17.27 BP	6.32 BP	11.94 BP	35.53 BP

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## SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End March 31, 2017



Sacramento County  
Period End March 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 January 01,2017 to March 31,2017. The analysis included trading of 207 trades in 89 different issues representing \$88,322,697 in principal across 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.

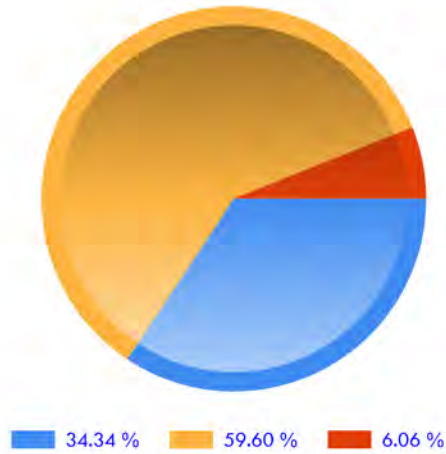
### Results:

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	Q4 2016	Q3 2016	Q2 2016	Q1 2016
BUYS	47	101	54	3.71	0.80	+3.32	19.22	4.12	16.78	+2.38	+1.07	17.47
SELLS	42	106	48	+27.98	+6.72	+3.32	+14.15	+3.40	+11.94	+1.98	+4.93	+9.62
GRAND TOTAL	88	207	89	+24.27	+2.75	+3.32	5.07	0.57	0.96	+2.18	+2.94	4.66

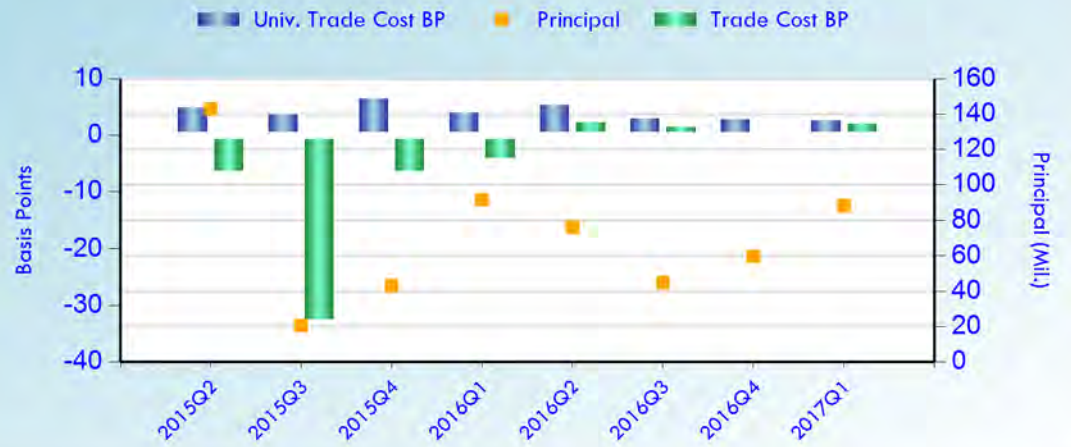
EXECUTIVE SUMMARY

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	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Governments	52	116	16	.09	0.02	+3.32	17.47	3.34	+5.81	+3.61	0.89	2.06
Corporates	30	85	68	+29.58	+9.80	+3.33	+19.53	+6.47	+10.99	5.92	10.36	4.87
Mortgages	6	6	5	5.23	9.17	+3.33	7.13	12.50	179.51	+13.43	+27.53	58.42

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	71	200	88	+29.38	+4.16	+3.32	+5.91	+0.84
2~5	18	7	4	5.12	2.90	+3.33	10.98	6.23



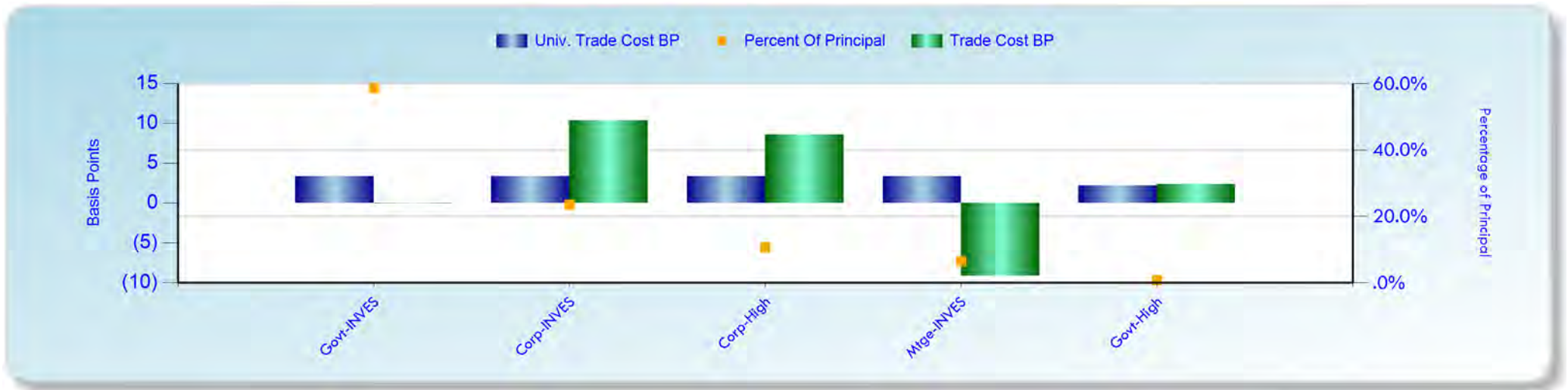




**EXECUTIVE SUMMARY**

**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	52	114	15	0.24	0.05	+3.33	17.48	3.38
Corp-INVESTMENT GRADE	21	54	43	+21.47	+10.34	+3.33	+14.55	+7.01
Corp-High Yield	9	31	25	+8.12	+8.61	+3.33	+4.98	+5.28
Mtge-INVESTMENT GRADE	6	6	5	5.23	9.17	+3.33	7.13	12.50
Govt-High Yield	<1	2	1	+0.15	+2.36	+2.19	+0.01	+0.17



EXECUTIVE SUMMARY

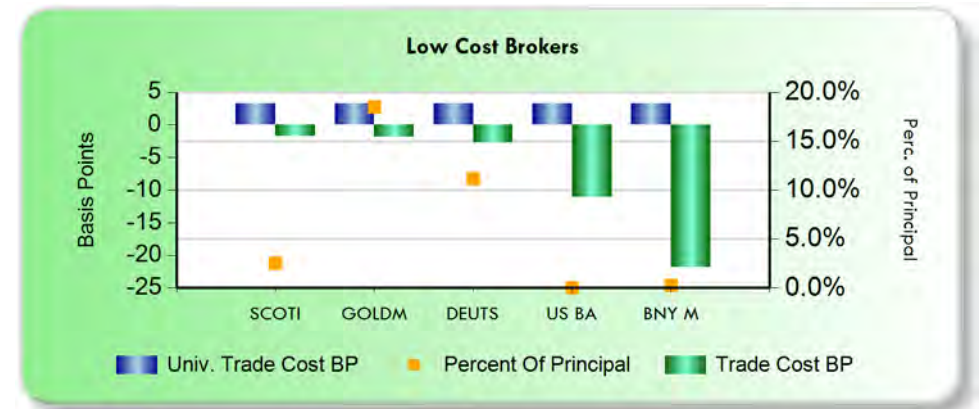
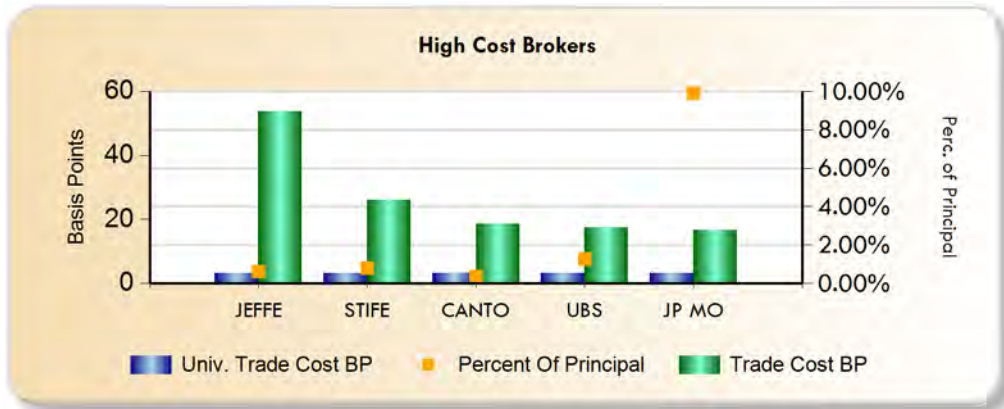
RATING SUMMARY

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
AAA	57.70	120	20	5.55	0.96	+3.33	24.76	4.29
BBB	7.04	11	11	+0.91	+1.29	+3.33	1.44	2.04
BBB+	6.03	15	14	+11.53	+19.13	+3.33	+9.52	+15.80
BBB-	3.76	9	9	+6.11	+16.24	+3.33	+4.86	+12.91
BB	3.14	5	4	+0.67	+2.14	+3.33	0.37	1.19
B+	2.06	4	4	+1.87	+9.07	+3.33	+1.18	+5.74
AA	1.34	10	2	+1.38	+10.33	+3.33	+0.93	+7.00
B	1.27	5	4	+1.60	+12.62	+3.33	+1.18	+9.29
BB+	1.21	7	6	0.16	1.34	+3.33	0.57	4.67
CCC+	<1	6	3	+3.49	+35.08	+3.33	+3.16	+31.75



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
<b>5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)</b>								
JEFFERIES & CO	<1	5	5	+2.97	+53.68	+3.33	+2.79	+50.35
STIFEL NICOLAUS & CO	<1	2	2	+1.85	+26.04	+3.33	+1.61	+22.71
CANTOR FITZGERALD	<1	2	2	+0.64	+18.60	+3.33	+0.53	+15.27
UBS	1	6	2	+1.96	+17.44	+3.33	+1.58	+14.11
JP MORGAN CHASE	9	23	14	+14.61	+16.69	+3.33	+11.69	+13.36
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
SCOTIA CAPITAL	2	10	7	0.38	1.70	+3.33	1.13	5.03
GOLDMAN SACHS	16	28	17	3.00	1.83	+3.31	8.40	5.14
DEUTSCHE BANK	10	12	10	2.65	2.68	+3.29	5.89	5.97
US BANCORP	<1	1	1	0.03	11.07	+3.33	0.04	14.40
BNY MELLON	<1	2	2	0.59	21.79	+3.33	0.68	25.12





**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	Q4 2016	Q3 2016	Q2 2016	Q1 2016
UNITED STATES	88	205	88	+24.12	+2.75	+3.33	5.08	0.58	1.79	+1.74	+2.95	3.63
GERMANY	<1	2	1	+0.15	+2.36	+2.19	+0.01	+0.17	+2.74	-	-	-



COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country	Side	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
UNITED STATES	SELLS	41	105	47	+27.78	+6.72	+3.33	+14.01	+3.39
	BUYS	46	100	53	3.66	0.79	+3.33	19.09	4.12
GERMANY	SELLS	<1	1	1	+0.20	+6.33	+2.19	+0.13	+4.14
	BUYS	<1	1	1	.05	1.62	+2.19	0.12	3.81

**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	Q4 2016	Q3 2016	Q2 2016	Q1 2016
PRUDENTIAL INVESTMEN	88	207	89	+24.27	+2.75	+3.32	5.07 0.57	0.96	+2.18	+2.94	4.66

### 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		Q4 2016	Q3 2016	Q2 2016	Q1 2016
GOLDMAN SACHS	16	28	17	3.00	1.83	+3.31	8.40	5.14	+8.01	+6.85	9.03	+1.64
CITIGROUP	14	28	20	1.92	1.42	+3.33	6.43	4.75	25.28	+6.66	+27.80	+0.11
DEUTSCHE BANK	10	12	10	2.65	2.68	+3.29	5.89	5.97	+20.96	+8.37	8.97	+1.95
JP MORGAN CHASE	9	23	14	+14.61	+16.69	+3.33	+11.69	+13.36	5.64	+4.16	16.69	22.26
NOMURA	7	8	5	+0.20	+0.27	+3.33	2.30	3.06	0.86	+1.02	+2.09	0.42
BARCLAYS	5	14	8	+2.87	+5.85	+3.33	+1.24	+2.52	+14.74	6.43	+1.07	0.60
WELLS FARGO	4	8	8	+1.05	+2.51	+3.33	0.35	0.82	12.65	+0.35	15.67	8.40
MORGAN STANLEY	4	8	8	+1.67	+4.01	+3.33	+0.28	+0.68	+0.43	8.84	+20.17	25.52
CREDIT SUISSE	3	4	4	+0.73	+2.39	+3.33	0.29	0.94	+10.74	-	+15.56	26.74
BANK OF AMERICA	3	7	6	0.10	0.39	+3.33	1.00	3.72	+4.64	35.07	+7.26	4.25
SCOTIA CAPITAL	2	10	7	0.38	1.70	+3.33	1.13	5.03	-	-	-	-
BMO CAPITAL MARKETS	2	6	4	+0.36	+2.06	+3.33	0.22	1.27	1.69	0.22	-	0.93
RBC CAPITAL MARKETS	1	11	9	+2.05	+14.09	+3.33	+1.57	+10.76	+102.21	+7.87	-	+24.33
R W PRESSPRICH & CO	1	2	2	+0.52	+4.11	+3.33	+0.10	+0.78	-	-	-	-
BAIRD, ROBERT W	1	7	3	+0.75	+6.07	+3.33	+0.34	+2.74	-	+0.95	+2.40	+8.25
UBS	1	6	2	+1.96	+17.44	+3.33	+1.58	+14.11	+28.08	+15.70	-	+5.67
TD SECURITIES	<1	2	2	0.06	0.76	+3.33	0.34	4.09	-	-	-	-
BNP PARIBAS	<1	3	3	+0.27	+3.73	+3.33	+0.03	+0.40	+12.09	+40.81	-	1.88
STIFEL NICOLAUS & CO	<1	2	2	+1.85	+26.04	+3.33	+1.61	+22.71	-	-	-	-
JEFFERIES & CO	<1	5	5	+2.97	+53.68	+3.33	+2.79	+50.35	+77.12	+5.93	+8.19	+46.00
CANTOR FITZGERALD	<1	2	2	+0.64	+18.60	+3.33	+0.53	+15.27	+19.69	+9.90	-	+21.54
RAYMOND JAMES	<1	1	1	+0.09	+2.56	+3.33	0.03	0.77	-	-	-	-

Sacramento County  
Period End March 31, 2017  
(Global Fixed Income Analysis)

**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		Q4 2016	Q3 2016	Q2 2016	Q1 2016
BNY MELLON	<1	2	2	0.59	21.79	+3.33	0.68	25.12	+8.30	+7.05	+1.76	+0.72
MIZUHO	<1	2	2	+0.19	+13.25	+3.33	+0.14	+9.92	-	-	-	+2.54
MERRILL LYNCH	<1	2	2	+0.11	+7.64	+3.33	+0.06	+4.31	-	-	+0.00	-
KEYBANC	<1	1	1	+0.09	+12.21	+3.33	+0.07	+8.88	-	-	-	-
NBCN CLEARING INC	<1	2	2	+0.02	+2.41	+3.33	0.01	0.92	-	-	-	-
US BANCORP	<1	1	1	0.03	11.07	+3.33	0.04	14.40	-	-	-	-



**TRADE DETAILS**

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
<b>15 Highest Cost Trades</b>											
S	055451AX BHP BILLITON FIN USA LTD COM	Corp	02/23/2017 10/19/2075	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	686,250	112.500	114.457	+174.00	+11,941
S	912810RT US TREASURY N/B 08/46 2.25	Govt	02/13/2017 08/15/2046	PRUDENTIAL INVE NOMURA	US	USD	2,075,607	84.203	84.446	+28.89	+5,997
B	06849UAD BARRICK PD AU FIN PTY LT COM	Corp	03/28/2017 10/15/2039	PRUDENTIAL INVE CITIGROUP	US	USD	575,860	115.172	114.470	+60.96	+3,510
S	675758AM ODEBRECHT FINANCE LTD COMPAN	Corp	03/07/2017 06/27/2029	PRUDENTIAL INVE JEFFERIES & CO	US	USD	133,875	38.250	39.063	+212.42	+2,844
S	912828V9 US TREASURY N/B 02/27 2.25	Govt	03/29/2017 02/15/2027	PRUDENTIAL INVE MORGAN STANLEY	US	USD	2,147,642	98.742	98.869	+12.83	+2,755
B	651229AY NEWELL BRANDS INC SR UNSECUR	Corp	03/30/2017 04/01/2046	PRUDENTIAL INVE CITIGROUP	US	USD	354,429	114.332	113.645	+60.11	+2,130
B	797440BL SAN DIEGO G & E	Corp	03/23/2017 05/15/2040	PRUDENTIAL INVE STIFEL NICOLAUS	US	USD	415,422	118.692	118.093	+50.48	+2,097
B	912810RT US TREASURY N/B 08/46 2.25	Govt	01/06/2017 08/15/2046	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	154,884	86.047	84.898	+133.48	+2,067
B	912810RJ US TREASURY N/B 11/44 3	Govt	03/13/2017 11/15/2044	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	742,003	96.364	96.101	+27.33	+2,028
S	06051GFH BANK OF AMERICA CORP SUBORDI	Corp	03/03/2017 08/26/2024	PRUDENTIAL INVE WELLS FARGO	US	USD	1,128,501	102.591	102.766	+17.08	+1,928
S	912810RT US TREASURY N/B 08/46 2.25	Govt	03/08/2017 08/15/2046	PRUDENTIAL INVE NOMURA	US	USD	361,178	82.086	82.448	+44.14	+1,594
S	85375CBE CALATLANTIC GROUP INC COMPAN	Corp	03/28/2017 11/15/2024	PRUDENTIAL INVE CREDIT SUISSE	US	USD	1,289,312	105.250	105.375	+11.88	+1,531
S	912810RT US TREASURY N/B 08/46 2.25	Govt	01/31/2017 08/15/2046	PRUDENTIAL INVE CITIGROUP	US	USD	381,435	83.832	84.138	+36.51	+1,393
S	58933YAJ MERCK + CO INC SR UNSECURED	Corp	02/01/2017 05/18/2043	PRUDENTIAL INVE BARCLAYS	US	USD	309,346	101.425	101.870	+43.87	+1,357



S	912828U2 US TREASURY N/B 11/26 2	Govt	01/11/2017 11/15/2026	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	1,421,650	96.711	96.801	+9.30	+1,322
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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
<b>15 Lowest Cost Trades</b>											
B	912810RU US TREASURY N/B 11/46 2.875	Govt	02/13/2017 11/15/2046	PRUDENTIAL INVE NOMURA	US	USD	2,165,043	96.654	96.913	26.81	5,805
B	12629NAF COMM MORTGAGE TRUST COMM 201	Mtge	03/29/2017 02/10/2048	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	2,818,921	100.676	100.880	20.28	5,718
S	912810RU US TREASURY N/B 11/46 2.875	Govt	03/28/2017 11/15/2046	PRUDENTIAL INVE CITIGROUP	US	USD	381,407	97.797	97.019	79.50	3,032
B	912810RT US TREASURY N/B 08/46 2.25	Govt	01/04/2017 08/15/2046	PRUDENTIAL INVE CITIGROUP	US	USD	4,215,820	84.316	84.377	7.17	3,022
S	912810RT US TREASURY N/B 08/46 2.25	Govt	03/13/2017 08/15/2046	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	675,082	81.828	81.541	35.08	2,368
S	912828U2 US TREASURY N/B 11/26 2	Govt	02/03/2017 11/15/2026	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	1,440,820	96.055	95.900	16.10	2,320
B	912810RK US TREASURY N/B 02/45 2.5	Govt	03/08/2017 02/15/2045	PRUDENTIAL INVE NOMURA	US	USD	379,390	87.216	87.606	44.73	1,697
S	912810RU US TREASURY N/B 11/46 2.875	Govt	03/30/2017 11/15/2046	PRUDENTIAL INVE CITIGROUP	US	USD	272,475	97.313	96.791	53.61	1,461
B	912828U2 US TREASURY N/B 11/26 2	Govt	01/04/2017 11/15/2026	PRUDENTIAL INVE CREDIT SUISSE	US	USD	527,763	95.957	96.180	23.22	1,226
B	460146CP INTERNATIONAL PAPER CO SR UN	Corp	03/21/2017 02/15/2027	PRUDENTIAL INVE CITIGROUP	US	USD	1,680,732	93.374	93.423	5.29	889
S	912828V7 US TREASURY N/B 01/22 1.875	Govt	02/27/2017 01/31/2022	PRUDENTIAL INVE BMO CAPITAL MAR	US	USD	415,865	100.209	100.006	20.16	839
S	912828V7 US TREASURY N/B 01/22 1.875	Govt	02/27/2017 01/31/2022	PRUDENTIAL INVE TD SECURITIES	US	USD	415,842	100.203	100.006	19.62	816
S	912810RT US TREASURY N/B 08/46 2.25	Govt	01/17/2017 08/15/2046	PRUDENTIAL INVE MORGAN STANLEY	US	USD	333,025	86.500	86.290	24.25	808
B	38141GWB GOLDMAN SACHS GROUP INC SR U	Corp	02/13/2017 01/26/2027	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	385,562	100.146	100.348	20.19	779
S	958102AJ WESTERN DIGITAL CORP SR SECU	Corp	01/30/2017 04/01/2023	PRUDENTIAL INVE CITIGROUP	US	USD	662,250	110.375	110.250	11.33	750





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	30	85	68	+29.58	+9.80	+3.33	+19.53	+6.47

**CORPORATES**



**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
GOVERNMENTS	52	116	16	0.09	0.02	+3.32	17.47	3.34

**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	6	6	5	5.23	9.17	+3.33	7.13	12.50

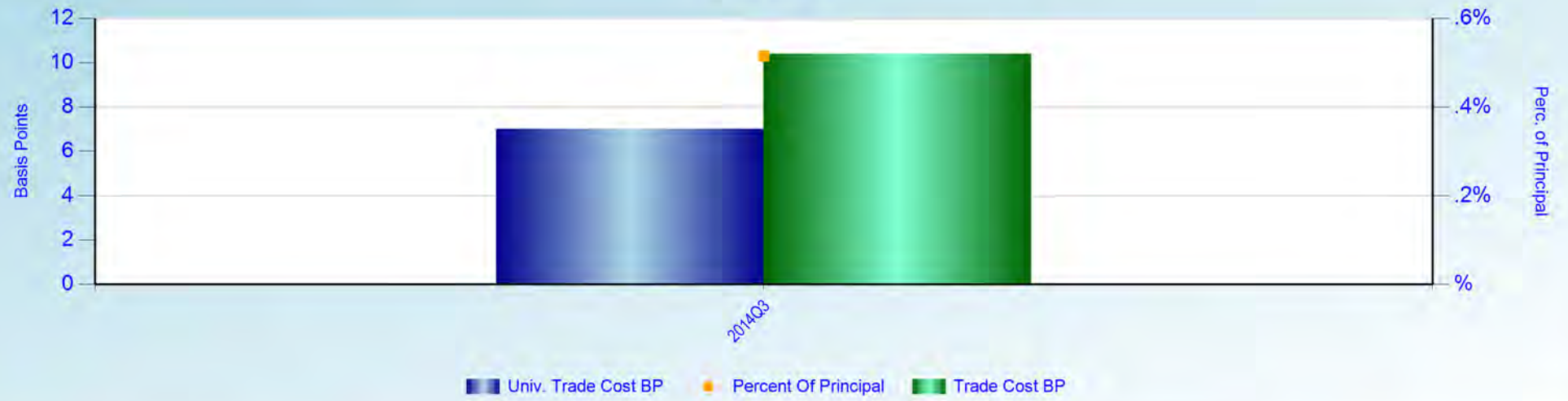
MORTGAGES







UNCLASSIFIED



(Note: Number of Issues may not Add up to the Grand Total, as the same issue may overlap within above groupings.)

**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	52	114	15	0.24	0.05	+3.33	17.48	3.38
NR	<1	2	1	+0.15	+2.36	+2.19	+0.01	+0.16

**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	7	11	11	+0.91	+1.29	+3.33	1.44	2.04
BBB+	6	15	14	+11.53	+19.13	+3.33	+9.52	+15.80
BBB-	4	9	9	+6.11	+16.24	+3.33	+4.86	+12.91
BB	3	5	4	+0.67	+2.14	+3.33	0.37	1.19
B+	2	4	4	+1.87	+9.07	+3.33	+1.18	+5.74
AA	1	10	2	+1.38	+10.33	+3.33	+0.93	+7.00
B	1	5	4	+1.60	+12.62	+3.33	+1.18	+9.29
BB+	1	7	6	0.16	1.34	+3.33	0.57	4.67
CCC+	<1	6	3	+3.49	+35.08	+3.33	+3.16	+31.75
BB-	<1	4	4	+0.64	+8.57	+3.33	+0.39	+5.24
A-	<1	4	2	0.56	8.44	+3.33	0.78	11.77
AA+	<1	1	1	+0.54	+9.08	+3.33	+0.34	+5.75
AAA	<1	1	1	+0.00	+0.00	+3.33	0.18	3.33
A+	<1	1	1	+2.10	+50.48	+3.33	+1.96	+47.15
A	<1	2	2	0.54	14.20	+3.33	0.67	17.53

**RATING BY EACH BOND TYPE**

**MORTGAGES - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	5	5	4	5.31	9.89	+3.33	7.10	13.22
AA-	<1	1	1	+0.09	+2.56	+3.33	0.03	0.77



**COUNTRIES BY EACH BOND TYPE**

<b>GOVERNMENTS</b>								
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	52	114	15	0.24	0.05	+3.33	17.48	3.38
GERMANY	<1	2	1	+0.15	+2.36	+2.19	+0.01	+0.16



**COUNTRIES BY EACH BOND TYPE**

CORPORATES								
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	30	85	68	+29.58	+9.80	+3.33	+19.53	+6.47



**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	6	6	5	5.23	9.17	+3.33	7.13	12.50

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
01/01/2017-03/31/2017	88,323	207	89	+24.27	+2.75	+3.32	5.07	0.57
Year-Ending 2017	88,323	207		+24.27	+2.75	+3.32	5.07	0.57
10/01/2016-12/31/2016	59,762	110	50	5.73	0.96	+3.49	26.57	4.45
07/01/2016-09/30/2016	44,927	135	53	+9.79	+2.18	+3.58	6.28	1.40
04/01/2016-06/30/2016	76,455	102	58	+22.49	+2.94	+5.97	23.17	3.03
01/02/2016-03/31/2016	91,594	125	57	42.69	4.66	+4.69	85.61	9.35
Year-Ending 2016	272,738	472		16.14	0.59	+4.60	141.63	5.19
10/01/2015-12/31/2015	43,193	60	34	29.83	6.91	+7.18	60.85	14.09
07/01/2015-09/30/2015	20,663	41	24	68.34	33.07	+4.30	77.22	37.37
04/01/2015-06/30/2015	143,060	122	71	98.11	6.86	+5.55	177.48	12.41
01/01/2015-03/31/2015	116,093	109	56	60.79	5.24	+5.51	124.75	10.75
Year-Ending 2015	323,008	332		257.06	7.96	+5.67	440.30	13.63
10/01/2014-12/31/2014	48,315	72	50	+9.25	+1.91	+5.72	18.39	3.81
07/01/2014-09/30/2014	266,740	204	99	216.37	8.11	+7.08	405.13	15.19
04/01/2014-06/30/2014	244,265	204	138	+42.48	+1.74	+8.55	166.48	6.81
01/02/2014-03/31/2014	187,634	187	128	+186.20	+9.92	+8.13	+33.59	+1.79
Year-Ending 2014	746,953	667		+21.55	+0.29	+7.74	556.41	7.45
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43
07/01/2013-09/30/2013	187,166	136	90	+47.79	+2.55	+6.68	77.19	4.13
04/01/2013-06/30/2013	157,154	129	98	+104.81	+6.67	+1.44	+82.21	+5.23
01/02/2013-03/31/2013	281,064	206	156	+366.87	+13.05	+1.56	+323.04	+11.49
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44
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



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
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	48	35	BLOOMBERGTERMINAL	56.49 %
	24	24	ISSUE PRICE	30.79 %
	11	11	MARKETAXESS-SUMMARYDATA	11.83 %
	2	2	MARKETAXESS-EMQUOTES	0.89 %
GOVERNMENTS	113	15	BLOOMBERGTERMINAL	97.83 %
	3	2	ISSUE PRICE	2.17 %
MORTGAGES	6	5	BLOOMBERGTERMINAL	100.00 %

## DISCLAIMER

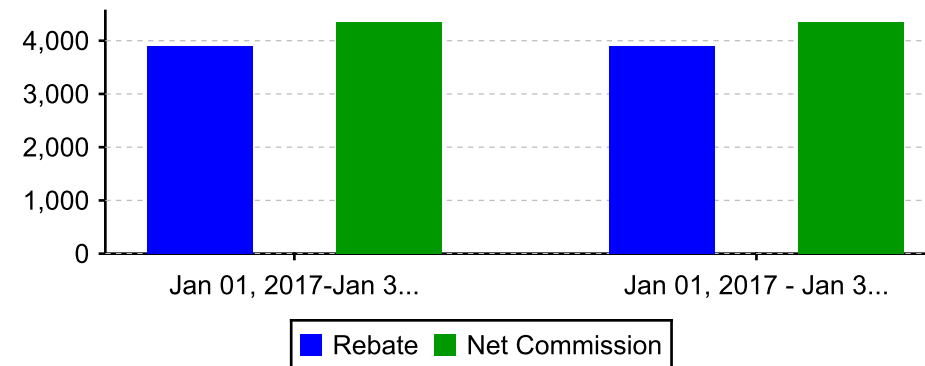
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**Sacramento County Employees Retirement System**

Currency: USD	Jan 01, 2017- Jan 31, 2017	Jan 01, 2017- Jan 31, 2017
<b>Opening Balance</b>	4,291.60	4,291.60
<b>Rebate</b>	3,906.75	3,906.75
<b>Payments</b>	-4,291.60	-4,291.60
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	3,906.75	3,906.75
<b>Commission</b>	6,987.20	6,987.20
<b>Net Commission</b>	4,340.83	4,340.83

**Rebate vs Net Commission(USD)**



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**Manager Breakout**

Currency: USD

Money Manager	01/01/2017 - 01/31/2017			01/01/2017 - 01/31/2017		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Dalton, Greiner, Hartman, Maher & Company	1,246.75	826.32	918.13	1,246.75	826.32	918.13
Eagle Capital Management	277.50	145.69	161.88	277.50	145.69	161.88
M.A. Weatherbie & Co.	1,311.28	649.09	721.21	1,311.28	649.09	721.21
UBS Global Asset Mgmt.	3,280.95	1,766.70	1,963.00	3,280.95	1,766.70	1,963.00
Urdang Investment Management	496.55	297.50	330.55	496.55	297.50	330.55
Wedge Capital Mgmt	374.17	221.45	246.06	374.17	221.45	246.06

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Currency: USD		01/01/2017 - 01/31/2017			01/01/2017 - 01/31/2017		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission	
Total:	6,987.20	3,906.75	4,340.83	6,987.20	3,906.75	4,340.83	

Broker Breakout

Currency: USD		01/01/2017 - 01/31/2017			01/01/2017 - 01/31/2017		
Broker	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission	

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Currency: USD	01/01/2017 - 01/31/2017			01/01/2017 - 01/31/2017		
Broker	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	2,020.80	1,269.50	1,410.56	2,020.80	1,269.50	1,410.56
ITG Inc	1,311.28	649.09	721.21	1,311.28	649.09	721.21
Merrill Lynch	3,655.12	1,988.15	2,209.06	3,655.12	1,988.15	2,209.06
<b>Total:</b>	<b>6,987.20</b>	<b>3,906.75</b>	<b>4,340.83</b>	<b>6,987.20</b>	<b>3,906.75</b>	<b>4,340.83</b>

**Commission Recapture Payments**

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of December	01/24/2017	01/24/2017	01/24/2017	201612	4,291.60	
<b>Total:</b>						<b>4,291.60</b>	

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STATE STREET®

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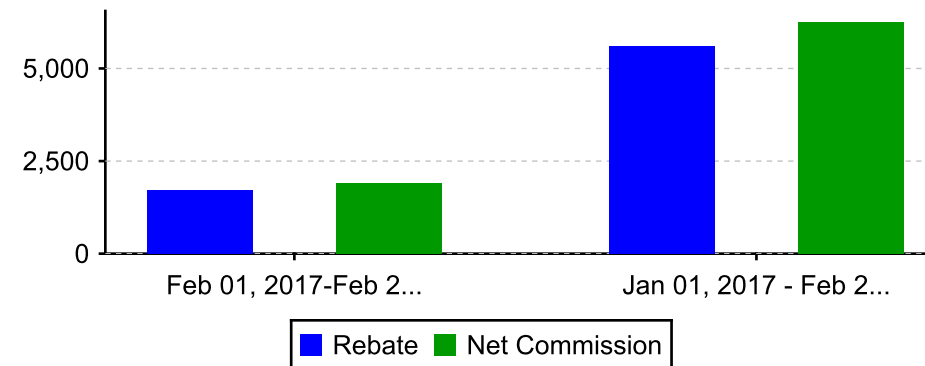
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**Sacramento County Employees Retirement System**

Currency: USD	Feb 01, 2017- Feb 28, 2017	Jan 01, 2017- Feb 28, 2017
<b>Opening Balance</b>	3,906.75	4,291.60
<b>Rebate</b>	1,708.80	5,615.55
<b>Payments</b>	-3,906.75	-8,198.35
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	1,708.80	1,708.80
<b>Commission</b>	3,011.08	9,998.28
<b>Net Commission</b>	1,898.67	6,239.50

**Rebate vs Net Commission(USD)**


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**Manager Breakout**

Currency: USD

Money Manager	02/01/2017 - 02/28/2017			01/01/2017 - 02/28/2017		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Dalton, Greiner, Hartman, Maher & Company	.00	.00	.00	1,246.75	826.32	918.13
Eagle Capital Management	486.75	255.55	283.94	764.25	401.24	445.82
M.A. Weatherbie & Co.	639.88	316.75	351.94	1,951.16	965.84	1,073.15
UBS Global Asset Mgmt.	468.12	251.35	279.28	3,749.07	2,018.05	2,242.28
Urdang Investment Management	592.70	398.20	442.44	1,089.25	695.69	772.99
Wedge Capital Mgmt	823.63	486.96	541.07	1,197.80	708.42	787.13

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Currency: USD		02/01/2017 - 02/28/2017			01/01/2017 - 02/28/2017		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission	
Total:	3,011.08	1,708.80	1,898.67	9,998.28	5,615.55	6,239.50	

Broker Breakout

Currency: USD		02/01/2017 - 02/28/2017			01/01/2017 - 02/28/2017		
Broker	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission	

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Currency: USD	02/01/2017 - 02/28/2017			01/01/2017 - 02/28/2017		
Broker	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	1,079.45	653.74	726.38	3,100.25	1,923.25	2,136.94
ITG Inc	639.88	316.75	351.94	1,951.16	965.84	1,073.15
Merrill Lynch	1,291.75	738.31	820.35	4,946.87	2,726.47	3,029.41
<b>Total:</b>	<b>3,011.08</b>	<b>1,708.80</b>	<b>1,898.67</b>	<b>9,998.28</b>	<b>5,615.55</b>	<b>6,239.50</b>

### Commission Recapture Payments

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of January	02/22/2017	02/22/2017	02/22/2017	201701	3,906.75	
<b>Total:</b>						<b>3,906.75</b>	

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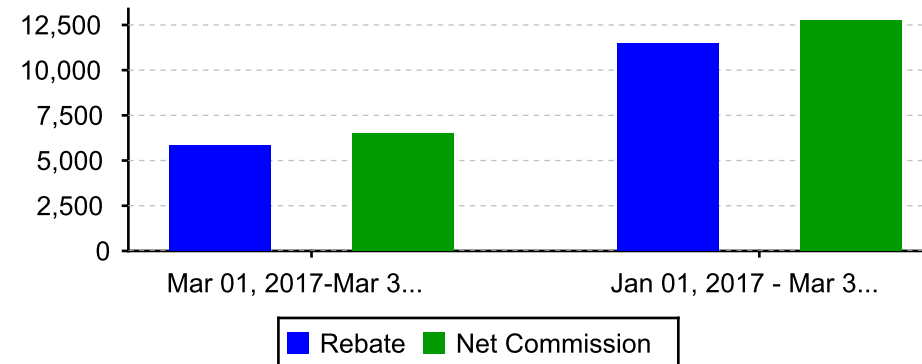
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**Sacramento County Employees Retirement System**

Currency: USD	Mar 01, 2017- Mar 31, 2017	Jan 01, 2017- Mar 31, 2017
<b>Opening Balance</b>	1,708.80	4,291.60
<b>Rebate</b>	5,855.45	11,471.00
<b>Payments</b>	-1,708.80	-9,907.15
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	5,855.45	5,855.45
<b>Commission</b>	10,769.08	20,767.36
<b>Net Commission</b>	6,506.05	12,745.55

**Rebate vs Net Commission(USD)**



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**Manager Breakout**

Currency: USD

Money Manager	03/01/2017 - 03/31/2017			01/01/2017 - 03/31/2017		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Brown Investment Advisory, Inc.	3,097.60	1,613.09	1,792.32	3,097.60	1,613.09	1,792.32
Dalton, Greiner, Hartman, Maher & Company	2,178.98	1,287.85	1,430.94	3,425.73	2,114.16	2,349.07
Eagle Capital Management	.00	.00	.00	764.25	401.24	445.82
M.A. Weatherbie & Co.	3,426.72	1,696.21	1,884.68	5,377.88	2,662.05	2,957.83
UBS Global Asset Mgmt.	430.65	231.01	256.68	4,179.72	2,249.06	2,498.96
Urdang Investment Management	936.30	615.94	684.38	2,025.55	1,311.63	1,457.37

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Currency: USD	03/01/2017 - 03/31/2017			01/01/2017 - 03/31/2017		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Wedge Capital Mgmt	698.83	411.35	457.05	1,896.63	1,119.77	1,244.18
<b>Total:</b>	<b>10,769.08</b>	<b>5,855.45</b>	<b>6,506.05</b>	<b>20,767.36</b>	<b>11,471.00</b>	<b>12,745.55</b>

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**Broker Breakout**

Currency: USD

Broker	03/01/2017 - 03/31/2017			01/01/2017 - 03/31/2017		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	6,212.88	3,516.88	3,907.64	9,313.13	5,440.12	6,044.58
ITG Inc	3,426.72	1,696.21	1,884.68	5,377.88	2,662.05	2,957.83
Merrill Lynch	1,129.48	642.36	713.73	6,076.35	3,368.83	3,743.14
<b>Total:</b>	<b>10,769.08</b>	<b>5,855.45</b>	<b>6,506.05</b>	<b>20,767.36</b>	<b>11,471.00</b>	<b>12,745.55</b>

**Commission Recapture Payments**

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of February	03/21/2017	03/21/2017	03/21/2017	201702	1,708.80	
<b>Total:</b>						<b>1,708.80</b>	

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