



## ITEM 9

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:**  
February 15, 2017

February 10, 2017

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

**FROM:** JR Pearce  
Investment Officer

**SUBJECT:** Review of Trading Activity and Commission Recapture Program for Fourth  
Quarter 2016

### **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:

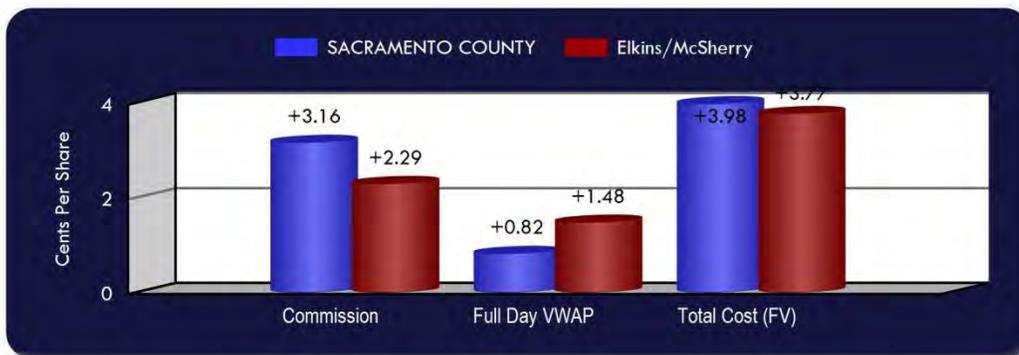
1. Commission Costs; both trade cost and any soft dollar costs.
2. Market Impact Cost; a trade performance measurement, which measures the difference between the manager's trade price and the market's volume-weighted average price (VWAP). VWAP is the average daily price of a security weighted by the 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:**

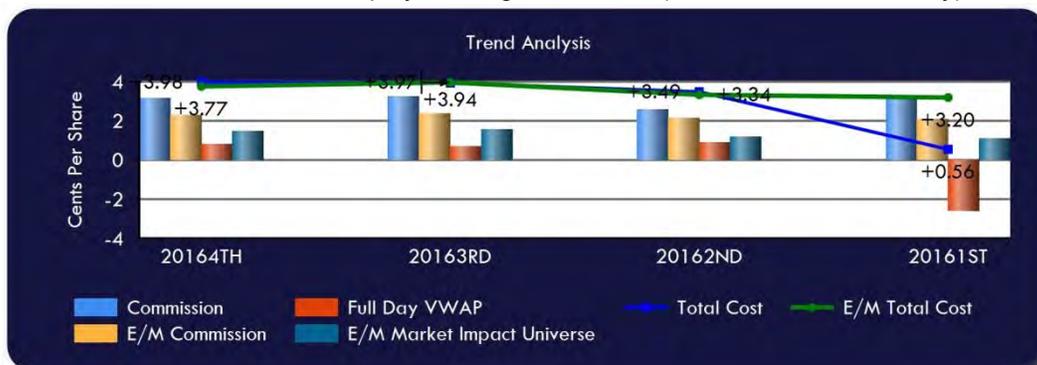
**US EQUITY:** During the quarter, SCERS' US equity portfolio traded 3.7 million shares representing approximately \$12.4 million on the AMEX, NASDAQ and NYSE exchanges, and ranked in the 45th percentile against the EM US Equity universe. SCERS generated a total trading cost of +3.98 cps, which is 0.21 cps more than the EM US Equity universe as follows: commission cost of +3.16 cps versus +2.29 cps and market impact cost (difference from VWAP) of +0.82 cps versus +1.48 cps. SCERS' market impact cost was better than 65% 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 (+2.29 cps). Weatherbie, CenterSquare, Wedge Capital, DGHM, UBS Global, and Brown Advisory, had commission costs more than the universe (+2.29 cps) at +3.91 cps, +3.24 cps, +3.28 cps, +4.38 cps, +2.46 cps, and +2.76 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 (formerly Urdang Securities). 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.

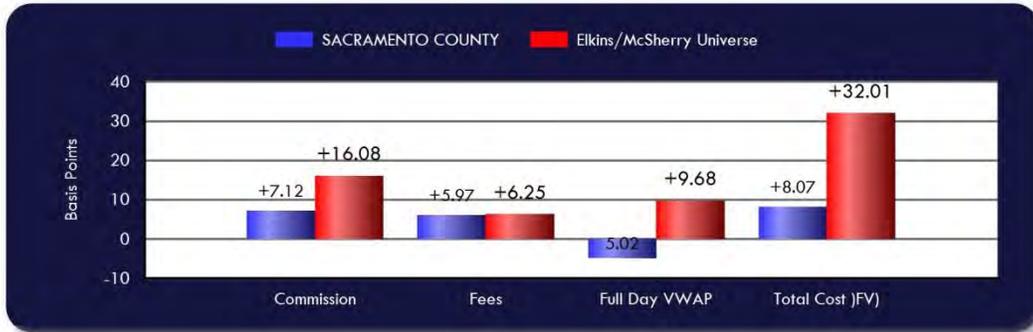
According to Elkins McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.44 cps, which is lower than several of SCERS' US Small Cap managers, except CenterSquare, Wedge Capital, and UBS Global Asset Management. DGHM commission cost at +4.38 cps was the highest among the managers and exceeded the universe of +3.44 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 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 (+1.48 cps), except for DGHM (+3.18 cps), UBS Global (+8.17 cps), and Alliance Bernstein (+4.09 cps). Staff will review the costs with the managers.

**INTERNATIONAL EQUITY:** During the quarter, SCERS' International Equity portfolio traded 20.2 million shares representing approximately \$200.9 million across 33 countries. SCERS generated a total trading cost of +8.07 bps, which is +23.94 bps lower than the EM International Equity universe, as follows: commission cost (+7.12 bps), fees (country taxes, tariffs, and other exchange charges) (+5.97 bps), and market impact cost (-5.02 bps). This

compares favorably to the EM International Equity universe's commission cost, fee cost, market impact cost, and total trading cost, of +16.08 bps, +6.25 bps, +9.68 bps, and +32.01 bps, respectively.

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



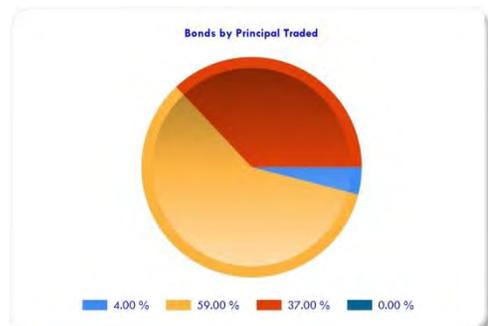
All of SCERS' International Equity managers generated commission costs (ranging from +1.66 bps to +9.11 bps), significantly less than the commission costs of the EM International Equity universe (ranging from +15.46 bps to +17.42 bps). This result is consistent with the previous quarters' lower trade costs than the EM peer group universe, as shown below.

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



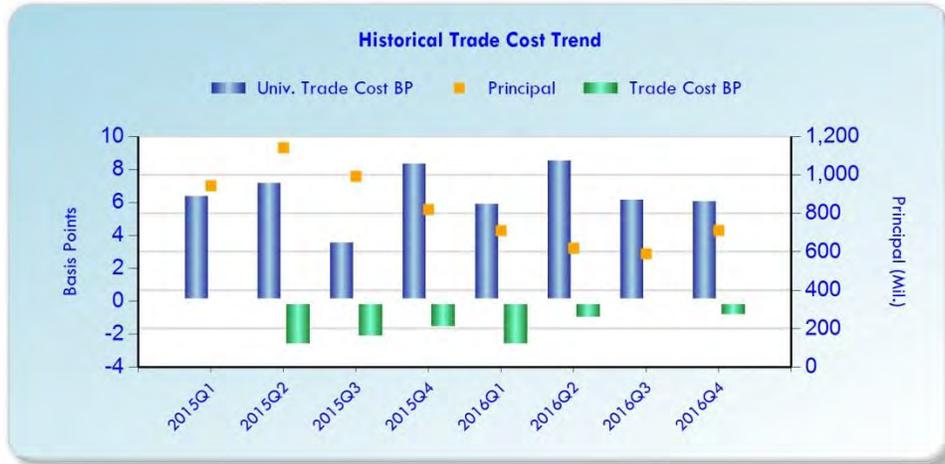
During the quarter, all of SCERS' International Equity managers experienced favorable market impact costs, as follows: Lazard Asset Management (-0.16 bps versus +9.47 bps), William Blair (+0.97 bps versus +10.46 bps), LSV Asset Management (-8.05 bps versus +9.70 bps), and CBRE Clarion (-17.80 bps versus +9.83 bps).

**US FIXED INCOME:** During the quarter, SCERS' US Fixed Income managers conducted 646 trades totaling approximately \$711.7 million, across mortgages, governments, corporates, and municipals. For the quarter, SCERS' US Fixed Income trading cost was -0.97 bps, which was



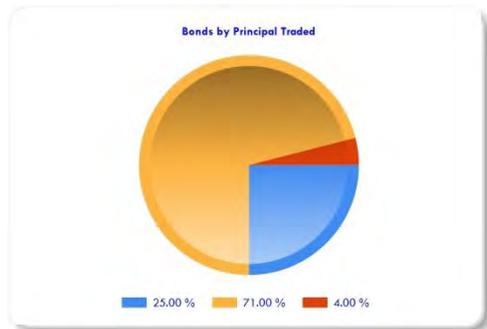
+7.23 bps lower than the EM US Fixed Income universe of +6.26 bps, and specifically lower in Governments (by +4.32 bps), Mortgages (by +11.09 bps), Corporates (by +12.92 bps), and Municipals (by +31.38 bps). This result is consistent with the previous quarters' lower trade costs than the EM peer group universe, as shown below.

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



SCERS traded \$419 million in Governments, \$264 million in Mortgages, \$28 million in Corporates, and \$2 million in Municipals. SCERS' domestic US Core Plus Fixed Income managers had trading costs below the US Fixed Income universe; TCW/MetWest (-0.87 bps versus +6.10 bps) and NeubergerBerman (-1.36 bps versus +7.04 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 110 international trades totaling approximately \$59.8 million in 50 different countries, as follows: \$42 million in Governments, \$15 million in Corporates, and \$3 million in Mortgages. Prudential's total trading cost was -0.96 bps, which was +4.45 bps lower than the EM peer group cost of +3.49 bps; and specifically, higher in Governments (by +2.27 bps) and Corporates (by +7.63 bps), but was lower in Mortgages (by +182.87 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 \$13,310 in commission rebates. For the year ending 2016, SCERS has earned \$61,946 in rebates. As a comparison, SCERS earned rebates of \$47,309 in 2015, \$105,736 in 2014, and \$126,980 in 2013. 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 December 31, 2016





## REPORT CONTENTS

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- **10 High / Low Cost Trades**
- **10 High Cost Trade Graphs**
- **10 Low Cost Trade Graphs**



(+) = Cost

**EXECUTIVE SUMMARY**

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates U.S. equity executions from October 1, 2016 to December 31, 2016. The analysis included trading of 3,691,765 shares representing \$124.13 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 +3.16 cps (+9.40 bp) or +\$116,656 (+0.87 cps (+2.58 bp) worse than the Elkins/McSherry All Trading Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact cost was +0.82 cps (+2.43 bp) or 0.66 cps (1.96 bp) better than the Elkins/McSherry Universe</li> <li>Your overall trading cost of +3.98 cps (+11.82 bp) was +0.21 cps (+0.62 bp) worse than the Elkins/McSherry Universe</li> <li>Full Day VWAP Universe Rank: 65%</li> <li>Total Cost Universe Rank: 45%</li> </ul>	<ul style="list-style-type: none"> <li>E-Score Rank : 57</li> <li>E-Score : 0.56</li> </ul>

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	75 %	+1.48
				25 %	+0.31
					+3.14



(+) = Cost

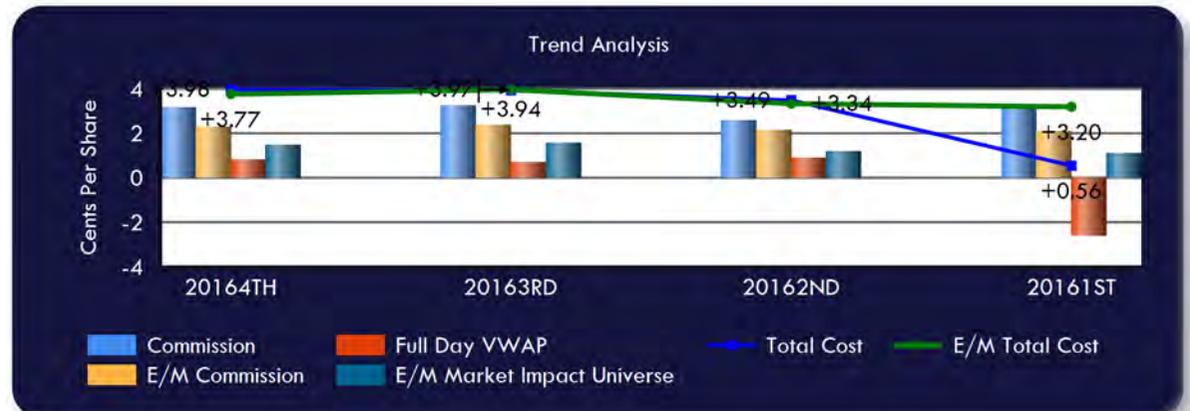
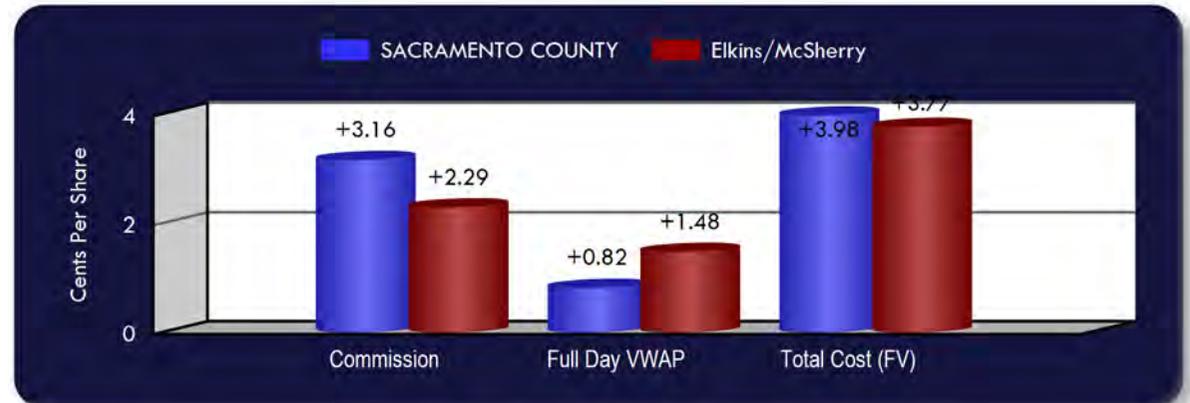
**EXECUTIVE SUMMARY**

**TOTAL PORTFOLIO COST PERFORMANCE**

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)	E - Score (Rank)	
Buys	+3.18	+2.29	+3.44	+1.00	+1.48	+4.19	+0.42	56	0.58
Sells	+3.13	+2.29	+3.44	+0.59	+1.48	+3.73	0.04	59	0.54
Total	+3.16	+2.29	+3.44	+0.82	+1.48	+3.98	+0.21	57	0.56

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	67,249,971	56,883,278
Shares	1,998,434	1,693,332
Unique Names	585	181
Liquidity (% ADV)	0.058	0.102
Avg. Execution Size	1,649	2,447
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,212	692



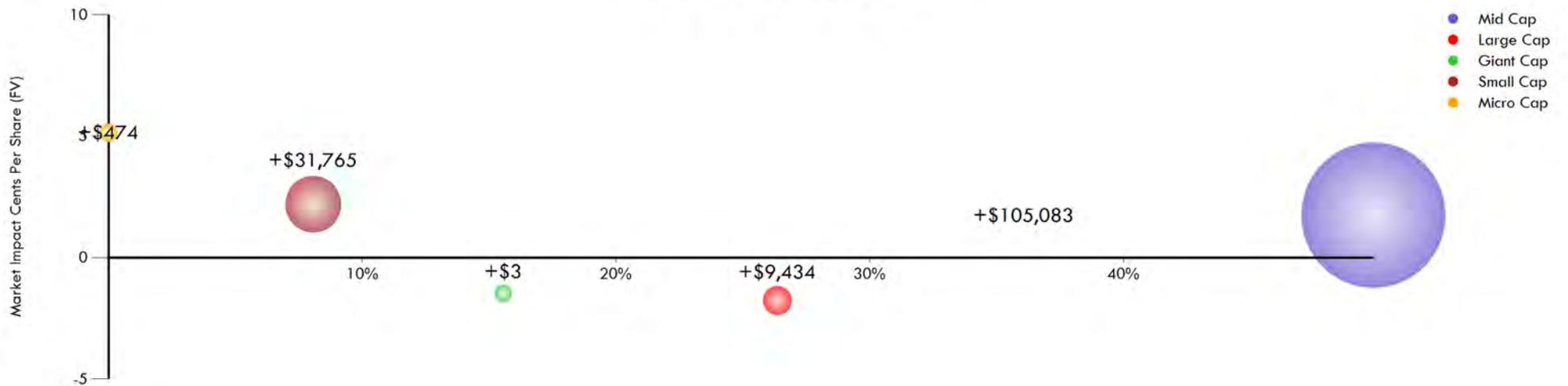
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EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score (Rank)	E - Score	Market Cap Definition
			Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP %	(cps)	Commission+ Full Day VWAP Vs. Universe (cps)			
Mid Cap	49.88 %	2,443	+3.37	+2.29	+1.74	+1.06	39 %	+5.12	+1.76	59	0.53	\$1 B TO \$5 B
Large Cap	26.39 %	1,294	+3.01	+2.29	1.77	+1.76	89 %	+1.24	2.81	56	0.58	\$5 B TO \$25 B
Giant Cap	15.59 %	1,414	+1.48	+2.29	1.48	+1.99	83 %	+0.00	4.28	51	0.65	Over \$25 B
Small Cap	8.10 %	2,242	+3.57	+2.29	+2.19	+0.62	25 %	+5.76	+2.85	60	0.53	\$250 M TO \$1 B
Micro Cap	0.03 %	1,802	+1.45	+2.29	+5.13	+0.87	12 %	+6.58	+3.42	78	0.27	Under \$250 M

Total Cost by Market Cap: (USD)



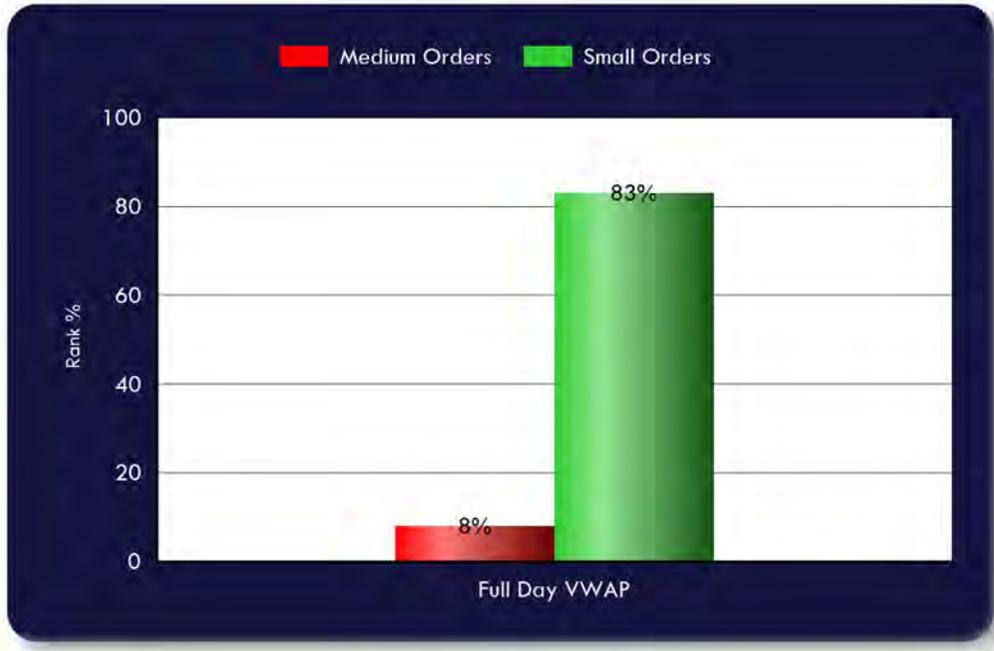


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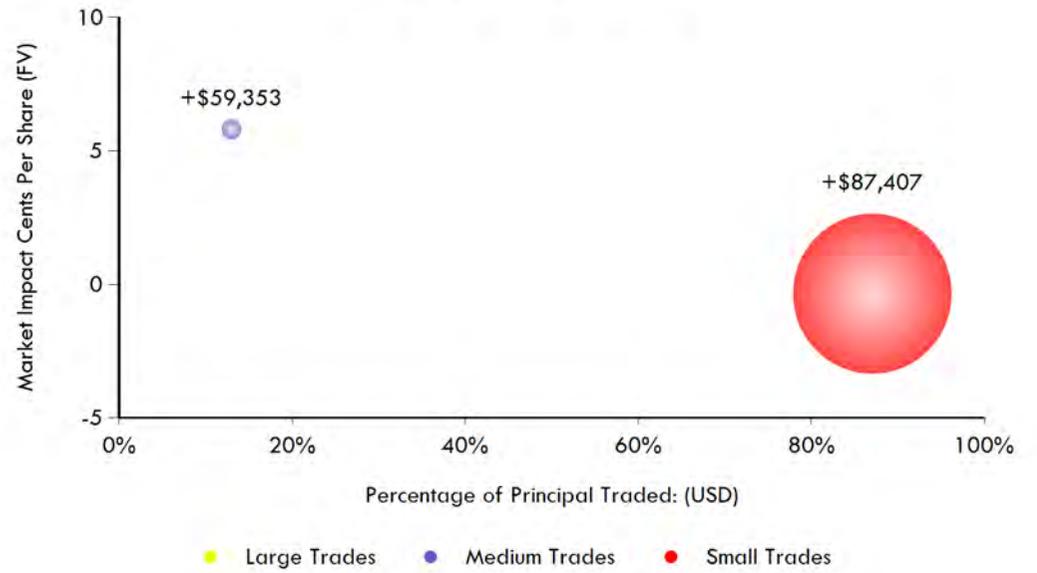
**EXECUTIVE SUMMARY**

**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	42	16,507	N/A	+2.68	+2.29	+5.82	+1.48	8 %	+8.50	+4.73	51	0.66	10K-50K
Small Orders	1,862	1,610	N/A	+3.27	+2.29	0.34	+1.48	83 %	+2.93	0.84	58	0.55	10K or Less



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





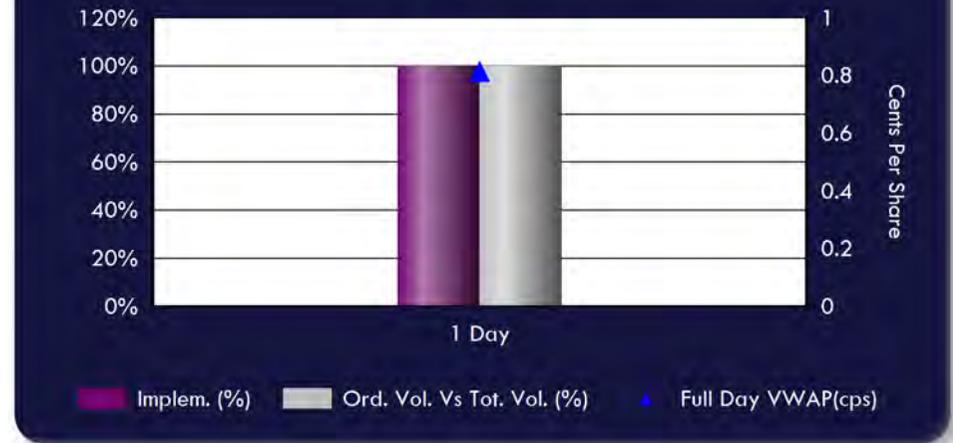
(+) = Cost

**EXECUTIVE SUMMARY**

**IMPLEMENTATION DAYS BY TRADE**

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
1 Day	100.00	100%	+0.82	57	0.56

**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%	+0.82	57	0.56

**Avg. % of Daily Volume**





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EXECUTIVE SUMMARY

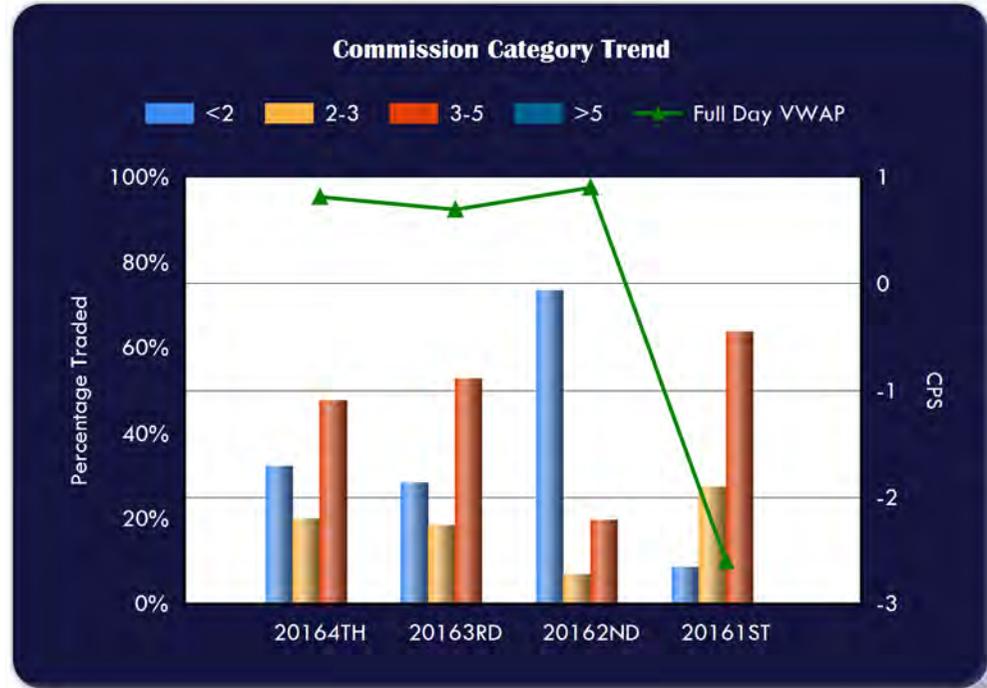
COMMISSION REVIEW

Top 10 Broker

Commission Trends

Broker	Total Commission (\$)	Commission 20164th (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20163RD (cps)	20162ND (cps)	20161ST (cps)
ITG	11,374	+3.87	+2.29	+3.44	+3.83	+3.86	+3.71
THEMIS TRA	10,337	+4.00	+2.29	+3.44	+4.00	+4.00	+4.00
CAPITAL IN	9,255	+3.60	+2.29	+3.44	+3.41	+3.24	+3.67
LIQUIDNET	8,212	+2.96	+2.29	+3.44	+3.08	+3.05	+2.98
MERRILL LY	7,859	+2.49	+2.29	+3.44	+2.06	+2.76	+3.05
CITIGROUP	5,490	+3.11	+2.29	+3.44	+3.00	+1.73	+2.22
BARCLAYS	4,711	+3.46	+2.29	+3.44	+3.28	+3.91	+3.88
JP MORGAN	4,336	+3.34	+2.29	+3.44	+3.64	+1.02	+3.43
JEFFERIES	4,279	+3.80	+2.29	+3.44	+4.11	+3.88	+3.82
CONVERGEX	4,223	+4.94	+2.29	+3.44	+4.88	+4.47	+4.79

Commission Category Trend



NOTES

(+) = Cost

**TRADE CYCLE DETAIL**

**Manager Performance (Full Day VWAP)**



Manager	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		
						Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20163RD (%)	20162ND (%)	20161ST (%)
WEATHERBIE	30	2,581	934,343	60	0.53	+3.91	+2.29	+0.88	62 %	+1.02	33	46	68
URDANG SECURITIES MA	27	2,381	954,928	53	0.63	+3.24	+2.29	0.61	86 %	1.14	73	68	66
WEDGE CAPITAL MGMT L	13	1,705	296,690	69	0.40	+3.28	+2.29	1.62	91 %	2.10	24	7	33
DALTON, GREINER, HAR	13	2,712	488,098	62	0.49	+4.38	+2.29	+3.18	25 %	+3.79	90	92	92
UBS GLOBAL ASSET MGM	12	3,693	454,184	59	0.54	+2.46	+2.29	+8.17	4 %	+6.87	34	24	94
HUBER CAPITAL MANAGE	10	3,680	301,740	61	0.52	+0.83	+2.29	+1.18	56 %	1.75	98	85	92
BROWN ADVISORY	9	981	100,051	56	0.59	+2.76	+2.29	11.50	99 %	12.50	31	92	92
ALLIANCE R 3000 CAPI	6	210	100,182	53	0.62	+0.49	+2.29	+4.09	16 %	+0.82	86	30	1
EAGLE CAPITAL MANAGE	6	15,388	61,550	32	0.97	+1.88	+2.29	26.56	99 %	28.44	1	91	98

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**NOTES**

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(+) = Cost

**TRADE CYCLE DETAIL**

**Broker Performance (Full Day VWAP)**



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	E - Score Rank	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		20163RD (%)	20162ND (%)	20161ST (%)
LIQUIDNET	13	1,967	277,383	43	0.79	8,212	+2.96	+2.29	8.08	99 %	8.89	90	74	90
THEMIS TRADING LLC	10	2,154	258,430	64	0.46	10,337	+4.00	+2.29	+1.94	41 %	+2.17	4	13	12
ITG	9	2,627	294,220	63	0.48	11,374	+3.87	+2.29	+2.96	28 %	+3.06	53	41	42
CAPITAL INSTL SVCS	8	4,141	256,763	52	0.63	9,255	+3.60	+2.29	+0.40	73 %	+0.24	24	92	93
UBS	7	4,513	212,126	63	0.48	2,428	+1.14	+2.29	+4.46	14 %	+1.84	96	89	92
MERRILL LYNCH	7	4,582	316,176	60	0.53	7,859	+2.49	+2.29	+6.83	5 %	+5.55	65	88	95
JP MORGAN CHASE	5	1,881	129,760	56	0.58	4,336	+3.34	+2.29	1.74	92 %	2.16	94	69	79
BARCLAYS	5	1,972	136,052	75	0.33	4,711	+3.46	+2.29	1.34	91 %	1.65	90	91	91
CITIGROUP	5	2,939	176,319	49	0.68	5,490	+3.11	+2.29	1.69	92 %	2.34	20	23	59
GOLDMAN SACHS	4	3,594	161,738	56	0.58	3,668	+2.27	+2.29	2.03	93 %	3.53	95	9	97

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**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	20163RD (%)	20162ND (%)	20161ST (%)
CITATION FINL GROUP	4	155	72,000	57	0.57	360	+0.50	+2.29	3.42	95 %	6.68	-	99	-
BROADCORT CAPITAL	4	2,128	80,848	74	0.33	1,835	+2.27	+2.29	2.81	94 %	4.31	4	33	89
CONVERGEX	3	1,472	85,400	65	0.45	4,223	+4.94	+2.29	0.15	82 %	+1.03	92	85	78
JEFFERIES & CO	3	2,451	112,746	45	0.74	4,279	+3.80	+2.29	1.63	91 %	1.61	17	54	93
ISI GROUP INC	3	3,518	84,434	48	0.69	2,082	+2.47	+2.29	5.86	97 %	7.17	41	95	44
WILLIAM BLAIR	2	3,770	79,173	68	0.42	3,336	+4.21	+2.29	4.67	97 %	4.23	34	95	96
CANTOR FITZGERALD	2	2,153	71,042	40	0.83	1,971	+2.77	+2.29	+12.91	1 %	+11.92	31	71	35
WELLS FARGO	2	2,444	80,664	58	0.56	2,966	+3.68	+2.29	0.41	84 %	0.50	45	95	17
RBC CAPITAL MARKETS	2	2,139	81,286	70	0.39	2,663	+3.28	+2.29	+5.43	9 %	+4.94	60	93	81
JONES TRADING	2	3,294	23,057	60	0.53	288	+1.25	+2.29	38.64	99 %	41.16	68	13	99

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**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	20163RD (%)	20162ND (%)	20161ST (%)
WEEDEN & CO	2	3,293	49,402	62	0.50	1,512	+3.06	+2.29	2.78	94 %	3.49	79	32	66
STIFEL NICOLAUS & CO	2	2,547	81,490	60	0.53	2,723	+3.34	+2.29	0.68	87 %	1.11	70	97	86
MORGAN STANLEY	2	2,179	45,769	57	0.56	1,394	+3.05	+2.29	2.72	94 %	3.44	24	1	99
KEYBANC	1	1,768	37,119	66	0.44	1,739	+4.68	+2.29	+0.86	63 %	+1.77	92	96	4
RAYMOND JAMES	1	2,013	42,271	67	0.43	1,436	+3.40	+2.29	0.10	81 %	0.47	17	69	96
STATE STREET BANK	1	1,549	40,281	64	0.46	1,507	+3.74	+2.29	+2.95	28 %	+2.92	22	56	66
CREDIT SUISSE	1	810	18,620	74	0.34	532	+2.86	+2.29	+3.54	22 %	+2.63	85	4	47
BAIRD, ROBERT W	1	1,727	32,816	61	0.50	1,010	+3.08	+2.29	+0.14	77 %	0.55	99	90	89
NEEDHAM & CO INC	<1	2,649	21,195	67	0.42	848	+4.00	+2.29	19.51	99 %	19.28	80	99	1
GREEN STREET	<1	1,743	24,398	43	0.78	1,000	+4.10	+2.29	+6.67	6 %	+7.00	5	92	94

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**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	20163RD (%)	20162ND (%)
CANACCORD GENUITY	<1	3,262	22,833	63	0.48	913	+4.00	+2.29	2.08	93 %	1.85	99	-	6
CRAIG - HALLUM	<1	3,121	18,724	65	0.46	749	+4.00	+2.29	+9.28	2 %	+9.52	-	-	-
LEERINK SWANN	<1	5,073	25,365	50	0.66	1,015	+4.00	+2.29	0.55	86 %	0.32	88	84	1
AUTREPAT-DISTRIBUT	<1	7,439	22,318	1	2.93	0	+0.00	+2.29	+161.92	1 %	+158.15	-	-	-
SANDLER ONEILL	<1	2,375	26,122	74	0.33	1,176	+4.50	+2.29	2.00	93 %	1.27	-	-	86
KNIGHT CAPITAL	<1	741	16,298	70	0.38	326	+2.00	+2.29	+3.56	22 %	+1.79	69	1	26
STEPHENS & CO INC	<1	2,839	14,197	65	0.46	620	+4.37	+2.29	+10.26	2 %	+10.86	26	24	33
SC BERNSTEIN	<1	672	6,045	44	0.77	85	+1.40	+2.29	21.93	99 %	24.30	95	47	1
COWEN & CO	<1	2,807	22,454	67	0.43	831	+3.70	+2.29	1.64	91 %	1.70	6	1	89
WUNDERLICH SECUR	<1	3,280	16,400	55	0.59	737	+4.50	+2.29	13.02	99 %	12.30	54	90	99

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**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	20163RD (%)	20162ND (%)	20161ST (%)
LUMINEX TRADING	<1	608	4,865	56	0.59	15	+0.30	+2.29	4.14	96 %	7.60	91	99	-
FIRST ANALYSIS SECUR	<1	1,869	5,608	68	0.41	280	+5.00	+2.29	12.02	99 %	10.79	-	-	-
KEEFE BRUYETTE WOODS	<1	1,664	23,295	77	0.29	947	+4.07	+2.29	0.75	87 %	0.45	70	78	91
WOLFE TRAHAN SECS	<1	3,716	26,011	81	0.24	1,104	+4.24	+2.29	+0.87	63 %	+1.34	-	-	-
BLUEFIN RESEARCH	<1	5,405	10,810	70	0.39	541	+5.00	+2.29	3.40	95 %	2.17	1	99	-
OPPENHEIMER & CO INC	<1	5,223	5,223	29	1.04	209	+4.00	+2.29	+24.01	1 %	+24.25	80	55	99
TELSEY ADVISORY GR	<1	1,665	3,330	24	1.14	167	+5.00	+2.29	8.42	99 %	7.18	98	1	-
SEAPORT GROUP SECS	<1	1,290	7,740	69	0.40	387	+5.00	+2.29	3.06	95 %	1.83	-	91	1
MACQUARIE	<1	1,550	3,100	73	0.34	109	+3.50	+2.29	4.37	96 %	4.64	90	-	-
PIPER JAFFRAY	<1	1,842	5,526	89	0.14	221	+4.00	+2.29	0.38	84 %	0.14	96	97	99

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

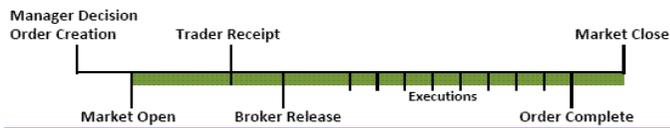
**NOTES**

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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	20163RD (%)	20162ND (%)
BTIG LLC	<1	2,555	2,555	38	0.87	51	+2.00	+2.29	20.11	99 %	21.88	1	94	-
DEUTSCHE BANK	<1	1,140	3,420	39	0.84	92	+2.70	+2.29	18.14	99 %	19.22	93	78	91
MAXIM GROUP	<1	2,900	2,900	47	0.72	104	+3.60	+2.29	57.17	99 %	57.34	8	-	-
BARRINGTON RESEARCH	<1	2,000	2,000	70	0.39	100	+5.00	+2.29	+6.88	5 %	+8.11	-	-	-
BLOOMBERG	<1	1,357	1,357	15	1.40	27	+2.00	+2.29	45.64	99 %	47.40	1	99	27
KING, CL, & ASSOC	<1	1,073	3,220	76	0.30	161	+5.00	+2.29	2.18	93 %	0.94	98	-	99
DAVIDSON D.A. & CO	<1	885	1,770	85	0.19	89	+5.00	+2.29	+4.29	15 %	+5.52	91	95	99
ANCORA SECIRITIES	<1	1,117	3,350	68	0.41	168	+5.00	+2.29	+4.62	13 %	+5.85	-	71	-
APEX CLEARING CORP	<1	1,252	1,252	7	1.76	25	+2.00	+2.29	+42.24	1 %	+40.47	-	98	-
CJS SECURITIES	<1	700	700	16	1.35	35	+5.00	+2.29	29.76	99 %	28.53	-	-	-

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.44	+2.29	+1.50	+1.59	+1.48

**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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	6	210	100,182	53	0.62	495	+0.49	+2.29	+4.09	16 %	+0.82	86	30	1
CITATION FINL GROUP	4	155	72,000	57	0.57	360	+0.50	+2.29	3.42	95 %	6.68	-	99	-
GOLDMAN SACHS	<1	1,477	10,336	76	0.31	38	+0.37	+2.29	10.27	99 %	13.67	-	99	1
BARCLAYS	<1	4,971	4,971	66	0.44	37	+0.75	+2.29	+10.85	1 %	+7.83	-	-	-
JP MORGAN CHASE	<1	7,965	7,965	65	0.46	60	+0.75	+2.29	+4.80	12 %	+1.78	-	63	-
AUTREPAT-DISTRIBUT	<1	4,910	4,910	1	3.16	0	+0.00	+2.29	+136.50	1 %	+132.73	-	-	-



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	9	981	100,051	56	0.59	2,766	+2.76	+2.29	11.50	99 %	12.50	31	92	92
CAPITAL INSTL SVCS	2	1,157	24,306	56	0.58	709	+2.92	+2.29	16.60	99 %	17.45	10	66	88
JP MORGAN CHASE	1	638	9,575	66	0.45	249	+2.60	+2.29	1.27	90 %	2.43	97	84	99
WILLIAM BLAIR	<1	1,680	10,082	68	0.42	353	+3.50	+2.29	27.04	99 %	27.31	1	99	-
MORGAN STANLEY	<1	1,090	4,360	44	0.76	55	+1.27	+2.29	28.20	99 %	30.70	91	99	1
BARCLAYS	<1	624	3,120	64	0.46	109	+3.50	+2.29	4.39	96 %	4.66	71	-	-
BAIRD, ROBERT W	<1	1,266	11,397	61	0.51	399	+3.50	+2.29	0.85	89 %	1.12	32	76	98
SC BERNSTEIN	<1	934	5,605	43	0.77	69	+1.23	+2.29	23.18	99 %	25.72	95	82	89
RAYMOND JAMES	<1	722	5,054	58	0.55	177	+3.50	+2.29	+15.59	1 %	+15.32	90	42	99
LUMINEX TRADING	<1	608	4,865	56	0.59	15	+0.30	+2.29	4.14	96 %	7.60	91	99	-
CITIGROUP	<1	745	2,236	50	0.67	78	+3.50	+2.29	39.66	99 %	39.93	56	-	99
ISI GROUP INC	<1	2,127	2,127	14	1.45	74	+3.50	+2.29	60.09	99 %	60.36	99	99	-
JONES TRADING	<1	1,089	3,268	63	0.48	65	+2.00	+2.29	+7.53	5 %	+5.76	1	1	-
MACQUARIE	<1	1,550	3,100	73	0.34	109	+3.50	+2.29	4.37	96 %	4.64	90	-	-
BTIG LLC	<1	2,555	2,555	38	0.87	51	+2.00	+2.29	20.11	99 %	21.88	1	94	-
JEFFERIES & CO	<1	1,129	2,258	50	0.67	79	+3.50	+2.29	+22.39	1 %	+22.13	46	86	1
BLOOMBERG	<1	1,357	1,357	15	1.40	27	+2.00	+2.29	45.64	99 %	47.40	1	99	27
CREDIT SUISSE	<1	313	1,253	78	0.28	36	+2.88	+2.29	+5.88	7 %	+4.99	88	97	99
KEYBANC	<1	1,164	1,164	70	0.38	41	+3.50	+2.29	6.25	97 %	6.51	-	-	-
WELLS FARGO	<1	1,317	1,317	88	0.15	46	+3.50	+2.29	3.85	96 %	4.11	92	79	91
ITG	<1	820	820	52	0.64	16	+2.00	+2.29	+35.10	1 %	+33.33	7	99	99



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
STIFEL NICOLAUS & CO	<1	232	232	86	0.18	8	+3.50	+2.29	1.28	91 %	1.55	97	14	-



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	13	2,712	488,098	62	0.49	21,357	+4.38	+2.29	+3.18	25 %	+3.79	90	92	92
CONVERGEX	3	1,472	85,400	65	0.45	4,223	+4.94	+2.29	0.15	82 %	+1.03	90	85	78
CAPITAL INSTL SVCS	2	9,966	99,664	50	0.67	4,695	+4.71	+2.29	+1.20	55 %	+2.15	80	92	97
RBC CAPITAL MARKETS	2	1,850	59,187	72	0.36	1,925	+3.25	+2.29	+2.02	39 %	+1.51	57	93	82
ITG	<1	2,213	22,130	74	0.34	708	+3.20	+2.29	+0.40	73 %	0.17	37	90	76
KEYBANC	<1	2,980	20,860	75	0.32	980	+4.70	+2.29	3.72	96 %	2.79	90	93	93
WILLIAM BLAIR	<1	10,950	21,900	91	0.11	1,095	+5.00	+2.29	7.26	98 %	6.03	80	1	90
WEEDEN & CO	<1	9,250	18,500	52	0.64	648	+3.50	+2.29	6.42	97 %	6.69	83	95	63
SANDLER ONEILL	<1	4,216	16,864	76	0.30	843	+5.00	+2.29	1.18	90 %	+0.05	-	-	-
FIRST ANALYSIS SECUR	<1	1,869	5,608	68	0.41	280	+5.00	+2.29	12.02	99 %	10.79	-	-	-
UBS	<1	3,699	11,096	72	0.36	555	+5.00	+2.29	2.95	94 %	1.72	92	48	39
AUTREPAT-DISTRIBUT	<1	12,058	12,058	1	2.80	0	+0.00	+2.29	+169.09	1 %	+165.32	-	-	-
WOLFE TRAHAN SECS	<1	3,716	26,011	81	0.24	1,104	+4.24	+2.29	+0.87	63 %	+1.34	-	-	-
WUNDERLICH SECUR	<1	2,625	10,500	86	0.18	525	+5.00	+2.29	2.38	94 %	1.15	54	92	99
GREEN STREET	<1	2,010	12,058	62	0.50	603	+5.00	+2.29	6.13	97 %	4.90	-	-	-
BLUEFIN RESEARCH	<1	5,405	10,810	70	0.39	541	+5.00	+2.29	3.40	95 %	2.17	1	99	-
TELSEY ADVISORY GR	<1	1,665	3,330	24	1.14	167	+5.00	+2.29	8.42	99 %	7.18	98	-	-
STEPHENS & CO INC	<1	5,205	5,205	67	0.43	260	+5.00	+2.29	+4.12	16 %	+5.35	60	97	-
SEAPORT GROUP SECS	<1	1,290	7,740	69	0.40	387	+5.00	+2.29	3.06	95 %	1.83	-	91	1
STIFEL NICOLAUS & CO	<1	6,519	13,038	70	0.39	587	+4.50	+2.29	8.87	99 %	8.14	-	-	90
BARRINGTON RESEARCH	<1	2,000	2,000	70	0.39	100	+5.00	+2.29	+6.88	5 %	+8.11	-	-	-



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
KEEFE BRUYETTE WOODS	<1	7,762	7,762	90	0.13	388	+5.00	+2.29	+0.69	68 %	+1.92	70	-	-
KING, CL, & ASSOC	<1	1,073	3,220	76	0.30	161	+5.00	+2.29	2.18	93 %	0.94	99	-	99
DAVIDSON D.A. & CO	<1	885	1,770	85	0.19	89	+5.00	+2.29	+4.29	15 %	+5.52	91	95	99
ANCORA SECURITIES	<1	1,117	3,350	68	0.41	168	+5.00	+2.29	+4.62	13 %	+5.85	-	71	-
ISI GROUP INC	<1	1,437	7,187	68	0.41	287	+4.00	+2.29	+0.36	74 %	+0.59	-	92	-
CJS SECURITIES	<1	700	700	16	1.35	35	+5.00	+2.29	29.76	99 %	28.53	-	-	-
LIQUIDNET	<1	75	150	29	1.04	6	+4.00	+2.29	29.85	99 %	29.62	8	86	72



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
<b>Grand Total</b>	6	15,388	61,550	32	0.97	1,160	+1.88	+2.29	26.56	99 %	28.44	1	91	98
LIQUIDNET	5	18,150	54,450	29	1.03	1,089	+2.00	+2.29	29.16	99 %	30.93	-	13	-
UBS	<1	7,100	7,100	78	0.27	71	+1.00	+2.29	6.61	97 %	9.37	1	99	-



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
<b>Grand Total</b>	10	3,680	301,740	61	0.52	2,513	+0.83	+2.29	+1.18	56 %	1.75	98	85	92
UBS	6	4,683	187,340	62	0.49	1,592	+0.85	+2.29	+5.51	9 %	+2.60	97	88	94
GOLDMAN SACHS	1	3,346	43,500	51	0.66	87	+0.20	+2.29	12.18	99 %	15.75	99	-	-
MERRILL LYNCH	<1	2,173	23,900	76	0.31	143	+0.60	+2.29	1.18	90 %	4.35	99	98	99
CITIGROUP	<1	3,213	25,700	63	0.48	51	+0.20	+2.29	3.33	95 %	6.89	67	50	35
JP MORGAN CHASE	<1	2,130	21,300	38	0.87	639	+3.00	+2.29	1.50	91 %	2.27	94	99	97



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	12	3,693	454,184	59	0.54	11,186	+2.46	+2.29	+8.17	4 %	+6.87	34	24	94
MERRILL LYNCH	6	5,029	286,626	60	0.52	7,716	+2.69	+2.29	+8.02	4 %	+6.94	8	83	95
BROADCORT CAPITAL	2	2,302	55,248	65	0.45	914	+1.65	+2.29	4.97	97 %	7.09	2	24	91
JP MORGAN CHASE	<1	4,411	22,054	74	0.33	631	+2.86	+2.29	+0.41	73 %	0.50	99	79	87
GOLDMAN SACHS	<1	4,039	24,236	49	0.68	442	+1.82	+2.29	+12.11	1 %	+10.17	2	1	92
STIFEL NICOLAUS & CO	<1	3,105	9,316	58	0.56	279	+3.00	+2.29	+9.13	2 %	+8.37	-	87	60
CREDIT SUISSE	<1	2,274	11,368	71	0.37	280	+2.46	+2.29	+1.13	58 %	0.17	90	1	42
JEFFERIES & CO	<1	2,714	5,427	47	0.71	163	+3.00	+2.29	5.97	97 %	6.74	1	98	65
RAYMOND JAMES	<1	5,800	5,800	84	0.20	174	+3.00	+2.29	3.84	96 %	4.60	-	-	-
STATE STREET BANK	<1	598	2,988	58	0.56	15	+0.50	+2.29	+1.66	45 %	1.61	1	95	62
DEUTSCHE BANK	<1	1,140	3,420	39	0.84	92	+2.70	+2.29	18.14	99 %	19.22	-	-	26
AUTREPAT-DISTRIBUT	<1	5,350	5,350	1	2.80	0	+0.00	+2.29	+169.09	1 %	+165.32	-	-	-
COWEN & CO	<1	843	3,372	46	0.73	67	+2.00	+2.29	+9.56	2 %	+7.79	2	1	-
RBC CAPITAL MARKETS	<1	5,985	5,985	56	0.58	180	+3.00	+2.29	+36.86	1 %	+36.09	-	98	7
WEEDEN & CO	<1	2,602	2,602	11	1.57	78	+3.00	+2.29	+37.74	1 %	+36.97	54	92	76
BAIRD, ROBERT W	<1	6,885	6,885	82	0.23	103	+1.50	+2.29	+5.56	9 %	+3.30	90	41	98
MORGAN STANLEY	<1	1,333	1,333	42	0.80	5	+0.40	+2.29	+19.16	1 %	+15.79	67	1	99
APEX CLEARING CORP	<1	1,252	1,252	7	1.76	25	+2.00	+2.29	+42.24	1 %	+40.47	-	98	-
WELLS FARGO	<1	700	700	27	1.08	21	+3.00	+2.29	+40.64	1 %	+39.87	-	-	-
CITIGROUP	<1	222	222	23	1.16	1	+0.40	+2.29	6.71	97 %	10.08	-	22	77



(+) = Cost

TRADE CYCLE DETAIL

URDANG SECURITIES 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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	27	2,381	954,928	53	0.63	30,940	+3.24	+2.29	0.61	86 %	1.14	73	68	66
LIQUIDNET	6	1,447	163,466	56	0.58	4,744	+2.90	+2.29	2.71	94 %	3.58	90	78	91
CAPITAL INSTL SVCS	4	4,284	132,793	51	0.65	3,852	+2.90	+2.29	+2.92	28 %	+2.05	55	21	27
CITIGROUP	3	3,113	130,755	48	0.70	4,754	+3.64	+2.29	+3.16	25 %	+3.03	5	8	91
ISI GROUP INC	2	4,173	75,120	53	0.62	1,720	+2.29	+2.29	4.92	97 %	6.40	6	2	44
JP MORGAN CHASE	2	1,583	53,817	47	0.72	2,154	+4.00	+2.29	2.98	95 %	2.74	19	62	5
WELLS FARGO	2	2,623	73,453	54	0.61	2,705	+3.68	+2.29	+1.14	58 %	+1.06	37	98	10
GOLDMAN SACHS	2	4,283	68,521	63	0.48	2,496	+3.64	+2.29	3.08	95 %	3.20	90	99	99
BARCLAYS	1	2,645	42,320	69	0.40	1,482	+3.50	+2.29	5.17	97 %	5.44	97	93	99
JEFFERIES & CO	1	2,339	44,438	32	0.97	1,693	+3.81	+2.29	5.46	97 %	5.42	94	66	1
STIFEL NICOLAUS & CO	<1	2,740	43,835	53	0.62	1,292	+2.95	+2.29	+0.44	72 %	0.38	75	96	95
KEYBANC	<1	1,161	15,095	60	0.53	718	+4.76	+2.29	+7.74	5 %	+8.72	96	99	5
RAYMOND JAMES	<1	2,417	31,417	67	0.43	1,085	+3.45	+2.29	1.93	92 %	2.25	97	95	93
GREEN STREET	<1	1,543	12,340	37	0.87	397	+3.22	+2.29	+19.17	1 %	+18.62	5	92	94
MORGAN STANLEY	<1	2,110	21,103	67	0.43	607	+2.88	+2.29	7.48	98 %	8.37	63	11	16
MERRILL LYNCH	<1	5,650	5,650	18	1.29	0	+0.00	+2.29	19.53	99 %	23.30	99	99	1
ITG	<1	1,357	13,573	52	0.64	342	+2.52	+2.29	1.51	91 %	2.76	79	15	79
BAIRD, ROBERT W	<1	1,519	10,632	56	0.58	352	+3.31	+2.29	+3.84	18 %	+3.39	61	-	99
RBC CAPITAL MARKETS	<1	3,337	10,010	52	0.64	339	+3.39	+2.29	+12.20	1 %	+11.82	74	-	-
UBS	<1	2,197	6,590	34	0.93	209	+3.18	+2.29	0.99	89 %	1.58	79	12	73



(+) = 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	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	30	2,581	934,343	60	0.53	36,501	+3.91	+2.29	+0.88	62 %	+1.02	33	46	68
THEMIS TRADING LLC	10	2,154	258,430	64	0.46	10,337	+4.00	+2.29	+1.94	41 %	+2.17	4	13	12
ITG	8	2,832	257,697	62	0.49	10,308	+4.00	+2.29	+3.31	24 %	+3.55	54	33	21
LIQUIDNET	2	2,579	59,317	45	0.75	2,373	+4.00	+2.29	3.48	95 %	3.25	92	58	90
JEFFERIES & CO	1	2,384	40,523	44	0.76	1,621	+4.00	+2.29	3.84	96 %	3.60	26	13	99
WILLIAM BLAIR	1	3,630	47,191	60	0.52	1,888	+4.00	+2.29	+1.31	53 %	+1.54	83	97	98
STATE STREET BANK	1	1,776	37,293	65	0.45	1,492	+4.00	+2.29	+3.05	27 %	+3.29	29	26	75
CANTOR FITZGERALD	1	2,156	36,657	47	0.71	733	+2.00	+2.29	+3.81	18 %	+2.04	42	75	78
NEEDHAM & CO INC	<1	2,649	21,195	67	0.42	848	+4.00	+2.29	19.51	99 %	19.28	83	99	1
CANACCORD GENUITY	<1	3,262	22,833	63	0.48	913	+4.00	+2.29	2.08	93 %	1.85	99	-	6
CRAIG - HALLUM	<1	3,121	18,724	65	0.46	749	+4.00	+2.29	+9.28	2 %	+9.52	-	-	-
LEERINK SWANN	<1	5,073	25,365	50	0.66	1,015	+4.00	+2.29	0.55	86 %	0.32	88	97	1
CITIGROUP	<1	2,901	17,406	44	0.77	606	+3.48	+2.29	30.78	99 %	31.07	99	6	99
GOLDMAN SACHS	<1	5,048	15,145	31	0.99	606	+4.00	+2.29	+14.88	1 %	+15.11	99	95	1
STEPHENS & CO INC	<1	2,248	8,992	63	0.48	360	+4.00	+2.29	+13.82	1 %	+14.05	23	1	33
JP MORGAN CHASE	<1	3,762	15,049	53	0.62	602	+4.00	+2.29	4.52	96 %	4.28	-	-	-
COWEN & CO	<1	4,771	19,082	75	0.32	763	+4.00	+2.29	3.61	95 %	3.38	96	6	89
BAIRD, ROBERT W	<1	1,951	3,902	64	0.47	156	+4.00	+2.29	16.62	99 %	16.39	1	89	1
WELLS FARGO	<1	947	1,894	80	0.25	76	+4.00	+2.29	+14.73	1 %	+14.97	24	99	96
OPPENHEIMER & CO INC	<1	5,223	5,223	29	1.04	209	+4.00	+2.29	+24.01	1 %	+24.25	68	76	94
MORGAN STANLEY	<1	5,398	10,795	50	0.66	432	+4.00	+2.29	+6.35	6 %	+6.58	-	96	97



(+) = Cost

**TRADE CYCLE DETAIL**

**WEATHERBIE Performance (Full Day VWAP)**



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20163RD (%)	20162ND (%)	20161ST (%)
JONES TRADING	<1	2,489	2,489	47	0.72	50	+2.00	+2.29	12.42	99 %	14.19	94	-	-
PIPER JAFFRAY	<1	1,842	5,526	89	0.14	221	+4.00	+2.29	0.38	84 %	0.14	99	98	31
STIFEL NICOLAUS & CO	<1	1,808	3,615	83	0.22	145	+4.00	+2.29	+4.33	15 %	+4.56	20	56	66



(+) = Cost

TRADE CYCLE DETAIL

WEDGE CAPITAL MGMT LLP Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20163RD (%)	20162ND (%)	20161ST (%)
Grand Total	13	1,705	296,690	69	0.40	9,738	+3.28	+2.29	1.62	91 %	2.10	24	7	33
BARCLAYS	3	1,822	85,641	80	0.25	3,083	+3.60	+2.29	0.04	80 %	0.21	45	75	5
BROADCORT CAPITAL	2	1,829	25,600	86	0.18	922	+3.60	+2.29	+1.85	42 %	+1.68	30	64	66
JONES TRADING	2	5,767	17,300	61	0.51	173	+1.00	+2.29	51.13	99 %	53.90	-	66	99
WEEDEN & CO	1	2,358	28,300	68	0.42	787	+2.78	+2.29	4.13	96 %	5.12	-	18	-
CANTOR FITZGERALD	1	2,149	34,385	34	0.93	1,238	+3.60	+2.29	+22.62	1 %	+22.46	17	70	13
CREDIT SUISSE	<1	429	5,999	74	0.34	216	+3.60	+2.29	+7.63	5 %	+7.46	74	-	-
KNIGHT CAPITAL	<1	741	16,298	70	0.38	326	+2.00	+2.29	+3.56	22 %	+1.79	69	1	26
JEFFERIES & CO	<1	3,350	20,100	77	0.29	724	+3.60	+2.29	+9.74	2 %	+9.57	1	93	25
MORGAN STANLEY	<1	2,045	8,178	79	0.26	294	+3.60	+2.29	+7.62	5 %	+7.46	89	26	-
SANDLER ONEILL	<1	1,323	9,258	72	0.36	333	+3.60	+2.29	3.50	95 %	3.67	-	-	86
STIFEL NICOLAUS & CO	<1	1,432	11,454	65	0.45	412	+3.60	+2.29	5.20	97 %	5.37	26	99	-
WELLS FARGO	<1	3,300	3,300	58	0.55	119	+3.60	+2.29	51.09	99 %	51.25	69	8	93
KEEFE BRUYETTE WOODS	<1	1,195	15,533	69	0.40	559	+3.60	+2.29	1.46	91 %	1.63	68	78	91
WUNDERLICH SECUR	<1	5,900	5,900	20	1.25	212	+3.60	+2.29	31.96	99 %	32.13	-	86	93
RBC CAPITAL MARKETS	<1	3,052	6,104	88	0.15	220	+3.60	+2.29	3.42	95 %	3.59	37	-	87
MAXIM GROUP	<1	2,900	2,900	47	0.72	104	+3.60	+2.29	57.17	99 %	57.34	8	-	-
SC BERNSTEIN	<1	147	440	60	0.53	16	+3.60	+2.29	5.94	97 %	6.11	-	11	1



(+) = 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)
SRC	12	85,180	1,001,050	+2.92	0.14%	0.61	+0.70
EVBG	29	73,649	1,168,097	+3.88	1.01%	0.48	+3.97
PKY	22	65,856	1,315,241	+2.74	0.17%	1.17	+43.73
BAC	4	64,700	1,400,435	+1.06	0.01%	0.77	+11.70
FRAN	13	63,769	1,057,710	+3.74	0.73%	0.39	+2.30
PTLA	12	63,329	1,346,689	+4.00	0.41%	0.57	7.48
GPT	8	57,050	532,102	+2.00	0.24%	1.06	+2.17
CUZ	4	55,800	442,506	+1.39	0.19%	0.91	+10.25
HEES	13	55,350	938,505	+4.00	0.83%	0.74	+7.15
ARRY	4	49,532	415,005	+2.97	0.36%	0.41	+3.36

**Names Most Traded - Total Orders**

							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
PKY	22	65,856	1,315,241	+2.74	0.17%	1.17	+43.73
MTSI	19	38,783	1,623,045	+3.64	0.52%	0.55	+7.50
DXCM	15	21,965	1,469,818	+2.87	0.09%	0.34	12.19
PTLA	12	63,329	1,346,689	+4.00	0.41%	0.57	7.48
IPGP	7	14,867	1,404,550	+3.94	1.04%	0.54	+16.89
ENH	6	25,800	2,347,183	+1.84	0.07%	0.39	34.15
WFC	4	27,900	1,520,217	+0.82	0.02%	0.50	+21.89
BAC	4	64,700	1,400,435	+1.06	0.01%	0.77	+11.70
GD	2	17,400	2,608,461	+1.99	0.61%	0.94	61.99
GS	1	8,250	1,731,281	+2.00	0.30%	1.60	60.37



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	4,110,988	10	+105.25	27.82%
Cost Trades	61,394,544	883	+14.74	100.00%
Saving Trades	62,738,705	1,021	17.07	100.00%
10 Low Cost Trades	6,314,913	10	110.71	25.31%





(+) = Cost

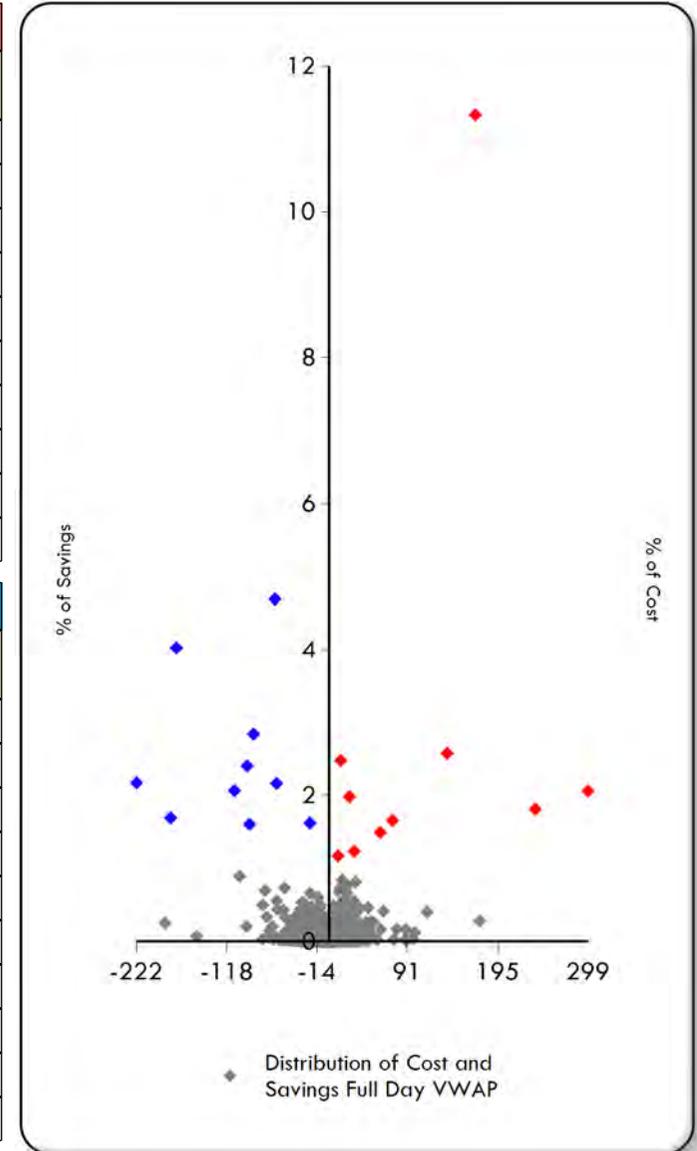
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buya1	PKY	2016/10/07	17,408	11.33	2.80	+169.09	DALTON, GR	AUTREPAT-D
Buya2	ADNT	2016/10/31	4,910	2.58	3.16	+136.50	ALLIANCE R	AUTREPAT-D
Sella3	BAC	2016/12/01	47,300	2.48	0.73	+13.63	HUBER CAPI	UBS
Sella4	ALXN	2016/11/11	1,792	2.06	1.12	+299.07	BROWN ADVI	CAPITAL IN
Buya5	WFC	2016/12/01	21,800	1.99	0.48	+23.67	HUBER CAPI	UBS
Sella6	RARE	2016/11/11	1,979	1.81	0.97	+238.24	WEATHERBIE	ITG
Buya7	THS	2016/11/14	5,875	1.66	1.05	+73.30	WEDGE CAPI	CANTOR FIT
Sella8	FGEN	2016/11/09	6,571	1.50	0.93	+59.18	UBS GLOBAL	MERRILL LY
Buya9	ARNC	2016/11/01	11,000	1.24	0.25	+29.20	HUBER CAPI	UBS
Sella10	CUZ	2016/10/07	28,800	1.17	0.90	+10.60	UBS GLOBAL	MERRILL LY

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buya1	GD	2016/11/01	17,300	4.69	0.95	62.29	EAGLE CAPI	LIQUIDNET
Sella2	ENH	2016/10/04	5,255	4.03	0.16	175.98	WEDGE CAPI	JONES TRAD
Buya3	DPLO	2016/11/03	7,513	2.84	1.21	86.97	WEATHERBIE	ITG
Buya4	TRIP	2016/11/09	5,856	2.41	1.01	94.44	BROWN ADVI	CAPITAL IN
Buya5	PBYI	2016/10/20	2,252	2.18	1.29	221.96	WEATHERBIE	CITIGROUP
Buya6	GS	2016/11/21	8,250	2.17	1.60	60.37	EAGLE CAPI	LIQUIDNET
Sella7	ABCO	2016/11/02	4,357	2.07	0.97	109.02	WEATHERBIE	THEMIS TRA
Sella8	RARE	2016/11/14	2,131	1.69	1.17	182.69	WEATHERBIE	LEERINK SW
Buya9	STAG	2016/10/13	17,100	1.62	1.50	21.80	URDANG SEC	JEFFERIES
Sella10	RARE	2016/11/10	4,034	1.61	0.61	91.58	WEATHERBIE	NEEDHAM &





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PKY - 2016/10/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	DALTON, GREINER, HARTMAN, MAHER	AUTREPAT-DISTRIBUT	10/07/2016 09:30:00	10/07/2016 16:00:00	17,408	22.7500	21.0591	+29,435	+169.09	2.80	0.68



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 11.33% of your market impact cost.

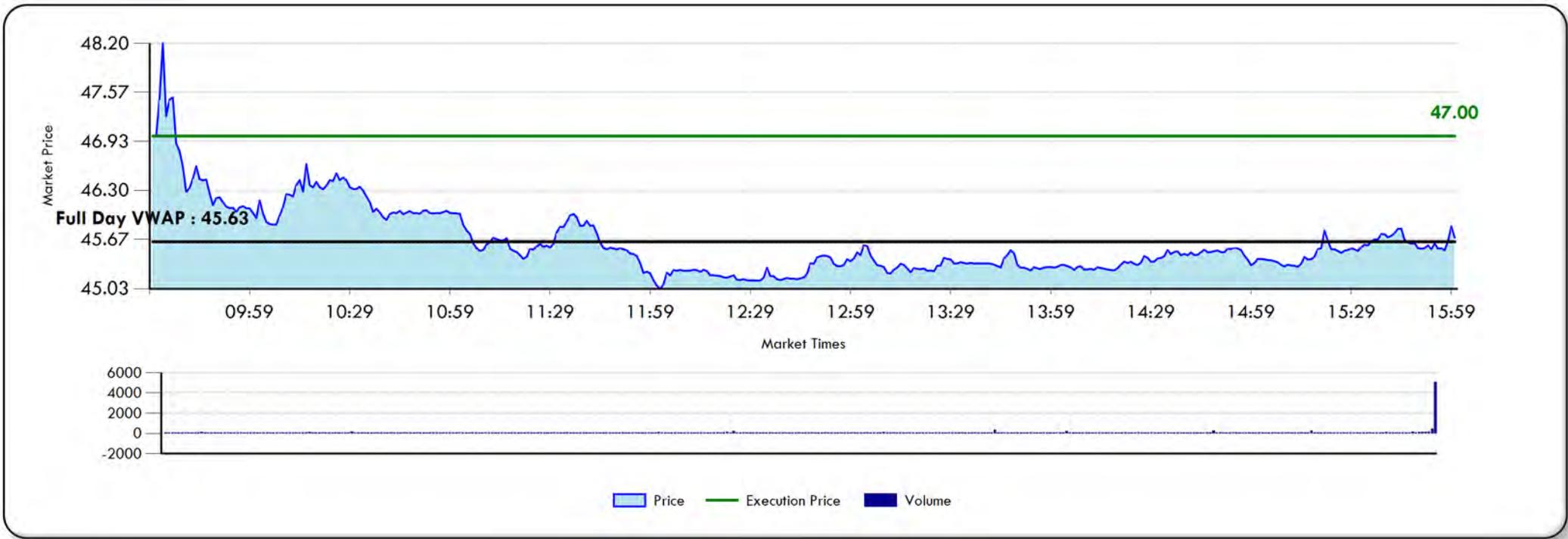


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ADNT - 2016/10/31

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	ALLIANCE R 3000 CAPITAL MANAGEM	AUTREPAT- DISTRIBUT	10/31/2016 09:30:00	10/31/2016 16:00:00	4,910	47.0000	45.6350	+6,702	+136.50	3.16	0.05



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.58% of your market impact cost.

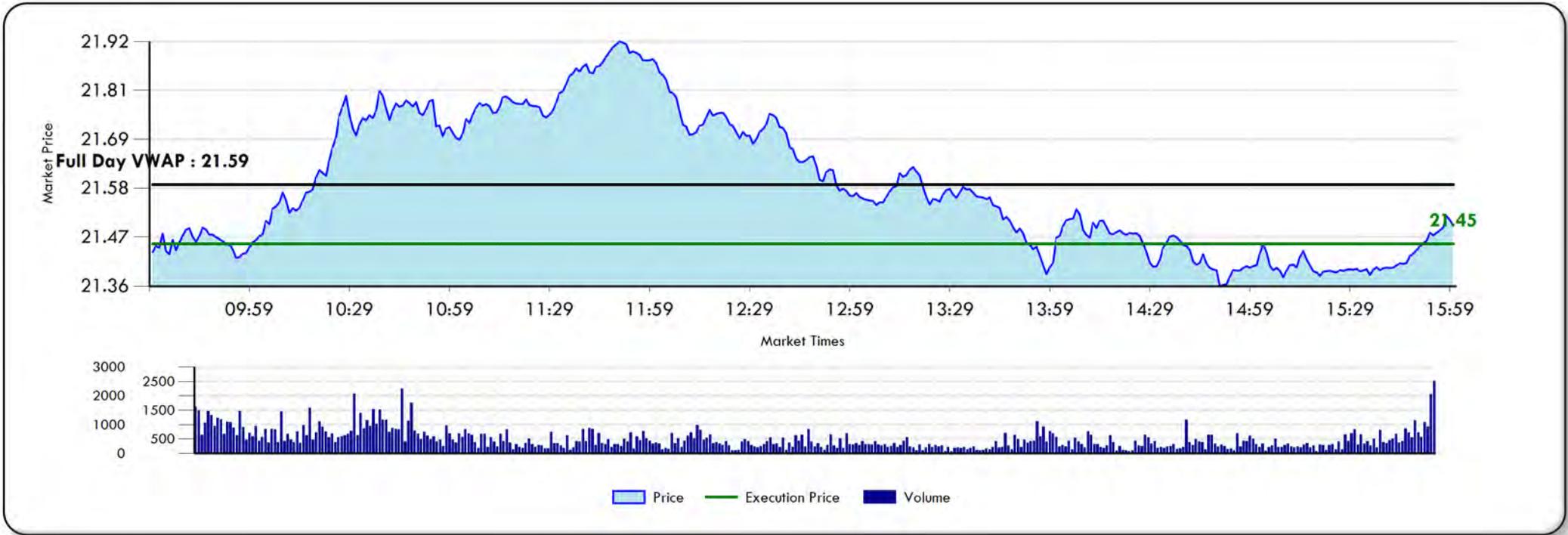


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAC - 2016/12/01

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 (%)
Sell	HUBER CAPITAL MANAGEMENT	UBS	12/01/2016 09:30:00	12/01/2016 16:00:00	47,300	21.4533	21.5896	+6,448	+13.63	0.73	0.02



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.48% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ALXN - 2016/11/11

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	CAPITAL INSTL SVCS	11/11/2016 09:30:00	11/11/2016 16:00:00	1,792	114.2152	117.2059	+5,359	+299.07	1.12	0.03



NOTES

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

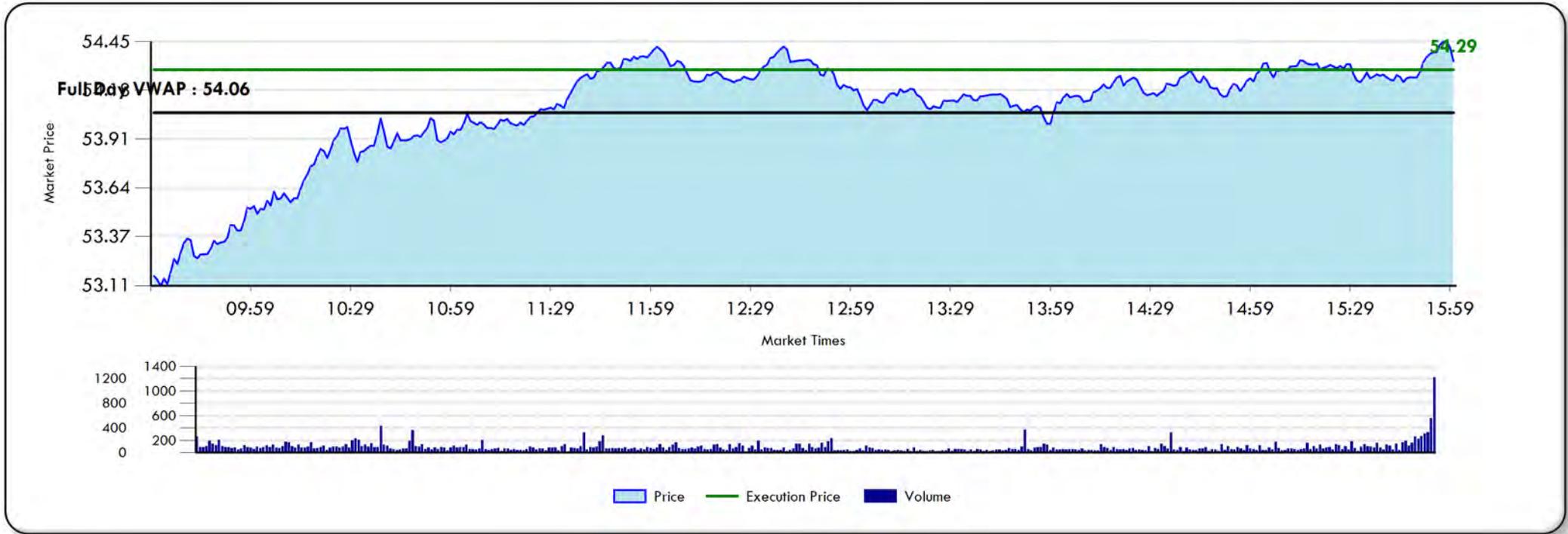


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WFC - 2016/12/01

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	HUBER CAPITAL MANAGEMENT	UBS	12/01/2016 09:30:00	12/01/2016 16:00:00	21,800	54.2934	54.0567	+5,160	+23.67	0.48	0.07



NOTES

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

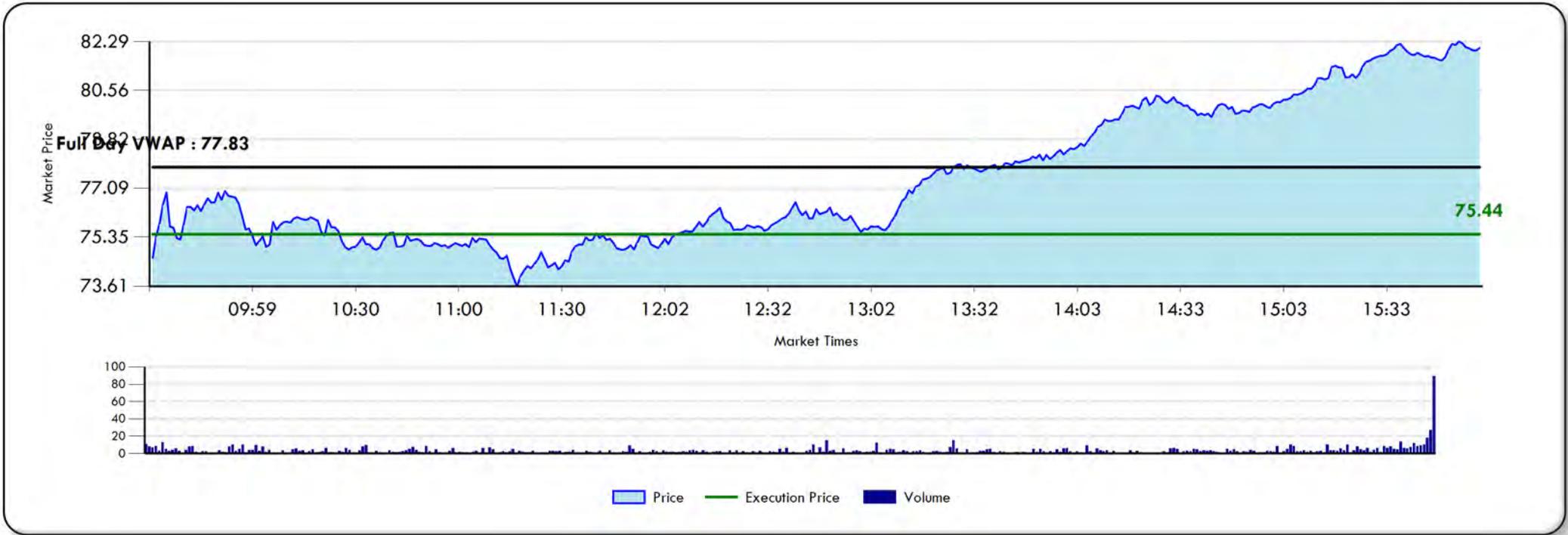


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

RARE - 2016/11/11

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	ITG	11/11/2016 09:30:00	11/11/2016 16:00:00	1,979	75.4440	77.8264	+4,715	+238.24	0.97	0.17



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.81% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

THS - 2016/11/14

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEDGE CAPITAL MGMT LLP	CANTOR FITZGERALD	11/14/2016 09:30:00	11/14/2016 16:00:00	5,875	64.5153	63.7823	+4,307	+73.30	1.05	0.29



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.66% of your market impact cost.

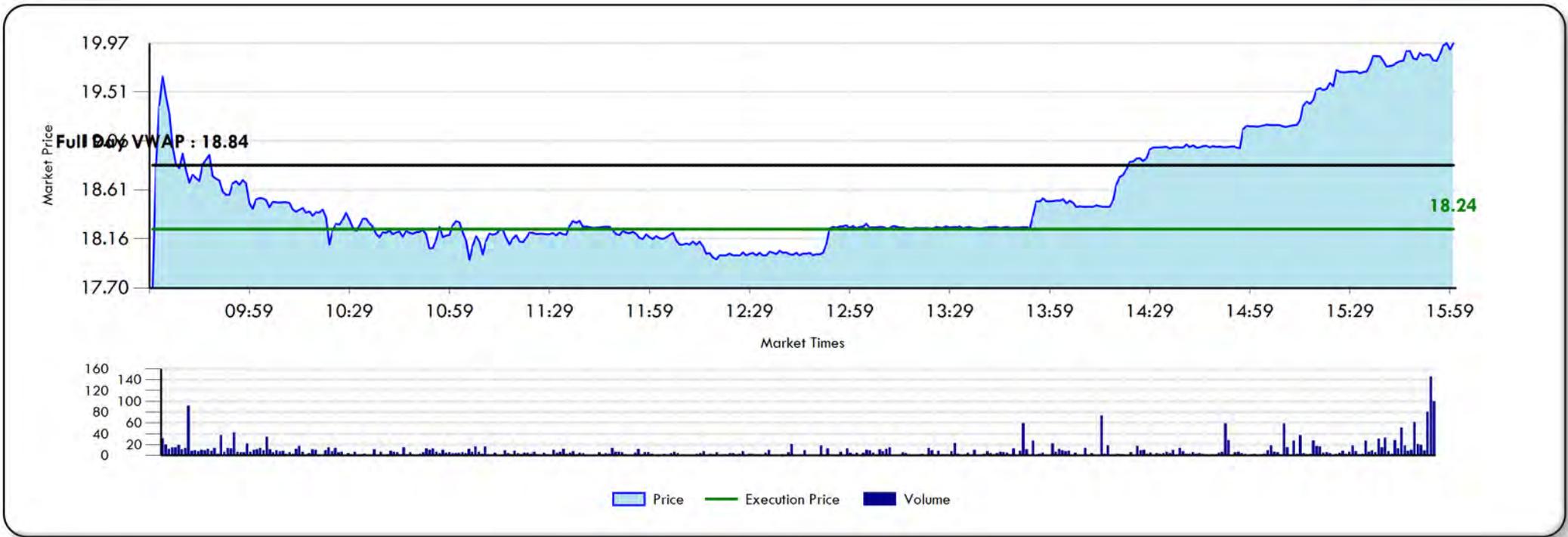


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

FGEN - 2016/11/09

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	UBS GLOBAL ASSET MGMT	MERRILL LYNCH	11/09/2016 09:30:00	11/09/2016 16:00:00	6,571	18.2438	18.8356	+3,889	+59.18	0.93	0.21



NOTES

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

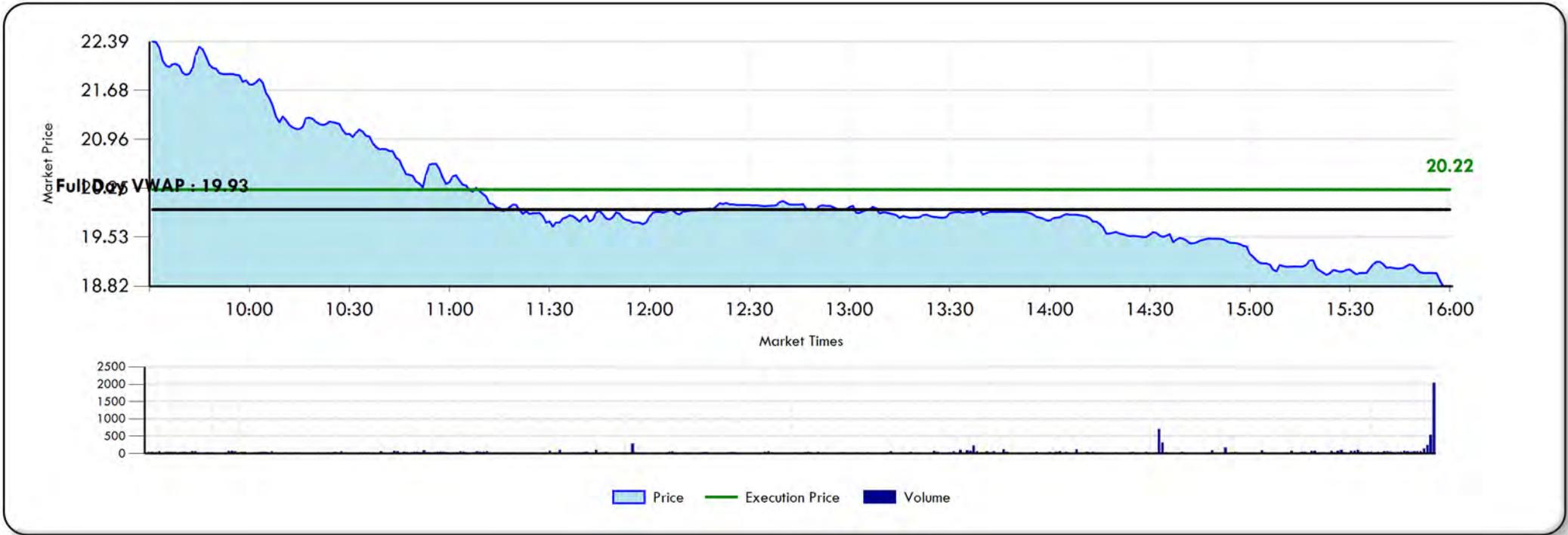


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ARNC - 2016/11/01

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	HUBER CAPITAL MANAGEMENT	UBS	11/01/2016 09:30:00	11/01/2016 16:00:00	11,000	20.2242	19.9322	+3,212	+29.20	0.25	0.08



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.24% of your market impact cost.

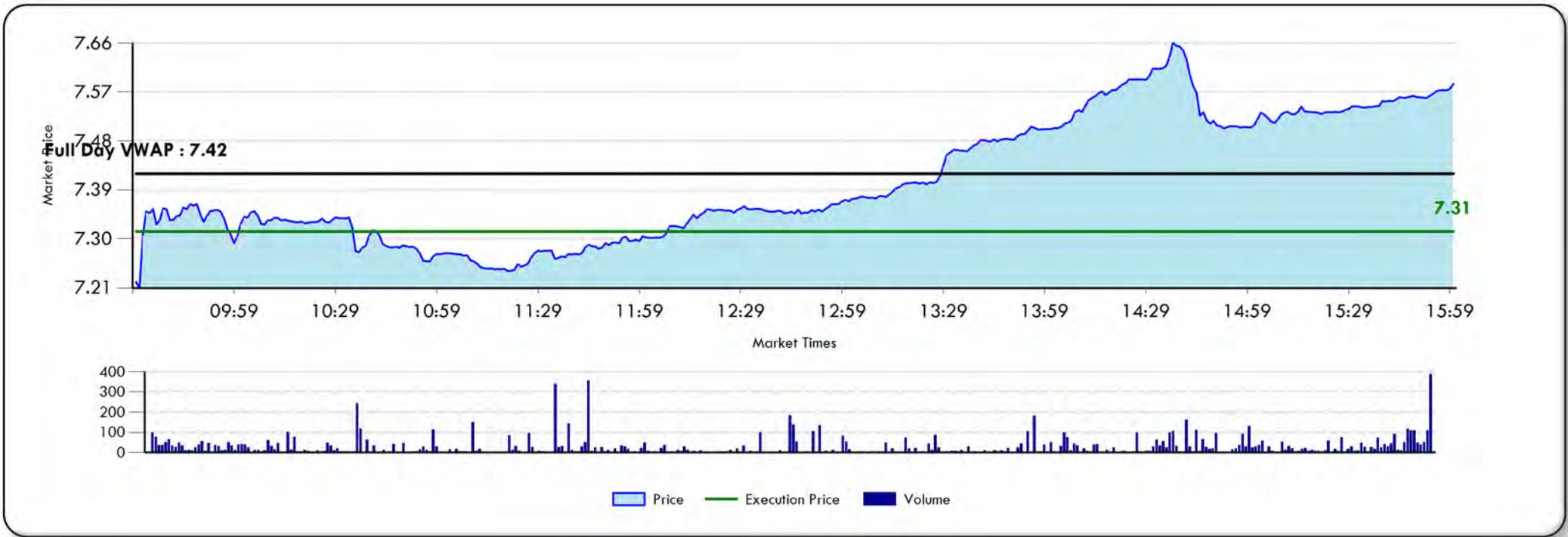


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CUZ - 2016/10/07

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	UBS GLOBAL ASSET MGMT	MERRILL LYNCH	10/07/2016 09:30:00	10/07/2016 16:00:00	28,800	7.3095	7.4155	+3,052	+10.60	0.90	0.27



NOTES

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

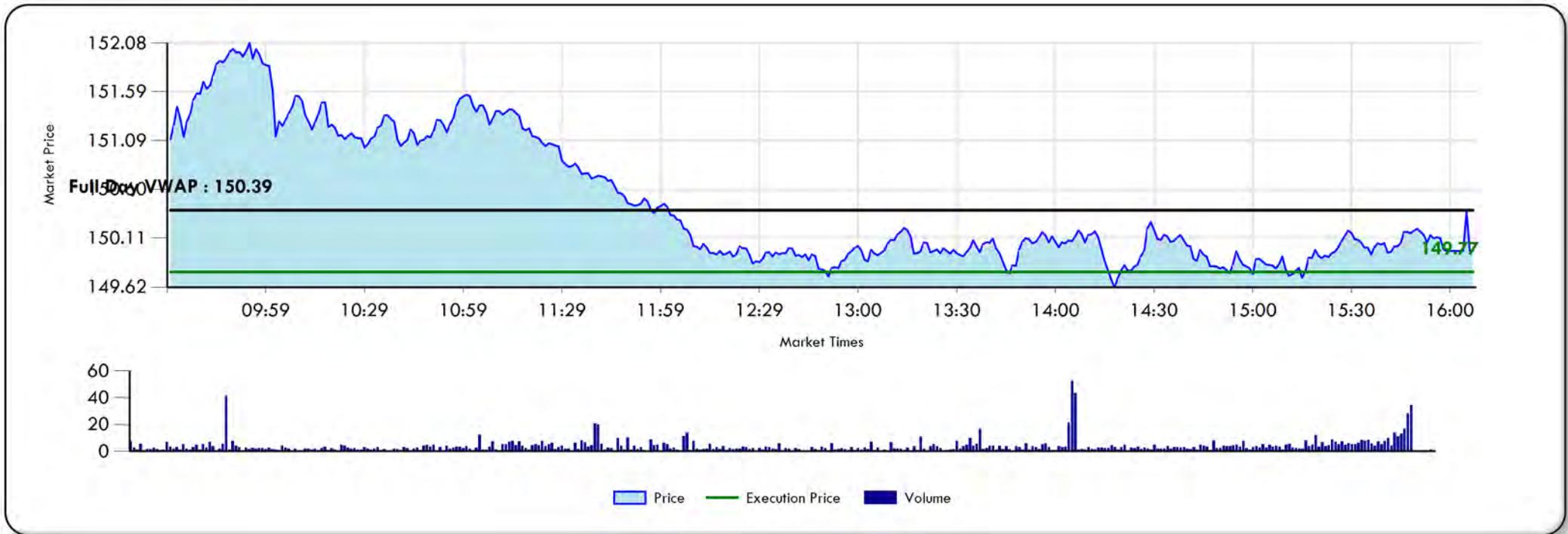


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GD - 2016/11/01

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	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	11/01/2016 09:30:00	11/01/2016 16:00:00	17,300	149.7674	150.3903	10,776	62.29	0.95	1.19



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.69% of your market impact savings.

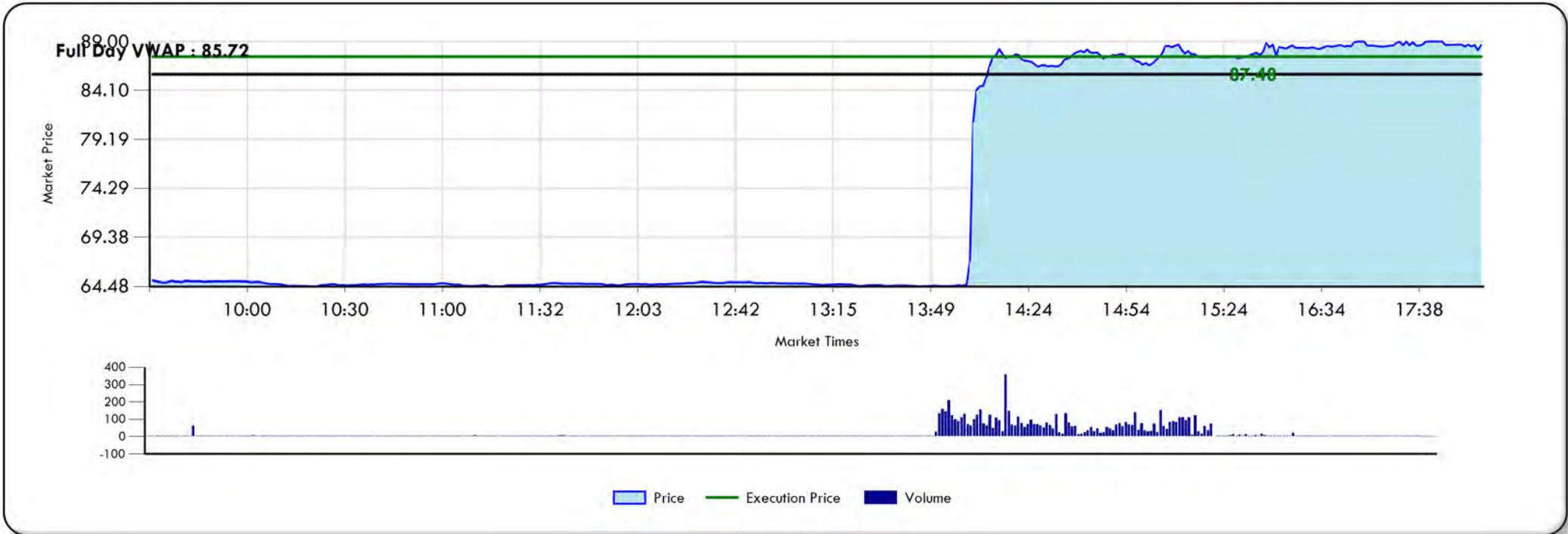


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ENH - 2016/10/04

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEDGE CAPITAL MGMT LLP	JONES TRADING	10/04/2016 09:30:00	10/04/2016 16:00:00	5,255	87.4832	85.7235	9,247	175.98	0.16	0.07



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.03% of your market impact savings.

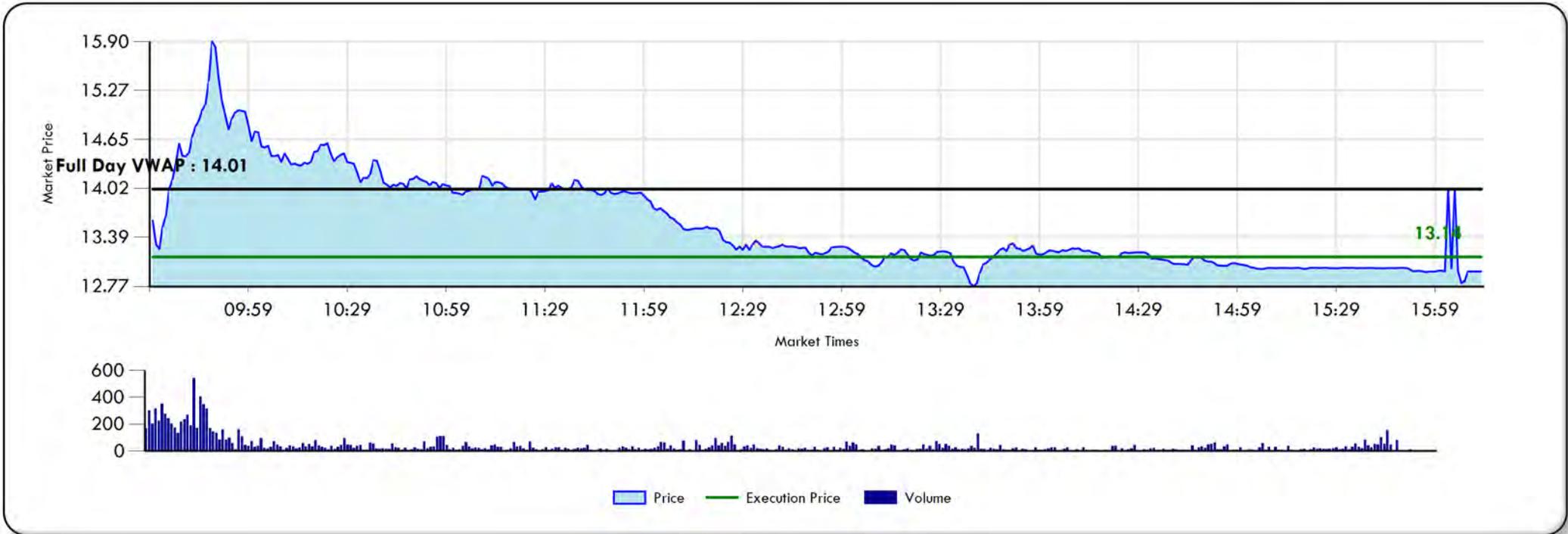


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DPLO - 2016/11/03

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	ITG	11/03/2016 09:30:00	11/03/2016 16:00:00	7,513	13.1370	14.0067	6,534	86.97	1.21	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.84% of your market impact savings.

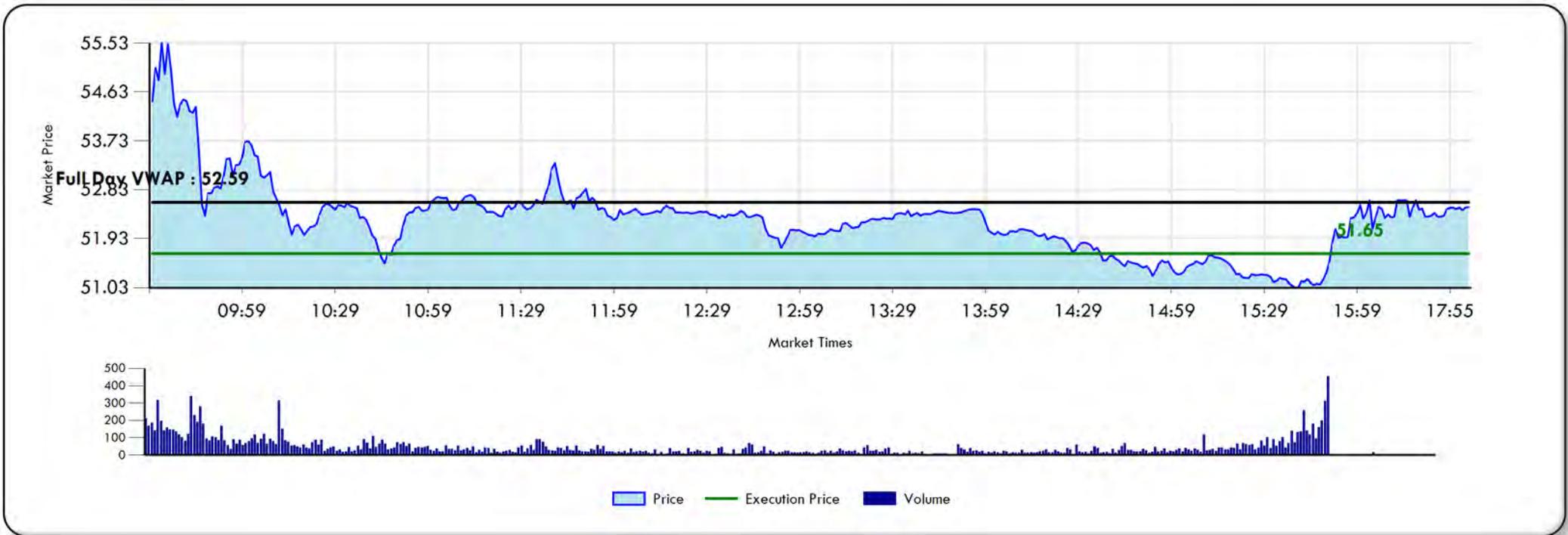


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TRIP - 2016/11/09

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	11/09/2016 09:30:00	11/09/2016 16:00:00	5,856	51.6499	52.5943	5,530	94.44	1.01	0.03



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.41% of your market impact savings.

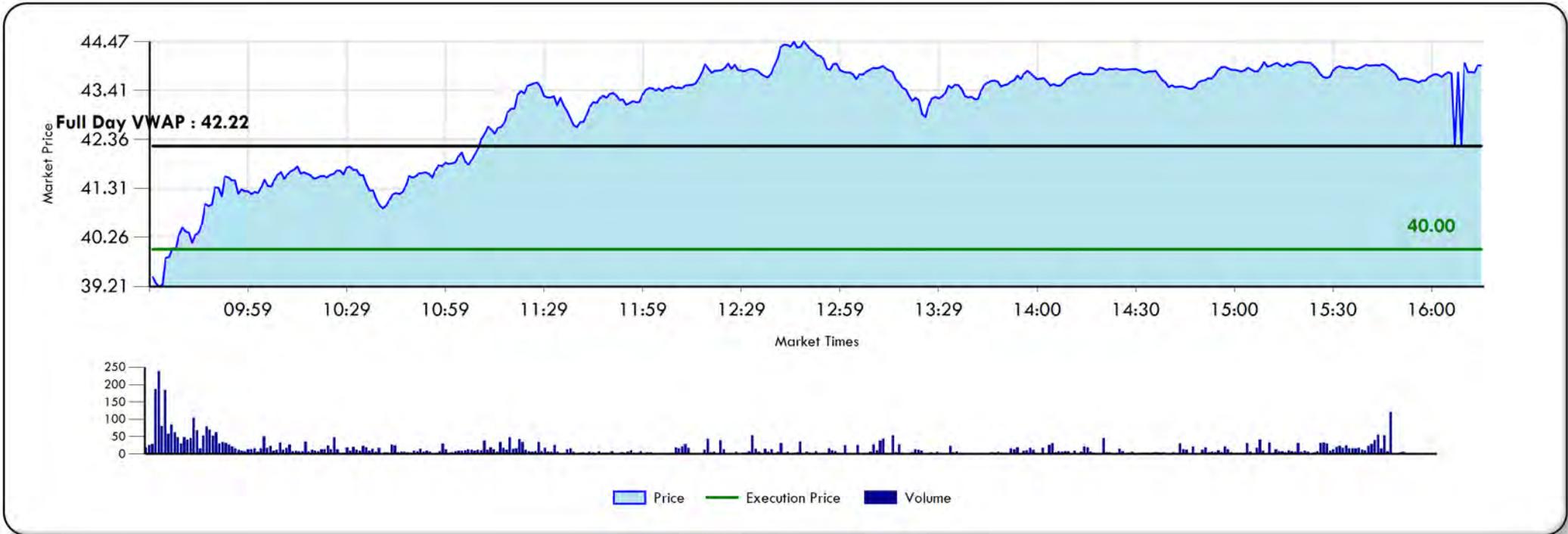


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PBYI - 2016/10/20

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	CITIGROUP	10/20/2016 09:30:00	10/20/2016 16:00:00	2,252	40.0000	42.2196	4,999	221.96	1.29	0.04



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.18% of your market impact savings.

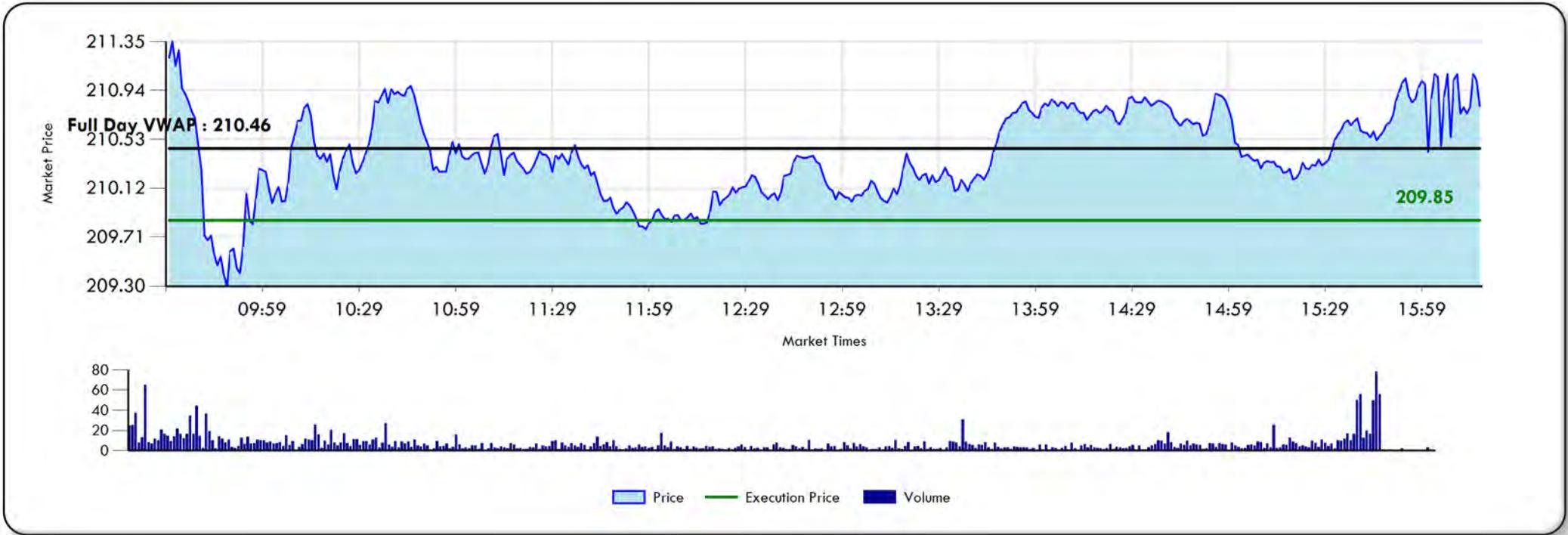


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GS - 2016/11/21

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	11/21/2016 09:30:00	11/21/2016 16:00:00	8,250	209.8523	210.4560	4,981	60.37	1.60	0.30



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.17% of your market impact savings.

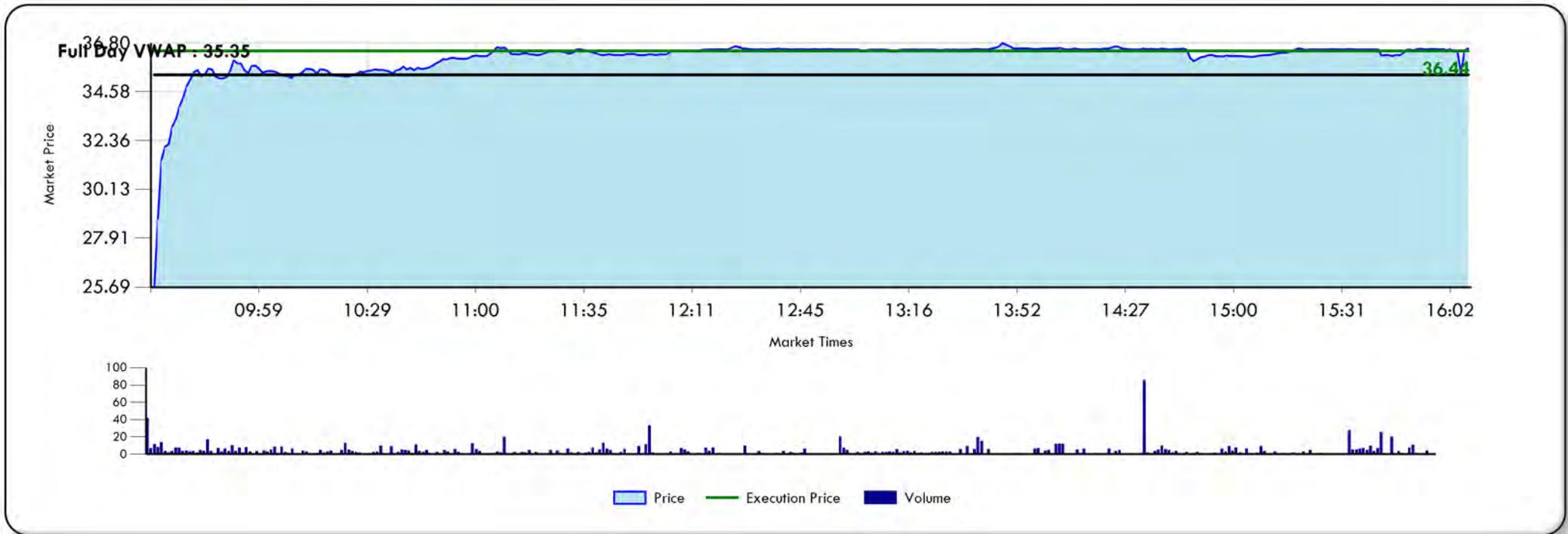


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ABCO - 2016/11/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	11/02/2016 09:30:00	11/02/2016 16:00:00	4,357	36.4361	35.3459	4,750	109.02	0.97	0.33



NOTES

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

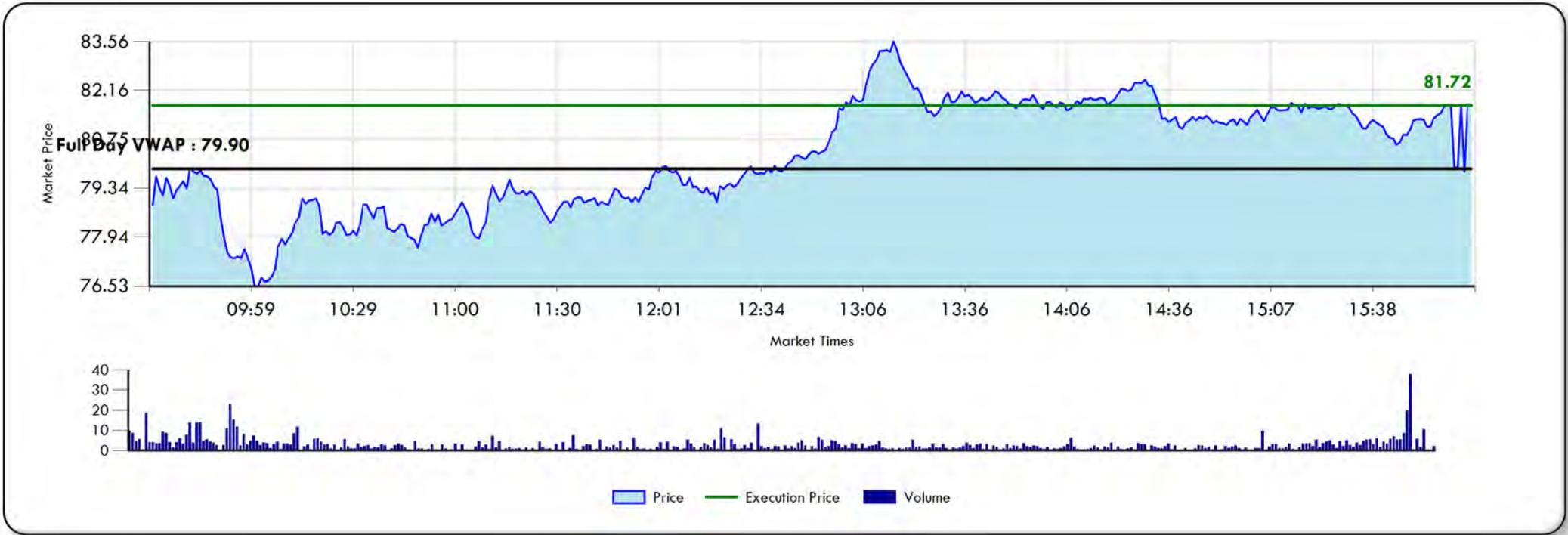


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

RARE - 2016/11/14

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	LEERINK SWANN	11/14/2016 09:30:00	11/14/2016 16:00:00	2,131	81.7229	79.8960	3,893	182.69	1.17	0.20



NOTES

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

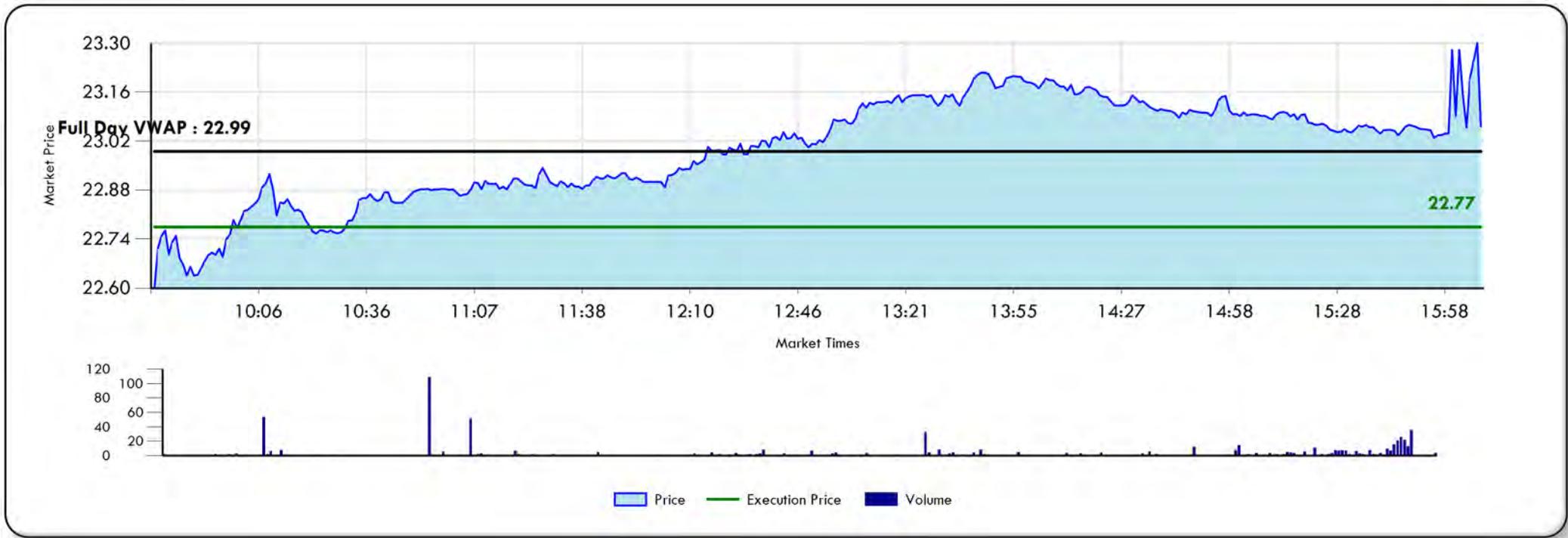


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

STAG - 2016/10/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	URDANG SECURITIES MANAGEMENT	JEFFERIES & CO	10/13/2016 09:30:00	10/13/2016 16:00:00	17,100	22.7700	22.9880	3,728	21.80	1.50	2.20



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.62% of your market impact savings.

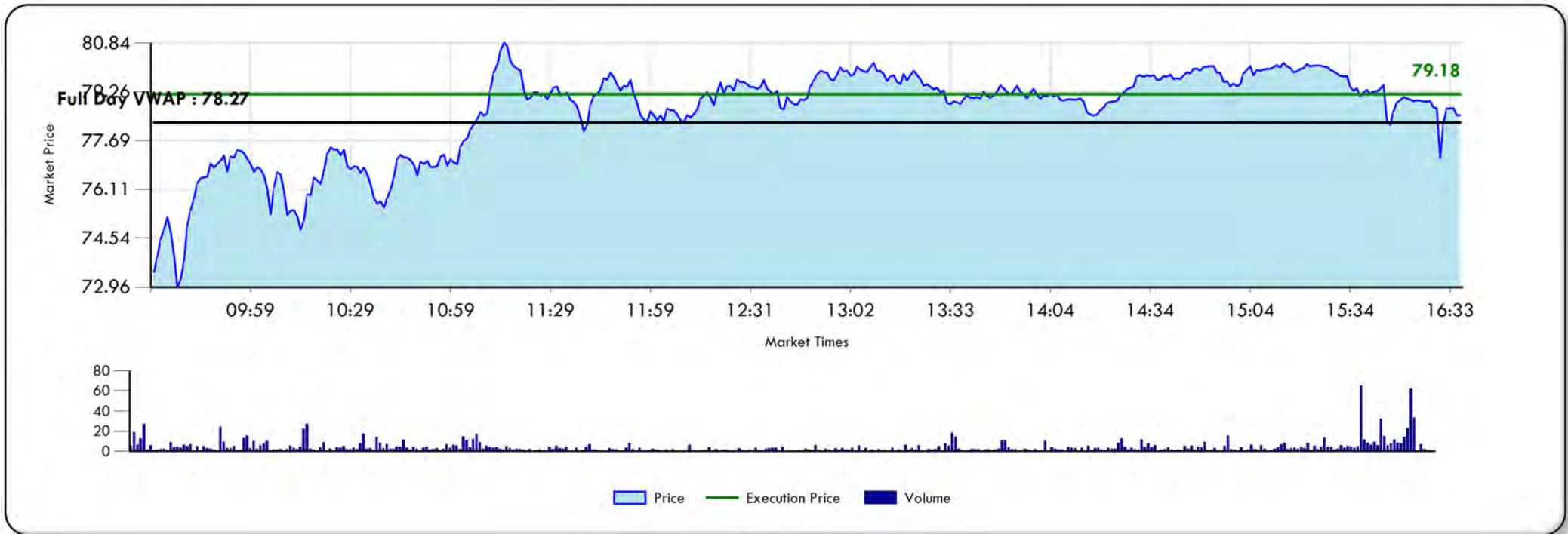


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

RARE - 2016/11/10

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	WEATHERBIE	NEEDHAM & CO INC	11/10/2016 09:30:00	11/10/2016 16:00:00	4,034	79.1820	78.2662	3,694	91.58	0.61	0.26



NOTES

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

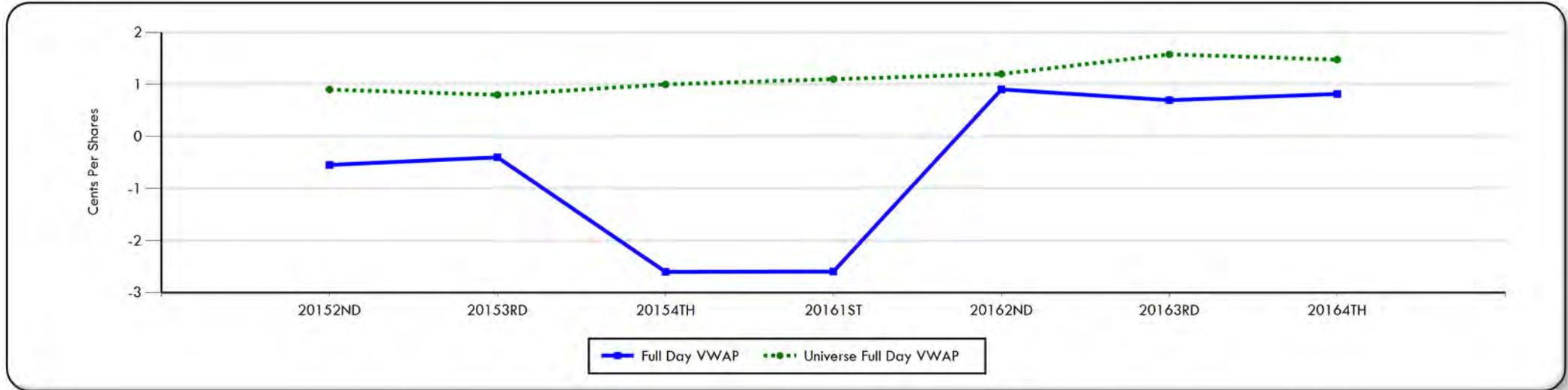


(+) = Cost

**TRADE HISTORY**

**Trade History**

Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP (cps)	Full Day VWAP Universe Rank (%)
			(cps)	(\$)		
20152ND	4,973,211	203,371,426	+2.63	130,933	0.55	73
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



**Note on Universes:**

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

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## SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End December 31, 2016





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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 October 1, 2016 to December 31, 2016. The analysis included trading of 20,215,646 shares representing \$200.92 million in principal across 33 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 +7.12 bp or \$ +\$143,119 (8.95 bp better than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your fee cost was +5.97 bp or \$ +119,870 (0.28 bp better than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact savings was 5.02 bp or \$100,932 (14.70 bp better than the Elkins/McSherry Universe)</li> <li>Your overall trading cost of +8.07 bp was 23.94 bp better than the Elkins/McSherry Universe.</li> <li>Sacramento County trading was higher than the Elkins/McSherry Universe in 4 countries and lower than the Elkins/McSherry Universe in 29 countries.</li> <li>10 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 52 of your brokers had lower trading cost.</li> </ul>	<ul style="list-style-type: none"> <li>E - Score : -0.01</li> </ul>



(+) = Cost

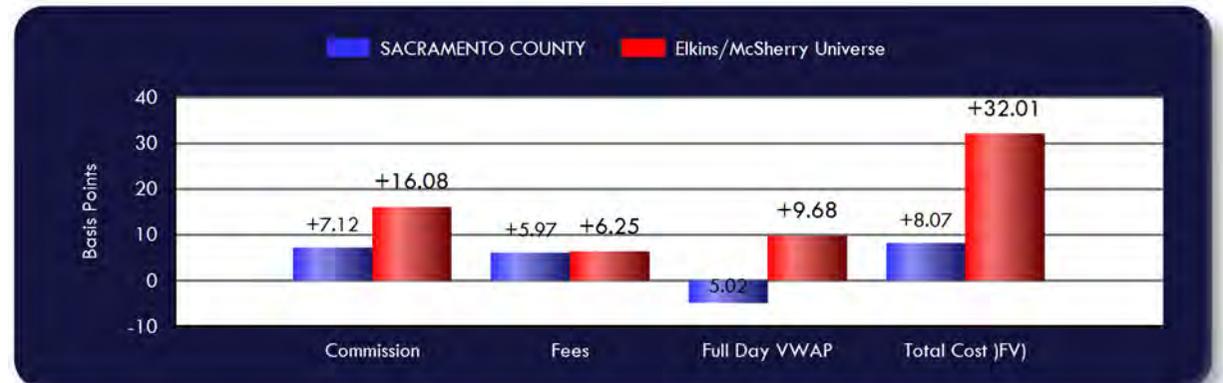
**EXECUTIVE SUMMARY**

**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	+6.53	+16.27	+7.56	+11.44	+12.00	3.81	+9.78	+14.17	23.88	0.05
Sell	+7.68	+15.90	+7.68	+0.81	+0.84	6.17	+9.59	+2.32	24.01	-0.07
<b>Total</b>	<b>+7.12</b>	<b>+16.08</b>	<b>+7.62</b>	<b>+5.97</b>	<b>+6.25</b>	<b>5.02</b>	<b>+9.68</b>	<b>+8.07</b>	<b>23.94</b>	<b>-0.01</b>

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	97,428,294	103,486,906
Shares	8,992,456	11,223,190
Unique Names	233	186
Liquidity (% POV)	0.304	0.448
Avg. Order Size	7,867	11,280
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,143	995





(+) = Cost

**EXECUTIVE SUMMARY**

**MARKET CAPITALIZATION**

Market Cap	% Traded	Avg. Principal Per Order	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	Bundled Universe	Full Day VWAP	Universe Full Day VWAP				
	(%)	(\$)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)		
Large Cap	35.51 %	123,432	+6.71	+16.26	5.54	+9.42	+6.91	25.13	-0.02	\$5 Billion to \$25 Billion
Mid Cap	31.91 %	71,549	+7.54	+15.77	3.53	+10.08	+9.66	22.44	-0.10	\$1 Billion to \$5 Billion
Giant Cap	16.29 %	204,508	+6.39	+16.21	+4.58	+8.23	+20.09	13.42	0.19	Over \$25 Billion
Small Cap	15.61 %	64,271	+8.11	+16.16	16.08	+10.99	3.88	34.36	-0.01	\$250 Million to \$1 Billion
Micro Cap	0.65 %	93,176	+3.85	+15.79	18.61	+9.07	14.75	39.67	-0.07	Under \$250 Million
N.A.	0.04 %	36,993	+9.61	+17.79	111.52	+13.08	101.90	132.79	-1.84	





(+) = 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	13	1,701,639	N/A	+6.07	+16.12	39.69	+9.48	26.68	59.19	0.03	1M or Greater
Medium Orders	40	710,514	N/A	+8.82	+16.22	+9.29	+10.45	+23.41	9.87	0.06	Between 500k - 1M
Small Orders	2,085	72,122	N/A	+6.96	+16.05	2.63	+9.57	+10.26	21.44	-0.03	500K or Less

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





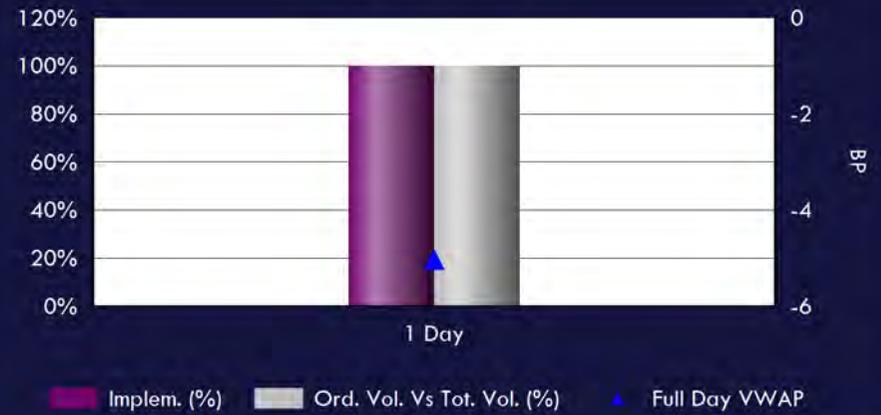
(+) = Cost

**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%	5.02	-0.01

**Implementation Days**



**TRADE DIFFICULTY**

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	0%	13.53	-0.16
0%~20% of daily vol.	L	99%	4.90	-0.01
20%~50% of daily vol.	M	0%	40.76	-0.91

**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>										
IRELAND - BUYS	<1	0.15%	+10.90	+13.36	+100.28	+100.00	+41.45	+6.17	+33.10	0.54
INDIA	<1	0.13%	+11.97	+19.18	+11.78	+10.03	+23.13	+6.43	+11.25	-0.31
ITALY - SELLS	4	2.13%	+6.56	+14.31	+0.00	+0.00	+33.76	+14.77	+11.24	0.41
KOREA - SELLS	<1	0.26%	+11.86	+21.29	+30.00	+41.76	+32.56	+10.58	+0.80	0.35

## 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>										
SWITZERLAND	6	2.91%	+7.37	+14.30	+0.00	+0.00	97.49	+6.07	110.49	-0.53
AUSTRIA	<1	0.40%	+7.90	+14.40	+0.00	+0.01	42.16	+10.85	59.52	-0.51
ITALY - BUYS	1	0.54%	+3.94	+13.92	+11.03	+12.00	20.24	+11.34	42.53	-0.34
BRAZIL	<1	0.34%	+13.11	+16.86	+3.25	+1.64	26.25	+14.03	42.42	-0.05
THAILAND	<1	0.20%	+20.21	+19.22	+0.52	+0.93	29.80	+8.33	37.55	-1.44
DENMARK	2	1.00%	+4.67	+13.87	+0.00	+0.00	10.65	+17.68	37.53	-1.16
NORWAY	<1	0.08%	+5.39	+18.59	+0.00	+0.01	5.81	+17.93	36.95	-0.26
ISRAEL	3	1.65%	+14.57	+17.22	+0.00	+0.04	23.90	+10.19	36.78	-0.52
U.K. - SELLS	7	3.50%	+7.07	+14.46	+0.14	+0.00	8.50	+19.02	34.77	-0.22
JAPAN	56	28.03%	+8.03	+16.44	+0.00	+0.01	8.60	+13.69	30.71	0.05
NEW ZEALAND	<1	0.48%	+7.62	+17.79	+0.00	+0.02	5.48	+13.08	28.75	-0.43
SOUTH AFRICA - SELLS	<1	0.42%	+7.88	+18.10	+0.01	+0.02	7.05	+11.44	28.72	-0.07
SPAIN	1	0.56%	+3.60	+17.05	+0.00	+0.00	7.29	+7.27	28.01	-0.23
NETHERLANDS	3	1.48%	+4.69	+14.16	+0.00	+0.04	14.51	+3.12	27.14	-0.34
AUSTRALIA	15	7.49%	+8.33	+14.64	+0.00	+0.06	12.25	+6.98	25.61	-0.13
SWEDEN	4	1.75%	+6.92	+14.03	+0.00	+0.00	9.95	+5.23	22.29	-0.25
CANADA	15	7.32%	+3.83	+17.24	+0.00	+0.11	1.06	+6.87	21.46	-0.14
FRANCE - SELLS	5	2.51%	+7.30	+14.01	+0.00	+0.00	6.08	+6.17	18.96	-0.14
HONG KONG	8	3.92%	+8.68	+24.15	+10.77	+10.49	+2.30	+4.23	17.12	-0.07
MEXICO	2	0.78%	+12.78	+17.22	+0.00	+0.00	7.44	+5.13	17.01	0.12
SOUTH AFRICA - BUYS	<1	0.15%	+7.89	+16.17	+25.02	+23.19	1.16	+8.48	16.09	-0.15
U.K. - BUYS	20	9.72%	+6.89	+17.39	+47.16	+50.00	+10.18	+11.92	15.08	0.12
SINGAPORE	6	3.09%	+8.87	+15.70	+3.77	+3.42	+0.16	+6.85	13.18	0.16

**EXECUTIVE SUMMARY**

**COUNTRY PERFORMANCE**

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
<b>LOWEST COST COUNTRIES - Total Cost Universe Difference</b>										
BELGIUM	2	1.06%	+4.70	+13.93	+0.00	+0.00	+6.85	+10.32	12.70	0.36
FRANCE - BUYS	5	2.34%	+6.07	+13.99	+20.19	+20.00	+3.68	+5.80	9.86	0.07
GERMANY	12	6.11%	+7.06	+14.19	+0.00	+0.00	+4.71	+6.49	8.92	0.16
U.S.	18	8.83%	+3.78	+15.11	+0.14	+0.09	+7.21	+4.19	8.26	0.24
FINLAND	1	0.57%	+7.47	+13.70	+0.00	+0.00	+7.91	+6.88	5.20	0.25
HUNGARY	<1	0.12%	+15.99	+18.53	+0.00	+0.01	+3.02	+5.31	4.84	0.09



(+) = Cost

**TRADE CYCLE DETAIL**

**5 LOWEST COST MANAGER (Full Day VWAP)**



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20163rd (bp)	20162nd (bp)	20161st (bp)
LAZARD ASSET MANAGEM	75	333	37.40%	225,658	0.13	+8.16	+15.88	0.16	+9.47	17.95	15.96	27.17	4.22
WILLIAM BLAIR & COMP	37	449	18.19%	81,377	0.03	+7.89	+15.98	+0.97	+10.46	17.96	13.85	19.97	15.72
S&P GLOBAL INFRAST-I	7	302	3.24%	21,535	-0.06	+1.66	+15.88	1.95	+6.71	22.76	+6.25	37.97	20.57
LSV ASSET MANAGEMENT	47	616	23.16%	75,540	-0.21	+4.07	+15.46	8.05	+9.70	29.17	36.40	24.56	32.00
CBRE CLARION (INTL R	36	438	18.02%	82,640	-0.09	+9.11	+17.42	17.80	+9.83	35.89	33.74	32.80	18.62

**NOTES**

- Manager above made up 100.00 % of principal traded.



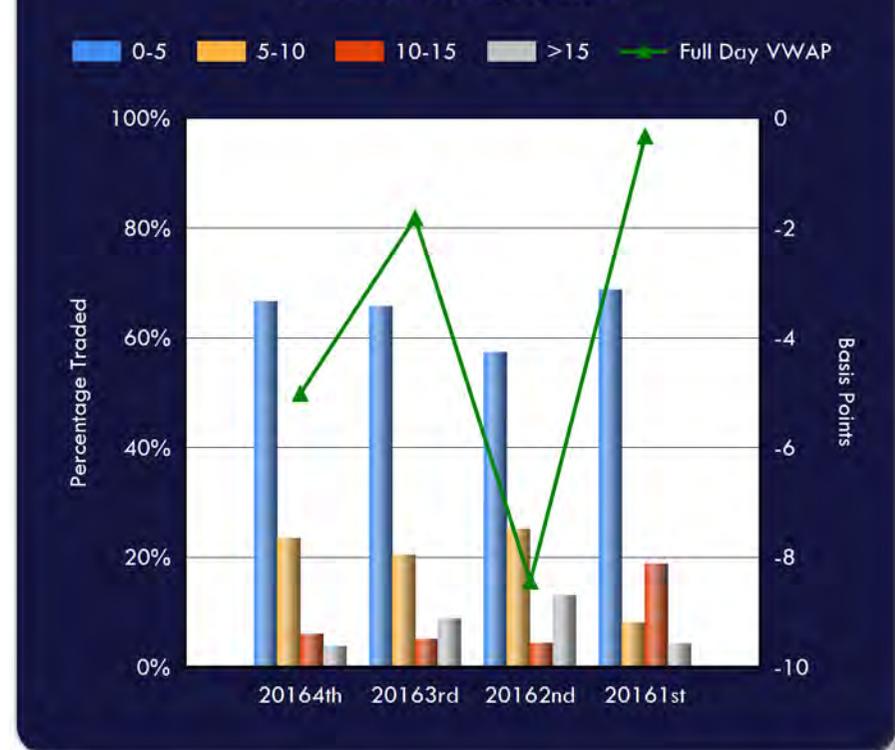
(+) = Cost

**COMMISSION REVIEW**

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

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20163rd (bp)	20162nd (bp)	20161st (bp)
CREDIT SUI	17,135	+8.14	+16.03	+7.68	+7.63	+7.80	+5.47
UBS	15,218	+7.11	+15.29	+7.79	+9.23	+6.30	+9.05
MERRILL LY	10,834	+7.22	+15.12	+7.33	+6.90	+7.07	+3.89
JP MORGAN	10,143	+11.48	+16.92	+7.59	+9.21	+10.16	+9.80
CITIGROUP	8,864	+5.70	+16.55	+8.05	+7.52	+4.70	+5.84
DEUTSCHE B	7,901	+7.58	+15.52	+7.09	+9.06	+10.52	+9.19
CREDIT AGR	7,273	+11.46	+18.01	+7.65	+11.52	+10.63	+15.35
SOCIETE GE	6,657	+6.36	+15.28	+7.36	+6.33	+5.34	+5.90
MORGAN STA	6,566	+4.58	+16.85	+7.96	+8.36	+7.12	+12.15
MITSUBISHI	4,668	+6.90	+16.44	+7.22	+11.50	+10.92	+12.00
MACQUARIE	4,291	+8.74	+16.55	+7.81	+10.49	+7.45	+12.93
MIZUHO	3,576	+8.78	+16.44	+7.22	+10.98	+9.75	+16.06
SMBC SECUR	3,538	+10.31	+16.44	+7.22	+10.43	+8.31	+14.08
BARCLAYS	3,511	+5.90	+16.79	+6.49	+4.55	+3.63	+7.06
INSTINET	3,473	+4.55	+16.80	+8.65	+6.35	+6.01	+7.02
DAIWA SECU	3,375	+6.58	+17.00	+7.23	+11.18	+8.55	+12.10
GOLDMAN SA	2,454	+7.52	+16.64	+7.34	+3.76	+9.65	+2.99
EXANE	1,921	+6.92	+14.61	+6.91	+5.68	+5.74	+8.28
LIQUIDNET	1,605	+5.71	+15.61	+8.66	+4.20	+6.19	+4.63
JEFFERIES	1,546	+10.17	+14.71	+7.22	+10.27	+11.85	+4.85

**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)	20163rd (bp)	20162nd (bp)	20161st (bp)
LAZARD ASSET MANAGEM	75	333	37.40%	225,658	0.13	+8.16	+15.88	0.16	+9.48	17.96	15.96	27.17	4.22
LSV ASSET MANAGEMENT	47	616	23.16%	75,540	-0.21	+4.07	+15.46	8.05	+9.70	29.17	36.40	24.56	32.00
WILLIAM BLAIR & COMP	37	449	18.19%	81,377	0.03	+7.89	+15.98	+0.97	+10.46	17.96	13.85	19.97	15.72
CBRE CLARION (INTL R	36	438	18.02%	82,640	-0.09	+9.11	+17.42	17.80	+9.83	35.90	33.74	32.80	18.62
S&P GLOBAL INFRAST-I	7	302	3.24%	21,535	-0.06	+1.66	+15.88	1.95	+6.71	22.76	+6.25	37.97	20.57

**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)	20163rd (bp)	20162nd (bp)	20161st (bp)
UBS	21	262	10.65%	81,664	-0.11	15,218	+7.11	+15.29	25.09	+8.47	42.07	14.75	24.78	18.14
CREDIT SUISSE	21	161	10.48%	130,811	0.02	17,135	+8.14	+16.03	3.11	+11.25	22.25	22.78	12.61	29.39
CITIGROUP	16	194	7.74%	80,154	0.00	8,864	+5.70	+16.55	2.02	+7.63	20.50	33.50	20.93	16.75
MERRILL LYNCH	15	112	7.47%	133,930	-0.13	10,834	+7.22	+15.12	+12.42	+10.62	8.57	13.23	36.65	+4.33
MORGAN STANLEY	14	195	7.13%	73,464	0.16	6,566	+4.58	+16.85	1.23	+6.60	20.48	25.86	27.84	31.09
SOCIETE GENERALE	10	120	5.21%	87,245	0.02	6,657	+6.36	+15.28	+2.27	+9.83	15.19	16.23	46.15	35.76
DEUTSCHE BANK	10	107	5.19%	97,400	0.19	7,901	+7.58	+15.52	+0.68	+8.45	16.25	3.80	8.31	15.32
JP MORGAN CHASE	9	67	4.40%	131,828	-0.04	10,143	+11.48	+16.92	0.86	+9.99	16.29	35.64	23.72	+0.22
INSTINET	8	114	3.80%	66,892	-0.19	3,473	+4.55	+16.80	5.24	+11.11	28.65	38.96	19.33	21.34
MITSUBISHI UFJ SECS	7	47	3.37%	143,964	-0.04	4,668	+6.90	+16.44	2.43	+13.69	25.68	27.84	19.36	26.47

**NOTES**

- Brokers above made up 65.42 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
CREDIT AGRICOLE	6	36	3.16%	176,264	0.11	7,273	+11.46	+18.01	+5.06	+8.83	10.42	1.01	13.00	36.59
BARCLAYS	6	75	2.96%	79,399	-0.34	3,511	+5.90	+16.79	9.76	+13.36	33.89	50.72	50.16	21.62
DAIWA SECURITIES	5	33	2.55%	155,316	0.08	3,375	+6.58	+17.00	90.11	+12.97	113.49	21.72	0.65	9.78
MACQUARIE	5	60	2.44%	81,806	-0.31	4,291	+8.74	+16.55	10.71	+8.39	26.85	26.49	19.66	0.13
MIZUHO	4	20	2.03%	203,674	0.16	3,576	+8.78	+16.44	+2.29	+13.69	19.07	30.13	27.54	8.98
HSBC BANK	4	80	1.94%	48,830	-0.61	1,184	+3.03	+16.39	28.86	+14.45	56.52	50.87	59.44	29.97
SMBC SECURITIES INC	3	21	1.71%	163,425	0.15	3,538	+10.31	+16.44	+3.42	+13.69	16.41	11.98	69.21	+18.47
GOLDMAN SACHS	3	56	1.62%	58,250	0.42	2,454	+7.52	+16.64	+10.44	+11.52	17.14	3.72	76.95	38.67
ITG	3	58	1.55%	53,669	0.54	1,460	+4.69	+14.91	+5.88	+9.93	14.27	19.75	30.71	20.52
ISI GROUP INC	3	5	1.53%	615,471	-0.01	988	+3.21	+15.11	2.64	+4.19	18.60	-	-	-

**NOTES**

- Brokers above made up 21.50 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
LIQUIDNET	3	24	1.40%	117,019	0.05	1,605	+5.71	+15.61	2.04	+5.79	17.74	+4.01	14.31	+71.24
EXANE	3	43	1.38%	64,566	-0.47	1,921	+6.92	+14.61	17.71	+7.27	32.78	25.60	15.61	21.84
SC BERNSTEIN	2	41	1.10%	54,038	0.03	850	+3.84	+15.95	+1.46	+10.60	21.27	6.09	20.13	21.62
BAIRD, ROBERT W	2	1	1.04%	2,081,836	0.64	1,096	+5.26	+15.11	+54.00	+4.19	+40.09	-	-	-
JEFFERIES & CO	2	25	0.76%	60,846	0.04	1,546	+10.17	+14.71	+1.89	+6.51	9.10	20.11	4.11	16.29
TD WATERHOUSE	2	13	0.75%	115,729	-0.57	440	+2.92	+17.24	17.78	+6.87	39.07	4.99	7.79	15.59
BNP PARIBAS	1	16	0.63%	79,241	0.69	982	+7.75	+16.27	+27.77	+11.45	+7.77	10.58	18.67	2.87
AUTONOMOUS LLP	1	1	0.51%	1,024,301	3.09	1,229	+12.00	+17.39	+83.39	+11.92	+66.09	-	22.39	-
PAVILION GLOBAL MKT	<1	20	0.49%	49,089	-0.02	295	+3.00	+17.24	+5.55	+6.87	15.67	41.70	22.63	43.44
RBC DOMINION SECS	<1	3	0.47%	315,990	-1.05	305	+3.22	+17.24	36.15	+6.87	57.15	22.75	37.42	17.84

**NOTES**

- Brokers above made up 8.53 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
D CARNEGIE AG	<1	7	0.42%	119,286	0.34	668	+8.00	+14.03	+25.44	+5.23	+14.18	-	14.15	+8.24
NUMIS SECURITIES	<1	13	0.40%	61,972	-0.15	1,043	+12.95	+15.46	4.44	+16.60	23.35	-	11.50	-
BROADCORT CAPITAL	<1	6	0.30%	100,157	-0.04	136	+2.26	+15.11	32.76	+4.19	49.87	-	-	-
PANMURE GORDON	<1	4	0.30%	149,029	-1.08	477	+8.00	+17.39	11.63	+11.92	32.82	-	-	-
KEPLER EQUITIES	<1	3	0.29%	194,413	0.20	701	+12.02	+14.00	+5.53	+6.01	2.46	+8.34	-	-
INVESTEC BANK	<1	8	0.29%	72,455	-0.22	805	+13.89	+14.66	+8.46	+14.84	6.99	-	-	23.66
BRDESCO	<1	1	0.28%	564,365	-0.27	594	+10.53	+15.11	+10.85	+4.19	+2.21	-	59.60	-
WEEDEN & CO	<1	30	0.20%	13,517	-0.60	321	+7.91	+14.76	2.47	+6.27	15.66	+2.49	12.13	16.49
STIFEL NICOLAUS & CO	<1	7	0.19%	54,242	0.41	456	+12.00	+14.46	+3.85	+19.02	17.40	-	-	-
KIM ENG SECS	<1	3	0.17%	111,440	-1.44	722	+21.60	+19.22	30.18	+8.33	36.64	-	-	-

**NOTES**

- Brokers above made up 2.83 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
GREEN STREET	<1	3	0.15%	101,630	1.05	366	+12.00	+14.33	12.80	+17.56	32.61	66.13	61.47	+3.22
CITATION FINL GROUP	<1	2	0.14%	136,626	0.18	126	+4.61	+15.11	11.57	+4.19	26.13	11.32	11.98	-
CANACCORD ADAMS	<1	2	0.13%	134,695	-0.14	243	+9.01	+17.24	0.08	+6.87	15.28	-	-	-
ABN AMRO	<1	1	0.13%	264,778	-1.39	318	+12.00	+14.01	34.16	+6.17	42.34	34.43	8.71	43.11
MAINFIRSTBANK	<1	3	0.12%	82,917	0.60	373	+15.00	+14.19	+31.68	+6.49	+26.00	-	-	+53.45
BANCO ITAU SA	<1	2	0.11%	109,223	-0.97	252	+11.55	+16.86	93.92	+14.03	111.65	-	-	25.78
JOH BERENBERG GOSSLE	<1	4	0.11%	53,856	-0.22	264	+12.25	+14.27	49.06	+8.22	59.30	9.95	3.38	18.02
GOODBODY STOCKBROKER	<1	5	0.10%	39,015	-0.66	151	+7.76	+16.43	+1.82	+10.54	+20.86	-	97.09	8.49
SKANDINAVISKA ENSKIL	<1	1	0.09%	172,489	0.29	259	+15.00	+13.70	+0.07	+6.88	5.51	-	-	31.30
SVENSKA HANDELSBANKE	<1	1	0.08%	168,641	-0.51	253	+15.00	+14.03	19.78	+5.23	24.04	-	+6.99	38.60

**NOTES**

- Brokers above made up 1.16 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
PERSHING	<1	1	0.08%	168,508	0.29	253	+15.00	+14.19	+17.14	+6.49	+11.46	279.88	57.76	2.93
CANACCORD GENUITY	<1	1	0.07%	130,980	-0.13	105	+8.00	+14.46	1.79	+19.02	27.17	-	35.01	-
CARNEGIE	<1	2	0.06%	64,925	-0.10	195	+15.00	+13.70	11.46	+6.88	17.04	15.43	33.14	4.87
SG SECURITIES	<1	4	0.06%	31,199	-0.42	37	+3.00	+14.64	+3.61	+6.98	15.07	-	7.32	-
WOORI INVESTMENT SEC	<1	2	0.06%	62,053	0.37	248	+20.00	+21.29	+12.05	+10.58	11.58	-	-	-
BANCO SANTANDER	<1	3	0.06%	38,156	-0.81	114	+10.00	+17.22	15.90	+5.13	28.25	12.73	23.11	15.37
CIMB SECURITIES	<1	1	0.05%	90,643	0.04	73	+8.00	+24.15	+0.95	+4.23	19.14	-	2.26	-
DANSKE BANK	<1	1	0.04%	83,932	0.55	67	+8.00	+13.87	+51.51	+17.68	+27.96	+21.44	+81.01	-
FORSYTH BARR LTD	<1	1	0.03%	69,870	-1.99	70	+10.00	+17.79	118.32	+13.08	139.21	-	-	-
SCOTIA CAPITAL	<1	3	0.02%	14,972	-0.90	26	+5.83	+17.24	50.60	+6.87	68.99	+20.79	31.15	31.44

**NOTES**

- Brokers above made up 0.54 % 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
DBS VICKERS SECS	<1	1	0.01%	24,814	-0.02	25	+10.00	+24.15	+2.16	+4.23	15.92	19.10	-	-
AUTREPAT-STK	<1	2	0.01%	8,519	-3.50	0	+0.00	+20.87	+152.52	+7.84	+94.15	400.13	86.09	-

**NOTES**

- Brokers above made up 0.02 % of principal traded.



(+) = Cost

**TRADE CYCLE DETAIL**

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



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission+Fees+Full Day VWAP Vs. Universe (bp)	20163rd (bp)	20162nd (bp)	20161st (bp)
<b>GRAND TOTAL</b>	36	438	18.02%	82,640	-0.09	32,972	+9.11	+17.42	17.80	+9.83	35.90	33.74	32.81	18.62
MORGAN STANLEY	4	66	2.14%	65,247	-0.06	2,332	+5.41	+19.09	10.81	+7.32	31.89	14.00	18.81	45.12
DAIWA SECURITIES	4	24	1.89%	158,368	-0.01	2,580	+6.79	+17.19	122.91	+12.73	146.02	22.78	+21.19	3.65
MACQUARIE	4	44	1.84%	84,067	-0.36	3,039	+8.22	+16.97	14.22	+8.68	31.63	33.71	18.48	+7.18
CITIGROUP	4	34	1.76%	103,927	-0.20	3,125	+8.84	+18.77	15.42	+8.01	33.19	57.30	17.29	16.25
CREDIT AGRICOLE	3	23	1.59%	139,116	0.02	3,200	+10.00	+19.75	0.49	+5.54	15.53	22.39	19.54	24.69
JP MORGAN CHASE	3	33	1.55%	94,591	-0.29	4,066	+13.03	+18.36	7.30	+8.19	20.77	36.17	15.29	+0.01
SMBC SECURITIES INC	3	20	1.44%	144,953	0.13	2,899	+10.00	+16.44	+3.96	+13.69	16.18	9.35	89.01	37.97
MITSUBISHI UFJ SECS	2	15	1.12%	149,928	-0.14	2,249	+10.00	+16.44	+1.26	+13.69	18.88	48.67	10.93	-
MIZUHO	2	16	0.79%	99,019	0.30	1,584	+10.00	+16.44	+8.55	+13.69	11.60	36.92	28.38	22.83
MERRILL LYNCH	1	18	0.65%	72,921	0.10	1,470	+11.20	+15.63	1.13	+9.17	14.59	27.41	115.74	25.82



(+) = Cost

**TRADE CYCLE DETAIL**

**LAZARD ASSET MANAGEMENT PERFORMANCE (FULL DAY VWAP)**



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission+Fees+Full Day VWAP Vs. Universe (bp)	20163rd (bp)	20162nd (bp)	20161st (bp)
<b>GRAND TOTAL</b>	75	333	37.40%	225,658	0.13	61,305	+8.16	+15.88	0.16	+9.48	17.96	15.96	27.18	4.22
UBS	11	62	5.53%	179,093	-0.27	9,893	+8.91	+15.33	53.12	+7.64	67.09	+8.60	33.27	3.74
CREDIT SUISSE	8	20	4.19%	421,206	-0.01	9,619	+11.42	+16.41	2.97	+13.02	20.99	+4.45	5.17	+9.38
MERRILL LYNCH	8	32	3.80%	238,900	0.30	5,966	+7.80	+15.24	+37.15	+11.75	+12.99	20.13	24.95	+4.63
MORGAN STANLEY	6	18	3.03%	338,689	0.40	2,261	+3.71	+15.91	+5.46	+5.23	12.05	34.95	26.74	+9.09
DEUTSCHE BANK	5	36	2.72%	152,038	0.17	5,390	+9.85	+16.18	+0.05	+8.87	16.17	10.81	3.83	17.99
CITIGROUP	5	16	2.31%	289,501	0.25	2,911	+6.28	+16.51	+12.38	+8.72	6.50	20.66	+1.27	20.38
SOCIETE GENERALE	4	36	2.07%	115,254	0.35	3,133	+7.55	+15.91	+16.04	+10.67	3.65	24.30	11.29	-
JP MORGAN CHASE	4	22	2.00%	182,704	0.06	4,294	+10.68	+16.21	+1.61	+12.37	16.31	32.52	58.90	+52.56
ISI GROUP INC	3	5	1.53%	615,471	-0.01	988	+3.21	+15.11	2.64	+4.19	18.60	-	-	-
MITSUBISHI UFJ SECS	3	14	1.45%	208,102	-0.11	1,457	+5.00	+16.44	8.73	+13.69	33.87	21.34	30.87	-



(+) = 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
<b>GRAND TOTAL</b>	47	616	23.16%	75,540	-0.21	18,944	+4.07	+15.46	8.05	+9.70	29.17	36.40	24.56	32.00
CREDIT SUISSE	9	90	4.70%	104,874	0.12	4,680	+4.96	+15.38	+1.78	+9.57	18.22	24.59	8.05	32.69
INSTINET	6	68	2.95%	87,161	-0.27	2,053	+3.46	+16.81	6.95	+10.52	30.88	30.73	4.80	31.91
CITIGROUP	5	72	2.43%	67,817	-0.29	1,957	+4.01	+15.27	12.49	+7.26	31.09	33.14	10.12	19.82
BARCLAYS	4	58	1.94%	67,074	-0.46	1,167	+3.00	+16.47	10.95	+14.15	38.44	58.81	54.47	33.64
HSBC BANK	4	70	1.90%	54,538	-0.63	1,145	+3.00	+16.24	29.91	+14.68	57.68	58.42	59.44	48.32
MERRILL LYNCH	4	27	1.82%	135,631	-0.87	1,467	+4.01	+14.18	18.67	+10.26	39.13	31.69	29.94	51.81
UBS	4	77	1.77%	46,084	-0.12	1,774	+5.00	+14.82	3.32	+8.36	21.48	27.82	26.11	27.18
DEUTSCHE BANK	3	39	1.62%	83,578	0.37	1,304	+4.00	+14.18	+7.19	+6.59	9.62	+2.99	1.60	22.71
SOCIETE GENERALE	2	31	1.16%	75,443	-0.16	1,182	+5.05	+14.02	13.71	+5.96	28.64	10.81	80.31	36.32
MORGAN STANLEY	2	35	0.89%	51,010	-0.35	758	+4.25	+14.37	18.55	+7.50	36.88	43.49	74.10	67.16



(+) = 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
<b>GRAND TOTAL</b>	7	302	3.24%	21,535	-0.06	1,083	+1.66	+15.88	1.95	+6.71	22.76	+6.25	37.98	20.57
CITIGROUP	2	64	0.93%	29,347	0.47	173	+0.92	+15.71	+12.79	+5.46	7.54	37.75	51.78	10.91
MORGAN STANLEY	<1	47	0.46%	19,453	0.41	122	+1.33	+15.72	+9.97	+4.72	9.03	+8.27	44.71	14.67
EXANE	<1	16	0.39%	49,326	-1.08	178	+2.25	+15.73	37.46	+8.84	60.16	-	42.77	-
MERRILL LYNCH	<1	25	0.37%	29,405	-1.22	45	+0.61	+15.13	18.34	+4.29	37.24	+3.64	29.67	+22.61
DEUTSCHE BANK	<1	16	0.22%	27,786	-0.88	100	+2.25	+15.21	38.51	+11.13	62.50	14.96	38.98	+33.38
GOLDMAN SACHS	<1	16	0.20%	25,546	-0.01	115	+2.81	+15.60	+0.21	+7.91	16.45	+8.05	110.00	44.39
UBS	<1	19	0.20%	21,393	0.95	90	+2.21	+16.34	+20.07	+10.55	4.56	49.05	36.77	39.43
JP MORGAN CHASE	<1	4	0.12%	59,296	1.23	71	+3.00	+14.64	+26.63	+6.98	+7.95	3.08	25.75	-
CREDIT SUISSE	<1	16	0.08%	10,496	0.27	49	+2.93	+22.04	+15.97	+4.83	7.77	12.47	19.13	35.11
SG SECURITIES	<1	4	0.06%	31,199	-0.42	37	+3.00	+14.64	+3.61	+6.98	15.07	-	-	-



(+) = 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)	20163rd (bp)	20162nd (bp)	20161st (bp)
<b>GRAND TOTAL</b>	37	449	18.19%	81,377	0.03	28,817	+7.89	+15.98	+0.97	+10.46	17.96	13.85	19.97	15.72
UBS	6	72	2.92%	81,414	0.14	3,251	+5.55	+15.51	+9.73	+9.95	11.53	2.43	2.57	26.99
SOCIETE GENERALE	4	53	1.98%	75,123	-0.23	2,343	+5.88	+15.37	2.68	+11.21	19.30	11.35	37.59	30.15
CREDIT SUISSE	3	31	1.34%	86,849	-0.18	2,315	+8.60	+16.96	19.26	+12.51	40.04	19.33	18.42	6.55
SC BERNSTEIN	2	41	1.10%	54,038	0.03	850	+3.84	+15.95	+1.46	+10.60	21.27	6.09	20.13	21.62
GOLDMAN SACHS	2	15	0.83%	111,618	0.74	1,471	+8.79	+16.19	+14.95	+12.59	19.58	23.87	27.80	+2.37
ITG	2	22	0.83%	75,638	0.28	794	+4.77	+15.28	0.49	+8.00	18.99	32.46	61.02	+15.58
MERRILL LYNCH	2	10	0.82%	164,566	-0.03	1,886	+11.46	+16.22	8.64	+10.17	23.00	+193.27	13.83	-
MITSUBISHI UFJ SECS	2	18	0.80%	89,110	0.21	962	+6.00	+16.44	+3.81	+13.69	20.33	20.74	12.51	26.47
JP MORGAN CHASE	1	8	0.72%	181,783	0.00	1,711	+11.77	+16.20	+1.66	+7.81	10.58	310.18	10.27	24.44
DAIWA SECURITIES	1	9	0.66%	147,176	0.25	795	+6.00	+16.44	+5.23	+13.69	18.91	20.36	38.84	25.07



(+) = Cost

**TRADE DETAIL ANALYSIS**

**Largest Principal Volume Traded**

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
KDDI CORP COMMON STOCK	30	362,000	6,939,066	9,298,607	0.16%	0.10	0.56
JAPAN TOBACCO INC COMMON STOCK	6	160,555	5,575,504	5,575,504	0.35%	-0.09	5.48
ACTELION LTD REG COMMON STOCK	5	30,906	3,422,474	5,391,073	0.27%	-0.59	106.62
TEVA PHARMACEUTICAL SP ADR ADR	11	135,475	5,298,257	5,298,257	0.07%	0.41	+19.93
AON PLC COMMON STOCK USD.01	15	44,940	4,894,894	5,007,090	0.22%	0.01	1.74
SHIMANO INC COMMON STOCK	29	27,100	-4,533,442	4,533,442	0.31%	-0.01	1.65
NATIONAL BANK OF CANADA COMMON	19	81,500	-3,303,460	3,303,460	0.26%	0.11	+11.50
MEDIASET SPA COMMON STOCK EUR.	2	921,487	3,301,456	3,301,456	0.42%	0.39	+37.07
ACCENTURE PLC CL A COMMON STOC	2	26,880	-3,186,735	3,186,735	0.27%	0.61	+14.34
DBS GROUP HOLDINGS LTD COMMON	11	250,000	-3,121,966	3,121,966	0.36%	0.33	+1.13

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

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
GEA GROUP AG COMMON STOCK	33	51,530	2,042,906	+11.06	0.20%	0.05	1.92
KDDI CORP COMMON STOCK	30	362,000	6,939,066	+9.93	0.16%	0.10	0.56
RESTAURANT GROUP PLC COMMON ST	30	121,700	-552,020	+3.00	0.60%	-0.56	43.28
SHIMANO INC COMMON STOCK	29	27,100	-4,533,442	+9.51	0.31%	-0.01	1.65
BOLIDEN AB COMMON STOCK SEK2.1	29	77,512	1,679,841	+6.13	0.18%	-0.47	20.91
CHALLENGER LTD COMMON STOCK	26	278,588	1,815,163	+4.68	0.72%	-0.16	+1.35
SHAW COMMUNICATIONS INC B COMM	26	72,400	1,443,007	+3.51	0.42%	-0.42	2.94
PEET LTD COMMON STOCK	25	80,906	-57,789	+4.24	4.96%	-0.26	25.36
WM MORRISON SUPERMARKETS COMMO	25	332,400	935,611	+3.47	0.30%	0.50	+6.30
THALES SA COMMON STOCK EUR3.	23	9,700	941,885	+4.93	0.25%	0.11	+1.76



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	12,348,307	10	+84.65	28.61%
Cost Trades	102,692,397	986	+26.34	100.00%
Saving Trades	98,222,803	1,152	33.47	100.00%
10 Low Cost Trades	8,382,287	10	171.09	44.51%





(+) = Cost

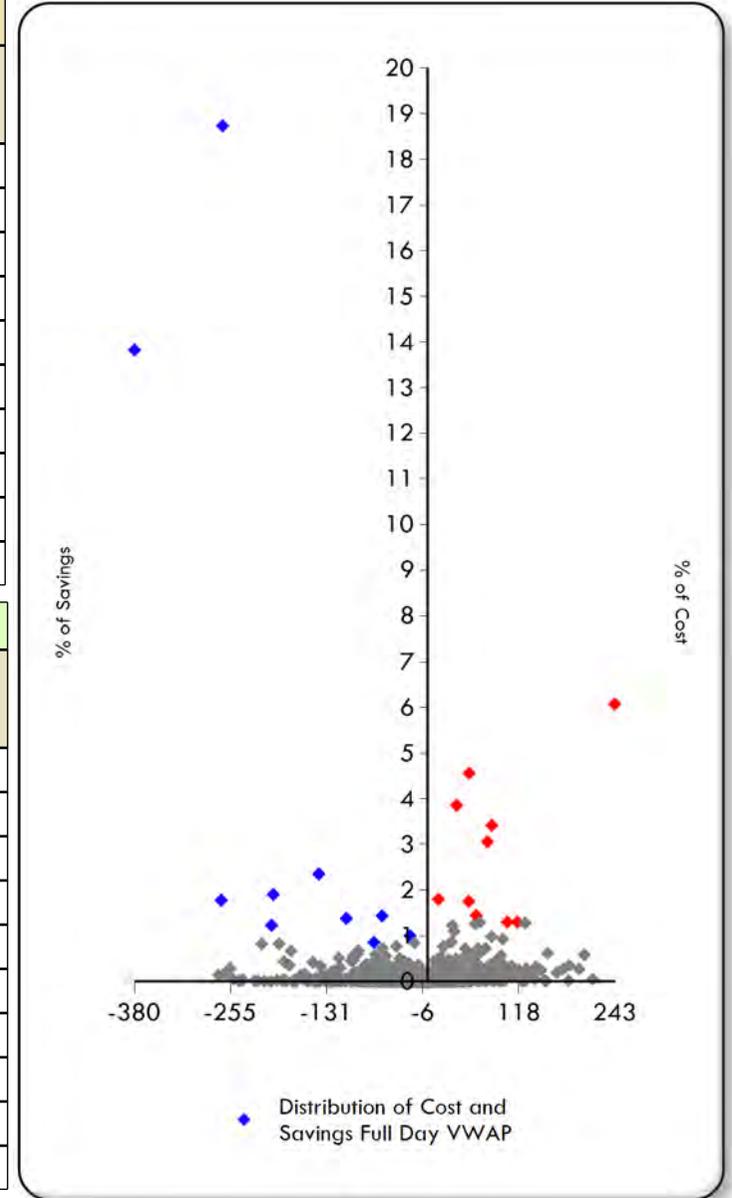
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	UK	ASHTED GR	20161109	635,459	6.08%	0.74	+242.78	LAZAR	MERRI
Sell	US	TEVA PHARM	20161115	2,081,836	4.56%	0.64	+54.00	LAZAR	BAIRD
Sell	ITA	MEDIASET S	20161213	2,517,387	3.86%	0.39	+37.85	LAZAR	MERRI
Buy	UK	BRITISH AM	20161028	1,024,301	3.42%	3.09	+83.39	LAZAR	AUTON
Buy	SWI	ACTELION L	20161109	984,299	3.06%	0.49	+77.65	LAZAR	UBS
Buy	US	ACCENTURE	20161102	3,139,609	1.80%	0.61	+14.23	LAZAR	MORGA
Buy	UK	PRUDENTIAL	20161202	816,589	1.76%	1.73	+53.55	LAZAR	DEUTS
Sell	US	TEVA PHARM	20161115	565,530	1.45%	0.68	+63.09	LAZAR	CITIG
Sell	CAN	AGRIUM INC	20161228	309,522	1.31%	0.94	+103.34	LSV A	CREDI
Sell	JAP	UNITED ARR	20161221	273,776	1.30%	2.56	+116.58	LAZAR	BNP P

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Sell	SWI	ACTELION L	20161125	2,524,813	18.73%	-1.37	265.49	LAZAR	UBS
Buy	JAP	ACTIVIA PR	20161121	1,220,575	13.82%	N/A	379.70	CBRE	DAIWA
Buy	AST	GOODMAN GR	20161109	575,262	2.36%	-1.60	140.77	CBRE	CITIG
Buy	JAP	DISCO CORP	20161109	326,220	1.91%	-1.00	199.83	WILLI	CREDI
Buy	AST	FORTESCUE	20161122	226,190	1.78%	-1.12	267.18	LSV A	CREDI
Sell	UK	ROYAL DUTC	20161130	858,380	1.44%	-0.89	58.79	LSV A	HSBC
Sell	US	TEVA PHARM	20161115	463,169	1.38%	-0.03	105.10	LAZAR	MORGA
Buy	JAP	NIPPON PRO	20161212	208,382	1.23%	N/A	202.13	CBRE	MORGA
Buy	DEN	DANSKE BAN	20161121	1,545,812	1.00%	-1.60	22.53	LSV A	MERRI
Sell	CAN	ALIMENTATI	20161219	433,484	0.86%	-2.10	69.39	LAZAR	RBC D





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ASHTED GROUP PLC COMMON STOCK - 20161109

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	0053673	11/09/2016 08:00:00	11/09/2016 16:30:00	635,459	13.73	13.41	+15,062	+242.78	0.74	0.69



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 6.08% of your market impact cost.

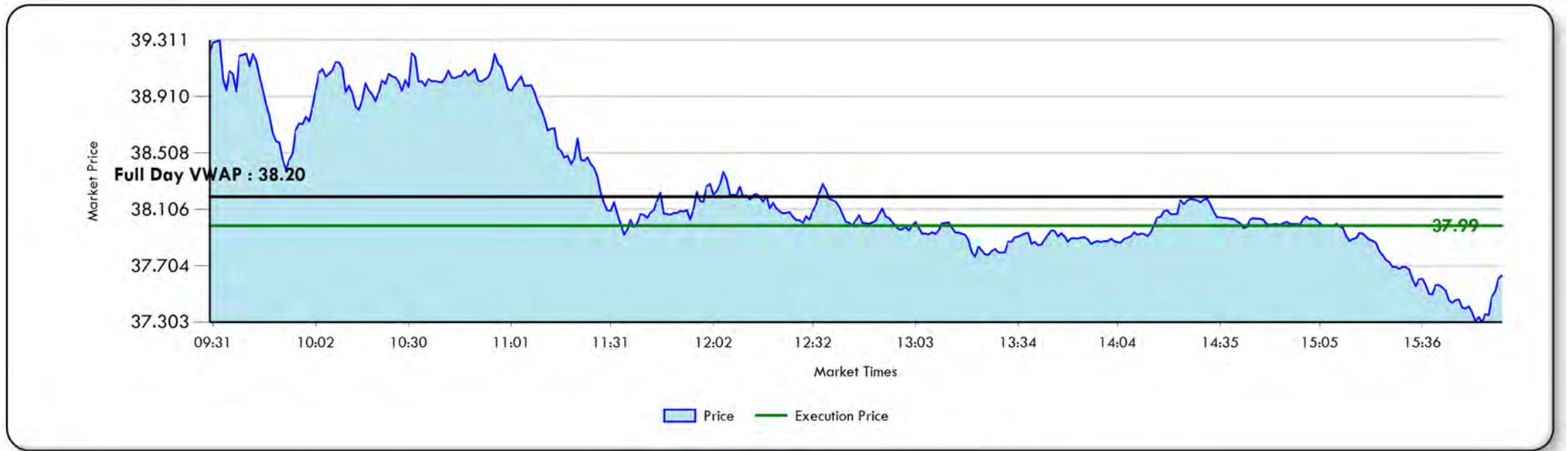


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TEVA PHARMACEUTICAL SP ADR ADR - 20161115

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	BAIRD, ROBERT W	US	USD	2883878	11/15/2016 09:30:00	11/15/2016 16:00:00	2,081,836	37.99	38.20	+11,303	+54.00	0.64	0.21



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.56% of your market impact cost.

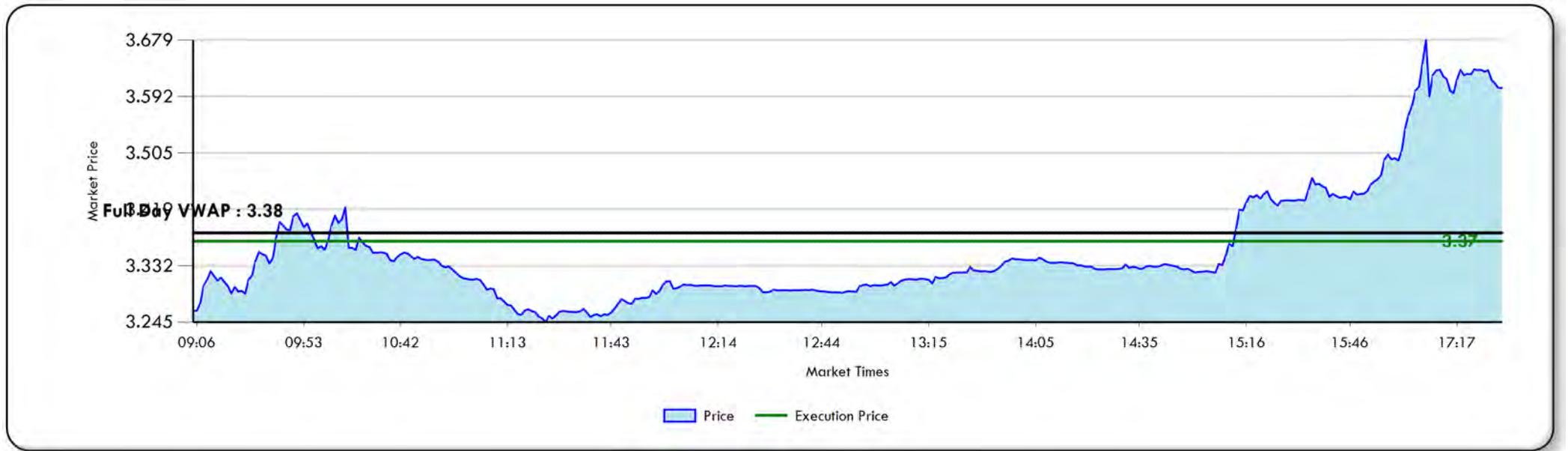


(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**MEDIASET SPA COMMON STOCK EUR. - 20161213**

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	ITA	EUR	5077946	12/13/2016 09:00:00	12/13/2016 17:30:00	2,517,387	3.37	3.38	+9,564	+37.84	0.39	0.64



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.86% of your market impact cost.



(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**BRITISH AMERICAN TOBACCO PLC C - 20161028**

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	AUTONOMOUS LLP	UK	GBP	0287580	10/28/2016 08:00:00	10/28/2016 16:30:00	1,024,301	47.12	46.73	+8,471	+83.39	3.09	0.30



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.42% of your market impact cost.

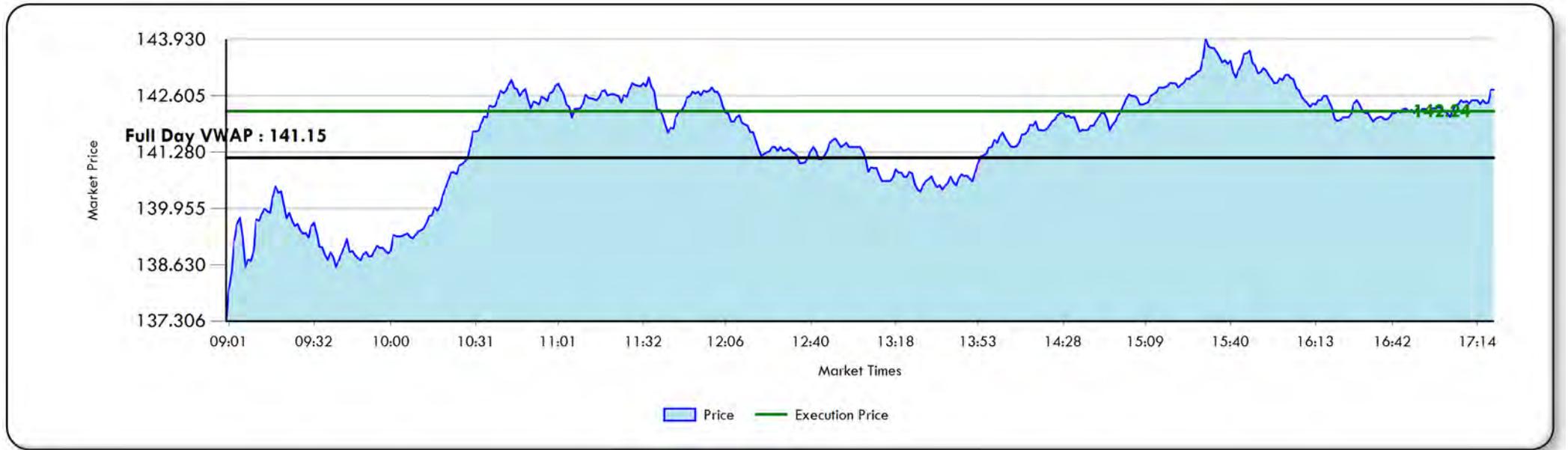


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ACTELION LTD REG COMMON STOCK - 20161109

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	UBS	SWI	CHF	B1YD5Q2	11/09/2016 09:00:00	11/09/2016 17:20:00	984,299	142.24	141.15	+7,584	+77.64	0.49	0.60



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.06% of your market impact cost.

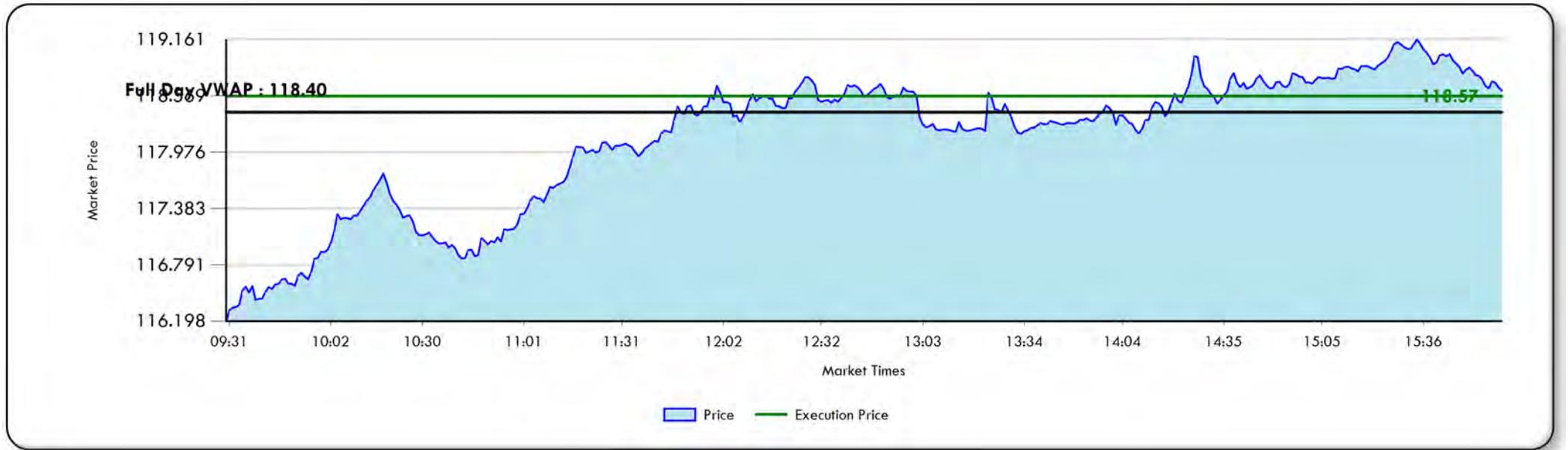


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ACCENTURE PLC CL A COMMON STOC - 20161102

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	MORGAN STANLEY	US	USD	B4BNMY3	11/02/2016 09:30:00	11/02/2016 16:00:00	3,139,609	118.57	118.40	+4,462	+14.23	0.61	0.52



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

PRUDENTIAL PLC COMMON STOCK GB - 20161202

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	UK	GBP	0709954	12/02/2016 08:00:00	12/02/2016 16:30:00	816,589	15.74	15.65	+4,350	+53.55	1.73	0.90



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.76% of your market impact cost.

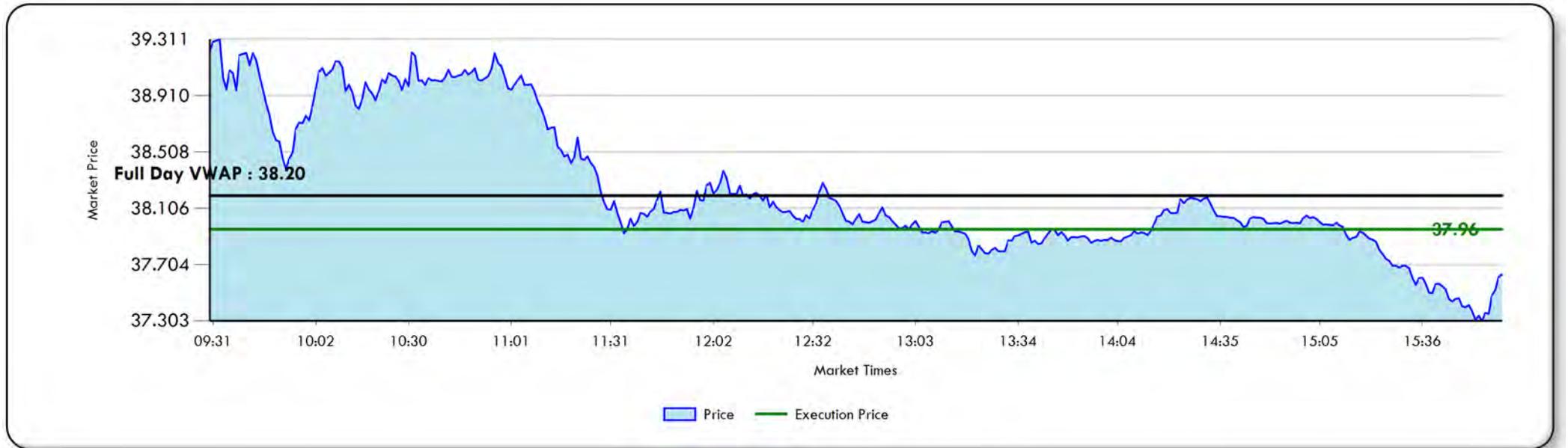


(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**TEVA PHARMACEUTICAL SP ADR ADR - 20161115**

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	CITIGROUP	US	USD	2883878	11/15/2016 09:30:00	11/15/2016 16:00:00	565,530	37.96	38.20	+3,590	+63.08	0.68	0.06



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.45% of your market impact cost.

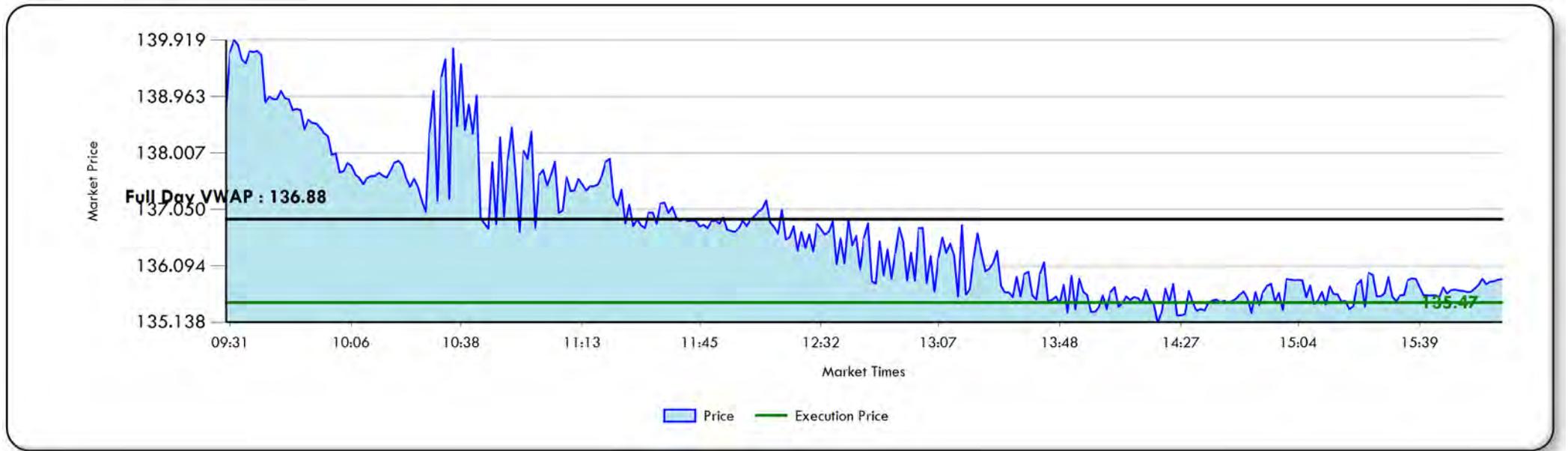


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AGRIUM INC COMMON STOCK - 20161228

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	CREDIT SUISSE	CAN	CAD	2213538	12/28/2016 09:30:00	12/28/2016 16:00:00	309,522	135.47	136.88	+3,232	+103.34	0.94	1.45



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.31% of your market impact cost.

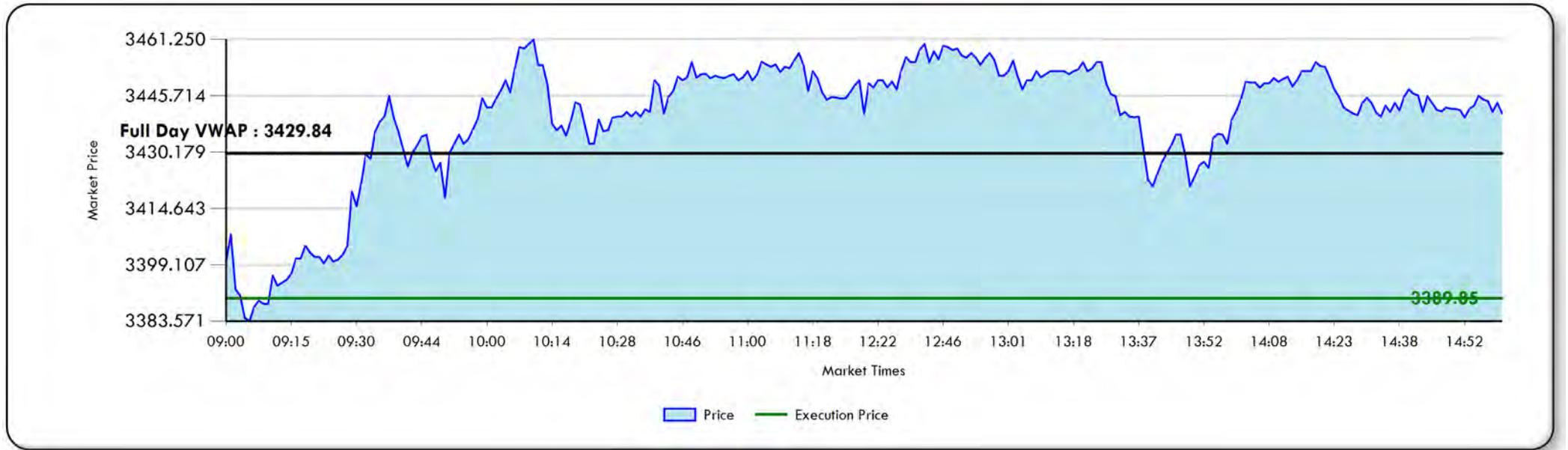


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

UNITED ARROWS LTD COMMON STOCK - 20161221

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	BNP PARIBAS	JAP	JPY	6166597	12/21/2016 09:00:00	12/21/2016 15:00:00	273,776	3389.85	3429.84	+3,229	+116.58	2.56	1.22



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.30% of your market impact cost.

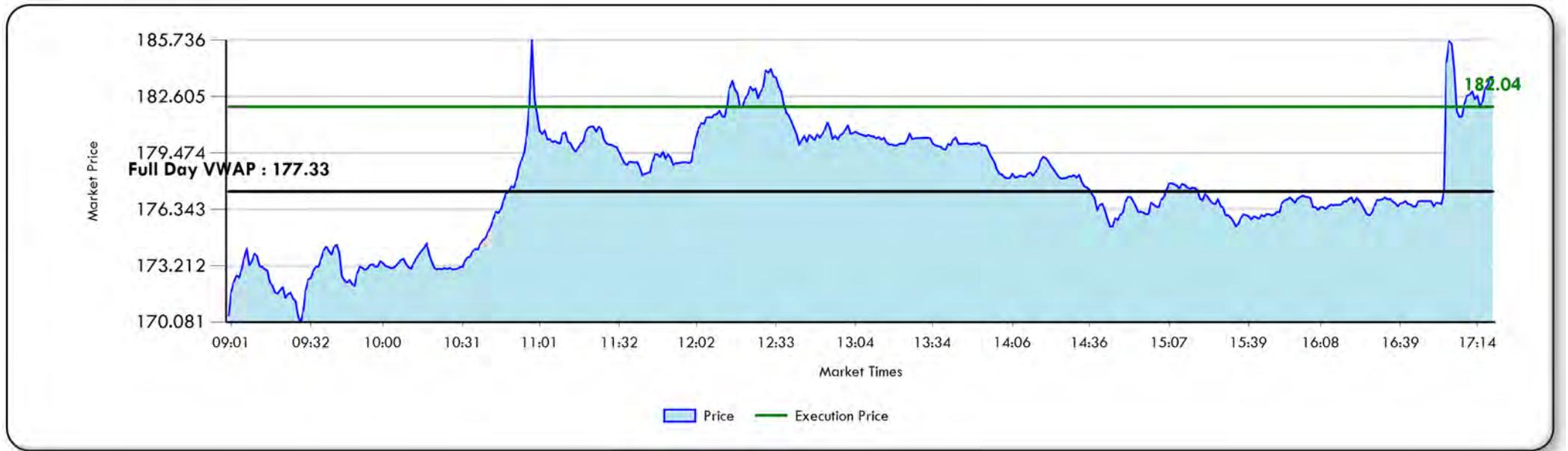


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**ACTELION LTD REG COMMON STOCK - 20161125**

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	UBS	SWI	CHF	B1YD5Q2	11/25/2016 09:00:00	11/25/2016 17:20:00	2,524,813	182.04	177.33	65,298	265.49	-1.37	0.33



**NOTES**

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 18.73% of your market impact cost.

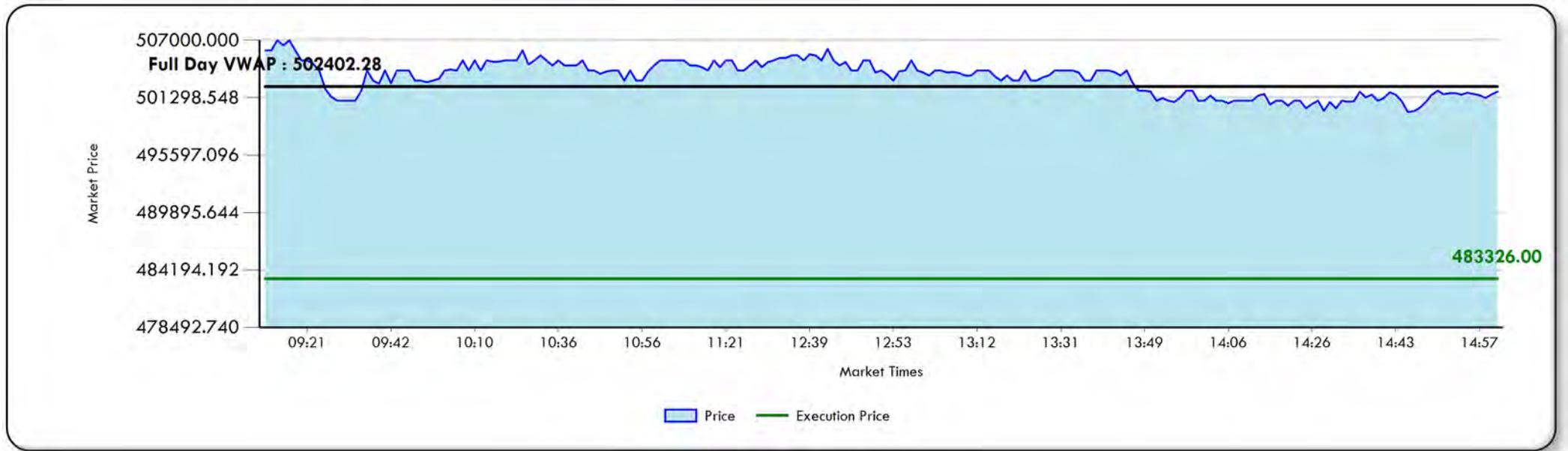


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ACTIVA PROPERTIES INC REIT - 20161121

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)	DAIWA SECURITIES	JAP	JPY	B8BSRY1	11/21/2016 09:00:00	11/21/2016 15:00:00	1,220,575	483326.00	502402.28	48,175	379.70	N/A	6.44



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 13.82% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GOODMAN GROUP REIT - 20161109

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	CITIGROUP	AST	AUD	B03FYZ4	11/09/2016 10:00:00	11/09/2016 16:12:00	575,262	6.58	6.68	8,214	140.77	-1.60	1.67



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.36% of your market impact cost.



(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**DISCO CORP COMMON STOCK - 20161109**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	CREDIT SUISSE	JAP	JPY	6270948	11/09/2016 09:00:00	11/09/2016 15:00:00	326,220	12169.89	12418.05	6,652	199.83	-1.00	0.70



**NOTES**

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.91% of your market impact cost.

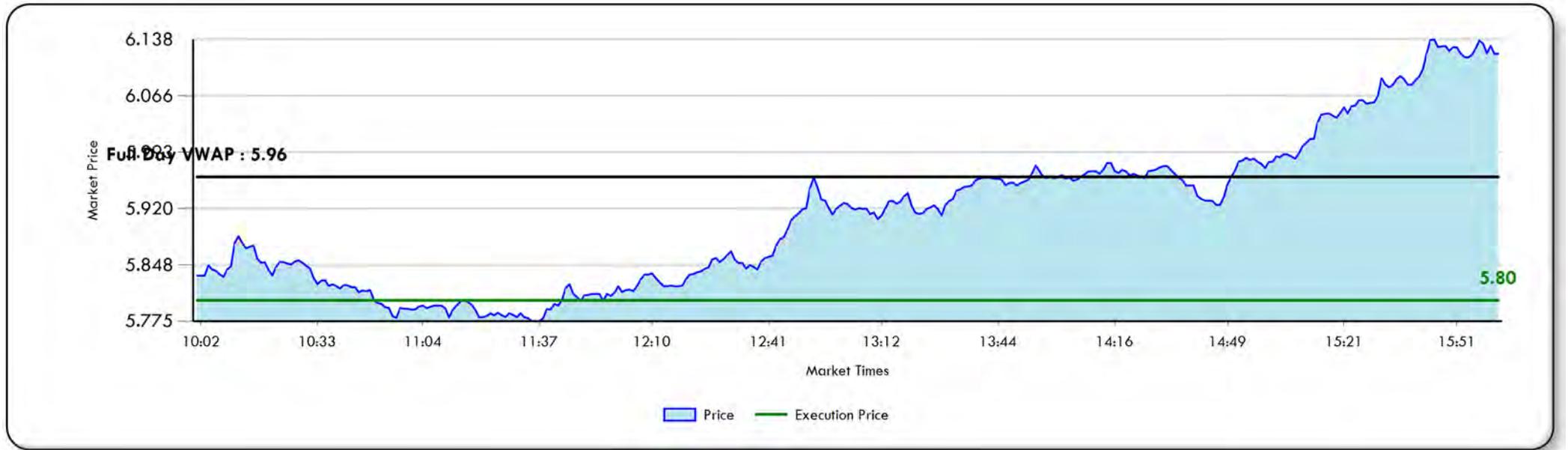


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**FORTESCUE METALS GROUP LTD COM - 20161122**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	CREDIT SUISSE	AST	AUD	6086253	11/22/2016 10:00:00	11/22/2016 16:12:00	226,190	5.80	5.96	6,209	267.18	-1.12	0.23



**NOTES**

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

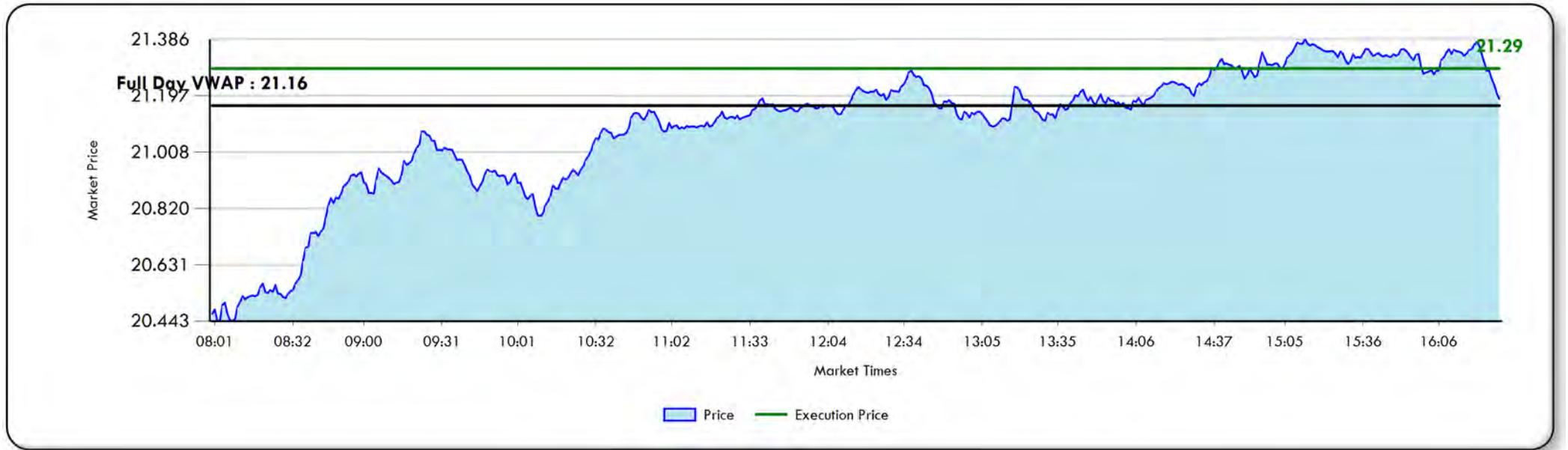


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**ROYAL DUTCH SHELL PLC B SHS CO - 20161130**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	HSBC BANK	UK	GBP	B03MM40	11/30/2016 08:00:00	11/30/2016 16:30:00	858,380	21.29	21.16	5,017	58.78	-0.89	0.30



**NOTES**

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

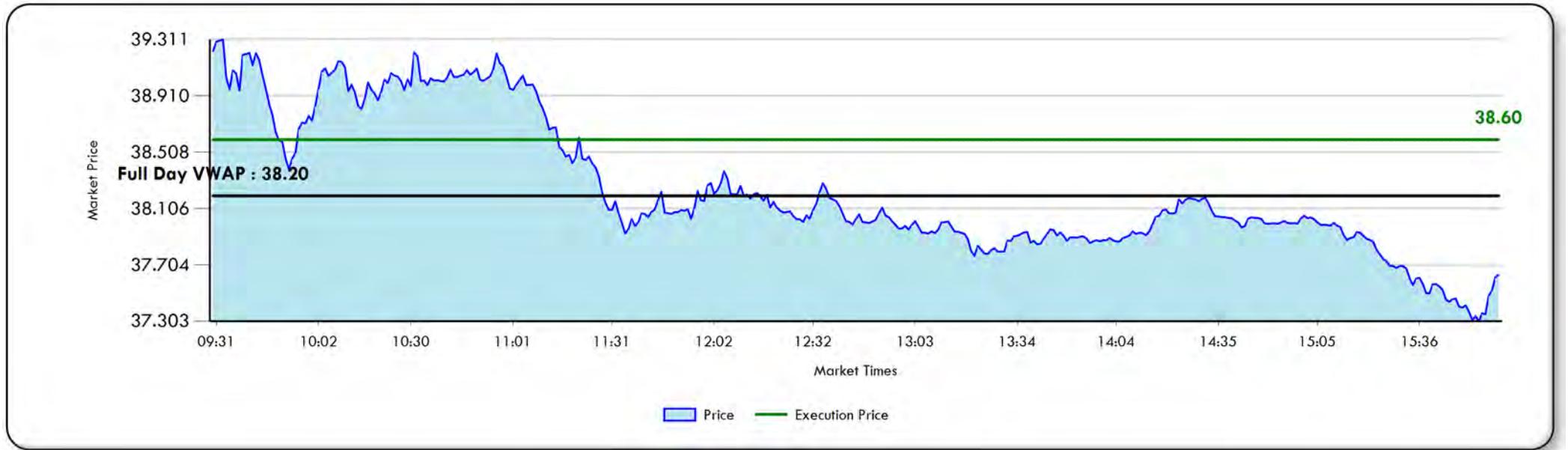


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TEVA PHARMACEUTICAL SP ADR ADR - 20161115

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	MORGAN STANLEY	US	USD	2883878	11/15/2016 09:30:00	11/15/2016 16:00:00	463,169	38.60	38.20	4,817	105.10	-0.03	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.38% of your market impact cost.

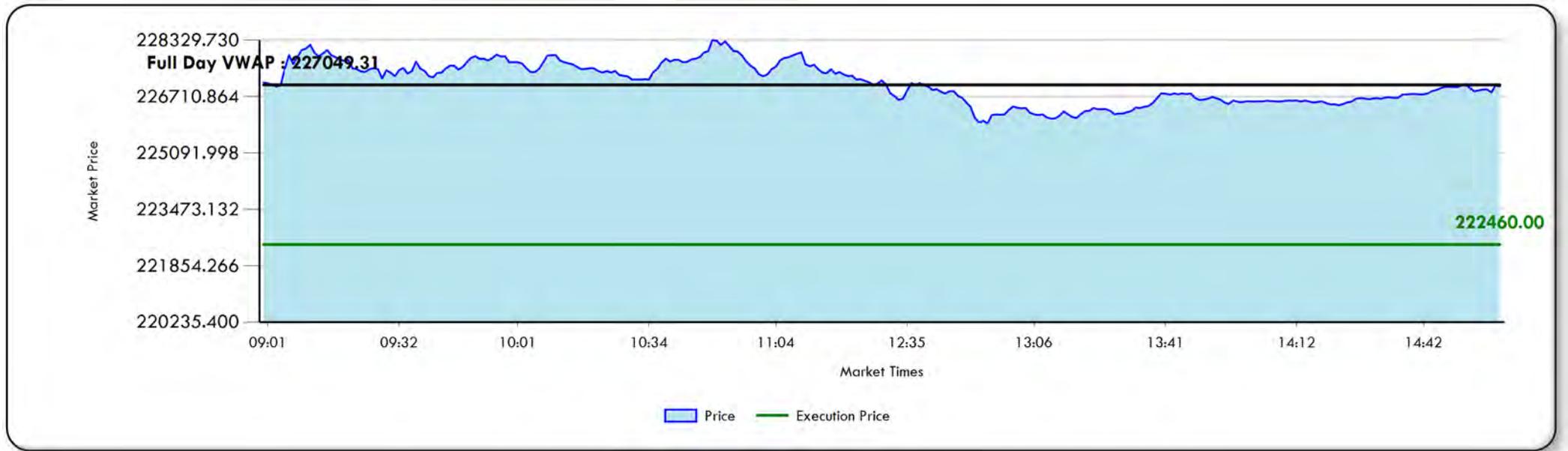


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NIPPON PROLOGIS REIT INC REIT - 20161212

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	CBRE CLARION (INTL RE)	MORGAN STANLEY	JAP	JPY	B98BC67	12/12/2016 09:00:00	12/12/2016 15:00:00	208,382	222460.00	227049.31	4,299	202.12	N/A	1.33



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.23% of your market impact cost.

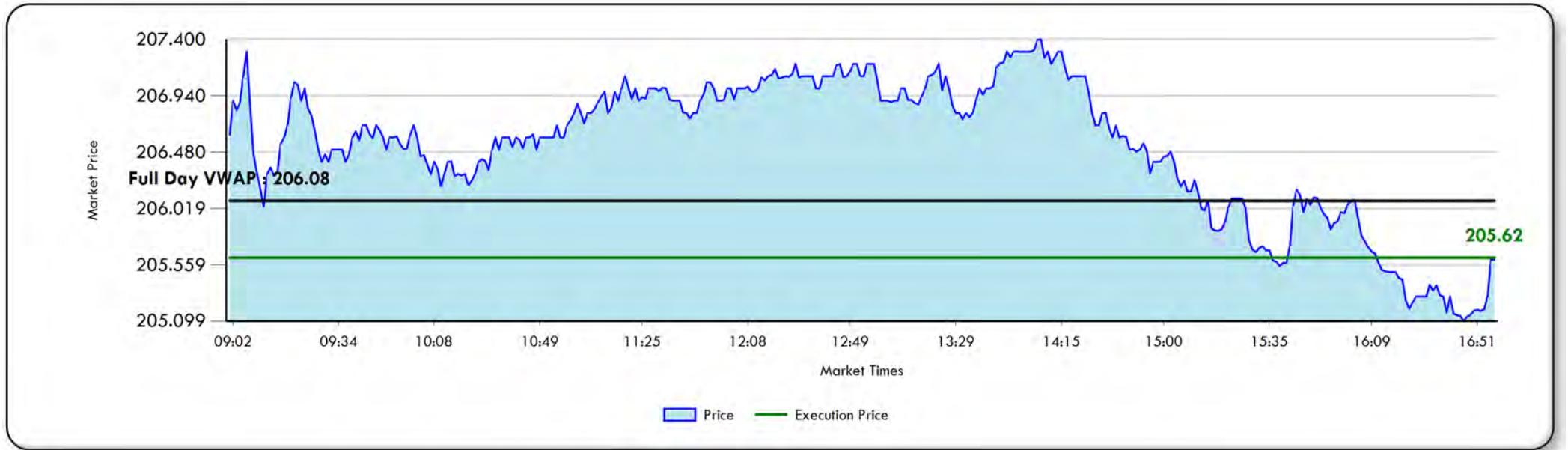


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DANSKE BANK A/S COMMON STOCK D - 20161121

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	MERRILL LYNCH	DEN	DKK	4588825	11/21/2016 09:00:00	11/21/2016 17:00:00	1,545,812	205.62	206.08	3,491	22.53	-1.60	3.78



NOTES

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

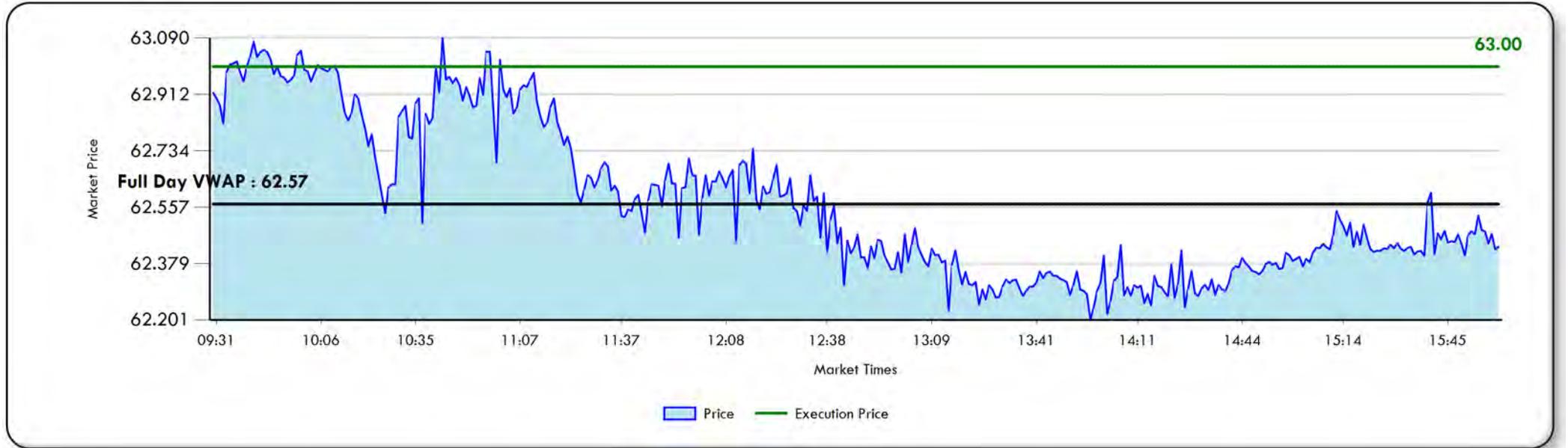


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**ALIMENTATION COUCHE TARD B CO - 20161219**

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	12/19/2016 09:30:00	12/19/2016 16:00:00	433,484	63.00	62.57	2,987	69.38	-2.10	1.54

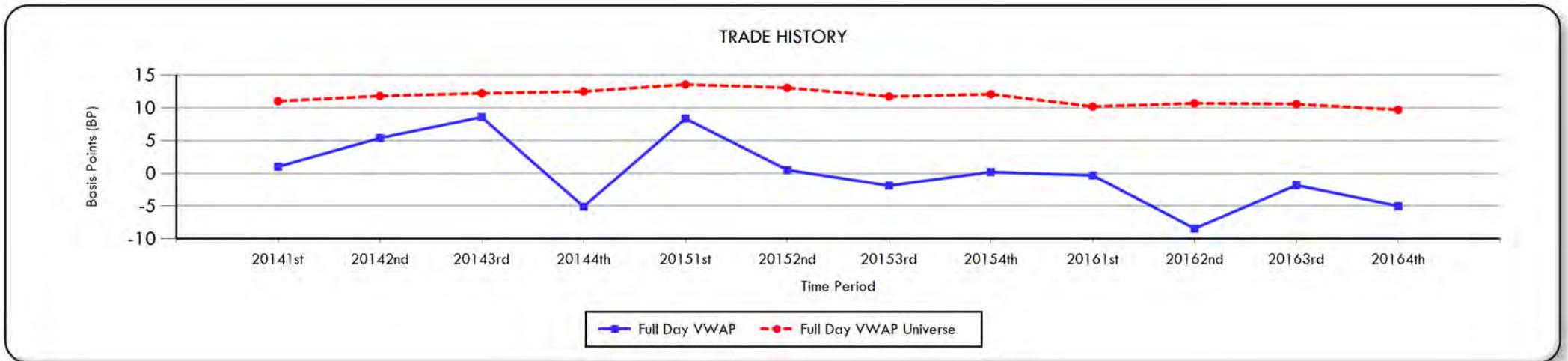


**NOTES**

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.86% 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)
20141st	297,706,884	+10.15	+16.32	+7.74	+8.63	+1.01	+11.00	17.04
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





**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	4.88 BP	14.64 BP	0.06 BP	6.98 BP	21.68 BP
AUSTRIA	11.95 BP	14.40 BP	0.01 BP	10.85 BP	25.26 BP
BELGIUM	66.85 BP	13.93 BP	0.00 BP	10.32 BP	24.25 BP
BRAZIL	4.36 BP	16.86 BP	1.64 BP	14.03 BP	32.53 BP
CANADA	13.23 BP	17.24 BP	0.11 BP	6.87 BP	24.22 BP
CHILE	0.14 BP	15.65 BP	0.87 BP	10.68 BP	27.20 BP
CHINA	1.89 BP	14.03 BP	9.12 BP	6.98 BP	30.13 BP
COLOMBIA	1.18 BP	23.15 BP	0.33 BP	15.68 BP	39.16 BP
CZECH REPUBLIC	21.95 BP	16.99 BP	0.00 BP	6.64 BP	23.63 BP
DENMARK	40.26 BP	13.87 BP	0.00 BP	17.68 BP	31.55 BP
EGYPT	1.05 BP	29.92 BP	0.01 BP	8.16 BP	38.09 BP
FINLAND	14.39 BP	13.70 BP	0.00 BP	6.88 BP	20.58 BP
FRANCE - BUYS	39.53 BP	13.99 BP	20.00 BP	5.80 BP	39.79 BP
FRANCE - SELLS	44.26 BP	14.01 BP	0.00 BP	6.17 BP	20.18 BP
GERMANY	44.85 BP	14.19 BP	0.00 BP	6.49 BP	20.68 BP
GREECE	4.79 BP	13.89 BP	2.73 BP	21.73 BP	38.35 BP
HONG KONG	1.42 BP	24.15 BP	10.49 BP	4.23 BP	38.87 BP
HUNGARY	14.37 BP	18.53 BP	0.01 BP	5.31 BP	23.85 BP
INDIA	6.61 BP	19.18 BP	10.03 BP	6.43 BP	35.64 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDONESIA	0.42 BP	17.67 BP	8.59 BP	10.00 BP	36.26 BP
IRELAND - BUYS	9.63 BP	13.36 BP	100.00 BP	6.17 BP	119.53 BP
IRELAND - SELLS	0.49 BP	14.88 BP	0.00 BP	31.35 BP	46.23 BP
ISRAEL	11.82 BP	17.22 BP	0.04 BP	10.19 BP	27.45 BP
ITALY - BUYS	5.56 BP	13.92 BP	12.00 BP	11.34 BP	37.26 BP
ITALY - SELLS	4.24 BP	14.31 BP	0.00 BP	14.77 BP	29.08 BP
JAPAN	15.92 BP	16.44 BP	0.01 BP	13.69 BP	30.14 BP
KOREA - BUYS	89.04 BP	20.91 BP	0.00 BP	13.31 BP	34.22 BP
KOREA - SELLS	74.45 BP	21.29 BP	41.76 BP	10.58 BP	73.63 BP
LUXEMBOURG	8.41 BP	4.20 BP	0.00 BP	47.84 BP	52.04 BP
MALAYSIA	1.49 BP	16.49 BP	3.34 BP	8.13 BP	27.96 BP
MEXICO	2.00 BP	17.22 BP	0.00 BP	5.13 BP	22.35 BP
NETHERLANDS	29.57 BP	14.16 BP	0.04 BP	3.12 BP	17.32 BP
NEW ZEALAND	3.26 BP	17.79 BP	0.02 BP	13.08 BP	30.89 BP
NORWAY	9.34 BP	18.59 BP	0.01 BP	17.93 BP	36.53 BP
PERU	0.63 BP	20.97 BP	1.59 BP	20.20 BP	42.76 BP
PHILIPPINES	0.70 BP	20.23 BP	16.03 BP	11.64 BP	47.90 BP
POLAND	5.95 BP	19.27 BP	0.00 BP	6.08 BP	25.35 BP
PORTUGAL	2.42 BP	14.56 BP	0.00 BP	10.02 BP	24.58 BP
RUSSIA	0.09 BP	20.00 BP	0.00 BP	23.94 BP	43.94 BP

**Elkins/McSherry Global Universe**

Country	Price	Commission	Fees	Market Impact	Total
SINGAPORE	2.49 BP	15.70 BP	3.42 BP	6.85 BP	25.97 BP
SOUTH AFRICA - BUYS	9.37 BP	16.17 BP	23.19 BP	8.48 BP	47.84 BP
SOUTH AFRICA - SELLS	9.76 BP	18.10 BP	0.02 BP	11.44 BP	29.56 BP
SPAIN	5.96 BP	17.05 BP	0.00 BP	7.27 BP	24.32 BP
SWEDEN	13.59 BP	14.03 BP	0.00 BP	5.23 BP	19.26 BP
SWITZERLAND	58.42 BP	14.30 BP	0.00 BP	6.07 BP	20.37 BP
TAIWAN - BUYS	1.93 BP	21.09 BP	0.00 BP	5.67 BP	26.76 BP
TAIWAN - SELLS	1.85 BP	18.69 BP	26.94 BP	10.65 BP	56.28 BP
THAILAND	1.84 BP	19.22 BP	0.93 BP	8.33 BP	28.48 BP
TURKEY	7.36 BP	14.98 BP	0.00 BP	3.18 BP	18.16 BP
U.K. - BUYS	3.28 BP	17.39 BP	50.00 BP	11.92 BP	79.31 BP
U.K. - SELLS	7.40 BP	14.46 BP	0.00 BP	19.02 BP	33.48 BP
U.S.	40.42 BP	15.11 BP	0.09 BP	4.19 BP	19.39 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 54	14.64 BP	17.73 BP	6.53 BP	11.68 BP	35.94 BP

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## SACRAMENTO COUNTY

US Fixed Income Analysis

Period End December 31, 2016



Sacramento County  
Period End December 31, 2016  
(US Fixed Income Analysis)

## EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates U.S. fixed income executions from October 01,2016 to December 31,2016. The analysis included trading of 646 trades in 221 different issues representing \$711,666,605 in principal across municipals, mortgages, governments and corporates.

### Methodology:

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

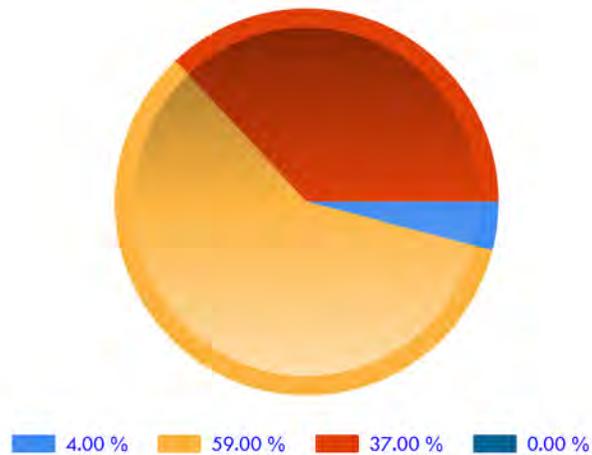
### Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q3 2016	Q2 2016	Q1 2016	Q4 2015
BUYS	354	300	130	+432.01	+12.19	+7.39	+170.06	+4.80	+2.63	0.90	+3.79	+9.25
SELLS	357	346	148	500.73	14.01	+5.14	684.30	19.15	3.11	1.27	8.27	12.52
GRAND TOTAL	712	646	221	68.72	0.97	+6.26	514.24	7.23	0.25	1.10	2.72	1.69

EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q3 2016	Q2 2016	Q1 2016	Q4 2015
Governments	419	229	85	+51.48	+1.23	+5.55	181.00 4.32	+0.07	0.11	+0.15	0.05
Mortgages	264	370	97	122.29	4.63	+6.46	292.80 11.09	1.31	1.17	3.23	3.00
Corporates	28	45	37	+5.08	+1.84	+14.76	35.63 12.92	+8.03	4.93	16.25	1.86
Municipals	2	2	2	2.99	19.52	+11.86	4.81 31.38	-	-	-	-

Bonds by Principal Traded



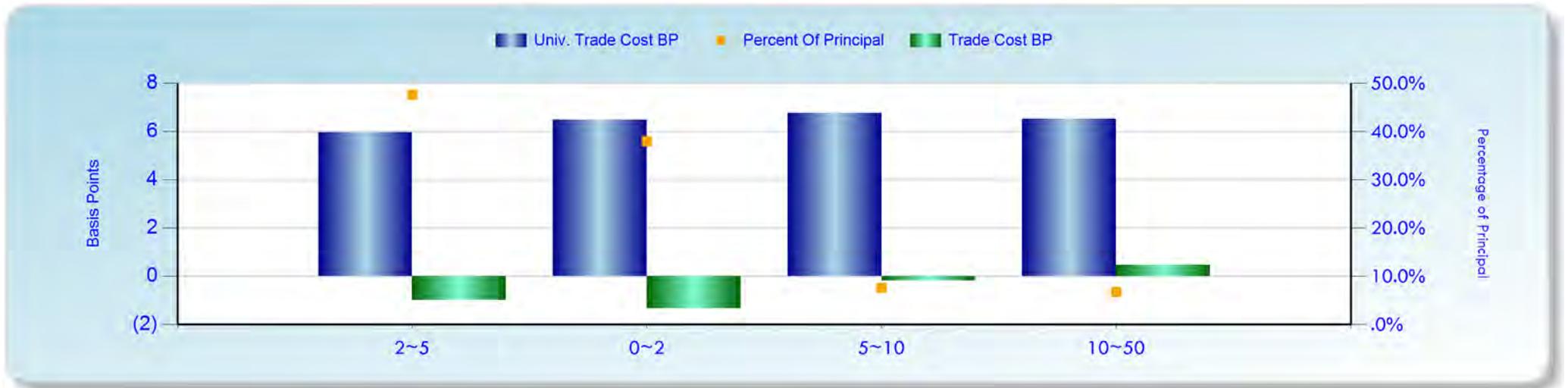
Historical Trade Cost Trend



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
2~5	339	107	45	33.55	0.99	+5.96	235.78	6.95
0~2	270	526	207	36.37	1.34	+6.48	211.71	7.82
5~10	54	9	6	1.00	0.18	+6.77	37.58	6.95
10~50	48	4	4	+2.20	+0.46	+6.53	29.16	6.07





**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	419	229	85	+51.48	+1.23	+5.55	181.00	4.32
Mtge-High Yield	261	364	91	132.50	5.09	+5.98	288.34	11.07
Corp-INVESTMENT GRADE	27	41	35	+2.92	+1.09	+14.28	35.33	13.19
Mtge-INVESTMENT GRADE	3	6	6	+10.21	+29.39	+42.24	4.47	12.85
Muni-INVESTMENT GRADE	2	2	2	2.99	19.52	+11.86	4.81	31.38
Corp-High Yield	<1	4	2	+2.16	+27.49	+31.33	0.30	3.84



EXECUTIVE SUMMARY

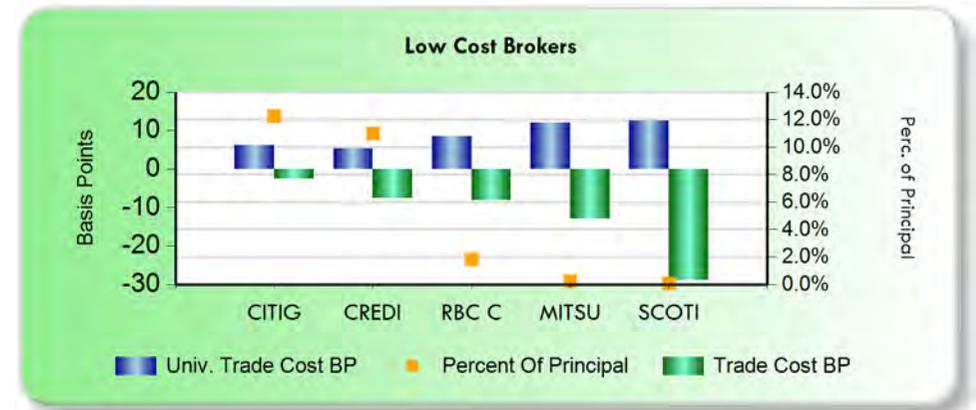
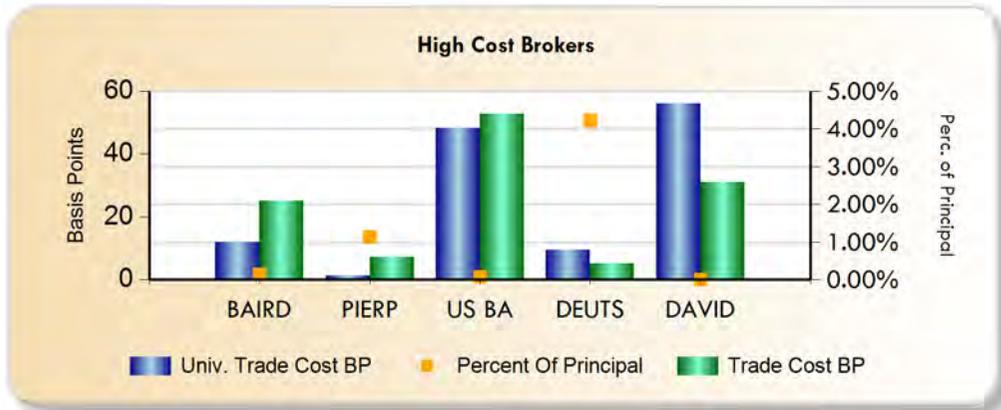
RATING SUMMARY

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	422.65	235	91	+64.72	+1.53	+5.85	182.46	4.32
NR	260.99	365	92	130.63	5.01	+5.99	287.00	11.00
BBB+	6.90	10	9	1.39	2.01	+14.09	11.10	16.10
A-	5.78	11	8	0.76	1.31	+8.84	5.86	10.15
BBB-	4.26	6	5	+3.38	+7.93	+13.72	2.46	5.79
AA-	3.62	3	3	+2.93	+8.08	+21.45	4.84	13.37
BBB	2.09	4	4	0.57	2.75	+27.61	6.33	30.36
AA	1.59	2	1	0.54	3.42	+12.52	2.53	15.94
A	1.55	3	3	2.52	16.21	+14.92	4.84	31.13
A+	<1	2	2	0.63	6.32	+8.57	1.48	14.89



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>								
BAIRD, ROBERT W	1	6	6	+2.70	+25.11	+12.02	+1.41	+13.09
PIERPONT SECURITIES	8	4	3	+5.88	+7.28	+1.36	+4.78	+5.92
US BANCORP	<1	1	1	+3.25	+52.79	+48.24	+0.28	+4.55
DEUTSCHE BANK	30	18	13	+15.41	+5.13	+9.44	12.96	4.31
DAVIDSON D.A. & CO	<1	1	1	+0.31	+31.06	+56.01	0.25	24.95
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
CITIGROUP	87	92	53	22.01	2.52	+6.10	75.17	8.62
CREDIT SUISSE	78	32	21	59.76	7.64	+5.40	101.98	13.04
RBC CAPITAL MARKETS	13	8	5	10.41	8.01	+8.50	21.44	16.51
MITSUBISHI UFJ SECS	2	5	5	2.30	12.97	+11.97	4.42	24.94
SCOTIA CAPITAL	<1	1	1	1.67	28.94	+12.51	2.39	41.45





**COUNTRY PERFORMANCE BASED ON BUYS AND SELLS**

Country									
		Principal	No. of	No. of	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	Side	(Mil. \$ )	Trades	Issues	(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	BUYS	354	300	130	+432.01	+12.19	+7.39	+170.06	+4.80
	SELLS	357	346	148	500.73	14.01	+5.14	684.30	19.15

**Manager PERFORMANCE**

Manager PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q3 2016	Q2 2016	Q1 2016	Q4 2015
METROPOLITAN WEST MG	536	237	70	46.92	0.87	+6.10	374.02	6.97	0.16	0.41	2.90	0.18
NEUBERGER BERMAN	160	363	149	21.81	1.36	+7.04	134.66	8.40	0.20	2.07	3.00	3.92
BARCLAYS 1-10 YR TIP	15	46	23	+0.01	+0.01	+3.75	5.56	3.74	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		Q3 2016	Q2 2016	Q1 2016	Q4 2015
GOLDMAN SACHS	154	119	71	9.97	0.65	+5.58	95.98	6.23	+1.61	+2.13	1.53	0.42
CITIGROUP	87	92	53	22.01	2.52	+6.10	75.17	8.62	2.51	0.80	1.56	5.96
CREDIT SUISSE	78	32	21	59.76	7.64	+5.40	101.98	13.04	1.12	0.55	+1.24	+0.70
BARCLAYS	71	49	29	+7.83	+1.10	+5.08	28.16	3.98	1.86	+2.28	3.96	+0.45
NOMURA	61	63	44	10.53	1.73	+6.76	51.78	8.49	1.29	1.79	7.17	2.14
JP MORGAN CHASE	55	37	27	+0.90	+0.16	+5.60	29.92	5.44	0.91	11.27	5.63	+0.72
MORGAN STANLEY	47	22	20	+16.52	+3.49	+11.45	37.79	7.96	+6.63	+0.98	7.76	0.33
DEUTSCHE BANK	30	18	13	+15.41	+5.13	+9.44	12.96	4.31	1.12	2.83	+2.26	2.60
BANK OF AMERICA	25	44	34	+0.42	+0.16	+6.02	14.82	5.86	2.36	1.49	4.85	6.31
WELLS FARGO	22	60	39	3.36	1.55	+6.73	17.98	8.28	1.38	2.05	1.28	3.92
RBS	14	6	6	0.96	0.69	+4.01	6.59	4.70	-	-	1.28	-
RBC CAPITAL MARKETS	13	8	5	10.41	8.01	+8.50	21.44	16.51	+1.81	0.15	13.94	+5.12
BNP PARIBAS	12	42	26	2.90	2.42	+5.33	9.28	7.75	+2.33	3.85	8.67	9.11
BMO CAPITAL MARKETS	8	3	3	+0.59	+0.70	+1.77	0.90	1.07	+0.97	-	+0.39	0.23
PIERPONT SECURITIES	8	4	3	+5.88	+7.28	+1.36	+4.78	+5.92	-	-	-	-
UBS	7	16	15	+1.40	+1.98	+5.55	2.53	3.57	+7.24	2.61	+2.84	+7.64
PERSHING	7	9	8	0.09	0.13	+2.31	1.70	2.44	+1.92	12.73	1.52	0.56
JEFFERIES & CO	3	3	3	0.06	0.19	+12.70	4.16	12.89	+3.63	+6.14	1.97	+21.27
NESBITT BURNS	2	2	1	+0.05	+0.24	+0.05	+0.04	+0.19	-	-	-	-
MITSUBISHI UFJ SECS	2	5	5	2.30	12.97	+11.97	4.42	24.94	2.43	+28.17	6.66	+11.25

**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>											
B	912828U2 US TREASURY N/B 11/26 2	Govt	12/09/2016 11/15/2026	METROPOLITAN WE MORGAN STANLEY	US	USD	10,113,200	96.500	95.890	+63.21	+63,928
B	912810RU US TREASURY N/B 11/46 2.875	Govt	11/17/2016 11/15/2046	METROPOLITAN WE DEUTSCHE BANK	US	USD	2,620,200	99.250	97.300	+196.47	+51,480
B	01F0224C FNMA TBA 15 YR 2.5 SINGLE FA	Mtge	11/07/2016 01/01/1900	METROPOLITAN WE GOLDMAN SACHS	US	USD	4,050,812	102.813	102.259	+53.86	+21,816
B	912810RT US TREASURY N/B 08/46 2.25	Govt	11/09/2016 08/15/2046	METROPOLITAN WE BARCLAYS	US	USD	1,015,322	89.852	88.070	+198.28	+20,132
S	912828T6 US TREASURY N/B 10/21 1.25	Govt	12/30/2016 10/31/2021	METROPOLITAN WE MORGAN STANLEY	US	USD	4,499,994	96.566	96.960	+40.76	+18,341
B	912828T6 US TREASURY N/B 10/21 1.25	Govt	11/09/2016 10/31/2021	METROPOLITAN WE DEUTSCHE BANK	US	USD	3,920,806	99.387	98.930	+45.95	+18,018
B	912828T3 US TREASURY N/B 09/21 1.125	Govt	10/03/2016 09/30/2021	METROPOLITAN WE GOLDMAN SACHS	US	USD	6,159,921	99.999	99.730	+26.87	+16,553
B	01F0306C FNCL 3 12/12	Mtge	11/04/2016 01/01/1900	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,510,626	102.895	102.279	+59.82	+15,019
B	912810RU US TREASURY N/B 11/46 2.875	Govt	11/18/2016 11/15/2046	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,444,965	97.964	96.950	+103.48	+14,953
B	01F0306C FNCL 3 12/12	Mtge	11/01/2016 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,569,140	102.766	102.201	+54.98	+14,126
B	01F0306B FNCL 3 11/12	Mtge	10/07/2016 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	4,806,211	103.359	103.098	+25.26	+12,143
S	912828T6 US TREASURY N/B 10/21 1.25	Govt	12/29/2016 10/31/2021	METROPOLITAN WE NOMURA	US	USD	4,052,435	96.602	96.860	+26.75	+10,842
B	01F0306B FNCL 3 11/12	Mtge	10/05/2016 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	3,515,812	103.406	103.093	+30.29	+10,651
S	92937EAS WF RBS COMMERCIAL MORTGAGE T	Mtge	11/16/2016 03/15/2045	NEUBERGER BERMA MORGAN STANLEY	US	USD	337,696	5.270	5.430	+304.52	+10,284



B	912828U6 US TREASURY N/B 11/21 1.75	Govt	11/30/2016 11/30/2021	METROPOLITAN WE JP MORGAN CHASE	US	USD	8,157,817	99.668	99.550	+11.83	+9,650
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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>											
S	9128282A US TREASURY N/B 08/26 1.5	Govt	12/09/2016 08/15/2026	METROPOLITAN WE MORGAN STANLEY	US	USD	10,140,076	92.141	91.580	60.85	61,697
S	912810RT US TREASURY N/B 08/46 2.25	Govt	11/17/2016 08/15/2046	METROPOLITAN WE DEUTSCHE BANK	US	USD	2,508,500	86.500	84.730	204.62	51,330
S	912828T6 US TREASURY N/B 10/21 1.25	Govt	11/09/2016 10/31/2021	METROPOLITAN WE BARCLAYS	US	USD	4,660,982	99.487	98.930	56.02	26,112
B	912828U8 US TREASURY N/B 12/21 2	Govt	12/29/2016 12/31/2021	METROPOLITAN WE NOMURA	US	USD	11,519,362	100.038	100.210	17.20	19,819
S	01F0306A FNCL 3 10/12	Mtge	10/07/2016 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	4,816,383	103.578	103.181	38.31	18,451
S	01F0306B FNCL 3 11/12	Mtge	11/01/2016 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,574,023	102.961	102.257	68.42	17,611
B	912828U8 US TREASURY N/B 12/21 2	Govt	12/30/2016 12/31/2021	METROPOLITAN WE MORGAN STANLEY	US	USD	4,422,234	99.938	100.330	39.27	17,368
S	01F0426A FNCL 4.5 10/10	Mtge	10/04/2016 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,890,578	109.594	109.158	39.76	15,469
S	01F0306A FNCL 3 10/12	Mtge	10/05/2016 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	3,523,515	103.633	103.185	43.21	15,226
S	912810RT US TREASURY N/B 08/46 2.25	Govt	11/18/2016 08/15/2046	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,382,421	85.335	84.420	107.18	14,817
S	01F0224B FNCL 2.5 11/12	Mtge	11/07/2016 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	4,057,430	102.980	102.649	32.19	13,060
S	912828S7 US TREASURY N/B 07/21 1.125	Govt	10/03/2016 07/31/2021	METROPOLITAN WE GOLDMAN SACHS	US	USD	4,984,500	99.990	99.740	25.00	12,461
S	01F0306B FNCL 3 11/12	Mtge	10/20/2016 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	4,574,170	103.371	103.125	23.78	10,876
S	01F0326A FNCL 3.5 10/10	Mtge	10/03/2016 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	3,638,671	105.469	105.162	29.08	10,583
S	01F0306C FNCL 3 12/12	Mtge	12/06/2016 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	2,489,404	99.576	99.173	40.54	10,092



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	28	45	37	+5.08	+1.84	+14.76	35.63	12.92

**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	419	229	85	+51.48	+1.23	+5.55	181.00	4.32

**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	264	370	97	122.29	4.63	+6.46	292.80	11.09

**MORTGAGES**



**BOND TYPE PERFORMANCE**

Bond Type	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MUNICIPALS	2	2	2	2.99	19.52	+11.86	4.81	31.38





**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	419	229	85	+51.48	+1.23	+5.55	181.00	4.32

**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	261	364	91	132.50	5.09	+5.98	288.34	11.07
AAA	3	5	5	+10.22	+32.28	+46.20	4.41	13.92
AA+	<1	1	1	+0.00	0.12	+1.81	0.06	1.93

**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	10	9	1.39	2.01	+14.09	11.10	16.10
A-	5	10	7	0.76	1.56	+8.13	4.70	9.69
BBB-	4	6	5	+3.38	+7.93	+13.72	2.46	5.79
AA-	4	3	3	+2.93	+8.08	+21.45	4.84	13.37
BBB	2	4	4	0.57	2.75	+27.61	6.33	30.36
AA	2	2	1	0.54	3.42	+12.52	2.53	15.94
A	2	3	3	2.52	16.21	+14.92	4.84	31.12
A+	<1	2	2	0.63	6.32	+8.57	1.48	14.89
AAA	<1	1	1	+3.03	+31.80	+0.84	+2.95	+30.96
NR	<1	1	1	+1.87	+42.37	+12.10	+1.34	+30.27
BB	<1	3	1	+0.29	+8.39	+56.01	1.64	47.62

**RATING BY EACH BOND TYPE**

**MUNICIPALS - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
A-	<1	1	1	+0.00	+0.00	+12.53	1.17	12.53
AA+	<1	1	1	2.99	49.70	+10.82	3.64	60.52

### HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
10/01/2016-12/31/2016	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
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

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Year-Ending 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	43	36	BLOOMBERGTERMINAL	94.37 %
	2	2	ISSUE PRICE	5.63 %
GOVERNMENTS	229	85	BLOOMBERGTERMINAL	100.00 %
MORTGAGES	268	29	TULLET PREBON	75.67 %
	102	68	BLOOMBERGTERMINAL	24.33 %
MUNICIPALS	2	2	BLOOMBERGTERMINAL	100.00 %

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## SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End December 31, 2016



Sacramento County  
Period End December 31, 2016  
(Global Fixed Income Analysis)

## EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates global fixed income executions from October 01,2016 to December 31,2016. The analysis included trading of 110 trades in 50 different issues representing \$59,762,371 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.

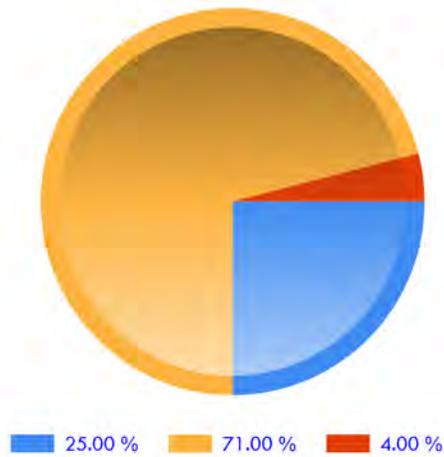
### Results:

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	Q3 2016	Q2 2016	Q1 2016	Q4 2015
BUYS	27	49	26	45.04	16.78	+3.35	54.04	20.13	+2.38	+1.07	17.47	23.54
SELLS	33	61	32	+39.31	+11.94	+3.59	+27.47	+8.35	+1.98	+4.93	+9.62	+13.98
GRAND TOTAL	60	110	50	5.73	0.96	+3.49	26.57	4.45	+2.18	+2.94	4.66	6.91

EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q3 2016	Q2 2016	Q1 2016	Q4 2015
Governments	42	66	17	+24.50	+5.81	+3.54	+9.57	+2.27	+3.61	0.89	2.06	+6.29
Corporates	15	41	31	+16.49	+10.99	+3.36	+11.45	+7.63	5.92	10.36	4.87	37.16
Mortgages	3	3	2	46.71	179.51	+3.36	47.58	182.87	+13.43	+27.53	58.42	13.17

Bonds by Principal Traded



Historical Trade Cost Trend

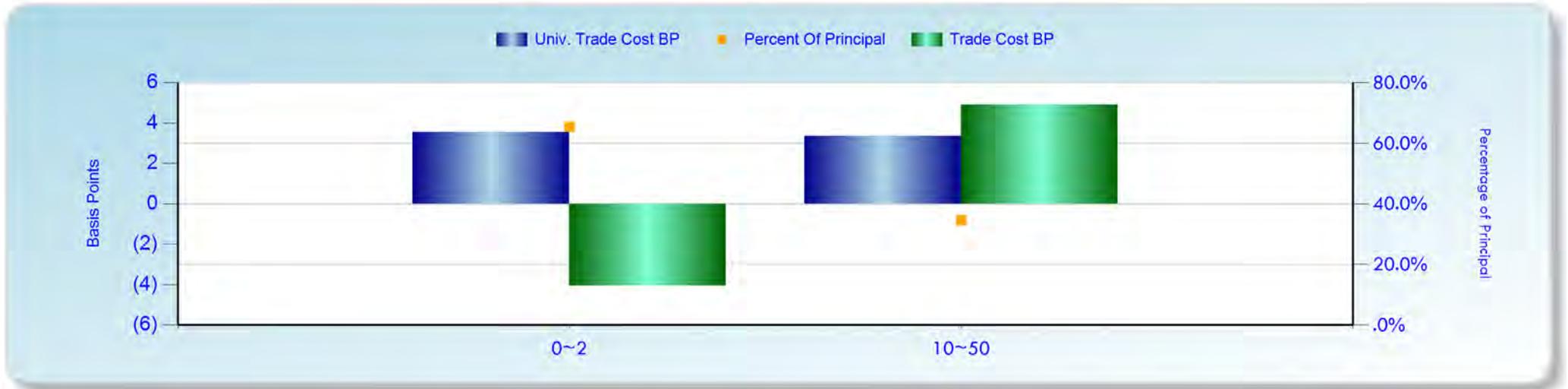




**EXECUTIVE SUMMARY**

**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	39	108	49	15.88	4.06	+3.55	29.78	7.61
10~50	21	2	2	+10.15	+4.91	+3.36	+3.21	+1.55





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	41	63	14	+19.65	+4.75	+3.36	+5.76	+1.39
Corp-INVESTMENT GRADE	11	33	23	+12.05	+11.31	+3.36	+8.47	+7.95
Corp-High Yield	4	8	8	+4.44	+10.22	+3.36	+2.98	+6.86
Mtge-High Yield	2	1	1	41.55	217.95	+3.36	42.19	221.31
Govt-High Yield	<1	3	3	+4.84	+59.95	+12.75	+3.81	+47.20
Mtge-INVESTMENT GRADE	<1	2	1	5.16	74.17	+3.36	5.39	77.53



EXECUTIVE SUMMARY

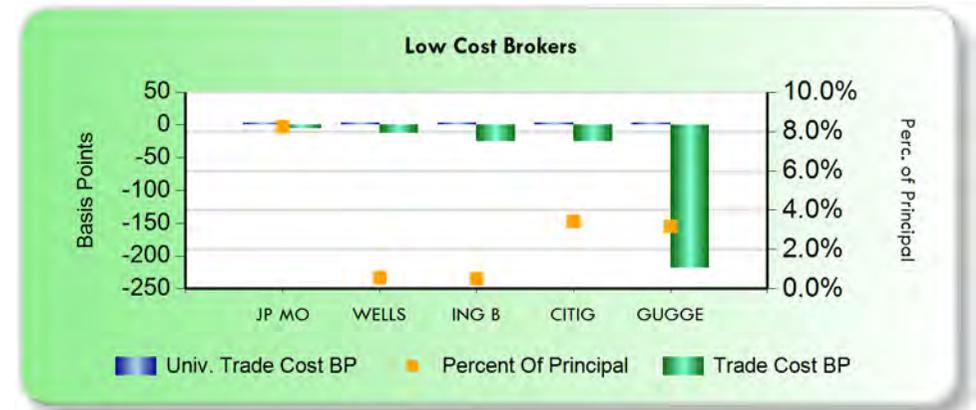
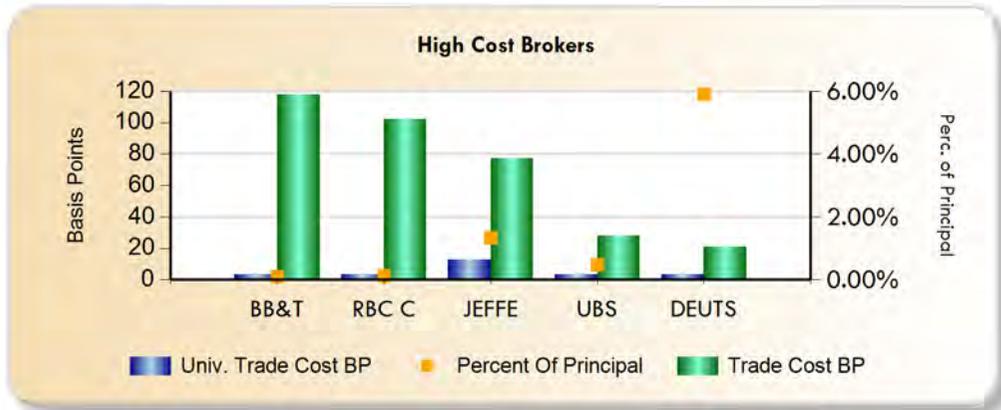
RATING SUMMARY

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	42.20	69	16	+15.51	+3.67	+3.36	+1.33	+0.31
BB+	4.06	5	5	39.45	97.18	+3.35	40.81	100.53
BBB-	3.16	8	7	+9.63	+30.54	+3.36	+8.57	+27.18
BBB	2.32	5	5	2.58	11.11	+3.36	3.36	14.47
AA-	1.84	3	2	+5.58	+30.25	+3.36	+4.96	+26.89
A-	1.53	7	3	+2.59	+16.92	+3.36	+2.07	+13.56
BB-	1.34	3	3	+0.36	+2.69	+3.36	0.09	0.67
BB	1.19	2	2	+2.88	+24.18	+3.36	+2.48	+20.82
BBB+	<1	3	2	2.30	32.54	+3.36	2.54	35.90
AA	<1	1	1	1.14	18.43	+3.36	1.35	21.79



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>								
BB&T SECURITIES	<1	2	2	+0.75	+117.78	+3.36	+0.73	+114.42
RBC CAPITAL MARKETS	<1	2	2	+0.77	+102.21	+3.36	+0.74	+98.85
JEFFERIES & CO	<1	2	2	+6.18	+77.12	+12.86	+5.15	+64.26
UBS	<1	2	2	+0.80	+28.08	+3.36	+0.71	+24.72
DEUTSCHE BANK	4	8	7	+7.39	+20.96	+3.32	+6.22	+17.64
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
JP MORGAN CHASE	5	13	9	2.78	5.64	+3.36	4.44	9.00
WELLS FARGO	<1	2	2	0.44	12.65	+3.36	0.55	16.01
ING BARING	<1	1	1	0.76	24.84	+3.36	0.86	28.20
CITIGROUP	2	12	6	5.18	25.28	+3.36	5.87	28.64
GUGGENHEIM	2	1	1	41.55	217.95	+3.36	42.19	221.31



**COUNTRY PERFORMANCE**

COUNTRY SUMMARY									TRADE COST HISTORICAL PERFORMANCE			
Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q3 2016	Q2 2016	Q1 2016	Q4 2015
UNITED STATES	59	107	47	10.57	1.79	+3.36	30.38	5.15	+1.74	+2.95	3.63	9.52
ARGENTINA	<1	1	1	+3.94	+98.99	+22.46	+3.05	+76.53	-	-	303.76	-
SINGAPORE	<1	1	1	+0.87	+29.81	+3.75	+0.76	+26.06	+31.20	-	-	-
GERMANY	<1	1	1	+0.03	+2.74	+2.19	+0.01	+0.55	-	-	-	-

**COUNTRY PERFORMANCE BASED ON BUYS AND SELLS**

Country	Side	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
								UNITED STATES	BUYS
	SELLS	32	59	30	+34.50	+10.70	+3.36	+23.66	+7.34
ARGENTINA	SELLS	<1	1	1	+3.94	+98.99	+22.46	+3.05	+76.53
SINGAPORE	SELLS	<1	1	1	+0.87	+29.81	+3.75	+0.76	+26.06
GERMANY	BUYS	<1	1	1	+0.03	+2.74	+2.19	+0.01	+0.55

**Manager PERFORMANCE**

Manager PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q3 2016	Q2 2016	Q1 2016	Q4 2015
PRUDENTIAL INVESTMEN	60	110	50	5.73	0.96	+3.49	26.57 4.45	+2.18	+2.94	4.66	6.91

### 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		Q3	Q2	Q1	Q4
							(Thous. \$)	BP	2016	2016	2016	2015
BANK OF AMERICA	25	13	11	+11.61	+4.64	+3.36	+3.21	+1.28	35.07	+7.26	4.25	1.89
JP MORGAN CHASE	5	13	9	2.78	5.64	+3.36	4.44	9.00	+4.16	16.69	22.26	66.64
BARCLAYS	5	10	6	+7.22	+14.74	+3.36	+5.57	+11.38	6.43	+1.07	0.60	+21.75
DEUTSCHE BANK	4	8	7	+7.39	+20.96	+3.32	+6.22	+17.64	+8.37	8.97	+1.95	+4.40
MORGAN STANLEY	3	12	11	+0.14	+0.43	+3.36	0.96	2.93	8.84	+20.17	25.52	24.73
GOLDMAN SACHS	3	13	10	+2.48	+8.01	+3.36	+1.44	+4.65	+6.85	9.03	+1.64	+0.00
CANTOR FITZGERALD	2	3	3	+4.16	+19.69	+3.36	+3.45	+16.33	+9.90	-	+21.54	-
NOMURA	2	4	4	0.18	0.86	+3.36	0.88	4.22	+1.02	+2.09	0.42	-
CITIGROUP	2	12	6	5.18	25.28	+3.36	5.87	28.64	+6.66	+27.80	+0.11	+16.60
GUGGENHEIM	2	1	1	41.55	217.95	+3.36	42.19	221.31	-	-	-	-
BNY MELLON	1	2	2	+1.21	+8.30	+3.36	+0.72	+4.94	+7.05	+1.76	+0.72	+18.71
BMO CAPITAL MARKETS	1	2	2	0.21	1.69	+3.36	0.64	5.05	0.22	-	0.93	-
MESIROW FINANCIAL	1	1	1	+1.49	+13.33	+3.36	+1.11	+9.97	-	-	-	-
JEFFERIES & CO	<1	2	2	+6.18	+77.12	+12.86	+5.15	+64.26	+5.93	+8.19	+46.00	0.55
BNP PARIBAS	<1	2	2	+0.87	+12.09	+3.52	+0.61	+8.57	+40.81	-	1.88	-
WELLS FARGO	<1	2	2	0.44	12.65	+3.36	0.55	16.01	+0.35	15.67	8.40	+4.14
CREDIT SUISSE	<1	1	1	+0.36	+10.74	+3.36	+0.25	+7.38	-	+15.56	26.74	+62.64
ING BARING	<1	1	1	0.76	24.84	+3.36	0.86	28.20	-	-	-	-
UBS	<1	2	2	+0.80	+28.08	+3.36	+0.71	+24.72	+15.70	-	+5.67	-
STANDARD BANK	<1	2	1	0.04	3.28	+3.36	0.09	6.64	-	-	-	-
RBC CAPITAL MARKETS	<1	2	2	+0.77	+102.21	+3.36	+0.74	+98.85	+7.87	-	+24.33	-
BB&T SECURITIES	<1	2	2	+0.75	+117.78	+3.36	+0.73	+114.42	-	-	-	-

Sacramento County  
Period End December 31, 2016  
(Global Fixed Income Analysis)

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	912810RB US TREASURY N/B 05/43 2.875	Govt	11/30/2016 05/15/2043	PRUDENTIAL INVE BANK OF AMERICA	US	USD	10,342,550	96.977	97.110	+13.76	+14,231
S	404119BN HCA INC SR SECURED 03/24 5	Corp	11/15/2016 03/15/2024	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	646,750	99.500	100.250	+75.38	+4,875
S	ARARGE03F441 REPUBLIC OF ARGENTINA BONDS	Govt	11/29/2016 04/17/2017	PRUDENTIAL INVE JEFFERIES & CO	ARG	USD	398,482	102.175	103.186	+98.99	+3,945
S	912810RB US TREASURY N/B 05/43 2.875	Govt	11/23/2016 05/15/2043	PRUDENTIAL INVE BARCLAYS	US	USD	386,375	96.594	97.360	+79.33	+3,065
B	912810RB US TREASURY N/B 05/43 2.875	Govt	11/16/2016 05/15/2043	PRUDENTIAL INVE BARCLAYS	US	USD	1,987,734	99.387	99.270	+11.74	+2,334
B	XS1244682057 PROVINCIA DE BUENOS AIRE SR	Govt	10/06/2016 06/09/2021	PRUDENTIAL INVE JEFFERIES & CO	US	USD	402,281	114.938	114.300	+55.46	+2,231
S	36164QNA GE CAPITAL INTL FUNDING COMP	Corp	11/08/2016 11/15/2035	PRUDENTIAL INVE MORGAN STANLEY	US	USD	439,113	108.423	108.970	+50.45	+2,215
S	26433UAA DUFREY FINANCE SCA COMPANY GU	Corp	10/21/2016 10/15/2020	PRUDENTIAL INVE CANTOR FITZGERA	US	USD	824,000	103.000	103.250	+24.27	+2,000
S	912810QL US TREASURY N/B	Govt	11/09/2016 11/15/2040	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	505,359	126.340	126.810	+37.21	+1,881
S	36164QNA GE CAPITAL INTL FUNDING COMP	Corp	11/07/2016 11/15/2035	PRUDENTIAL INVE CANTOR FITZGERA	US	USD	787,429	108.611	108.860	+22.93	+1,805
S	36962G3P GENERAL ELEC CAP CORP	Corp	11/07/2016 01/14/2038	PRUDENTIAL INVE BARCLAYS	US	USD	617,080	130.461	130.790	+25.22	+1,556
S	143658BA CARNIVAL CORP COMPANY GUAR 1	Corp	11/18/2016 10/15/2020	PRUDENTIAL INVE MESIROW FINANCI	US	USD	1,115,757	105.759	105.900	+13.33	+1,488
B	9128282A US TREASURY N/B 08/26 1.5	Govt	11/10/2016 08/15/2026	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	180,240	94.863	94.190	+70.97	+1,279
S	35802XAA FRESENIUS MED CARE US	Corp	10/18/2016 09/15/2018	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,087,500	108.750	108.870	+11.03	+1,200



S	42809HAH HESS CORP SR UNSECURED 04/47	Corp	11/30/2016 04/01/2047	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	86,663	96.293	97.620	+137.81	+1,194
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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	32027NJL FIRST FRANKLIN MTG LOAN ASSE	Mtge	11/17/2016 06/25/2034	PRUDENTIAL INVE GUGGENHEIM	US	USD	1,906,497	96.125	98.220	217.95	41,551
S	17290YAR CITIGROUP COMMERCIAL MORTGAG	Mtge	12/22/2016 05/10/2049	PRUDENTIAL INVE CITIGROUP	US	USD	394,765	98.691	97.140	157.20	6,206
B	912803EQ STRIP PRINC 11/45 0.00000	Govt	11/30/2016 11/15/2045	PRUDENTIAL INVE BANK OF AMERICA	US	USD	10,315,770	40.454	40.470	3.96	4,080
B	404280BH HSBC HOLDINGS PLC SUBORDINAT	Corp	11/16/2016 11/23/2026	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	279,977	99.992	100.930	93.81	2,626
S	912810RB US TREASURY N/B 05/43 2.875	Govt	11/14/2016 05/15/2043	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	980,312	98.031	97.820	21.55	2,113
B	29274FAF ENEL AMERICAS SA SR UNSECURE	Corp	10/20/2016 10/25/2026	PRUDENTIAL INVE MORGAN STANLEY	US	USD	83,609	98.364	100.500	217.15	1,816
B	717081ED PFIZER INC SR UNSECURED 12/4	Corp	11/14/2016 12/15/2046	PRUDENTIAL INVE BANK OF AMERICA	US	USD	618,921	99.826	100.010	18.43	1,141
S	912810RT US TREASURY N/B 08/46 2.25	Govt	12/15/2016 08/15/2046	PRUDENTIAL INVE MORGAN STANLEY	US	USD	194,168	82.625	82.180	53.86	1,046
B	912810RT US TREASURY N/B 08/46 2.25	Govt	12/02/2016 08/15/2046	PRUDENTIAL INVE BARCLAYS	US	USD	141,578	83.281	83.880	71.89	1,018
S	445545AF HUNGARY SR UNSECURED 03/41 7	Govt	11/08/2016 03/29/2041	PRUDENTIAL INVE ING BARING	US	USD	306,000	153.000	152.620	24.84	760
B	552081AM LYONDELLBASELL IND NV SR UNS	Corp	10/26/2016 02/26/2055	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	291,741	97.247	97.500	26.02	759
B	912810RT US TREASURY N/B 08/46 2.25	Govt	11/14/2016 08/15/2046	PRUDENTIAL INVE NOMURA	US	USD	461,251	84.633	84.750	13.78	636
B	912810RS US TREASURY N/B 05/46 2.5	Govt	11/08/2016 05/15/2046	PRUDENTIAL INVE MORGAN STANLEY	US	USD	277,607	97.406	97.620	21.94	609
S	9128282A US TREASURY N/B 08/26 1.5	Govt	11/14/2016 08/15/2026	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	98,445	93.758	93.210	58.43	575
B	912810RT US TREASURY N/B 08/46 2.25	Govt	11/14/2016 08/15/2046	PRUDENTIAL INVE BMO CAPITAL MAR	US	USD	626,602	84.676	84.750	8.74	548



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	15	41	31	+16.49	+10.99	+3.36	+11.45	+7.63

**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	42	66	17	+24.50	+5.81	+3.54	+9.57	+2.27

**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	3	3	2	46.71	179.51	+3.36	47.58	182.87

**MORTGAGES**





UNCLASSIFIED



**RATING BY EACH BOND TYPE**

**GOVERNMENTS - RATING DETAILS**

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$ )	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	41	63	14	+19.65	+4.75	+3.36	+5.76	+1.39
BB+	<1	2	2	+0.90	+21.95	+3.30	+0.76	+18.65
NR	<1	1	1	+3.94	+98.99	+22.46	+3.05	+76.53

**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-	3	8	7	+9.63	+30.54	+3.36	+8.57	+27.18	
BBB	2	5	5	2.58	11.11	+3.36	3.36	14.47	
AA-	2	3	2	+5.58	+30.25	+3.36	+4.96	+26.89	
BB+	2	2	2	+1.20	+6.88	+3.36	+0.61	+3.52	
A-	2	7	3	+2.59	+16.92	+3.36	+2.07	+13.56	
BB-	1	3	3	+0.36	+2.69	+3.36	0.09	0.67	
BB	1	2	2	+2.88	+24.18	+3.36	+2.48	+20.82	
BBB+	<1	3	2	2.30	32.54	+3.36	2.54	35.90	
AA	<1	1	1	1.14	18.43	+3.36	1.35	21.79	
A	<1	1	1	0.35	20.18	+3.36	0.41	23.54	
AAA	<1	4	1	+1.01	+65.19	+3.36	+0.96	+61.83	
A+	<1	1	1	0.38	24.89	+3.36	0.43	28.25	
B+	<1	1	1	+0.00	+0.00	+3.36	0.02	3.36	

**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
BB+	2	1	1	41.55	217.95	+3.36	42.19	221.31
AAA	<1	2	1	5.16	74.17	+3.36	5.39	77.53



**COUNTRIES BY EACH BOND TYPE**

GOVERNMENTS								
Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	41	63	14	+19.65	+4.75	+3.36	+5.76	+1.39
ARGENTINA	<1	1	1	+3.94	+98.99	+22.46	+3.05	+76.53
SINGAPORE	<1	1	1	+0.87	+29.81	+3.75	+0.76	+26.06
GERMANY	<1	1	1	+0.03	+2.74	+2.19	+0.01	+0.55



**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	15	41	31	+16.49	+10.99	+3.36	+11.45	+7.63



**COUNTRIES BY EACH BOND TYPE**

<b>MORTGAGES</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	3	3	2	46.71	179.51	+3.36	47.58	182.87

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
10/01/2016-12/31/2016	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
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

**HISTORICAL DATA**

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Year-Ending 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	37	27	BLOOMBERGTERMINAL	90.51 %
	3	3	ISSUE PRICE	8.38 %
	1	1	MARKETAXESS-SUMMARYDATA	1.11 %
GOVERNMENTS	64	16	BLOOMBERGTERMINAL	97.36 %
	2	2	ISSUE PRICE	2.64 %
MORTGAGES	3	2	BLOOMBERGTERMINAL	100.00 %

## DISCLAIMER

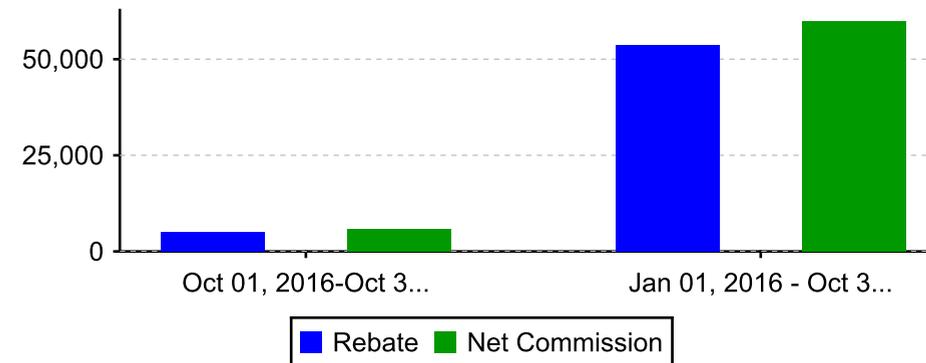
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**Sacramento County Employees Retirement System**

Currency: USD	Oct 01, 2016- Oct 31, 2016	Jan 01, 2016- Oct 31, 2016
<b>Opening Balance</b>	3,442.46	6,257.54
<b>Rebate</b>	5,153.81	53,789.93
<b>Payments</b>	-3,442.46	-54,893.66
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	5,153.81	5,153.81
<b>Commission</b>	8,827.37	97,987.65
<b>Net Commission</b>	5,726.46	59,766.59

**Rebate vs Net Commission(USD)**



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**Manager Breakout**

Currency: USD

Money Manager	10/01/2016 - 10/31/2016			01/01/2016 - 10/31/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Brown Advisory	.00	.00	.00	200.40	132.26	146.96
Dalton, Greiner, Hartman, Maher & Company	3,376.55	2,214.30	2,460.33	13,379.85	8,922.71	9,914.12
Eagle Capital Management	.00	.00	.00	15,355.71	8,061.76	8,957.51
Lazard Asset Management	.00	.00	.00	6,267.43	2,534.97	2,816.64
M.A. Weatherbie & Co.	3,483.96	1,724.56	1,916.18	37,604.60	18,614.16	20,682.40
UBS Global Asset Mgmt.	419.71	180.87	200.97	6,572.50	3,186.50	3,540.55

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Currency: USD	10/01/2016 - 10/31/2016			01/01/2016 - 10/31/2016		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Urdang Investment Management	1,273.55	869.92	966.58	15,175.94	10,278.84	11,420.93
Wedge Capital Mgmt	273.60	164.16	182.40	3,431.22	2,058.73	2,287.48
<b>Total:</b>	<b>8,827.37</b>	<b>5,153.81</b>	<b>5,726.46</b>	<b>97,987.65</b>	<b>53,789.93</b>	<b>59,766.59</b>

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**Broker Breakout**

Currency: USD

Broker	10/01/2016 - 10/31/2016			01/01/2016 - 10/31/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	4,650.10	3,084.22	3,426.91	43,911.50	27,263.30	30,292.56
ConvergEx Group	.00	.00	.00	200.40	132.26	146.96
HSBC Securities	.00	.00	.00	3,170.90	1,141.52	1,268.36
ITG Inc	3,483.96	1,724.56	1,916.18	37,604.60	18,614.16	20,682.40
Merrill Lynch	693.31	345.03	383.37	10,003.72	5,245.22	5,828.03
SG Securities	.00	.00	.00	3,096.53	1,393.45	1,548.28

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Currency: USD		10/01/2016 - 10/31/2016			01/01/2016 - 10/31/2016		
Broker		Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
	<b>Total:</b>	8,827.37	5,153.81	5,726.46	97,987.65	53,789.93	59,766.59

### Commission Recapture Payments

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of September	10/21/2016	10/21/2016	10/21/2016	201609	3,442.46	
<b>Total:</b>						3,442.46	

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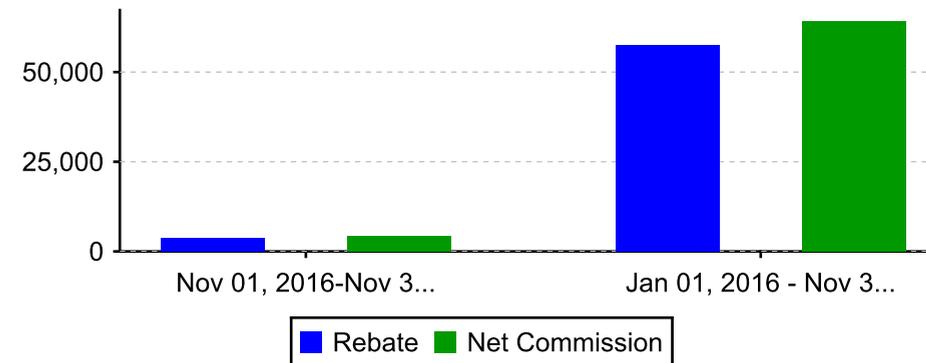
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**Sacramento County Employees Retirement System**

Currency: USD	Nov 01, 2016- Nov 30, 2016	Jan 01, 2016- Nov 30, 2016
<b>Opening Balance</b>	5,153.81	6,257.54
<b>Rebate</b>	3,864.45	57,654.38
<b>Payments</b>	-5,153.81	-60,047.47
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	3,864.45	3,864.45
<b>Commission</b>	7,618.13	105,605.78
<b>Net Commission</b>	4,293.84	64,060.42

**Rebate vs Net Commission(USD)**



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**Manager Breakout**

Currency: USD

Money Manager	11/01/2016 - 11/30/2016			01/01/2016 - 11/30/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Brown Advisory	.00	.00	.00	200.40	132.26	146.96
Dalton, Greiner, Hartman, Maher & Company	.00	.00	.00	13,379.85	8,922.71	9,914.12
Eagle Capital Management	.00	.00	.00	15,355.71	8,061.76	8,957.51
Lazard Asset Management	.00	.00	.00	6,267.43	2,534.97	2,816.64
M.A. Weatherbie & Co.	5,701.16	2,822.11	3,135.68	43,305.76	21,436.27	23,818.08
UBS Global Asset Mgmt.	724.16	280.18	311.31	7,296.66	3,466.68	3,851.86

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Currency: USD	11/01/2016 - 11/30/2016			01/01/2016 - 11/30/2016		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Urdang Investment Management	645.60	435.11	483.45	15,821.54	10,713.94	11,904.38
Wedge Capital Mgmt	547.21	327.05	363.39	3,978.43	2,385.78	2,650.87
<b>Total:</b>	<b>7,618.13</b>	<b>3,864.45</b>	<b>4,293.84</b>	<b>105,605.78</b>	<b>57,654.38</b>	<b>64,060.42</b>

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**Broker Breakout**
**Currency: USD**

Broker	11/01/2016 - 11/30/2016			01/01/2016 - 11/30/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	645.60	435.11	483.45	44,557.10	27,698.41	30,776.01
ConvergEx Group	.00	.00	.00	200.40	132.26	146.96
HSBC Securities	.00	.00	.00	3,170.90	1,141.52	1,268.36
ITG Inc	5,701.16	2,822.11	3,135.68	43,305.76	21,436.27	23,818.08
Merrill Lynch	1,271.37	607.24	674.71	11,275.09	5,852.46	6,502.73
SG Securities	.00	.00	.00	3,096.53	1,393.45	1,548.28

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Currency: USD		11/01/2016 - 11/30/2016			01/01/2016 - 11/30/2016		
Broker		Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
	<b>Total:</b>	7,618.13	3,864.45	4,293.84	105,605.78	57,654.38	64,060.42

### Commission Recapture Payments

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of October	11/21/2016	11/21/2016	11/21/2016	201610	5,153.81	
<b>Total:</b>						5,153.81	

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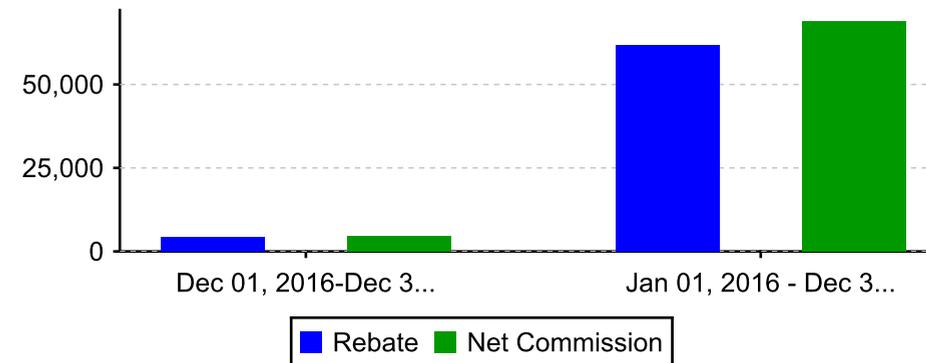
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**Sacramento County Employees Retirement System**

Currency: USD	Dec 01, 2016- Dec 31, 2016	Jan 01, 2016- Dec 31, 2016
<b>Opening Balance</b>	3,864.45	6,257.54
<b>Rebate</b>	4,291.60	61,945.98
<b>Payments</b>	-3,864.45	-63,911.92
<b>Adjustments</b>	.00	.00
<b>Closing Balance</b>	4,291.60	4,291.60
<b>Commission</b>	7,731.94	113,337.72
<b>Net Commission</b>	4,768.44	68,828.86

**Rebate vs Net Commission(USD)**



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**Manager Breakout**

Currency: USD

Money Manager	12/01/2016 - 12/31/2016			01/01/2016 - 12/31/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Brown Advisory	.00	.00	.00	200.40	132.26	146.96
Dalton, Greiner, Hartman, Maher & Company	681.25	459.85	510.94	14,061.10	9,382.55	10,425.06
Eagle Capital Management	.00	.00	.00	15,355.71	8,061.76	8,957.51
Lazard Asset Management	.00	.00	.00	6,267.43	2,534.97	2,816.64
M.A. Weatherbie & Co.	1,122.76	555.77	617.52	44,428.52	21,992.04	24,435.60
UBS Global Asset Mgmt.	3,762.11	2,014.35	2,238.17	11,058.77	5,481.03	6,090.03

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Currency: USD	12/01/2016 - 12/31/2016			01/01/2016 - 12/31/2016		
Money Manager	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Urdang Investment Management	2,065.02	1,201.15	1,334.61	17,886.56	11,915.09	13,238.99
Wedge Capital Mgmt	100.80	60.48	67.20	4,079.23	2,446.26	2,718.07
<b>Total:</b>	<b>7,731.94</b>	<b>4,291.60</b>	<b>4,768.44</b>	<b>113,337.72</b>	<b>61,945.98</b>	<b>68,828.86</b>

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**Broker Breakout**

Currency: USD

Broker	12/01/2016 - 12/31/2016			01/01/2016 - 12/31/2016		
	Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
Capital Institutional Services (CAPIS)	2,746.27	1,661.00	1,845.55	47,303.37	29,359.40	32,621.56
ConvergEx Group	.00	.00	.00	200.40	132.26	146.96
HSBC Securities	.00	.00	.00	3,170.90	1,141.52	1,268.36
ITG Inc	1,122.76	555.77	617.52	44,428.52	21,992.04	24,435.60
Merrill Lynch	3,862.91	2,074.83	2,305.37	15,138.00	7,927.29	8,808.10
SG Securities	.00	.00	.00	3,096.53	1,393.45	1,548.28

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Currency: USD		12/01/2016 - 12/31/2016			01/01/2016 - 12/31/2016		
Broker		Commission	Rebate	Net Commission	Commission	Rebate	Net Commission
	<b>Total:</b>	7,731.94	4,291.60	4,768.44	113,337.72	61,945.98	68,828.86

### Commission Recapture Payments

Currency: USD

Vendor	Service	Request Date	Payment Date	Invoice Date	Invoice #	Amount	Payment Method
Payment	Payment of November	12/21/2016	12/21/2016	12/21/2016	201611	3,864.45	
<b>Total:</b>						<b>3,864.45</b>	

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