



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 9

MEETING DATE: August 15, 2018

SUBJECT: Trading Activity Report – Second Quarter 2018

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Quarterly Trading Activity Report for the quarter ending June 30, 2018.

PURPOSE

This agenda item does not specifically support the 2018-19 Strategic Management Plan, but complies with SCERS' investment policy statement reporting requirements and provides a summary of SCERS' investment manager trade execution and Elkins / McSherry Quarterly Trade Cost Summary Report. This item contributes to the effective management and oversight of investment activities.

DISCUSSION

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

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

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

(VWAP). VWAP is the average security price weighted by the share volume traded that day.

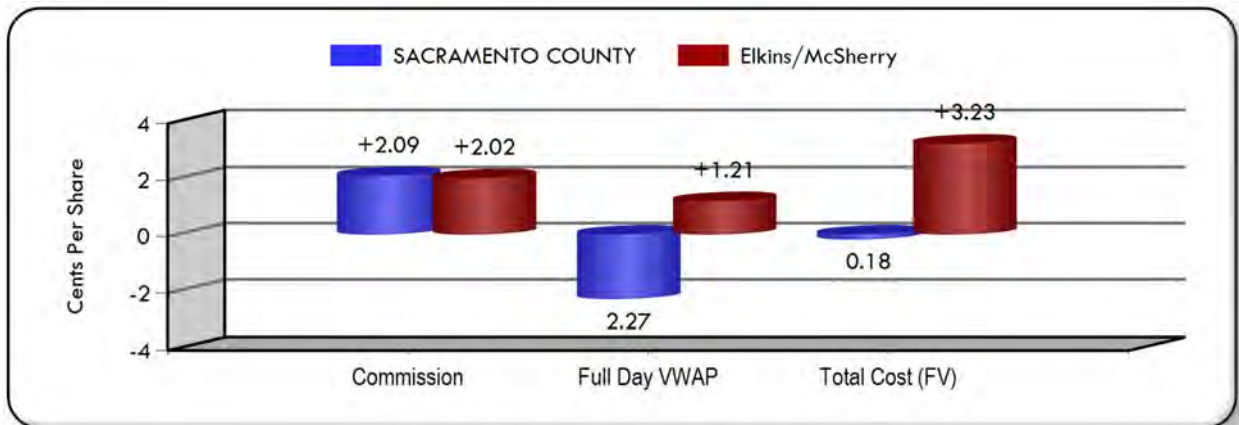
3. Total trading costs.

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

SCERS TRADE COST SUMMARY

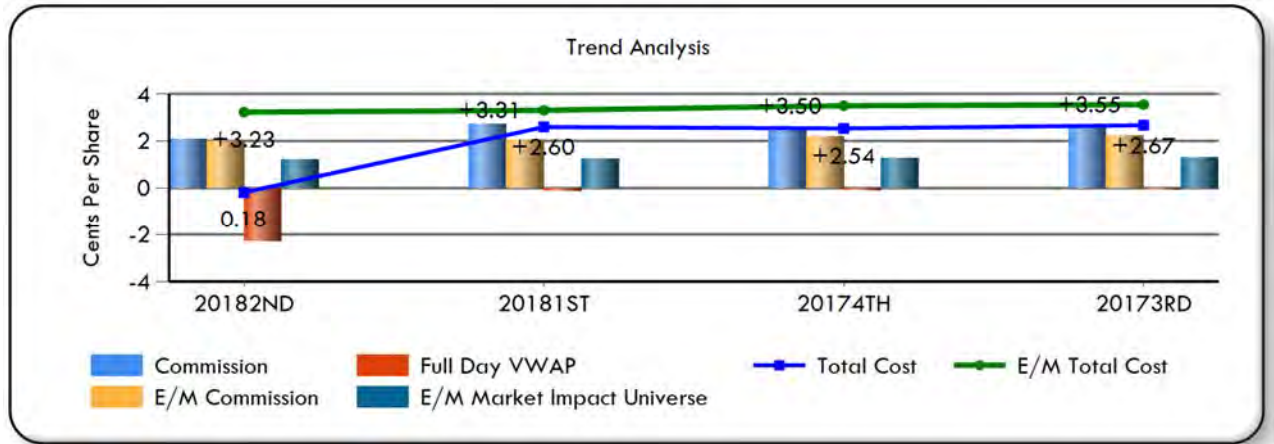
U.S. EQUITY

- SCERS’ U.S. equity managers traded 4.6 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$191.3 million in principal, and ranked in the 55th percentile among the E/M U.S. Equity universe.
- SCERS’ total trading costs equaled -0.18 cps, which is 3.41 cps lower than the peer group at +3.23 cps, as follows:
 - Commission cost of +2.09 cps versus +2.02 cps
 - Market impact cost of -2.27 cps versus +1.21 cps



- SCERS’ total trading costs were better than 94% of the peer group.
- A majority of SCERS’ U.S. Equity managers experienced unfavorable commission costs compared to the U.S. Equity peer group. Managers with commission costs greater than the average peer group cost of +2.02 cps include:
 - DGHM at +3.70 cps
 - Weatherbie at +3.53 cps
 - Wedge Capital at +2.85 cps
 - Brown Advisory at +2.50 cps
 - UBS Global at +2.43 cps
 - Eagle Capital at +2.30 cps

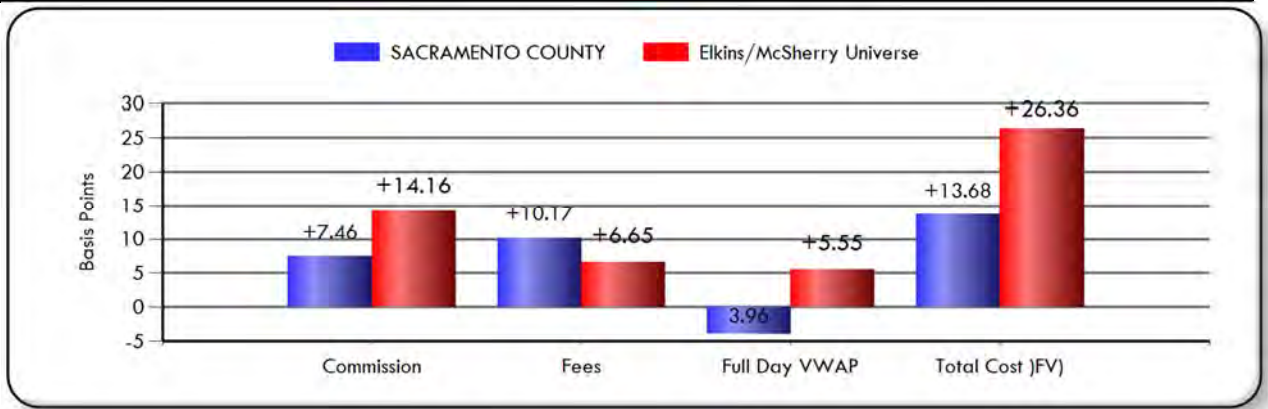
- As illustrated below, SCERS’ managers have generally been generating higher commission costs than the peer group.
- SCERS’ total trading costs have been consistently below the total trading costs of the E/M universe, with the difference averaging 1.49 cps over the past four quarters.



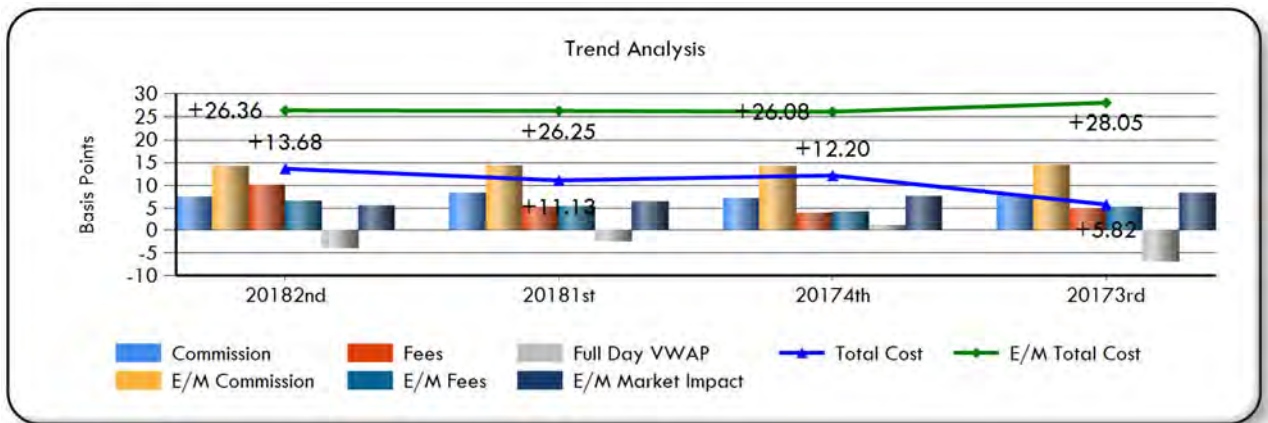
- The U.S. small cap managers (Weatherbie, UBS Global, DGHM, and Wedge Capital) will typically incur additional commission costs in the form of a soft dollar relationship where, in return for conducting trades through a brokerage firm, the manager receives the brokerage firm’s research, generally an additional +2.0 cps.
- According to Elkins / McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.62 cps, which is higher than all of SCERS’ U.S. Small Cap managers, except for DGHM at +3.70 cps in the second quarter.
- The majority of SCERS’ U.S. Equity managers experienced favorable market impact costs compared to the peer group cost of +1.21 cps, except the following managers:
 - Brown Advisory at +15.72 cps
 - Weatherbie at +8.33 cps
 - UBS Global at +2.19 cps

INTERNATIONAL EQUITY

- SCERS’ International Equity managers traded 12.0 million shares totaling \$152.4 million in principal across 28 countries.
- Total trading cost equaled +13.68 bps, which is 12.69 bps lower than the peer group at +26.36 bps, as follows:
 - Commission cost of +7.46 bps versus +14.16 bps
 - Fees (country taxes, tariffs) of +10.17 bps versus +6.65 bps
 - Market impact cost of -3.96 bps versus +5.55 bps



- All of SCERS’ International Equity managers analyzed generated commission costs (ranging from +4.73 bps to +9.06 bps), significantly less than the E/M peer group (ranging from +14.01 bps to +14.31 bps). This result is consistent with the previous quarters’ lower trade costs versus the peer group, as illustrated below (commission vs. E/M commission).
- All of SCERS’ International Equity managers experienced favorable market impact cost versus the peer group during the quarter (full day VWAP vs. E/M market impact).
- SCERS’ total international trading costs have been consistently below the total trading costs of the E/M universe, with the difference averaging 15.98 bps over the past four quarters.



U.S. FIXED INCOME

- SCERS’ U.S. Fixed Income managers conducted 378 trades totaling \$779 million in principal, as follows:
 - Governments: 227 trades totaling \$494 million
 - Mortgages: 85 trades totaling \$236 million
 - Corporates: 66 trades totaling \$50 million
- Total trading cost equaled +2.62 bps, which is 6.96 bps lower than the E/M peer group, as follows:

- Governments at +1.22 bps versus +11.09 bps
- Mortgages at +6.46 bps versus +5.69 bps
- Corporates at -1.77 bps versus +12.97 bps
- As illustrated below, the total trade cost (in basis points) is slightly higher than previous quarters' trade costs, but still significantly lower compared to the peer group. SCERS' overall trading volume (in Principal) is consistent with previous quarters, with the exception of first quarter 2018, which was higher due to rebalancing performed across the fixed income portfolio.

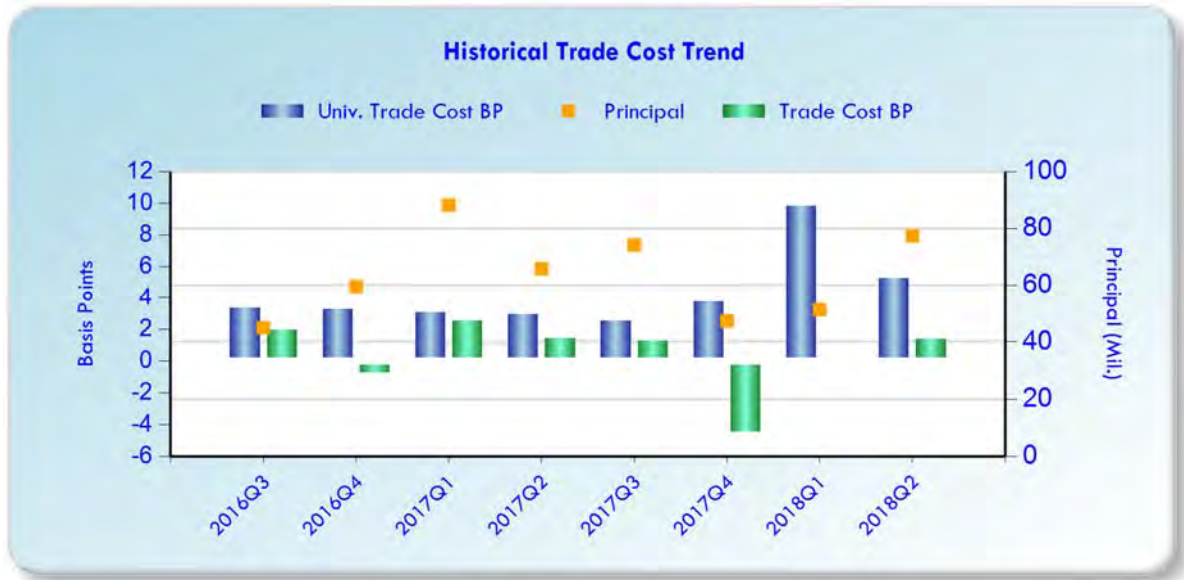


- Comparing SCERS' U.S. Fixed Income Core Plus and Treasury managers trade costs versus their peer group is as follows:
 - TCW / MetWest (Core Plus) at +2.61 bps versus +9.68 bps
 - NeubergerBerman (Treasury) at +2.73 bps versus +10.22 bps

INTERNATIONAL FIXED INCOME

- SCERS is invested with Brandywine Global Fixed Income's commingled fund; therefore, trading activity is not tracked.
- Prudential, SCERS' Core Plus Fixed Income manager, is permitted up to a 20% allocation in international bonds or non-U.S. denominated bonds, which is reported as follows:
 - Prudential conducted 217 international trades totaling \$77.5 million in principal as follows:
 - Governments: 105 trades totaling \$38 million
 - Corporates: 105 trades totaling \$37 million
 - Mortgages: 7 trades totaling \$2 million

- Total trading cost was +1.62 bps, which was 3.89 bps lower than the E/M peer group cost of +5.51 bps, as follows:
 - Governments at +1.62 bps versus +5.51 bps
 - Corporates at +0.01 bps versus +5.51 bps
 - Mortgages at +28.04 bps versus +5.51 bps
- Trading costs were in line with previous quarters' results, as illustrated below.



COMMISSION RECAPTURE

- SCERS' commission recapture program, administered by State Street, instructs investment managers to trade with the program's brokerage partners but only if the trade cost is lower and is the best execution.
- For the second quarter of 2018, SCERS' brokerage partners provided a rebate back to SCERS for approximately 50% of the commissions paid.
 - For the quarter ending June 30, 2018, the commission rebate totaled \$12,336.
 - Year to date through June 30, 2018, the commission rebate totaled \$28,489.
 - For comparison, the commission rebate for the year to date through June 30, 2017 totaled \$27,641.

ATTACHMENTS

1. Elkins / McSherry Trading Cost Summary report for the quarter ending June 30, 2018 for U.S. equity, international equity, U.S. fixed income, and global fixed income.

Prepared by:

/S/

Brian Miller
Investment Officer

Reviewed by:

/S/

Steve Davis
Chief Investment Officer

/S/

Eric Stern
Chief Executive Officer



SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End June 30, 2018



REPORT CONTENTS

Tab 1 : Executive Summary

- **Results / Methodology**
- **Performance vs. Universe / Trading Components**
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- **Order Size Performance**
- **Commission Review**

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- **Manager Performance**
- **Broker Performance**

Tab 3 : High / Low Cost Trades

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



(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates U.S. equity executions from April 1, 2018 to June 30, 2018. The analysis included trading of 4,581,935 shares representing \$191.34 million in principal.

Methodology :

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

Results :

BENCHMARK PERFORMANCE

Commission	Full Day VWAP	E - Score
<ul style="list-style-type: none"> Your commission cost was +2.09 cps (+5.01 bp) or +\$95,937 (+0.08 cps (+0.18 bp) worse than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact savings was 2.27 cps (5.43 bp) or 3.48 cps (8.34 bp) better than the Elkins/McSherry Universe Your overall trading savings of 0.18 cps (0.42 bp) was 3.41 cps (8.16 bp) better than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 93% Total Cost Universe Rank: 94% 	<ul style="list-style-type: none"> E-Score Rank : 55 E-Score : 0.60

ELKINS/MCSHERRY UNIVERSE VALUES

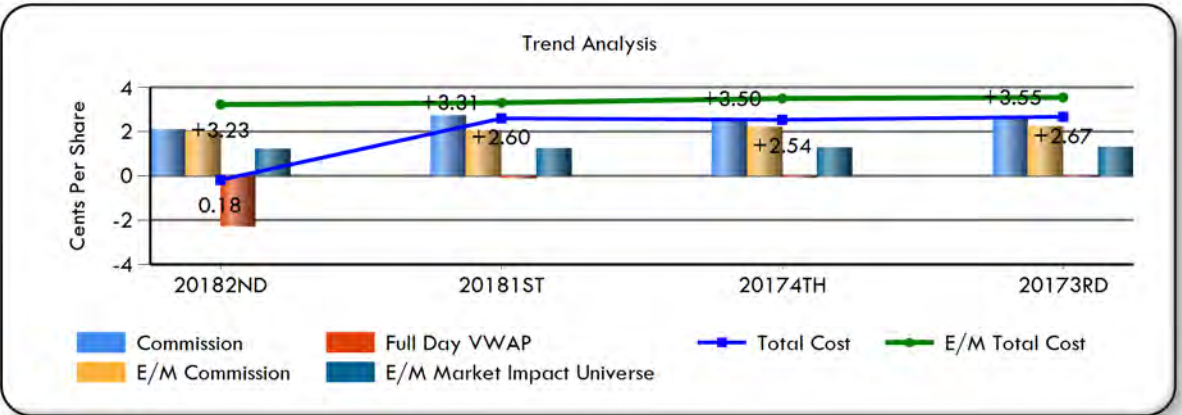
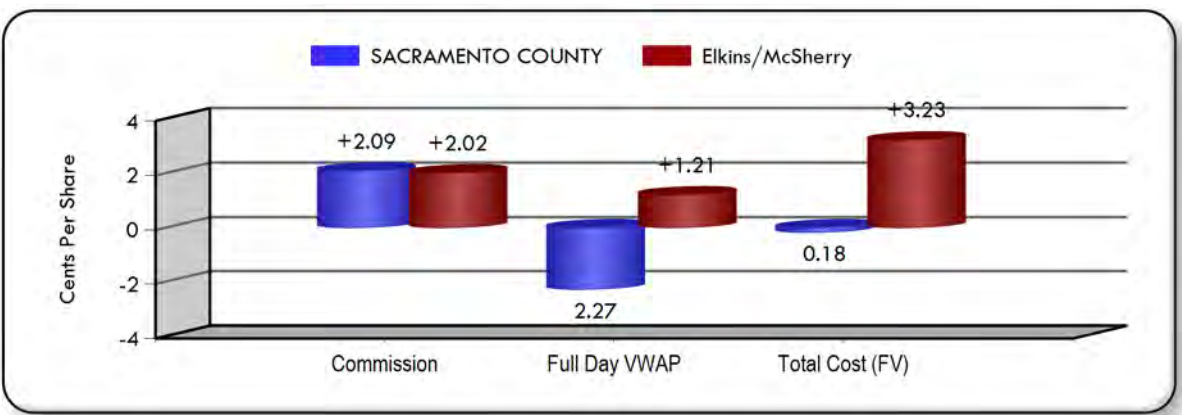
Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program		Full Day VWAP
+3.62	+2.02	+1.12	+1.29	Median	+1.21
				75 %	+0.07
				25 %	+3.03



(+) = Cost **EXECUTIVE SUMMARY**

TOTAL PORTFOLIO COST PERFORMANCE									
Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score (Rank)	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)		
Sells	+2.12	+2.02	+3.62	0.99	+1.21	+1.14	2.09	54	0.60
Buys	+2.08	+2.02	+3.62	3.09	+1.21	1.01	4.24	55	0.60
Total	+2.09	+2.02	+3.62	2.27	+1.21	0.18	3.41	55	0.60

TRADING COMPONENTS		
	Buys	Sells
Trade Principal	105,710,936	85,632,664
Shares	2,796,278	1,785,657
Unique Names	671	512
Liquidity (% ADV)	0.089	0.06
Avg. Execution Size	2,228	1,876
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,255	952



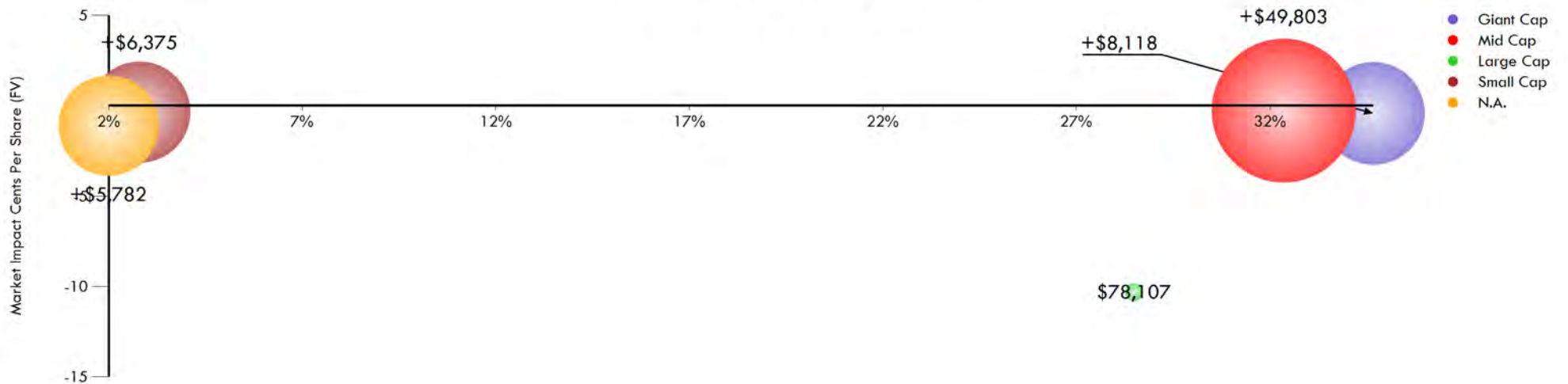
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EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded (\$)	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost (cps)	Total Cost/Savings (cps)	E - Score (Rank)	E - Score	Market Cap Definition
			Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP %					
Giant Cap	34.61 %	1,864	+1.36	+2.02	0.43	+1.31	67 %	+0.92	2.40	49	0.69	Over \$25 B
Mid Cap	32.29 %	2,968	+2.46	+2.02	0.27	+1.01	74 %	+2.18	0.84	65	0.46	\$1 B To \$5 B
Large Cap	28.42 %	1,023	+1.33	+2.02	10.32	+1.61	97 %	8.99	12.62	52	0.65	\$5 B To \$25 B
Small Cap	2.74 %	2,128	+2.99	+2.02	0.36	+0.45	68 %	+2.63	+0.16	62	0.49	\$250 M To \$1 B
N.A.	1.94 %	77,531	+2.97	+2.02	1.10	+1.21	89 %	+1.86	1.37	42	0.80	

Total Cost by Market Cap: (USD)

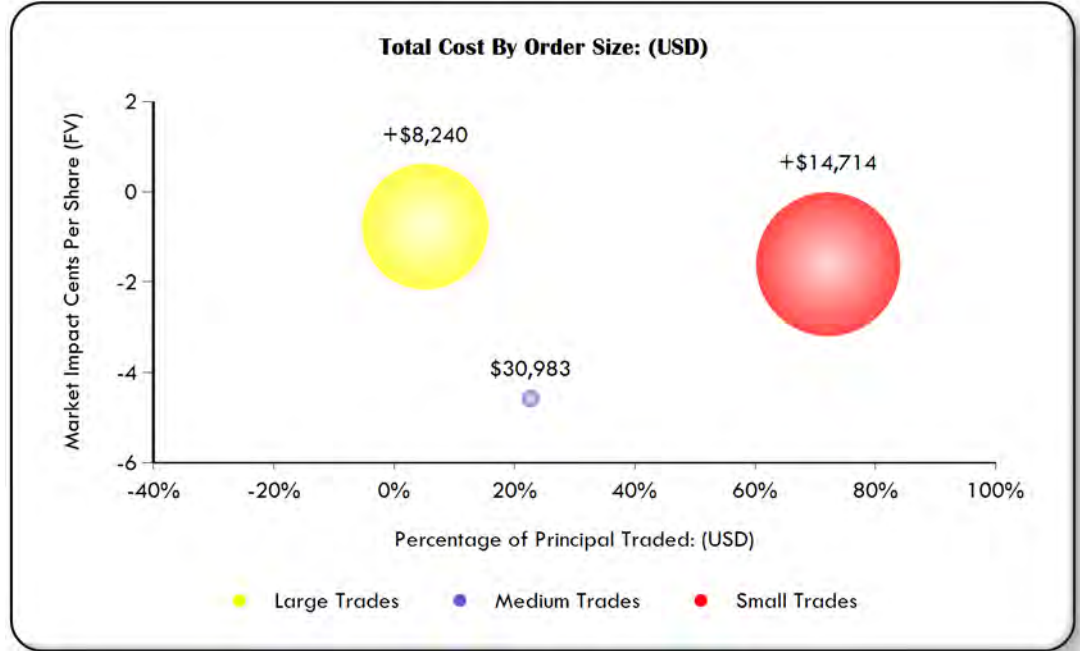
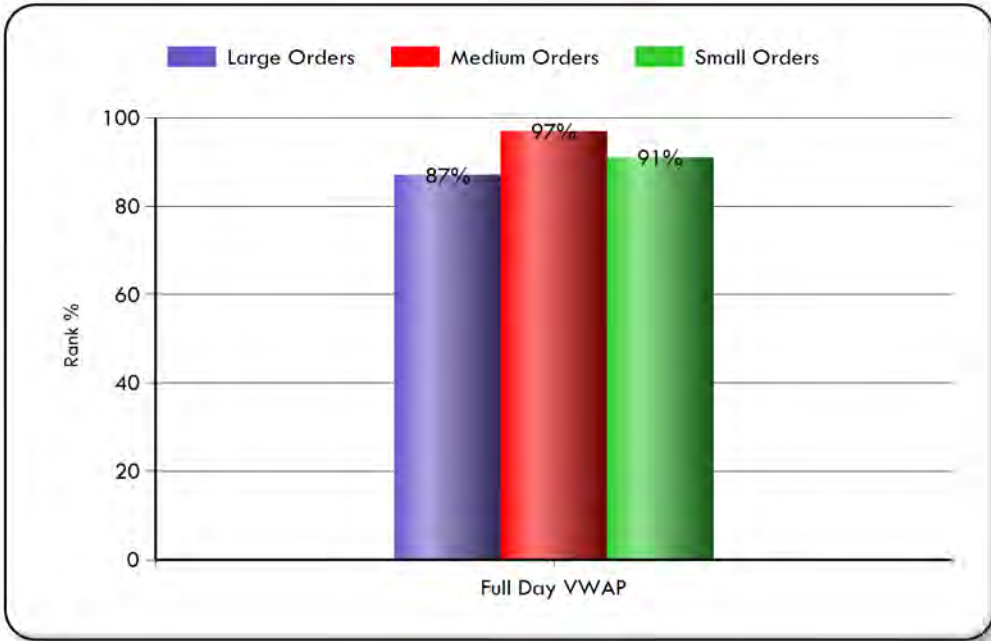


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EXECUTIVE SUMMARY

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)			
Large Orders	5	131,296	N/A	+2.03	+2.02	0.77	+1.21	87 %	+1.26	1.98	53	0.62	50K Or More
Med. Orders	61	19,594	N/A	+2.02	+2.02	4.45	+1.21	97 %	2.42	5.66	62	0.50	10K-50K
Small Orders	2,141	1,275	N/A	+2.14	+2.02	1.68	+1.21	91 %	+0.47	2.77	53	0.63	10K Or Less





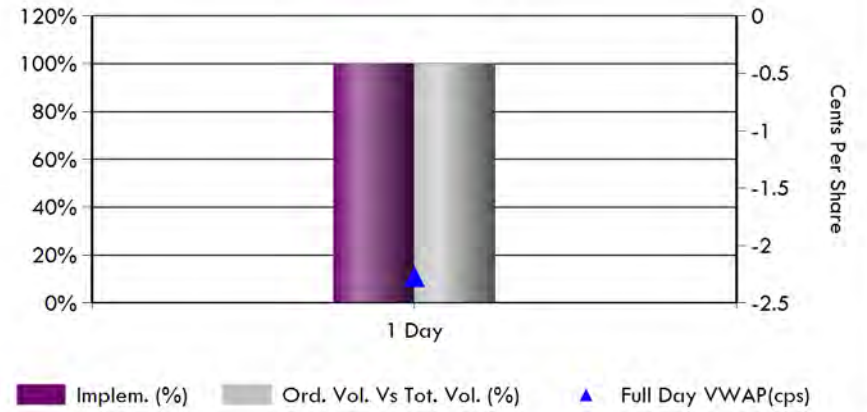
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EXECUTIVE SUMMARY

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%	2.27	55	0.60

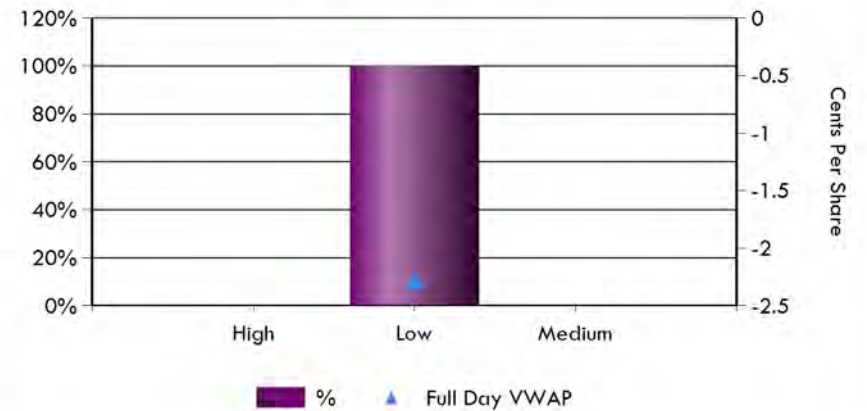
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
0%~20% of daily vol.	L	100%	2.27	55	0.60

Avg. % of Daily Volume





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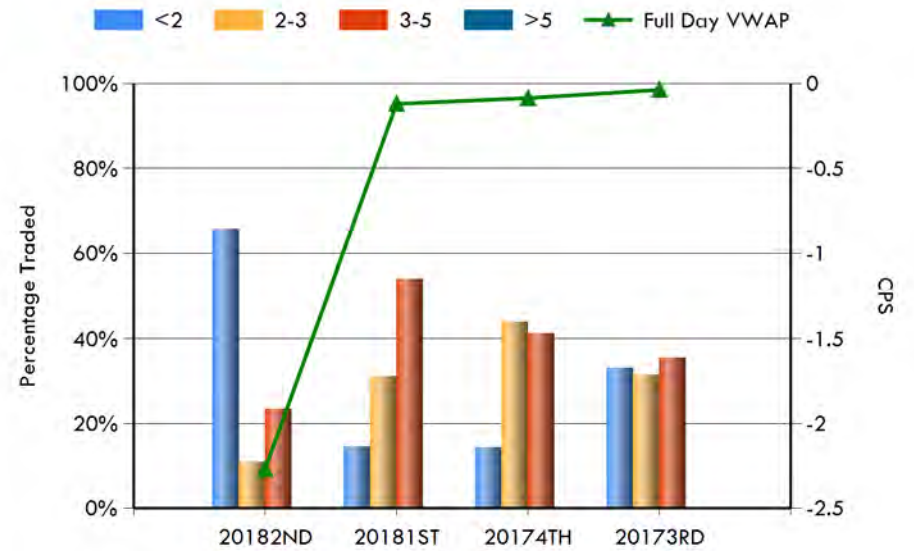
EXECUTIVE SUMMARY

COMMISSION REVIEW

Top 10 Broker

Broker	Total Commission (\$)	Commission 20182nd (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Commission Trends		
					20181ST (cps)	20174TH (cps)	20173RD (cps)
CAPITAL IN	17,423	+3.08	+2.02	+3.62	+2.99	+3.47	+3.28
LIQUIDNET	12,166	+2.26	+2.02	+3.62	+2.64	+2.42	+2.28
COWEN & CO	6,450	+3.89	+2.02	+3.62	+3.27	+3.27	+2.45
CONVERGEX	5,454	+3.93	+2.02	+3.62	+4.65	+4.08	+3.19
JP MORGAN	4,521	+1.09	+2.02	+3.62	+3.49	+4.21	+3.98
ITG	3,986	+2.56	+2.02	+3.62	+3.42	+3.28	+3.21
WEEDEN & C	3,829	+3.15	+2.02	+3.62	+3.50	+3.49	+3.50
THEMIS TRA	3,446	+3.60	+2.02	+3.62	+3.32	+1.60	+1.60
JEFFERIES	3,368	+3.18	+2.02	+3.62	+3.15	+2.45	+3.35
WILLIAM BL	3,337	+3.64	+2.02	+3.62	+3.57	+3.42	+3.60

Commission Category Trend

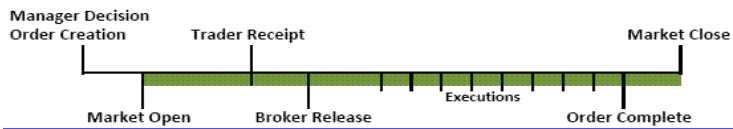


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(+) = Cost

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	20181ST (%)	20174TH (%)	20173RD (%)
ALLIANCE R 3000 CAPI	54	798	1,071,903	34	0.94	+0.16	+2.02	8.37	99 %	11.45	93	99	94
EAGLE CAPITAL MANAGE	46	36,220	905,501	59	0.54	+2.30	+2.02	4.61	97 %	5.54	97	87	96
DALTON, GREINER, HAR	25	3,439	918,241	70	0.39	+3.70	+2.02	2.44	93 %	1.97	95	95	93
WEATHERBIE	24	2,376	510,918	64	0.47	+3.53	+2.02	+8.33	4 %	+8.63	32	79	4
UBS GLOBAL ASSET MGM	11	2,243	291,571	61	0.51	+2.43	+2.02	+2.19	33 %	+1.39	26	13	96
WEDGE CAPITAL MGMT L	11	3,424	359,564	76	0.31	+2.85	+2.02	+0.31	72 %	0.07	38	66	79
HUBER CAPITAL MANAGE	10	8,955	456,700	64	0.47	+0.53	+2.02	2.36	93 %	5.06	51	97	95
BROWN ADVISORY	10	951	67,537	70	0.38	+2.50	+2.02	+15.72	1 %	+14.99	96	91	12

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	E - Score Rank	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		Commission + Full Day VWAP Vs. Universe	20181ST (%)	20174TH (%)
CITIGROUP	36	1,467	990,140	34	0.94	525	+0.05	+2.02	10.80	99 %	13.98	60	97	99
LIQUIDNET	35	6,118	538,425	60	0.52	12,166	+2.26	+2.02	3.72	96 %	4.69	94	87	95
JP MORGAN CHASE	21	598	414,680	37	0.89	4,521	+1.09	+2.02	+2.42	30 %	+0.28	1	34	84
CAPITAL INSTL SVCS	17	17,164	566,424	61	0.50	17,423	+3.08	+2.02	+2.15	33 %	+2.00	95	93	81
UBS	10	4,121	201,916	68	0.41	2,529	+1.25	+2.02	2.99	95 %	4.96	52	79	76
ITG	8	3,532	155,428	61	0.51	3,986	+2.56	+2.02	7.41	99 %	8.08	35	55	97
SC BERNSTEIN	7	2,139	128,361	67	0.42	3,014	+2.35	+2.02	0.83	87 %	1.71	99	7	46
THEMIS TRADING LLC	6	1,994	95,723	64	0.46	3,446	+3.60	+2.02	+17.01	1 %	+17.38	6	92	1
GOLDMAN SACHS	5	2,529	123,921	54	0.61	2,656	+2.14	+2.02	0.54	84 %	1.63	97	9	23
CONVERGEX	5	2,571	138,854	67	0.43	5,454	+3.93	+2.02	5.44	98 %	4.74	98	99	90

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

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	20181ST (%)	20174TH (%)	20173RD (%)
COWEN & CO	4	4,871	165,619	68	0.41	6,450	+3.89	+2.02	+1.61	40 %	+2.27	60	10	88
WILLIAM BLAIR	4	3,165	91,790	66	0.44	3,337	+3.64	+2.02	5.99	98 %	5.58	93	99	1
WEEDEN & CO	4	2,427	121,354	66	0.44	3,829	+3.15	+2.02	0.50	83 %	0.57	38	93	96
RBC CAPITAL MARKETS	3	2,033	83,339	75	0.32	2,350	+2.82	+2.02	1.74	92 %	2.15	98	97	91
JEFFERIES & CO	2	3,658	106,074	63	0.48	3,368	+3.18	+2.02	+0.66	62 %	+0.60	84	23	97
STIFEL NICOLAUS & CO	2	3,963	59,444	63	0.48	2,275	+3.83	+2.02	+20.98	1 %	+21.58	22	46	10
INSTINET	2	1,593	46,201	56	0.57	1,097	+2.38	+2.02	+12.48	1 %	+11.62	6	98	1
MORGAN STANLEY	2	3,334	43,342	76	0.31	1,477	+3.41	+2.02	1.04	89 %	0.87	96	7	98
JONES TRADING	1	5,058	60,696	83	0.22	1,214	+2.00	+2.02	+0.70	62 %	0.54	34	97	94
CREDIT SUISSE	1	911	19,136	79	0.26	559	+2.92	+2.02	7.69	99 %	8.01	92	97	3

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

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	20181ST (%)	20174TH (%)	20173RD (%)
MERRILL LYNCH	1	5,098	30,589	86	0.17	744	+2.43	+2.02	+0.09	75 %	0.71	2	24	71
STEPHENS & CO INC	1	2,429	26,714	58	0.55	1,042	+3.90	+2.02	+9.40	1 %	+10.07	15	98	99
BARCLAYS	1	3,261	26,084	80	0.26	812	+3.11	+2.02	6.69	98 %	6.81	49	90	90
BROADCORT CAPITAL	1	1,391	12,520	90	0.12	390	+3.11	+2.02	+7.63	5 %	+7.51	90	6	1
PIPER JAFFRAY	1	3,125	28,129	64	0.46	1,143	+4.06	+2.02	+9.81	1 %	+10.64	89	96	28
CRAIG - HALLUM	1	2,510	25,103	83	0.22	904	+3.60	+2.02	8.00	99 %	7.63	-	70	24
RAYMOND JAMES	<1	6,378	31,892	82	0.22	1,265	+3.97	+2.02	0.01	77 %	+0.72	86	7	97
CANTOR FITZGERALD	<1	5,822	75,687	72	0.37	1,514	+2.00	+2.02	+0.79	59 %	0.44	92	32	61
B.RILEY & CO	<1	2,935	20,545	81	0.25	719	+3.50	+2.02	+0.18	74 %	+0.45	44	96	-
BAIRD, ROBERT W	<1	3,287	23,007	62	0.49	782	+3.40	+2.02	0.51	84 %	0.34	99	14	75

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

NOTES

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS Commission + Full Day VWAP Vs. Universe	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		20181ST (%)	20174TH (%)	20173RD (%)
NEEDHAM & CO INC	<1	2,152	12,909	61	0.50	501	+3.88	+2.02	+6.95	7 %	+7.60	12	61	7
CJS SECURITIES	<1	1,432	10,027	52	0.63	501	+5.00	+2.02	11.72	99 %	9.95	-	-	1
KEEFE BRUYETTE WOODS	<1	2,498	17,485	55	0.59	697	+3.99	+2.02	7.39	99 %	6.63	98	-	1
ISI GROUP INC	<1	1,905	17,143	52	0.63	488	+2.85	+2.02	7.29	99 %	7.68	99	33	29
DAVIDSON D.A. & CO	<1	2,085	8,340	92	0.10	391	+4.68	+2.02	+1.77	38 %	+3.23	97	-	-
SEAPORT GROUP SECS	<1	7,060	21,181	77	0.29	829	+3.92	+2.02	0.43	82 %	+0.25	24	92	-
SCOTIA CAPITAL	<1	1,851	3,702	91	0.11	130	+3.50	+2.02	+5.27	12 %	+5.54	99	66	-
NORTHCOAST RESEARCH	<1	3,077	6,154	69	0.40	277	+4.50	+2.02	6.20	98 %	4.93	13	-	43
OPPENHEIMER & CO INC	<1	1,776	7,103	34	0.94	254	+3.58	+2.02	+8.48	3 %	+8.83	45	96	98
NORTHLAND SECURITIES	<1	1,638	4,913	39	0.84	205	+4.17	+2.02	11.75	99 %	10.80	-	-	33

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

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	2018 1ST (%)	2017 4TH (%)
MAXIM GROUP	<1	1,400	2,800	77	0.30	126	+4.50	+2.02	2.71	94 %	1.44	-	-	-
WOLFE TRAHAN SECS	<1	4,685	9,370	44	0.77	328	+3.50	+2.02	9.42	99 %	9.15	90	-	-
LUMINEX TRADING	<1	5,152	5,152	35	0.92	122	+2.38	+2.02	8.90	99 %	9.76	2	1	99
FIG PARTNERS LLC	<1	2,274	2,274	89	0.14	91	+4.00	+2.02	1.96	92 %	1.19	-	-	-
AUTREPAT-DISTRIBUT	<1	2,095	2,095	67	0.42	0	+0.00	+2.02	+6.82	8 %	+3.58	-	1	-
KEYBANC	<1	150	150	53	0.63	6	+4.00	+2.02	+17.66	1 %	+18.43	91	32	95

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.62	+2.02	+1.12	+1.29	+1.21

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	20181ST (%)	20174TH (%)	20173RD (%)
CITIGROUP	35	1,104	738,269	34	0.93	0	+0.00	+2.02	14.19	99 %	17.42	-	-	-
JP MORGAN CHASE	19	484	325,000	33	0.96	1,625	+0.50	+2.02	+4.09	18 %	+1.36	-	-	-
MORGAN STANLEY	<1	6,539	6,539	34	0.94	39	+0.60	+2.02	+24.39	1 %	+21.76	99	-	-
AUTREPAT-DISTRIBUT	<1	2,095	2,095	67	0.42	0	+0.00	+2.02	+6.82	8 %	+3.58	-	1	-
Grand Total	54	798	1,071,903	34	0.94	1,664	+0.16	+2.02	8.37	99 %	11.45	93	99	94



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
CAPITAL INSTL SVCS	4	1,440	31,689	71	0.37	832	+2.63	+2.02	+43.94	1 %	+43.34	82	95	34
SC BERNSTEIN	2	860	12,040	72	0.36	206	+1.71	+2.02	37.23	99 %	38.75	99	26	94
CREDIT SUISSE	<1	676	4,056	76	0.30	41	+1.00	+2.02	9.68	99 %	11.91	32	99	-
STIFEL NICOLAUS & CO	<1	587	1,761	47	0.72	66	+3.76	+2.02	+90.93	1 %	+91.46	1	99	-
WILLIAM BLAIR	<1	934	2,802	54	0.61	112	+4.00	+2.02	+36.08	1 %	+36.85	2	99	-
ITG	<1	410	2,051	55	0.60	41	+2.00	+2.02	+7.77	4 %	+6.53	13	97	99
LIQUIDNET	<1	1,103	1,103	84	0.20	22	+2.00	+2.02	+18.70	1 %	+17.47	-	97	-
JONES TRADING	<1	3,877	3,877	94	0.07	78	+2.00	+2.02	2.51	94 %	3.74	-	99	-
JEFFERIES & CO	<1	1,219	3,657	74	0.34	146	+4.00	+2.02	48.86	99 %	48.09	1	-	97
JP MORGAN CHASE	<1	499	1,995	67	0.42	51	+2.56	+2.02	+9.51	1 %	+8.84	97	1	99
UBS	<1	346	691	80	0.26	26	+3.77	+2.02	+13.13	1 %	+13.66	74	1	6
MORGAN STANLEY	<1	84	168	88	0.16	3	+1.96	+2.02	22.45	99 %	23.72	1	1	39
BAIRD, ROBERT W	<1	324	648	73	0.34	26	+4.00	+2.02	17.07	99 %	16.31	99	4	99
CITIGROUP	<1	571	571	26	1.10	23	+4.00	+2.02	+58.44	1 %	+59.21	97	-	-
WEEDEN & CO	<1	155	155	87	0.16	3	+2.00	+2.02	+21.45	1 %	+20.22	-	-	-
RAYMOND JAMES	<1	273	273	87	0.16	11	+4.00	+2.02	8.43	99 %	7.66	3	99	-
Grand Total	10	951	67,537	70	0.38	1,688	+2.50	+2.02	+15.72	1 %	+14.99	96	91	12



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
LIQUIDNET	4	2,188	91,879	71	0.38	3,216	+3.50	+2.02	7.20	99 %	6.93	99	52	97
CONVERGEX	3	3,036	118,420	65	0.45	4,718	+3.98	+2.02	8.60	99 %	7.84	98	99	90
COWEN & CO	3	5,771	144,282	74	0.34	5,902	+4.09	+2.02	+0.57	66 %	+1.43	92	52	78
RBC CAPITAL MARKETS	3	2,026	81,046	75	0.32	2,269	+2.80	+2.02	1.93	92 %	2.36	99	98	85
WEEDEN & CO	2	2,769	80,305	77	0.29	2,811	+3.50	+2.02	1.44	90 %	1.17	1	93	82
CAPITAL INSTL SVCS	1	16,001	112,005	60	0.53	3,908	+3.49	+2.02	+2.73	27 %	+2.99	74	88	87
INSTINET	1	2,118	31,772	60	0.53	953	+3.00	+2.02	+8.85	2 %	+8.62	98	-	-
RAYMOND JAMES	<1	14,455	28,910	83	0.22	1,156	+4.00	+2.02	0.26	79 %	+0.51	-	24	94
STIFEL NICOLAUS & CO	<1	3,816	19,080	75	0.32	846	+4.43	+2.02	5.74	98 %	4.54	98	-	-
CJS SECURITIES	<1	1,432	10,027	52	0.63	501	+5.00	+2.02	11.72	99 %	9.95	-	-	1
PIPER JAFFRAY	<1	3,723	14,891	89	0.14	667	+4.48	+2.02	+0.34	71 %	+1.59	99	-	88
ISI GROUP INC	<1	1,905	17,143	52	0.63	488	+2.85	+2.02	7.29	99 %	7.68	37	-	-
MORGAN STANLEY	<1	15,100	15,100	89	0.14	680	+4.50	+2.02	+1.35	45 %	+2.62	-	-	-
DAVIDSON D.A. & CO	<1	2,085	8,340	92	0.10	391	+4.68	+2.02	+1.77	38 %	+3.23	97	-	-
SEAPORT GROUP SECS	<1	7,060	21,181	77	0.29	829	+3.92	+2.02	0.43	82 %	+0.25	24	92	-
WILLIAM BLAIR	<1	4,867	14,600	54	0.61	559	+3.83	+2.02	13.39	99 %	12.79	1	-	-
KEEFE BRUYETTE WOODS	<1	2,164	10,820	47	0.72	464	+4.29	+2.02	9.39	99 %	8.33	97	-	-
NORTHCOAST RESEARCH	<1	3,077	6,154	69	0.40	277	+4.50	+2.02	6.20	98 %	4.93	13	-	43
STEPHENS & CO INC	<1	3,047	9,140	48	0.70	411	+4.50	+2.02	+4.43	17 %	+5.69	98	-	99
JP MORGAN CHASE	<1	8,050	16,100	67	0.43	557	+3.46	+2.02	5.00	97 %	4.77	1	-	-
JEFFERIES & CO	<1	18,102	18,102	82	0.24	634	+3.50	+2.02	+2.34	31 %	+2.61	-	-	99



(+) = Cost

TRADE CYCLE DETAIL

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

						COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20181ST (%)	20174TH (%)	20173RD (%)
NEEDHAM & CO INC	<1	2,181	6,543	68	0.41	272	+4.16	+2.02	1.38	90 %	0.46	-	-	-
NORTHLAND SECURITIES	<1	1,638	4,913	39	0.84	205	+4.17	+2.02	11.75	99 %	10.80	-	-	33
MAXIM GROUP	<1	1,400	2,800	77	0.30	126	+4.50	+2.02	2.71	94 %	1.44	-	-	-
WOLFE TRAHAN SECS	<1	4,685	9,370	44	0.77	328	+3.50	+2.02	9.42	99 %	9.15	90	-	-
B.RILEY & CO	<1	2,946	5,892	84	0.20	206	+3.50	+2.02	+0.86	58 %	+1.12	-	-	-
BAIRD, ROBERT W	<1	8,140	8,140	59	0.54	244	+3.00	+2.02	9.88	99 %	10.11	34	-	35
ITG	<1	1,237	3,710	75	0.32	119	+3.20	+2.02	2.03	92 %	2.06	-	-	74
LUMINEX TRADING	<1	5,152	5,152	35	0.92	122	+2.38	+2.02	8.90	99 %	9.76	99	1	-
FIG PARTNERS LLC	<1	2,274	2,274	89	0.14	91	+4.00	+2.02	1.96	92 %	1.19	-	-	-
KEYBANC	<1	150	150	53	0.63	6	+4.00	+2.02	+17.66	1 %	+18.43	96	99	95
Grand Total	25	3,439	918,241	70	0.39	33,956	+3.70	+2.02	2.44	93 %	1.97	95	95	93



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
LIQUIDNET	28	29,347	381,514	59	0.53	6,627	+1.74	+2.02	6.57	98 %	8.06	99	75	96
CAPITAL INSTL SVCS	12	105,683	422,730	58	0.55	12,682	+3.00	+2.02	1.13	89 %	1.36	96	-	-
ITG	4	28,714	57,428	54	0.61	574	+1.00	+2.02	22.65	99 %	24.88	-	99	-
MERRILL LYNCH	<1	8,133	16,265	94	0.08	243	+1.49	+2.02	1.28	90 %	3.01	-	-	-
GOLDMAN SACHS	<1	12,718	12,718	32	0.97	127	+1.00	+2.02	+13.81	1 %	+11.58	-	-	-
SC BERNSTEIN	<1	6,450	6,450	46	0.73	258	+4.00	+2.02	6.13	98 %	5.36	-	-	-
MORGAN STANLEY	<1	6,096	6,096	100	0.00	244	+4.00	+2.02	+0.00	77 %	+0.77	-	-	-
UBS	<1	2,300	2,300	85	0.19	46	+2.00	+2.02	1.17	89 %	2.40	94	-	-
Grand Total	46	36,220	905,501	59	0.54	20,801	+2.30	+2.02	4.61	97 %	5.54	97	87	96



(+) = Cost

TRADE CYCLE DETAIL

HUBER CAPITAL MANAGEMENT Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
						Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20181ST (%)	20174TH (%)	20173RD (%)
UBS	8	4,722	170,000	67	0.42	1,445	+0.85	+2.02	3.33	95 %	5.71	33	94	91
CITIGROUP	<1	50,260	251,300	32	0.97	503	+0.20	+2.02	1.00	89 %	4.03	71	98	98
JP MORGAN CHASE	<1	2,350	14,100	67	0.42	423	+3.00	+2.02	0.48	83 %	0.71	98	98	23
GOLDMAN SACHS	<1	6,367	19,100	82	0.23	38	+0.20	+2.02	12.45	99 %	15.49	96	93	99
WEEDEN & CO	<1	2,200	2,200	63	0.48	22	+1.00	+2.02	7.76	99 %	9.99	-	-	-
Grand Total	10	8,955	456,700	64	0.47	2,431	+0.53	+2.02	2.36	93 %	5.06	51	97	95



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
SC BERNSTEIN	5	2,357	103,686	66	0.44	2,333	+2.25	+2.02	+3.66	20 %	+2.68	34	2	52
GOLDMAN SACHS	2	1,904	45,687	49	0.68	831	+1.82	+2.02	+15.21	1 %	+13.79	96	3	1
MORGAN STANLEY	<1	1,930	15,439	70	0.38	511	+3.31	+2.02	14.33	99 %	14.26	99	1	99
JEFFERIES & CO	<1	1,895	22,737	64	0.46	512	+2.25	+2.02	+0.35	71 %	0.63	16	55	99
COWEN & CO	<1	2,295	13,770	43	0.78	275	+2.00	+2.02	+12.83	1 %	+11.60	1	2	97
MERRILL LYNCH	<1	3,581	14,324	76	0.31	501	+3.50	+2.02	+1.64	40 %	+1.91	5	7	85
INSTINET	<1	1,031	14,429	49	0.69	144	+1.00	+2.02	+20.47	1 %	+18.24	1	98	1
STIFEL NICOLAUS & CO	<1	6,801	27,205	80	0.26	952	+3.50	+2.02	5.30	98 %	5.03	-	95	61
CREDIT SUISSE	<1	1,636	8,182	73	0.34	277	+3.38	+2.02	17.23	99 %	17.08	94	98	5
BARCLAYS	<1	5,063	5,063	59	0.54	76	+1.50	+2.02	29.21	99 %	30.94	97	45	-
WILLIAM BLAIR	<1	5,842	11,684	35	0.91	409	+3.50	+2.02	8.16	99 %	7.89	-	99	-
BROADCORT CAPITAL	<1	1,291	3,872	100	0.00	87	+2.25	+2.02	+14.61	1 %	+13.62	96	6	1
STEPHENS & CO INC	<1	1,700	1,700	16	1.36	60	+3.50	+2.02	78.80	99 %	78.53	-	97	-
WEEDEN & CO	<1	1,500	1,500	15	1.41	34	+2.25	+2.02	81.50	99 %	82.48	-	-	-
RBC CAPITAL MARKETS	<1	2,293	2,293	85	0.20	80	+3.50	+2.02	+5.13	12 %	+5.40	42	-	1
Grand Total	11	2,243	291,571	61	0.51	7,081	+2.43	+2.02	+2.19	33 %	+1.39	26	13	96



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
THEMIS TRADING LLC	6	1,994	95,723	64	0.46	3,446	+3.60	+2.02	+17.01	1 %	+17.38	6	92	1
ITG	4	2,713	92,239	70	0.39	3,252	+3.53	+2.02	+1.53	42 %	+1.82	25	16	97
LIQUIDNET	3	1,998	63,929	54	0.61	2,301	+3.60	+2.02	+17.90	1 %	+18.27	20	91	97
WILLIAM BLAIR	3	2,986	62,704	71	0.37	2,257	+3.60	+2.02	5.74	98 %	5.37	98	99	1
CONVERGEX	1	1,362	20,434	71	0.38	736	+3.60	+2.02	+12.85	1 %	+13.22	-	-	-
GOLDMAN SACHS	1	2,734	35,537	55	0.59	1,279	+3.60	+2.02	16.28	99 %	15.91	-	1	1
CRAIG - HALLUM	1	2,510	25,103	83	0.22	904	+3.60	+2.02	8.00	99 %	7.63	-	70	1
STEPHENS & CO INC	<1	2,268	15,874	67	0.42	571	+3.60	+2.02	+21.70	1 %	+22.07	13	99	1
JEFFERIES & CO	<1	3,543	31,885	55	0.59	1,037	+3.25	+2.02	+4.24	18 %	+4.26	92	8	97
PIPER JAFFRAY	<1	2,648	13,238	47	0.72	477	+3.60	+2.02	+20.46	1 %	+20.83	1	97	3
STIFEL NICOLAUS & CO	<1	3,799	11,398	51	0.65	410	+3.60	+2.02	+117.66	1 %	+118.02	-	1	1
BAIRD, ROBERT W	<1	3,555	14,219	60	0.52	512	+3.60	+2.02	+5.61	11 %	+5.98	99	-	-
NEEDHAM & CO INC	<1	2,122	6,366	59	0.54	229	+3.60	+2.02	+15.51	1 %	+15.88	12	61	7
JP MORGAN CHASE	<1	1,560	6,239	51	0.65	71	+1.14	+2.02	7.74	99 %	9.83	-	-	-
COWEN & CO	<1	2,522	7,567	60	0.52	272	+3.60	+2.02	+0.97	55 %	+1.34	22	1	9
RAYMOND JAMES	<1	1,355	2,709	77	0.29	98	+3.60	+2.02	+3.45	21 %	+3.82	87	-	-
OPPENHEIMER & CO INC	<1	2,877	5,754	52	0.64	207	+3.60	+2.02	3.47	95 %	3.10	45	96	99
Grand Total	24	2,376	510,918	64	0.47	18,061	+3.53	+2.02	+8.33	4 %	+8.63	32	79	4



(+) = 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	20181ST (%)	20174TH (%)	20173RD (%)
WEEDEN & CO	1	2,066	37,194	55	0.59	959	+2.58	+2.02	+5.15	12 %	+4.50	96	-	96
UBS	1	2,893	28,925	75	0.33	1,012	+3.50	+2.02	1.50	90 %	1.23	1	13	-
JONES TRADING	1	5,165	56,819	80	0.25	1,136	+2.00	+2.02	+0.91	56 %	0.32	34	7	94
JP MORGAN CHASE	1	8,541	51,246	81	0.24	1,794	+3.50	+2.02	4.08	96 %	3.81	11	77	-
BROADCORT CAPITAL	<1	1,441	8,648	89	0.14	303	+3.50	+2.02	+4.50	15 %	+4.77	42	96	1
GOLDMAN SACHS	<1	1,360	10,879	75	0.32	381	+3.50	+2.02	11.15	99 %	10.88	-	99	-
BARCLAYS	<1	3,003	21,021	87	0.16	736	+3.50	+2.02	1.27	90 %	1.00	34	48	95
CANTOR FITZGERALD	<1	5,822	75,687	72	0.37	1,514	+2.00	+2.02	+0.79	59 %	0.44	92	32	61
B.RILEY & CO	<1	2,931	14,653	80	0.25	513	+3.50	+2.02	0.09	78 %	+0.17	44	96	-
CREDIT SUISSE	<1	690	6,898	86	0.18	241	+3.50	+2.02	+4.78	15 %	+5.05	-	-	-
JEFFERIES & CO	<1	7,423	29,693	62	0.49	1,039	+3.50	+2.02	+2.11	34 %	+2.38	79	83	85
SCOTIA CAPITAL	<1	1,851	3,702	91	0.11	130	+3.50	+2.02	+5.27	12 %	+5.54	99	66	-
KEEFE BRUYETTE WOODS	<1	3,333	6,665	68	0.41	233	+3.50	+2.02	4.14	96 %	3.87	99	-	1
SC BERNSTEIN	<1	6,185	6,185	92	0.11	216	+3.50	+2.02	+0.42	70 %	+0.69	-	88	11
OPPENHEIMER & CO INC	<1	675	1,349	18	1.31	47	+3.50	+2.02	+59.47	1 %	+59.74	-	-	95
Grand Total	11	3,424	359,564	76	0.31	10,255	+2.85	+2.02	+0.31	72 %	0.07	38	66	79



(+) = 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)
BCS	2	307,125	3,552,423	+2.99	4.40%	0.78	1.35
CHK	8	251,100	755,882	+0.20	0.11%	0.65	+0.13
CMCSA	4	184,255	6,037,683	+2.08	0.20%	0.50	0.17
CHS	13	129,469	1,294,283	+3.16	0.31%	0.32	2.00
BAC	8	126,595	3,845,329	+1.43	0.03%	0.48	4.56
LBRDK	4	109,061	8,081,474	+1.76	2.14%	0.46	13.33
PAH	14	75,787	754,870	+2.00	0.26%	0.37	+0.80
CLNS	5	63,907	363,039	+2.99	0.22%	0.94	+0.96
WFC	9	58,850	3,159,535	+1.72	0.04%	0.43	2.44
WPX	8	58,286	996,182	+3.92	0.11%	0.30	+2.56

Names Most Traded - Total Orders

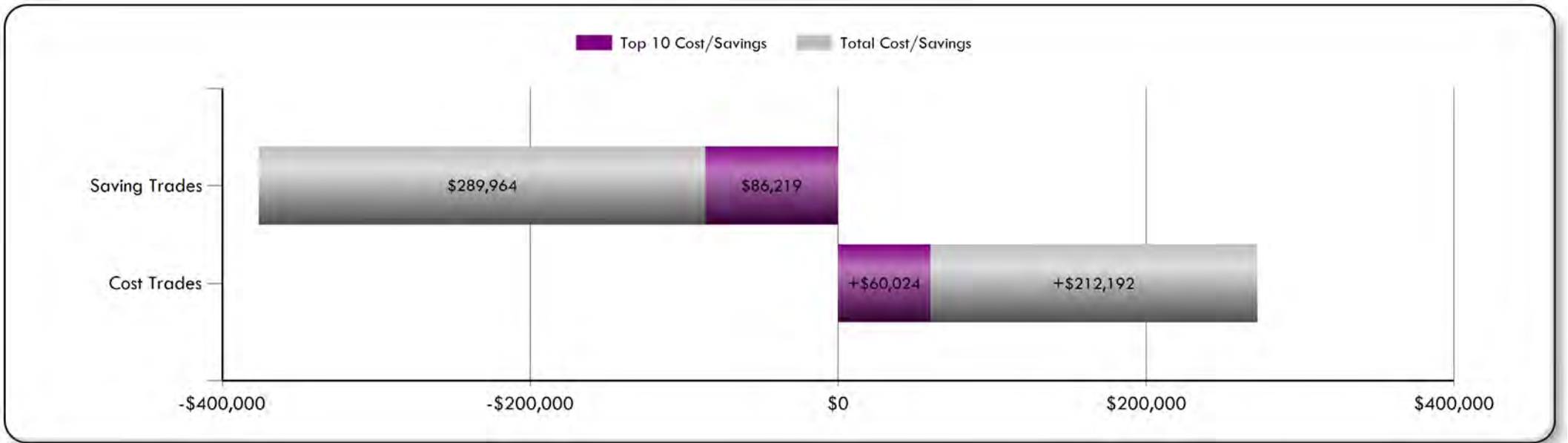
							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
CHTR	9	11,354	3,049,987	+2.43	0.04%	0.25	+23.03
WFC	9	58,850	3,159,535	+1.72	0.04%	0.43	2.44
BAC	8	126,595	3,845,329	+1.43	0.03%	0.48	4.56
CMCSA	4	184,255	6,037,683	+2.08	0.20%	0.50	0.17
LBRDK	4	109,061	8,081,474	+1.76	2.14%	0.46	13.33
GD	3	14,100	3,085,172	+2.96	0.43%	0.87	39.82
ECL	3	30,361	4,479,967	+1.99	0.99%	1.02	25.23
BCS	2	307,125	3,552,423	+2.99	4.40%	0.78	1.35
MHK	2	25,350	5,352,143	+1.55	1.66%	0.06	+2.38
FIS	2	33,100	3,280,129	+2.00	0.61%	0.47	21.72



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	8,707,955	10	+141.99	22.05%
Cost Trades	83,900,759	1,105	+26.90	100.00%
Saving Trades	107,442,840	1,102	26.73	100.00%
10 Low Cost Trades	15,730,179	10	140.53	22.92%





(+) = Cost

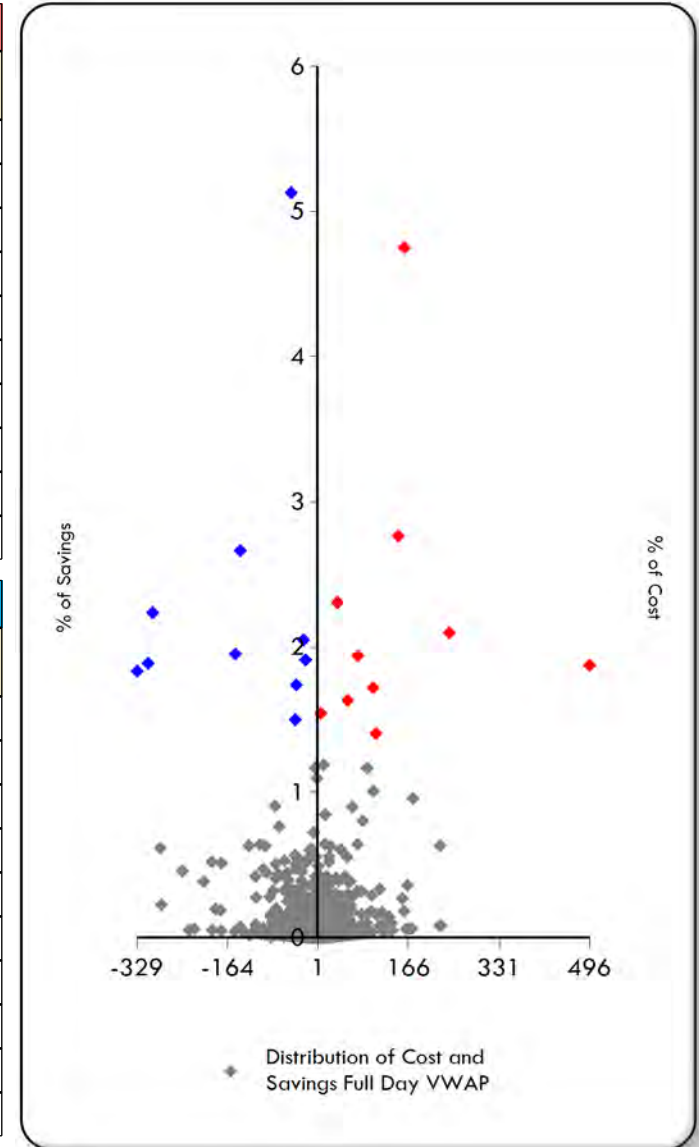
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	LASR	2018/04/26	8,173	4.75	1.19	+158.22	WEATHERBIE	STIFEL NIC
Buy	AVLR	2018/06/18	5,109	2.76	0.64	+147.23	WEATHERBIE	THEMIS TRA
Buy	LBRDK	2018/05/09	17,388	2.31	0.94	+36.12	EAGLE CAPI	ITG
Buy	LASR	2018/04/26	2,378	2.10	1.81	+240.43	WEATHERBIE	LIQUIDNET
Sell	MAR	2018/06/06	7,225	1.94	0.78	+73.20	EAGLE CAPI	LIQUIDNET
Buy	SHW	2018/04/24	1,030	1.88	0.89	+496.19	BROWN ADVI	CAPITAL IN
Sell	CHTR	2018/04/27	4,620	1.72	0.08	+101.39	BROWN ADVI	CAPITAL IN
Sell	AAPL	2018/06/22	8,100	1.64	1.29	+54.96	ALLIANCE R	CITIGROUP
Buy	CMCSA	2018/04/10	72,705	1.55	0.35	+5.79	EAGLE CAPI	CAPITAL IN
Sell	JPM	2018/06/22	3,600	1.41	1.40	+106.40	ALLIANCE R	CITIGROUP

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	LBRDK	2018/05/03	40,040	5.13	0.46	48.18	EAGLE CAPI	ITG
Buy	NKTR	2018/06/22	7,100	2.66	1.75	141.02	ALLIANCE R	CITIGROUP
Buy	SRPT	2018/06/22	2,800	2.24	1.43	300.88	ALLIANCE R	CITIGROUP
Sell	ECL	2018/05/11	30,161	2.05	1.02	25.58	EAGLE CAPI	LIQUIDNET
Buy	NTNX	2018/06/22	4,900	1.96	1.48	150.10	ALLIANCE R	CITIGROUP
Sell	FIS	2018/05/01	33,000	1.91	0.46	21.81	EAGLE CAPI	LIQUIDNET
Buy	BLUE	2018/06/22	2,300	1.89	0.84	309.18	ALLIANCE R	CITIGROUP
Buy	SAGE	2018/06/22	2,100	1.84	1.34	328.97	ALLIANCE R	CITIGROUP
Sell	CTB	2018/04/30	16,843	1.74	0.75	38.92	DALTON, GR	CONVERGEX
Sell	GD	2018/04/13	13,900	1.50	0.87	40.65	EAGLE CAPI	CAPITAL IN



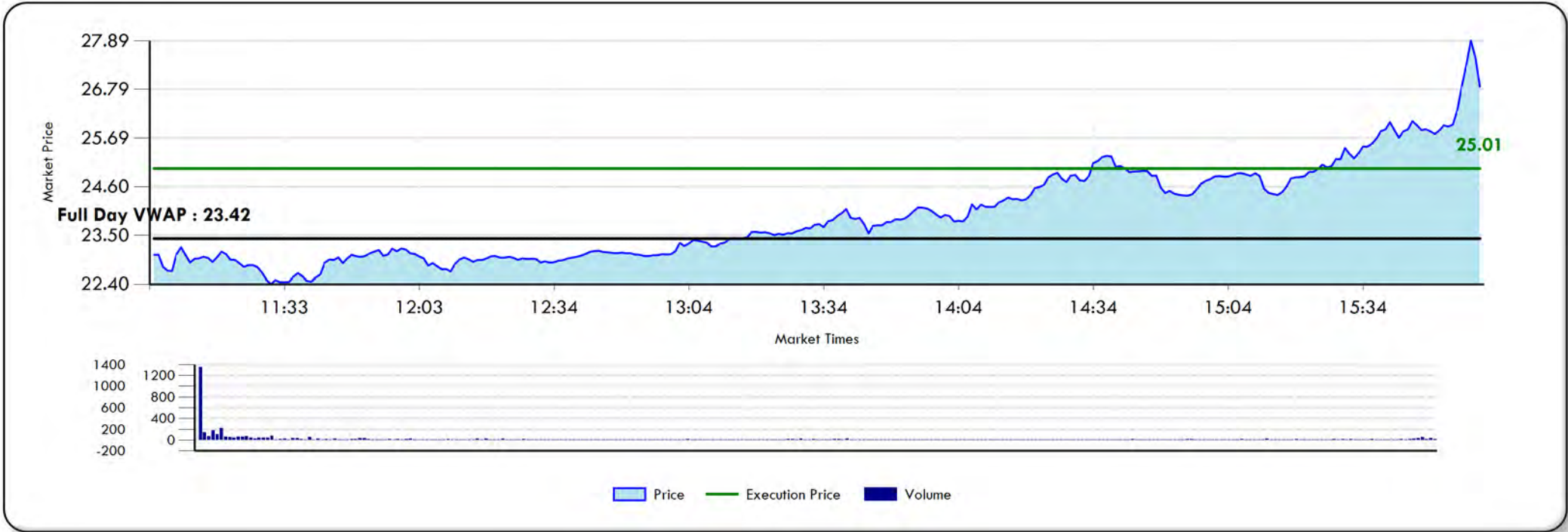


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

LASR - 2018/04/26

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	STIFEL NICOLAUS & CO	04/26/2018 09:30:00	04/26/2018 16:00:00	8,173	25.0069	23.4247	+12,931	+158.22	1.19	0.18



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.75% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AVLR - 2018/06/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	THEMIS TRADING LLC	06/18/2018 09:30:00	06/18/2018 16:00:00	5,109	49.6345	48.1622	+7,522	+147.23	0.64	0.13



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.76% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

LBRDK - 2018/05/09

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	EAGLE CAPITAL MANAGEMENT	ITG	05/09/2018 09:30:00	05/09/2018 16:00:00	17,388	72.0409	71.6797	+6,281	+36.12	0.94	0.91



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.31% of your market impact cost.

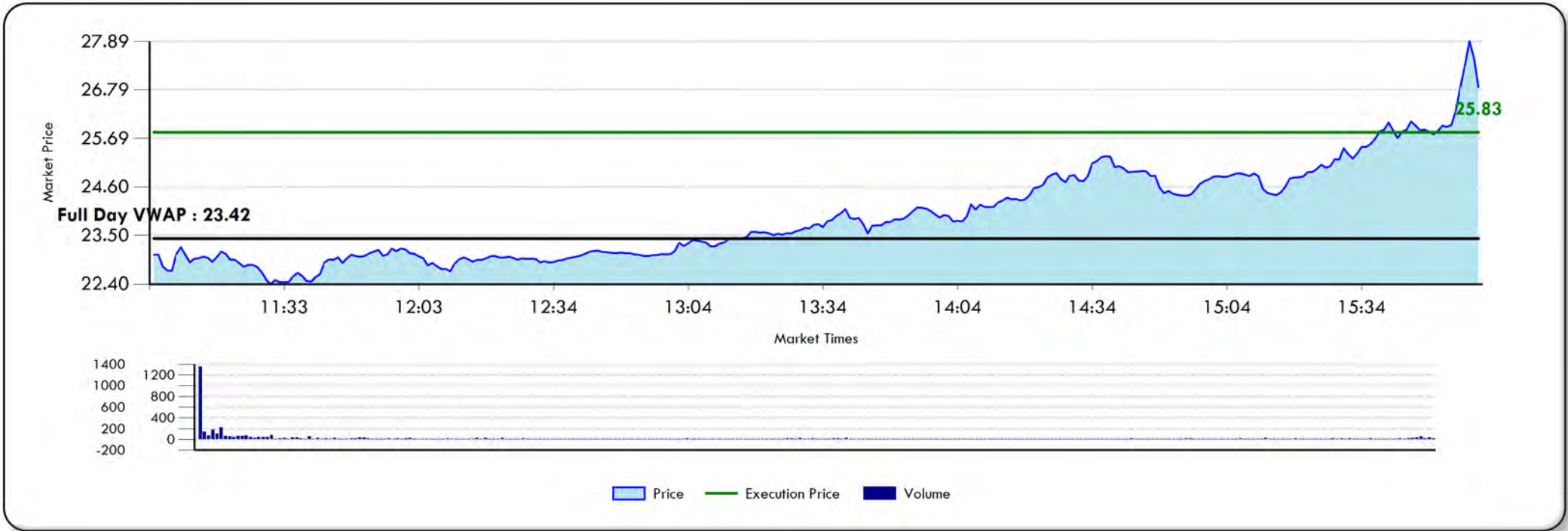


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

LASR - 2018/04/26

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	LIQUIDNET	04/26/2018 09:30:00	04/26/2018 16:00:00	2,378	25.8290	23.4247	+5,717	+240.43	1.81	0.05



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.10% of your market impact cost.

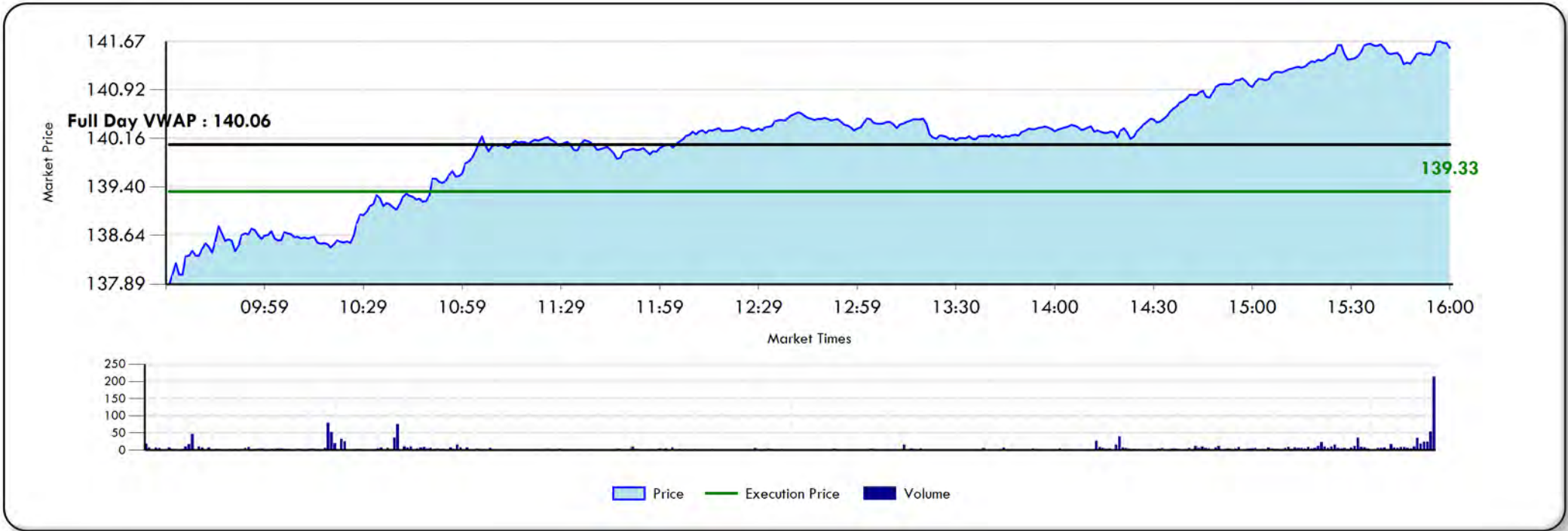


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MAR - 2018/06/06

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	06/06/2018 09:30:00	06/06/2018 16:00:00	7,225	139.3279	140.0599	+5,289	+73.20	0.78	0.39



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.94% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SHW - 2018/04/24

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	BROWN ADVISORY	CAPITAL INSTL SVCS	04/24/2018 09:30:00	04/24/2018 16:00:00	1,030	379.2526	374.2907	+5,111	+496.19	0.89	0.04



NOTES

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

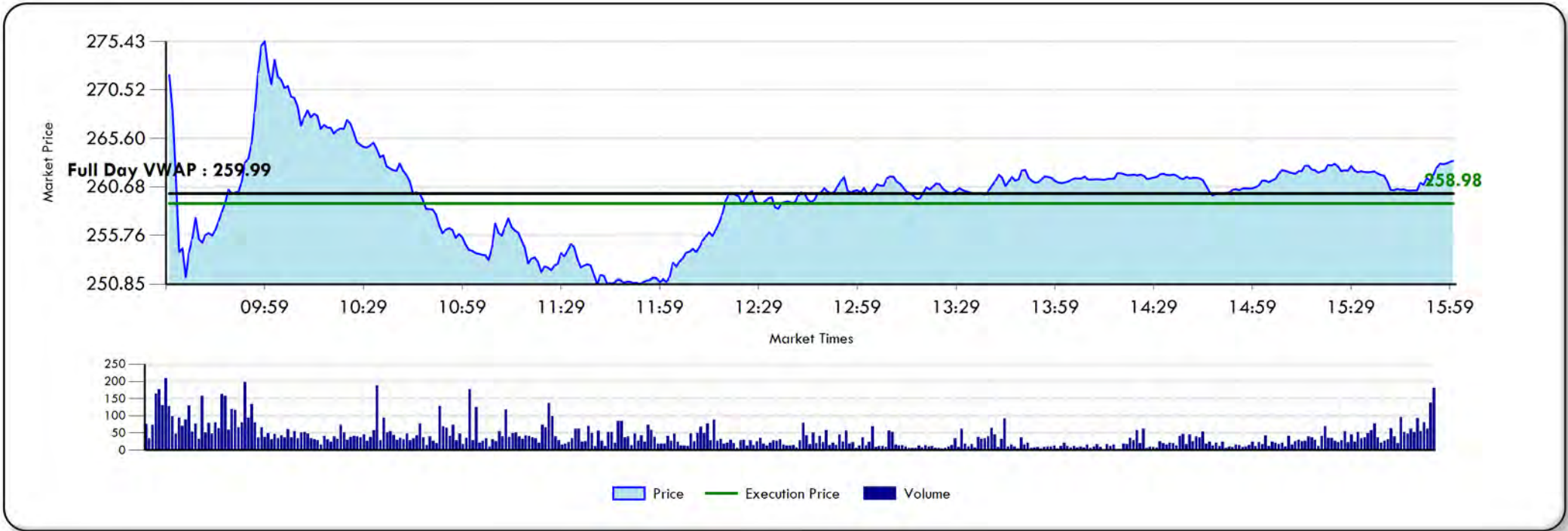


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TRADE LEVEL DETAIL - HIGH COST

CHTR - 2018/04/27

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	BROWN ADVISORY	CAPITAL INSTL SVCS	04/27/2018 09:30:00	04/27/2018 16:00:00	4,620	258.9806	259.9945	+4,684	+101.39	0.08	0.03



NOTES

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

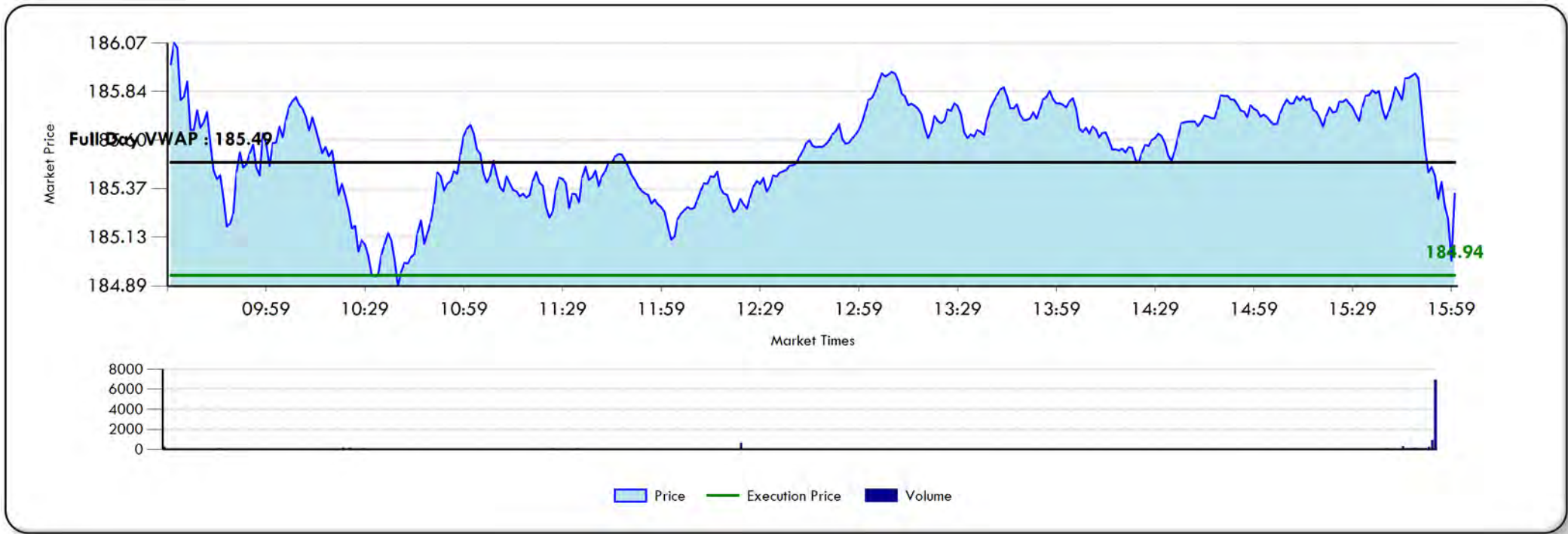


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TRADE LEVEL DETAIL - HIGH COST

AAPL - 2018/06/22

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	8,100	184.9433	185.4929	+4,452	+54.96	1.29	0.05



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.64% of your market impact cost.

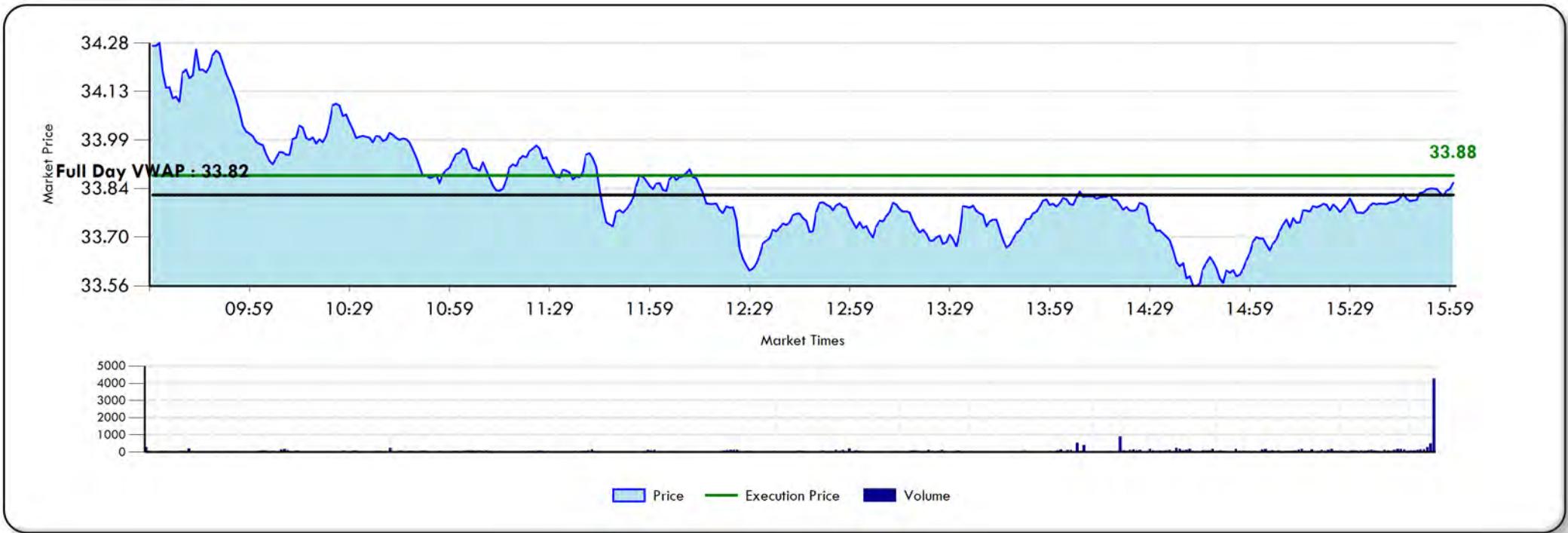


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TRADE LEVEL DETAIL - HIGH COST

CMCSA - 2018/04/10

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 (%)
Buy	EAGLE CAPITAL MANAGEMENT	CAPITAL INSTL SVCS	04/10/2018 09:30:00	04/10/2018 16:00:00	72,705	33.8817	33.8238	+4,207	+5.79	0.35	0.29



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.55% of your market impact cost.

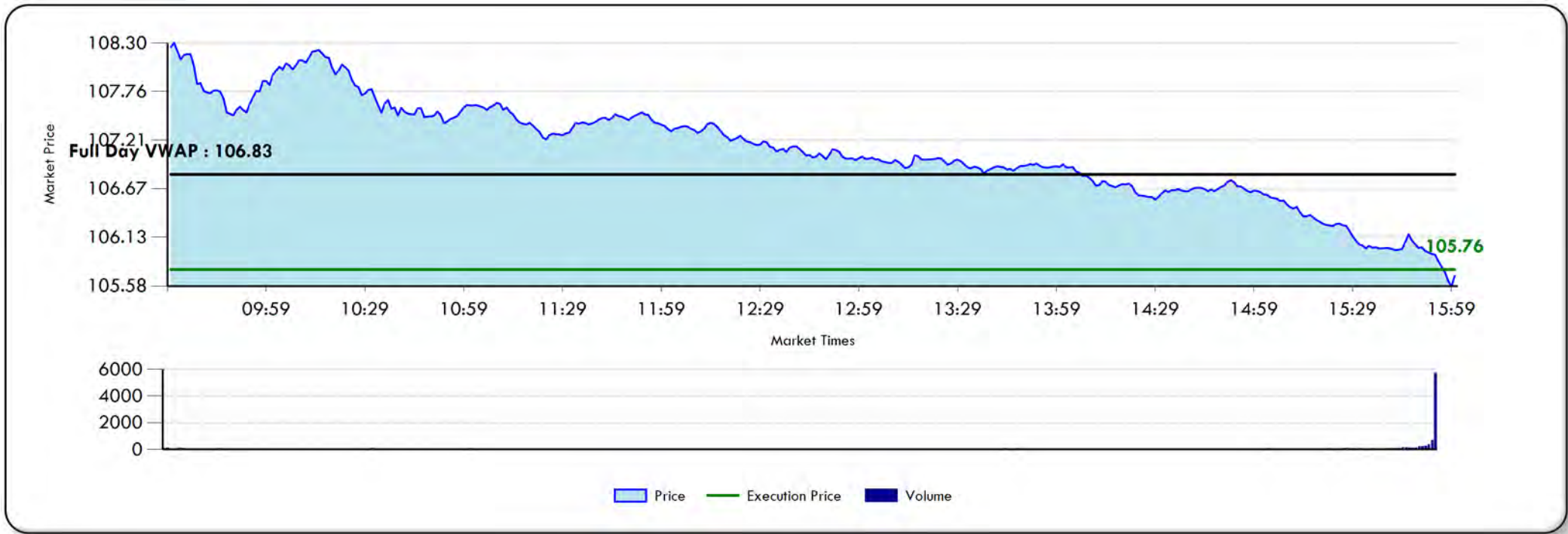


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TRADE LEVEL DETAIL - HIGH COST

JPM - 2018/06/22

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	3,600	105.7633	106.8273	+3,831	+106.40	1.40	0.03



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.41% of your market impact cost.

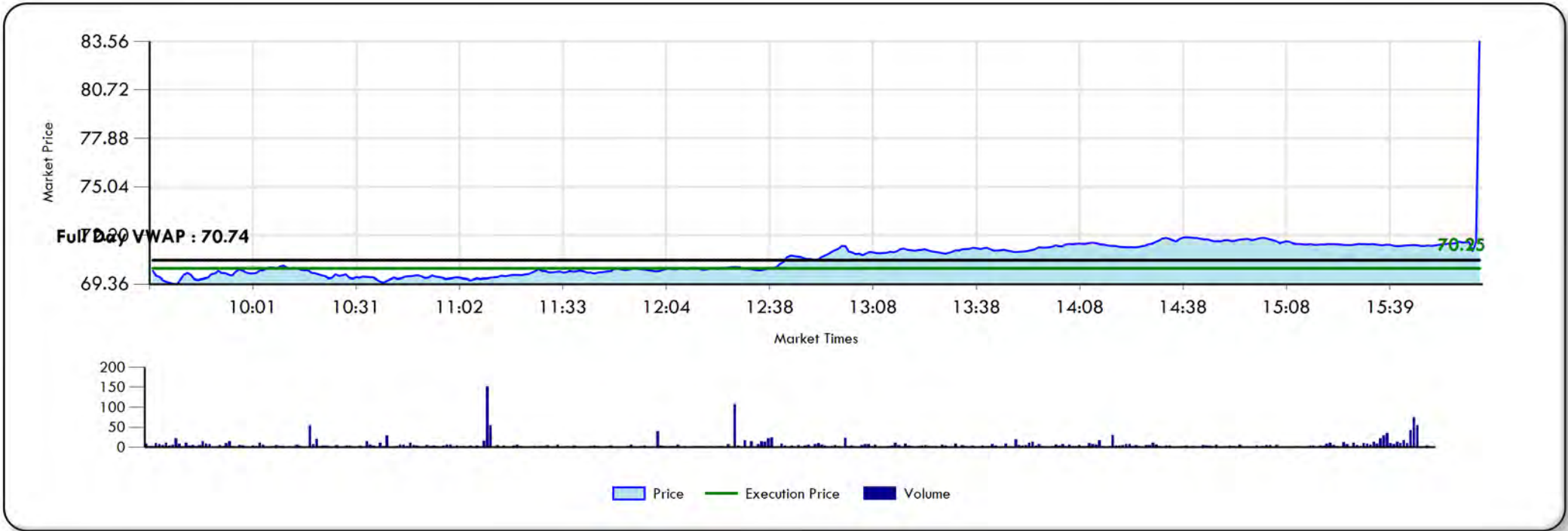


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

LBRDK - 2018/05/03

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	EAGLE CAPITAL MANAGEMENT	ITG	05/03/2018 09:30:00	05/03/2018 16:00:00	40,040	70.2549	70.7367	19,290	48.18	0.46	1.80



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 5.13% of your market impact savings.

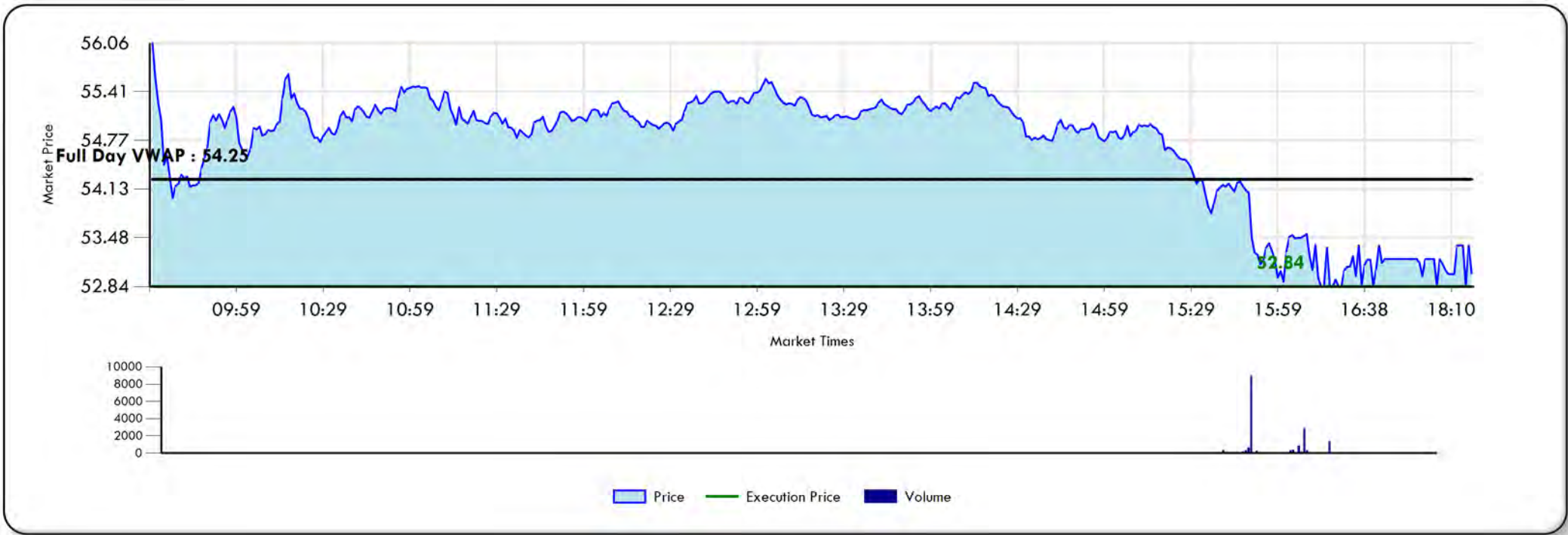


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TRADE LEVEL DETAIL - LOW COST

NKTR - 2018/06/22

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	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	7,100	52.8433	54.2535	10,013	141.02	1.75	0.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.66% of your market impact savings.

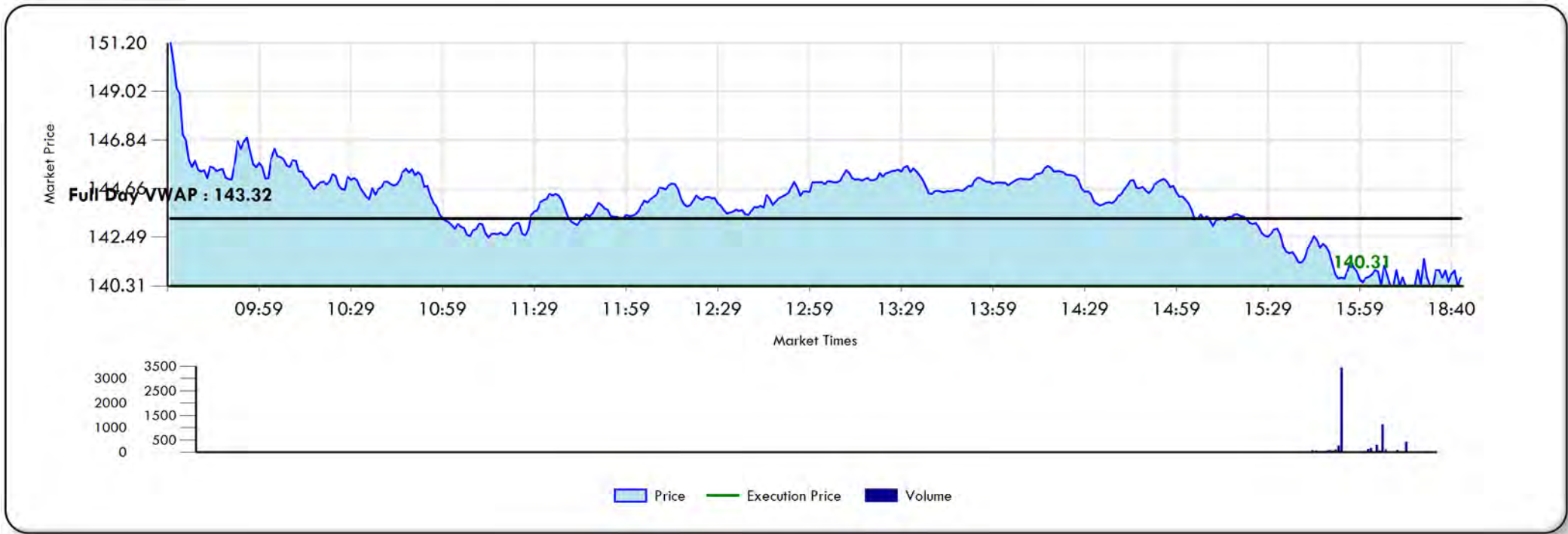


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TRADE LEVEL DETAIL - LOW COST

SRPT - 2018/06/22

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	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	2,800	140.3123	143.3211	8,425	300.88	1.43	0.10



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.24% of your market impact savings.

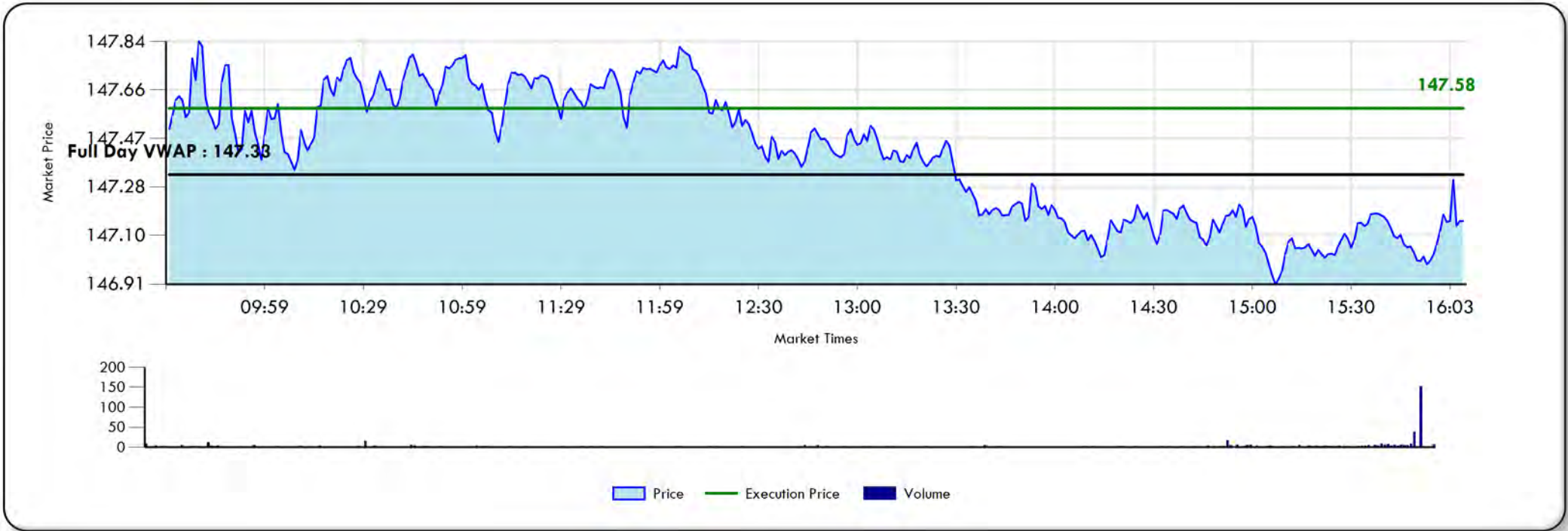


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TRADE LEVEL DETAIL - LOW COST

ECL - 2018/05/11

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	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	05/11/2018 09:30:00	05/11/2018 16:00:00	30,161	147.5847	147.3289	7,715	25.58	1.02	4.68



NOTES

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

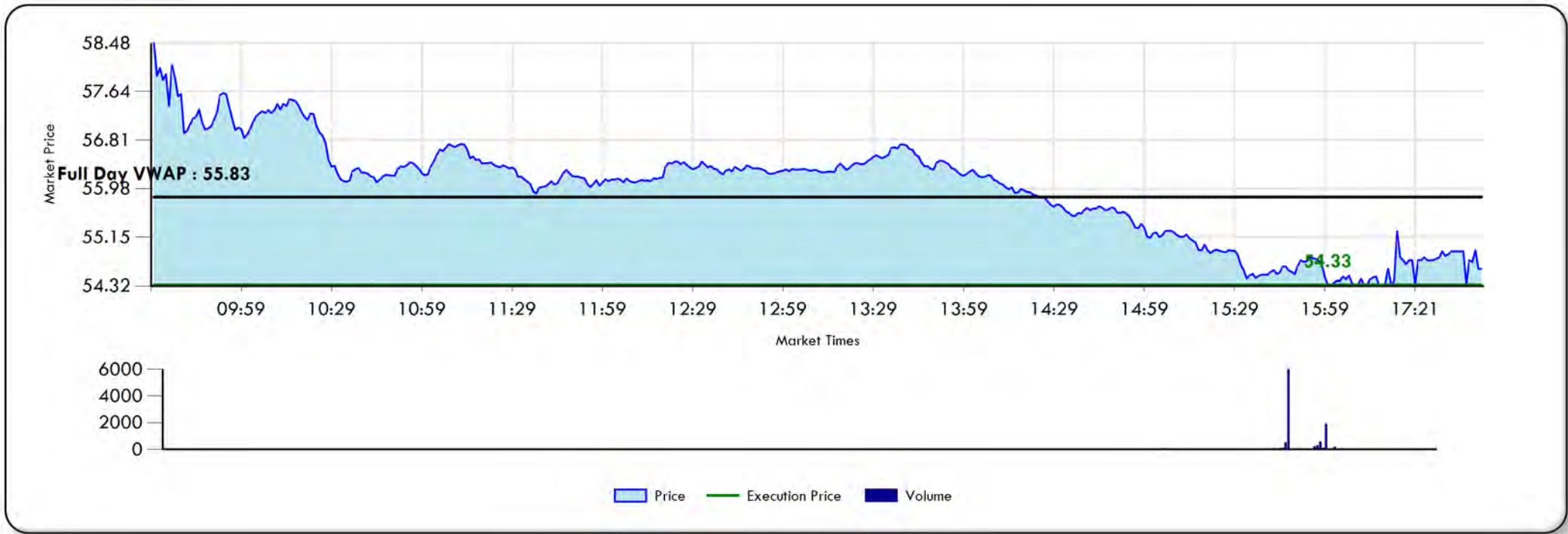


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TRADE LEVEL DETAIL - LOW COST

NTNX - 2018/06/22

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	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	4,900	54.3331	55.8341	7,355	150.10	1.48	0.09



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.96% of your market impact savings.

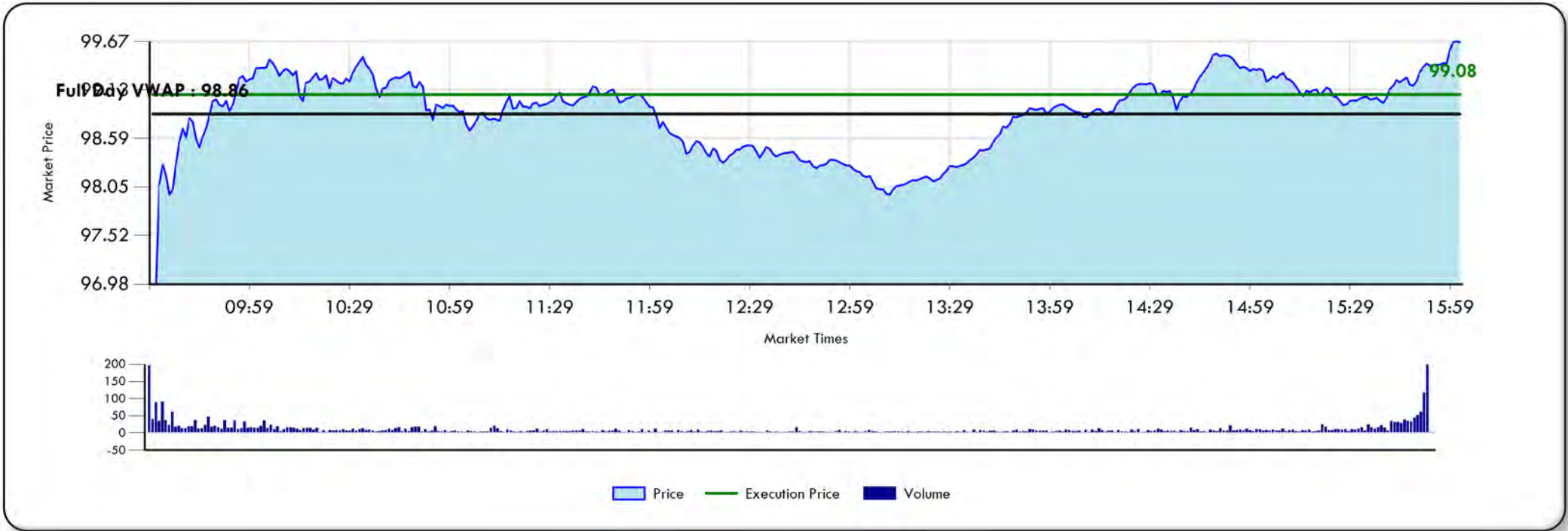


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FIS - 2018/05/01

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	EAGLE CAPITAL MANAGEMENT	LIQUIDNET	05/01/2018 09:30:00	05/01/2018 16:00:00	33,000	99.0802	98.8621	7,198	21.81	0.46	0.86



NOTES

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

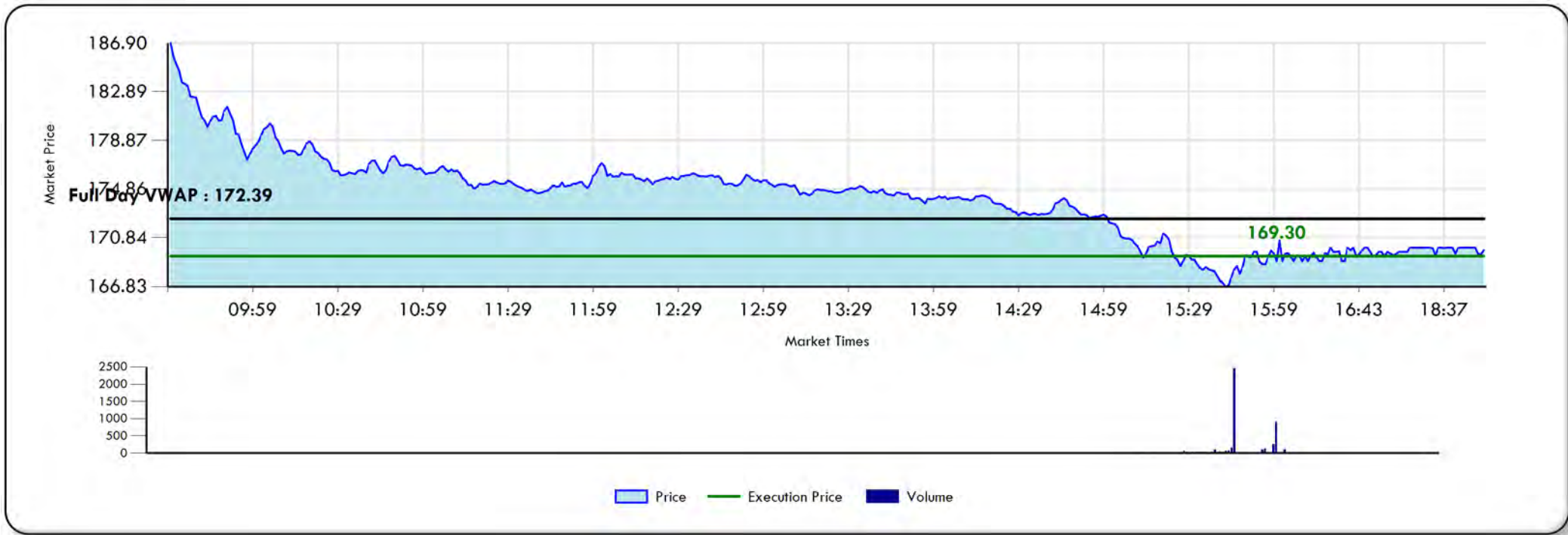


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BLUE - 2018/06/22

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	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	2,300	169.3000	172.3918	7,111	309.18	0.84	0.09



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.89% of your market impact savings.

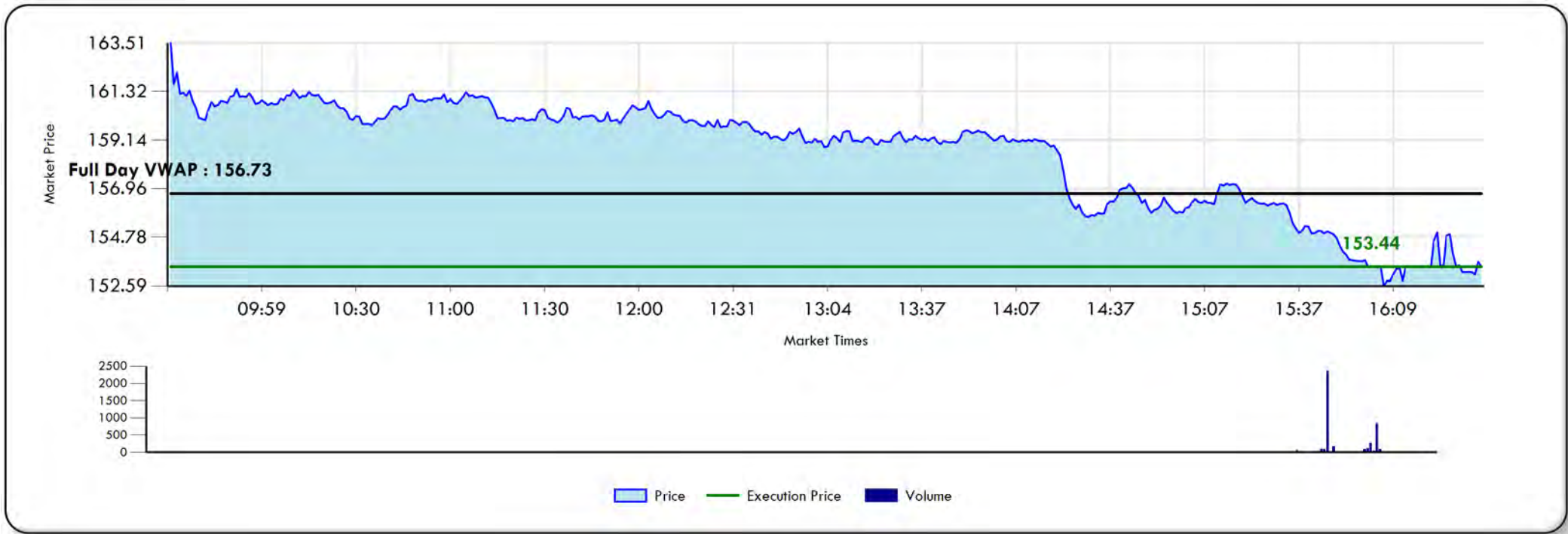


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SAGE - 2018/06/22

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	CITIGROUP	06/22/2018 09:30:00	06/22/2018 16:00:00	2,100	153.4406	156.7303	6,908	328.97	1.34	0.18



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.84% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

CTB - 2018/04/30

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	DALTON, GREINER, HARTMAN, MAHER	CONVERGEX	04/30/2018 09:30:00	04/30/2018 16:00:00	16,843	24.0097	23.6205	6,555	38.92	0.75	0.38



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.74% of your market impact savings.

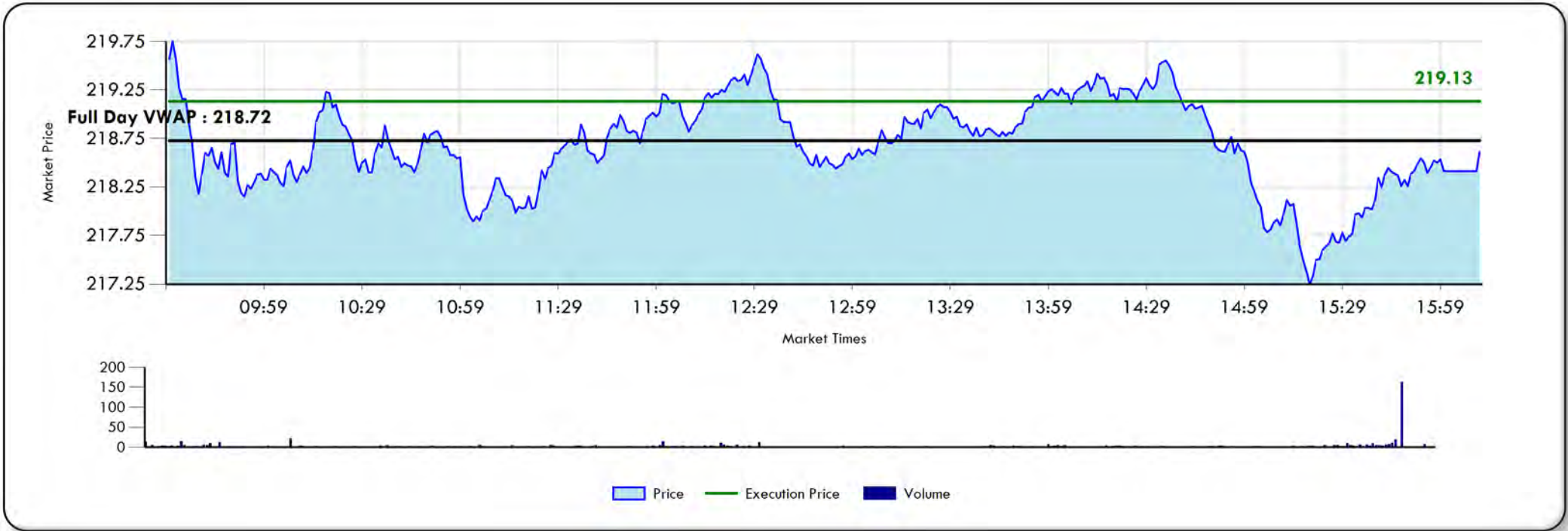


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GD - 2018/04/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	CAPITAL INSTL SVCS	04/13/2018 09:30:00	04/13/2018 16:00:00	13,900	219.1309	218.7245	5,650	40.65	0.87	1.65



NOTES

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

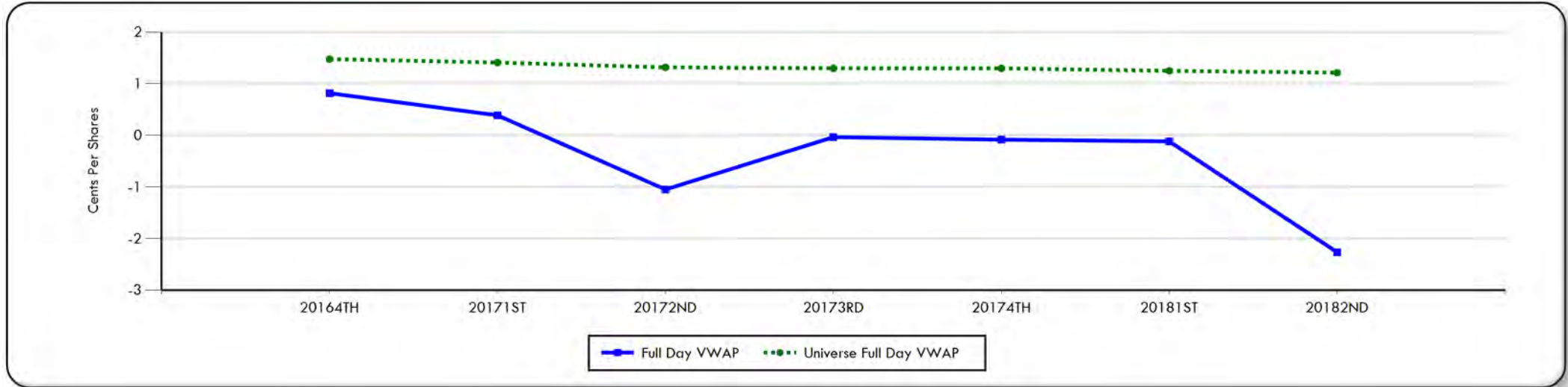


(+) = Cost

TRADE HISTORY

Trade History

Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP (cps)	Full Day VWAP Universe Rank (%)
			(cps)	(\$)		
20164TH	3,691,765	124,133,249	+3.16	116,656	+0.82	65
20171ST	3,961,231	140,137,188	+2.63	104,144	+0.39	74
20172ND	5,271,800	199,346,650	+2.32	122,417	1.05	91
20173RD	3,933,837	136,419,896	+2.71	106,661	0.04	82
20174TH	4,135,427	144,811,996	+2.63	108,628	0.09	80
20181ST	3,617,136	158,343,996	+2.72	98,459	0.12	81
20182ND	4,581,935	191,343,600	+2.09	95,937	2.27	93



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 June 30, 2018





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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 April 1, 2018 to June 30, 2018. The analysis included trading of 12,046,847 shares representing \$152.37 million in principal across 28 countries.

Methodology :

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

Results :

BENCHMARK PERFORMANCE			E - Score
Commission	Fees	Full Day VWAP	
<ul style="list-style-type: none"> Your commission cost was +7.46 bp or \$ +\$113,720 (6.69 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +10.17 bp or \$ +155,012 (+3.52 bp worse than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact savings was 3.96 bp or \$60,336 (9.50 bp better than the Elkins/McSherry Universe) Your overall trading cost of +13.68 bp was 12.69 bp better than the Elkins/McSherry Universe. Sacramento County trading was higher than the Elkins/McSherry Universe in 6 countries and lower than the Elkins/McSherry Universe in 27 countries. 13 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 48 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : -0.05



(+) = Cost

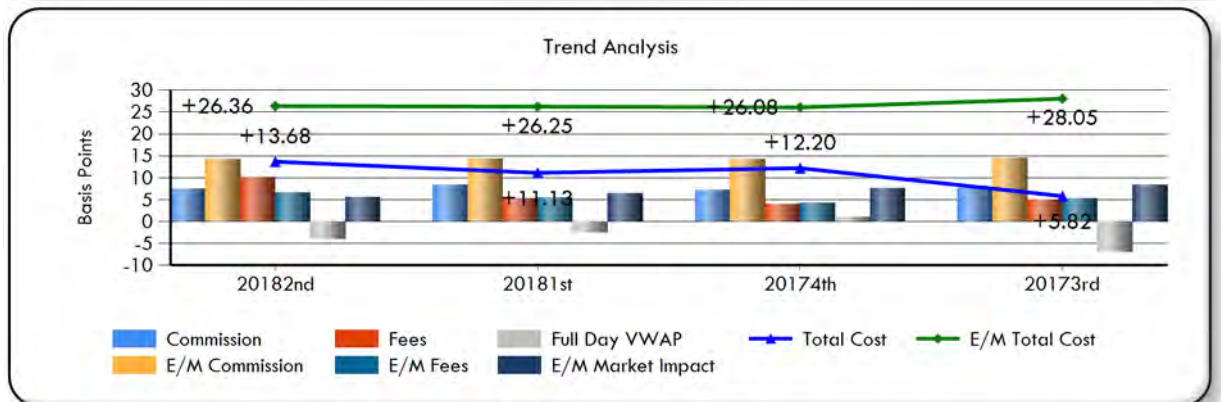
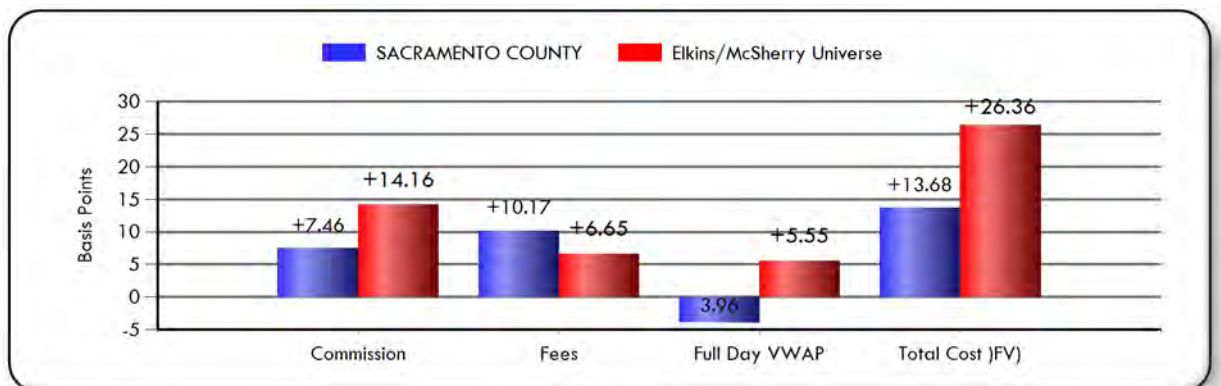
EXECUTIVE SUMMARY

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)	
Sell	+8.12	+14.16	+5.08	+0.85	+0.77	+1.10	+7.19	+10.06	12.06	0.03
Buy	+6.87	+14.15	+4.82	+18.65	+12.01	8.55	+4.06	+16.97	13.25	-0.12
Total	+7.46	+14.16	+4.94	+10.17	+6.65	3.96	+5.55	+13.68	12.69	-0.05

TRADING COMPONENTS

	Buys	Sells
Trade Principal	79,812,013	72,562,604
Shares	6,440,047	5,606,800
Unique Names	134	93
Liquidity (% POV)	0.430	0.466
Avg. Order Size	7,816	7,291
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	824	769



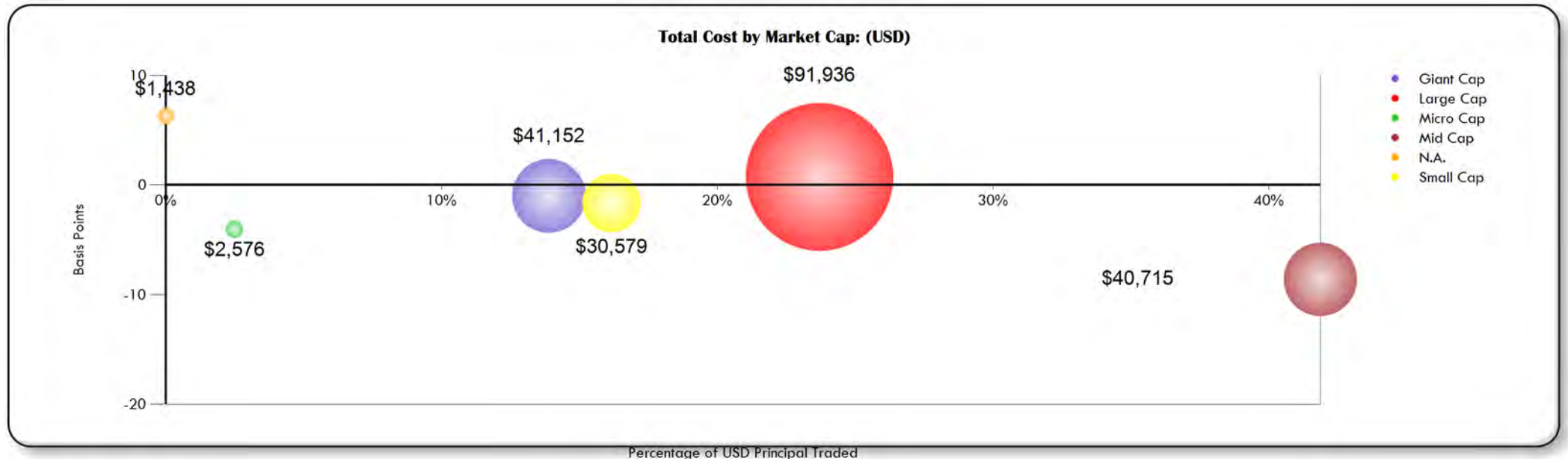


(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded	Avg. Principal Per Order	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	Bundled Universe	Full Day VWAP	Universe Full Day VWAP				
	(%)	(\$)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)		
Mid Cap	42.18 %	86,740	+7.71	+14.16	8.60	+5.79	+6.34	18.28	-0.06	\$1 Billion To \$5 Billion
Large Cap	24.02 %	133,100	+8.02	+14.08	+0.74	+4.41	+25.12	4.38	0.03	\$5 Billion To \$25 Billion
Small Cap	16.47 %	63,542	+6.88	+14.32	1.64	+5.63	+12.18	12.50	-0.04	\$250 Million To \$1 Billion
Giant Cap	14.21 %	186,629	+6.30	+14.07	0.99	+6.76	+19.01	9.21	-0.12	Over \$25 Billion
Micro Cap	2.80 %	74,912	+7.73	+14.22	4.03	+5.45	+6.03	19.85	-0.07	Under \$250 Million
N.A.	0.31 %	53,282	+12.00	+15.22	+6.30	+3.35	+29.99	+0.67	-0.24	





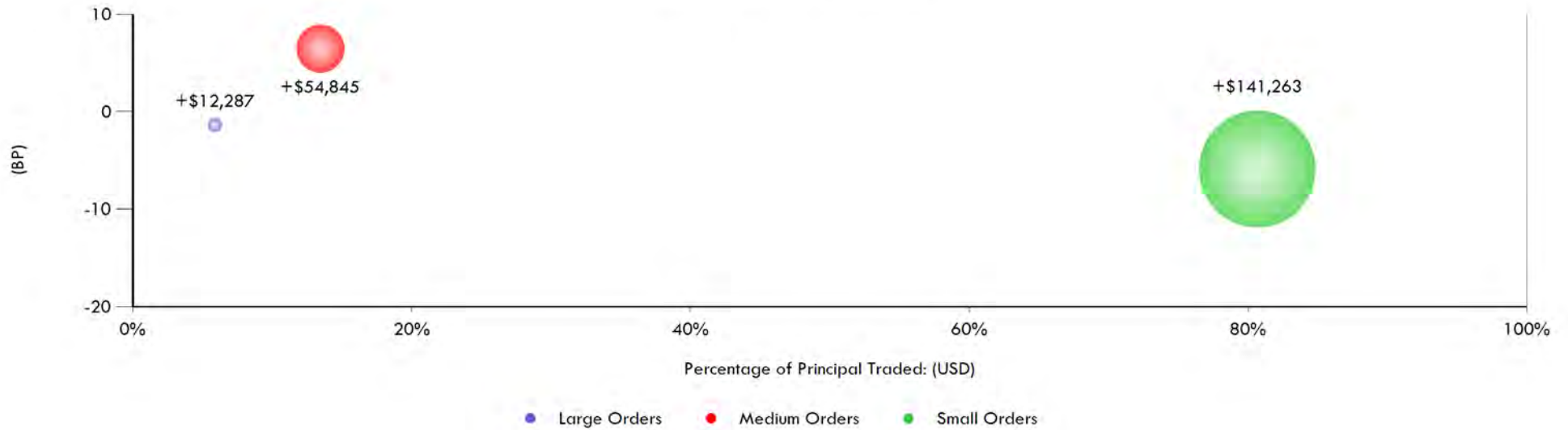
(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Principal Per Order (\$)	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Absolute Size (Principal)
				Your Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	(bp)	Commission+Fees +Full Day VWAP Vs. Universe (bp)		
Large Orders	6	1,494,784	N/A	+11.95	+13.73	1.38	+4.76	+13.69	7.78	-0.17	1M or Greater
Medium Orders	30	683,533	N/A	+9.38	+14.36	+6.47	+6.23	+26.73	+0.21	0.03	Between 500k - 1M
Small Orders	1,557	78,934	N/A	+6.82	+14.16	5.88	+5.50	+11.49	15.21	-0.05	500K or Less

Total Cost By Order Size: (USD)





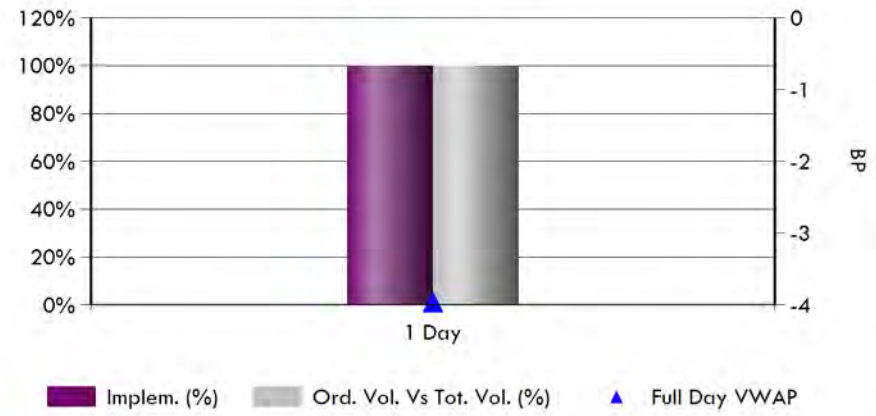
(+) = Cost

EXECUTIVE SUMMARY

IMPLEMENTATION DAYS BY TRADE

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (bp)	E - Score
1 Day	100.00	100%	3.96	-0.05

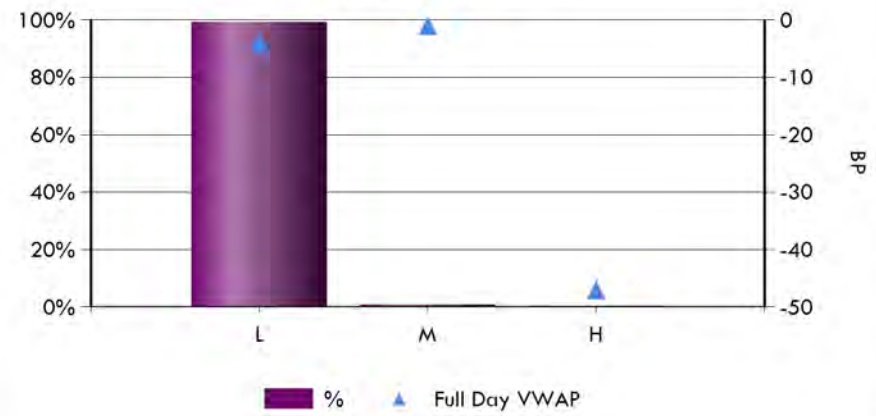
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	0%	47.04	-0.69
0%~20% of daily vol.	L	99%	3.89	-0.05
20%~50% of daily vol.	M	1%	0.97	-0.17

Avg. % of Daily Volume



EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
HIGHEST COST COUNTRIES - Total Cost Universe Difference										
SPAIN	<1	0.08%	+3.00	+14.08	+0.00	+0.01	+50.89	+4.74	+35.06	0.42
AUSTRIA	<1	0.32%	+5.15	+14.00	+0.00	+0.04	+33.96	+8.69	+16.38	0.24
NEW ZEALAND	2	1.00%	+12.04	+14.75	+0.00	+0.01	+21.45	+7.98	+10.74	0.28
FRANCE - SELLS	4	2.92%	+7.20	+14.13	+0.00	+0.00	+18.61	+4.17	+7.51	0.65
HONG KONG	6	3.84%	+14.30	+14.00	+10.77	+10.19	+5.24	+1.89	+4.23	0.09
U.K. - BUYS	26	17.07%	+6.94	+14.23	+47.34	+26.89	8.62	+2.69	+1.86	-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)		
LOWEST COST COUNTRIES - Total Cost Universe Difference										
PORTUGAL	<1	0.01%	+4.00	+13.54	+0.00	+0.02	71.81	+8.77	90.14	-2.16
U.S.	7	4.65%	+2.68	+14.87	+0.07	+0.13	40.26	+2.99	55.49	-0.20
FINLAND	4	2.90%	+5.42	+13.80	+0.00	+0.01	26.82	+8.37	43.59	-0.20
KOREA - SELLS	<1	0.25%	+19.78	+17.98	+30.00	+28.52	28.83	+3.96	29.51	-0.32
SOUTH AFRICA - BUYS	<1	0.16%	+12.07	+15.70	+25.25	+23.97	20.27	+6.35	28.96	-0.07
ITALY - SELLS	4	2.32%	+10.67	+13.37	+0.00	+0.00	16.07	+9.69	28.47	-0.15
SINGAPORE	<1	0.19%	+5.00	+14.04	+4.00	+3.53	8.80	+2.68	20.05	0.08
NORWAY	2	1.04%	+6.71	+12.87	+0.00	+0.03	5.70	+8.08	19.97	-0.40
GERMANY	7	4.48%	+6.09	+13.85	+0.00	+0.02	5.37	+5.10	18.25	-0.12
INDIA	3	2.26%	+12.48	+15.22	+11.55	+10.75	12.27	+3.35	17.56	-0.04
SWITZERLAND	4	2.66%	+5.36	+14.57	+0.00	+0.05	3.31	+4.64	17.20	-0.24
JAPAN	43	27.89%	+6.78	+13.85	+0.00	+0.02	1.88	+6.99	15.97	-0.01
IRELAND - BUYS	<1	0.27%	+3.00	+14.38	+100.23	+100.00	0.92	+3.64	15.71	-0.24
FRANCE - BUYS	4	2.73%	+5.25	+13.89	+30.00	+30.00	2.30	+4.05	14.99	0.08
ITALY - BUYS	2	1.06%	+7.91	+13.68	+10.00	+12.00	3.37	+3.36	14.50	-0.11
U.K. - SELLS	7	4.65%	+7.16	+14.35	+0.14	+0.00	+10.71	+17.30	13.64	0.15
SOUTH AFRICA - SELLS	<1	0.42%	+13.26	+14.23	+0.20	+0.08	7.09	+4.76	12.70	-0.03
BELGIUM	<1	0.29%	+6.47	+13.71	+0.00	+0.02	+0.68	+5.12	11.70	-0.05
INDONESIA	<1	0.47%	+14.65	+16.62	+14.83	+9.72	10.01	+4.57	11.44	-0.14
KOREA - BUYS	<1	0.58%	+13.43	+16.35	+0.00	+0.00	0.76	+7.02	10.69	-0.01
BRAZIL	1	0.67%	+15.29	+14.31	+3.24	+1.59	3.05	+9.12	9.53	0.30
AUSTRALIA	4	2.59%	+7.70	+14.04	+0.00	+0.94	+3.70	+4.71	8.29	0.12
SWEDEN	9	5.80%	+7.35	+14.00	+0.00	+0.02	+0.50	+1.75	7.92	0.15

EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
LOWEST COST COUNTRIES - Total Cost Universe Difference										
CANADA	5	3.18%	+8.77	+14.35	+0.00	+0.02	+2.98	+5.16	7.78	0.14
DENMARK	2	0.99%	+8.02	+13.80	+0.00	+0.00	+8.87	+7.53	4.44	-0.19
NETHERLANDS	2	1.10%	+6.10	+13.74	+0.00	+0.10	+8.25	+4.87	4.37	-0.10
ISRAEL	2	1.14%	+14.78	+18.02	+0.00	+0.12	+4.58	+5.07	3.85	-0.27



(+) = Cost

TRADE CYCLE DETAIL

3 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)	20181st (bp)	20174th (bp)	20173rd (bp)
LAZARD ASSET MANAGEM	62	358	40.58%	172,732	-0.01	+9.06	+14.14	+0.62	+5.58	5.38	13.25	6.32	36.08
LSV ASSET MANAGEMENT	41	464	26.93%	88,426	-0.05	+4.73	+14.01	5.16	+5.98	17.28	21.78	19.83	19.23
WILLIAM BLAIR & COMP	50	771	32.49%	64,212	-0.09	+7.73	+14.31	8.67	+5.15	17.99	14.73	8.44	16.14

NOTES

- Manager above made up 100.00 % of principal traded.



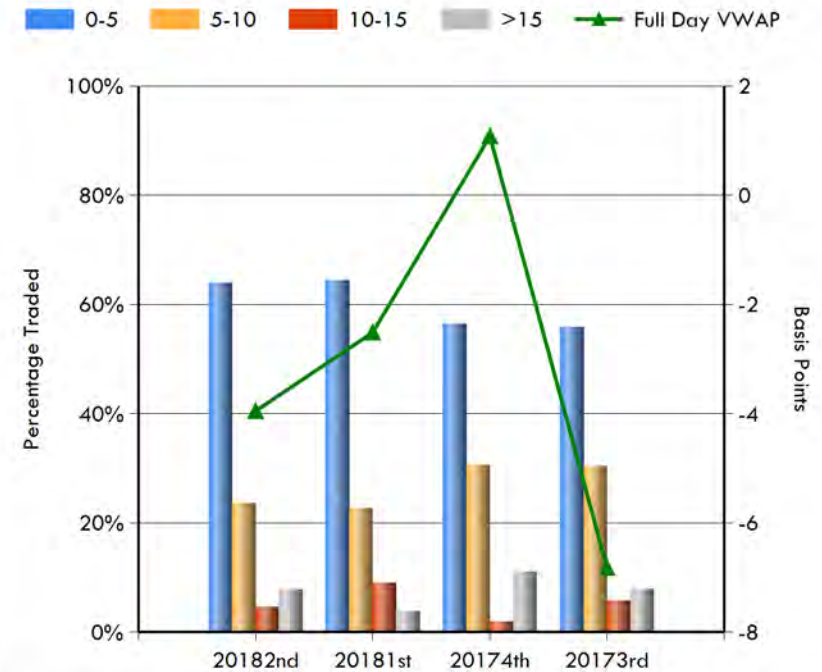
(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20181st (bp)	20174th (bp)	20173rd (bp)
CREDIT SUI	15,547	+6.94	+14.05	+4.91	+9.12	+5.90	+8.54
GOLDMAN SA	12,120	+12.71	+13.93	+4.89	+6.90	+9.55	+9.89
CITIGROUP	9,256	+7.04	+14.00	+4.95	+6.88	+5.41	+11.09
JP MORGAN	9,019	+9.53	+14.11	+4.66	+10.71	+9.58	+10.21
UBS	8,822	+7.60	+14.03	+5.03	+9.17	+6.84	+7.49
DEUTSCHE B	6,840	+9.24	+14.11	+4.60	+8.03	+8.90	+6.24
ITG	5,673	+5.71	+14.08	+4.99	+6.52	+5.53	+4.15
SOCIETE GE	5,570	+4.67	+14.10	+4.59	+5.11	+6.48	+6.29
HSBC BANK	4,656	+5.55	+14.96	+4.84	+5.44	+3.18	+6.68
BNP PARIBA	4,641	+9.28	+14.26	+5.38	+7.75	+7.70	+8.27
MORGAN STA	3,665	+10.67	+14.86	+5.36	+20.18	+7.43	+6.35
MIZUHO	2,759	+9.64	+13.85	+5.05	+9.49	+8.66	+10.43
MERRILL LY	2,745	+8.45	+13.88	+5.19	+6.37	+6.67	+6.13
JEFFERIES	2,180	+6.81	+14.41	+5.17	+7.25	+6.38	+9.16
SMBC SECUR	1,941	+8.50	+13.85	+5.06	+7.17	+7.72	+9.58
BARCLAYS	1,806	+3.48	+14.26	+4.64	+3.68	+3.32	+3.84
CREDIT AGR	1,783	+8.14	+13.91	+5.01	+9.70	+9.39	+9.47
LIQUIDNET	1,434	+5.13	+14.72	+4.85	+5.25	+6.37	+3.95
KEPLER EQU	1,073	+8.54	+14.12	+4.74	+5.00	-	-
DAIWA SECU	1,029	+7.37	+13.88	+4.95	+8.93	+7.74	+9.59

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)	20181st (bp)	20174th (bp)	20173rd (bp)
LAZARD ASSET MANAGEM	62	358	40.58%	172,732	-0.01	+9.06	+14.14	+0.62	+5.59	5.39	13.25	6.32	36.08
WILLIAM BLAIR & COMP	50	771	32.49%	64,212	-0.09	+7.73	+14.31	8.67	+5.15	17.99	14.73	8.44	16.14
LSV ASSET MANAGEMENT	41	464	26.93%	88,426	-0.05	+4.73	+14.01	5.16	+5.98	17.28	21.78	19.83	19.23

NOTES

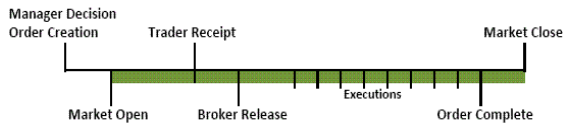
- Manager above made up 100.00 % of principal traded.



(+) = 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)	20181st (bp)	20174th (bp)	20173rd (bp)
CREDIT SUISSE	22	229	14.71%	97,861	0.05	15,547	+6.94	+14.05	+1.99	+5.40	8.08	14.02	16.85	15.94
CITIGROUP	13	95	8.62%	138,307	0.08	9,256	+7.04	+14.00	+7.82	+8.22	7.16	13.67	15.74	16.54
SOCIETE GENERALE	12	127	7.83%	93,904	-0.14	5,570	+4.67	+14.10	5.59	+5.79	15.47	24.04	4.52	28.18
UBS	12	163	7.62%	71,217	-0.05	8,822	+7.60	+14.03	8.11	+4.82	19.26	18.64	21.64	14.92
ITG	10	140	6.52%	70,989	0.19	5,673	+5.71	+14.08	+3.28	+5.12	9.03	8.16	14.45	2.73
GOLDMAN SACHS	10	43	6.26%	221,684	-0.09	12,120	+12.71	+13.93	33.16	+5.22	36.48	14.07	4.04	14.83
JP MORGAN CHASE	9	47	6.21%	201,259	-0.16	9,019	+9.53	+14.11	+1.82	+4.15	+1.91	3.86	11.50	13.56
HSBC BANK	8	61	5.51%	137,518	-0.52	4,656	+5.55	+14.96	17.70	+4.85	17.39	25.63	49.21	29.13
DEUTSCHE BANK	7	62	4.86%	119,395	-0.03	6,840	+9.24	+14.11	+0.51	+5.04	+2.57	20.07	6.03	21.19
BARCLAYS	5	69	3.41%	75,299	-0.16	1,806	+3.48	+14.26	8.37	+6.61	19.86	48.23	12.30	22.10

NOTES

- Brokers above made up 71.53 % 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)	20181st (bp)	20174th (bp)	20173rd (bp)
BNP PARIBAS	5	60	3.28%	83,333	0.05	4,641	+9.28	+14.26	3.55	+5.79	13.93	7.01	24.12	+5.57
MORGAN STANLEY	3	56	2.25%	61,344	0.32	3,665	+10.67	+14.86	+15.13	+4.61	+6.42	+9.36	15.30	20.44
MERRILL LYNCH	3	31	2.13%	104,825	-0.23	2,745	+8.45	+13.88	11.69	+6.06	21.37	22.31	5.02	8.03
JEFFERIES & CO	3	56	2.10%	57,136	-0.05	2,180	+6.81	+14.41	7.17	+6.89	20.44	+0.98	+0.43	13.34
MIZUHO	3	26	1.88%	110,054	0.04	2,759	+9.64	+13.85	+0.37	+6.88	10.73	3.44	9.35	11.23
LIQUIDNET	3	24	1.83%	116,423	-0.12	1,434	+5.13	+14.72	+1.86	+3.73	11.47	29.48	49.00	417.13
SMBC SECURITIES INC	2	7	1.50%	326,249	-0.16	1,941	+8.50	+13.85	3.36	+6.99	15.72	15.49	10.54	9.12
CREDIT AGRICOLE	2	25	1.44%	87,571	0.08	1,783	+8.14	+13.91	5.22	+5.90	16.99	22.29	9.30	10.94
INSTINET	2	33	1.24%	57,377	-0.12	741	+3.92	+13.85	6.54	+6.99	23.48	23.31	18.01	8.07
DAIWA SECURITIES	1	16	0.92%	87,310	0.01	1,029	+7.37	+13.88	+7.96	+6.08	4.54	11.80	13.03	3.55

NOTES

- Brokers above made up 18.57 % 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)	20181st (bp)	20174th (bp)	20173rd (bp)
KEPLER EQUITIES	1	5	0.82%	251,327	-0.48	1,073	+8.54	+14.12	14.66	+4.09	22.83	5.59	-	-
EXANE	<1	18	0.61%	51,779	-0.14	637	+6.83	+13.81	9.78	+4.00	21.32	21.27	20.52	20.52
D CARNEGIE AG	<1	3	0.59%	301,619	-0.46	633	+7.00	+14.00	17.08	+1.75	25.85	+16.40	11.91	-
TD WATERHOUSE	<1	17	0.58%	51,982	-0.05	974	+11.02	+14.35	7.17	+5.16	15.69	+47.73	10.24	28.62
PERSHING	<1	1	0.52%	790,914	1.64	949	+12.00	+13.85	+51.36	+5.10	+44.39	+3.12	+24.94	+3.90
SC BERNSTEIN	<1	15	0.46%	46,311	0.25	214	+3.08	+14.41	+6.04	+4.53	9.74	17.82	4.97	11.07
LIBERUM CAPITAL LTD	<1	8	0.41%	79,005	-0.06	332	+5.26	+14.23	24.96	+2.69	25.84	10.60	+29.72	18.56
JOH BERENBERG GOSSLE	<1	11	0.41%	57,298	-0.80	441	+7.00	+14.31	2.83	+5.35	18.38	-	4.06	+21.00
RBC DOMINION SECS	<1	8	0.40%	76,178	-0.04	272	+4.47	+14.35	7.27	+5.16	22.33	6.83	+10.17	6.61
SCOTIA CAPITAL	<1	17	0.38%	33,631	-0.27	69	+1.20	+14.35	5.25	+5.16	23.58	27.21	27.08	33.88

NOTES

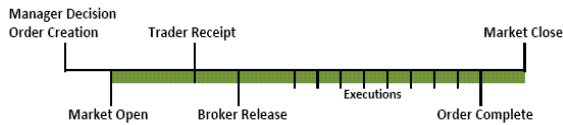
- Brokers above made up 5.19 % of principal traded.



(+) = 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)	20181st (bp)	20174th (bp)	20173rd (bp)
MITSUBISHI UFJ SECS	<1	7	0.37%	81,038	0.07	340	+6.00	+13.85	+3.92	+6.99	10.94	10.67	10.11	9.22
EDELWEISS SECURITIES	<1	4	0.35%	134,026	-0.75	643	+12.00	+15.22	28.97	+3.35	34.13	31.22	-	-
TOKYO MITSUBISHI	<1	4	0.32%	123,374	0.03	422	+8.54	+13.85	1.63	+6.99	13.95	-	-	-
BANCO PACTUAL	<1	7	0.31%	67,832	0.42	548	+11.55	+14.31	23.80	+9.12	34.02	-	-	-
PANMURE GORDON	<1	8	0.28%	53,114	N/A	297	+7.00	+14.23	11.56	+2.69	+1.92	-	4.73	5.76
INVESTEC BANK	<1	10	0.21%	32,162	N/A	225	+7.00	+14.35	9.42	+17.30	33.72	46.11	40.92	-
NOMURA	<1	7	0.20%	43,901	-0.38	294	+9.55	+15.07	24.65	+3.75	33.27	17.15	11.05	-
MACQUARIE	<1	5	0.19%	58,632	-0.19	280	+9.54	+14.71	9.32	+5.42	19.44	7.89	13.32	15.54
ROYAL BANK OF CANADA	<1	4	0.19%	73,000	-1.01	227	+7.77	+14.23	49.10	+2.69	65.94	-	-	-
BANCO SANTANDER	<1	4	0.18%	67,915	0.05	151	+5.56	+14.87	+37.74	+2.99	+25.35	-	32.83	+5.36

NOTES

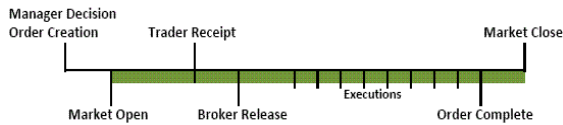
- Brokers above made up 2.61 % of principal traded.



(+) = 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)	20181st (bp)	20174th (bp)	20173rd (bp)
PAVILION GLOBAL MKT	<1	12	0.17%	21,304	-0.29	77	+3.00	+14.35	7.63	+5.16	24.16	18.60	32.39	28.46
BTIG LLC	<1	3	0.15%	75,873	0.00	32	+1.41	+14.87	+3.99	+2.99	12.38	14.70	36.14	-
DAVY STOCKBROKERS	<1	3	0.15%	74,968	0.79	157	+7.00	+14.23	+9.63	+2.69	+73.01	22.61	-	17.63
SVENSKA HANDELSBANKE	<1	6	0.15%	37,256	0.08	156	+7.00	+14.00	+6.73	+1.75	2.04	-	-	-
MEDIOBANCA	<1	3	0.15%	74,162	-0.30	156	+7.00	+13.68	7.77	+3.36	19.81	-	-	-
MOTILAL OSWAL SECURI	<1	4	0.15%	55,332	-0.44	266	+12.00	+15.22	+17.64	+3.35	+12.48	-	-	-
NESBITT BURNS	<1	2	0.13%	96,897	0.41	245	+12.63	+14.35	+13.11	+5.16	+6.21	+2.74	24.15	46.19
NUMIS SECURITIES	<1	4	0.12%	46,775	N/A	131	+7.00	+14.26	3.96	+6.84	1.25	-	-	-
BRDESCO	<1	1	0.12%	181,117	0.13	272	+15.00	+14.31	+19.05	+9.12	+12.28	12.11	-	-
KOTAK SECURITIES	<1	3	0.11%	53,962	-0.57	194	+12.00	+15.22	31.71	+3.35	36.87	+119.71	-	-

NOTES

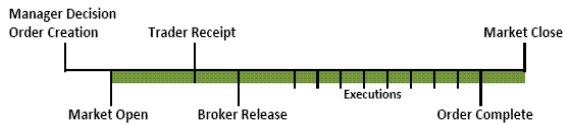
- Brokers above made up 1.38 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20181st (bp)	20174th (bp)	20173rd (bp)
WOORI INVESTMENT SEC	<1	1	0.10%	155,526	-0.54	156	+10.00	+16.35	54.43	+7.02	67.80	-	-	-
BANK J. VONTOBEL	<1	6	0.10%	25,837	0.21	109	+7.00	+14.57	+20.57	+4.64	+8.31	-	14.39	-
DANSKE BANK	<1	3	0.09%	45,504	0.51	96	+7.00	+13.80	+29.92	+7.53	+15.59	29.04	-	51.99
ABG SECURITIES	<1	2	0.07%	54,040	0.66	76	+7.00	+14.00	+22.59	+1.75	+13.82	32.21	36.56	21.72
CANTOR FITZGERALD	<1	1	0.06%	92,717	-0.72	46	+5.00	+13.74	16.02	+4.87	29.73	-	-	-
ENSKILDA SECURITIES	<1	1	0.06%	88,640	-0.64	44	+5.00	+14.00	84.92	+1.75	95.69	-	6.93	-
CIBC WORLD MARKETS	<1	1	0.06%	84,453	-0.16	94	+11.11	+14.35	10.27	+5.16	18.69	+19.72	-	+11.28
PAREL	<1	1	0.04%	67,459	-0.52	34	+5.00	+13.68	28.84	+3.36	42.88	128.16	-	-
BTG CAPITAL CORP	<1	1	0.04%	65,503	-1.72	62	+9.40	+14.87	39.71	+2.99	48.06	-	-	-
NORDEA BANK	<1	1	0.04%	65,139	-0.98	33	+5.00	+13.80	108.89	+8.37	126.07	-	+21.56	-

NOTES

- Brokers above made up 0.67 % 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)	20181st (bp)	20174th (bp)	20173rd (bp)
OKASAN INTERNATIONAL	<1	1	0.04%	63,906	0.26	38	+6.00	+13.85	+2.60	+6.99	12.26	-	-	-

NOTES

- Brokers above made up 0.04 % of principal traded.



(+) = 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)	20181st (bp)	20174th (bp)	20173rd (bp)
GRAND TOTAL	62	358	40.58%	172,732	-0.01	56,039	+9.06	+14.14	+0.62	+5.59	5.39	13.25	6.32	36.08
JP MORGAN CHASE	9	29	5.74%	301,473	-0.18	8,081	+9.24	+14.13	+2.06	+4.20	+2.50	12.26	13.01	22.36
CREDIT SUISSE	8	42	4.99%	181,019	-0.01	6,647	+8.74	+14.02	1.74	+3.45	3.78	9.85	15.71	7.46
GOLDMAN SACHS	7	7	4.39%	955,745	0.09	10,118	+15.12	+13.72	+2.31	+5.97	2.04	26.53	+2.16	16.20
CITIGROUP	6	28	3.67%	199,762	0.09	4,851	+8.67	+13.99	+10.51	+10.53	5.34	+2.14	32.51	11.96
DEUTSCHE BANK	6	51	3.66%	109,495	-0.01	5,934	+10.63	+14.20	+5.71	+4.71	+13.30	23.04	4.09	15.33
SOCIETE GENERALE	5	18	3.05%	257,962	-0.20	2,438	+5.25	+14.09	+4.46	+7.02	4.88	31.28	+0.47	27.60
UBS	4	40	2.45%	93,318	-0.24	3,202	+8.58	+13.90	15.01	+6.52	26.66	65.26	20.51	23.70
BARCLAYS	4	35	2.41%	104,775	-0.09	1,068	+2.91	+14.24	7.50	+4.12	17.78	32.07	5.38	26.95
ITG	2	16	1.55%	147,821	0.70	1,183	+5.00	+14.03	7.35	+5.06	17.21	25.57	2.85	+19.25
MIZUHO	2	13	1.21%	142,134	0.09	2,138	+11.57	+13.85	+2.30	+6.99	6.99	-	12.49	-



(+) = 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)	2018 1st (bp)	2017 4th (bp)	2017 3rd (bp)
GRAND TOTAL	41	464	26.93%	88,426	-0.05	19,387	+4.73	+14.01	5.16	+5.98	17.28	21.78	19.83	19.23
CREDIT SUISSE	13	156	8.63%	84,279	0.09	7,179	+5.46	+13.98	+3.19	+6.47	11.37	17.33	19.42	24.89
HSBC BANK	7	56	4.28%	116,443	-0.63	1,956	+3.00	+14.23	24.13	+4.87	21.54	38.24	49.78	55.66
CITIGROUP	7	55	4.28%	118,510	0.05	2,607	+4.00	+13.87	+6.81	+6.80	9.96	17.74	+16.43	6.69
UBS	5	61	3.05%	76,095	0.09	2,321	+5.00	+13.95	6.75	+3.94	19.68	20.30	34.24	+1.76
ITG	3	24	1.67%	106,276	0.01	1,572	+6.16	+13.99	10.01	+6.45	24.49	+2.24	16.93	+6.02
BNP PARIBAS	1	13	0.93%	109,377	0.69	1,243	+8.74	+13.92	+10.18	+6.14	1.50	+11.50	21.79	+80.18
MERRILL LYNCH	1	17	0.87%	78,170	-0.21	554	+4.17	+14.02	19.63	+5.35	34.85	46.33	27.02	47.39
DEUTSCHE BANK	<1	2	0.61%	462,897	-0.21	370	+4.00	+13.85	24.98	+5.10	39.95	27.55	31.03	27.57
SOCIETE GENERALE	<1	7	0.56%	122,001	0.18	561	+6.57	+13.91	36.66	+3.80	47.82	24.14	14.71	37.56
BARCLAYS	<1	22	0.55%	37,813	-0.57	250	+3.00	+14.33	22.91	+14.78	44.77	55.74	29.28	11.07



(+) = 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)	20181st (bp)	20174th (bp)	20173rd (bp)
GRAND TOTAL	50	771	32.49%	64,212	-0.09	38,293	+7.73	+14.31	8.67	+5.15	17.99	14.73	8.44	16.14
SOCIETE GENERALE	6	102	4.22%	63,024	-0.15	2,571	+4.00	+14.13	8.75	+5.16	18.84	11.67	3.31	28.37
ITG	5	100	3.30%	50,228	0.14	2,918	+5.81	+14.16	+15.01	+4.47	+2.64	5.70	38.48	30.08
UBS	3	62	2.12%	52,158	-0.02	3,300	+10.20	+14.30	2.09	+4.12	10.13	28.82	16.21	17.20
JEFFERIES & CO	3	56	2.10%	57,136	-0.05	2,180	+6.81	+14.41	7.17	+6.89	20.44	+11.76	+2.29	1.64
GOLDMAN SACHS	3	36	1.87%	78,950	-0.58	2,002	+7.05	+14.41	115.75	+3.47	116.69	11.26	13.25	16.93
BNP PARIBAS	3	37	1.78%	73,175	-0.26	2,420	+8.94	+14.57	10.56	+5.23	20.52	12.02	0.76	8.68
LIQUIDNET	2	19	1.15%	92,435	-0.02	821	+4.68	+14.79	+6.20	+3.40	7.30	+5.91	29.76	+10.83
MERRILL LYNCH	2	12	1.15%	146,167	-0.28	2,044	+11.66	+13.77	7.53	+6.83	13.12	2.97	+5.91	17.85
CREDIT SUISSE	2	31	1.09%	53,542	-0.09	1,720	+10.36	+14.83	+9.53	+5.87	1.62	21.98	+2.85	5.05
MORGAN STANLEY	2	41	1.08%	40,306	0.19	3,074	+18.60	+15.34	+14.53	+4.30	+13.75	9.84	16.81	+0.73



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
ROYAL DUTCH SHELL PLC B SHS CO	39	153,100	-5,382,852	5,382,852	0.09%	-0.61	19.93
TOKYO ELECTRON LTD COMMON STOC	16	27,500	2,018,735	5,068,516	0.11%	-0.14	5.97
RELX PLC COMMON STOCK GBP.1443	26	208,495	-4,596,974	4,596,974	0.43%	-0.09	1.74
UBISOFT ENTERTAINMENT COMMON S	18	38,098	3,668,640	3,999,512	0.76%	0.34	+12.64
VOLKSWAGEN AG PREF PREFERENCE	6	18,638	-3,899,881	3,899,881	0.27%	-0.09	+5.22
UNICREDIT SPA COMMON STOCK	8	150,553	3,136,305	3,167,380	0.16%	-0.11	9.23
BUNZL PLC COMMON STOCK GBP.321	21	105,070	-3,154,144	3,154,144	1.13%	-0.57	16.18
MELROSE INDUSTRIES PLC COMMON	10	987,920	-3,143,514	3,143,514	0.91%	N/A	+6.09
TECHTRONIC INDUSTRIES CO LTD C	5	511,000	-3,033,347	3,033,347	3.53%	0.11	2.08
BRITISH AMERICAN TOBACCO PLC C	8	57,312	2,406,997	2,972,288	0.11%	0.52	+33.57

Names Most Traded - Total Orders (\$)

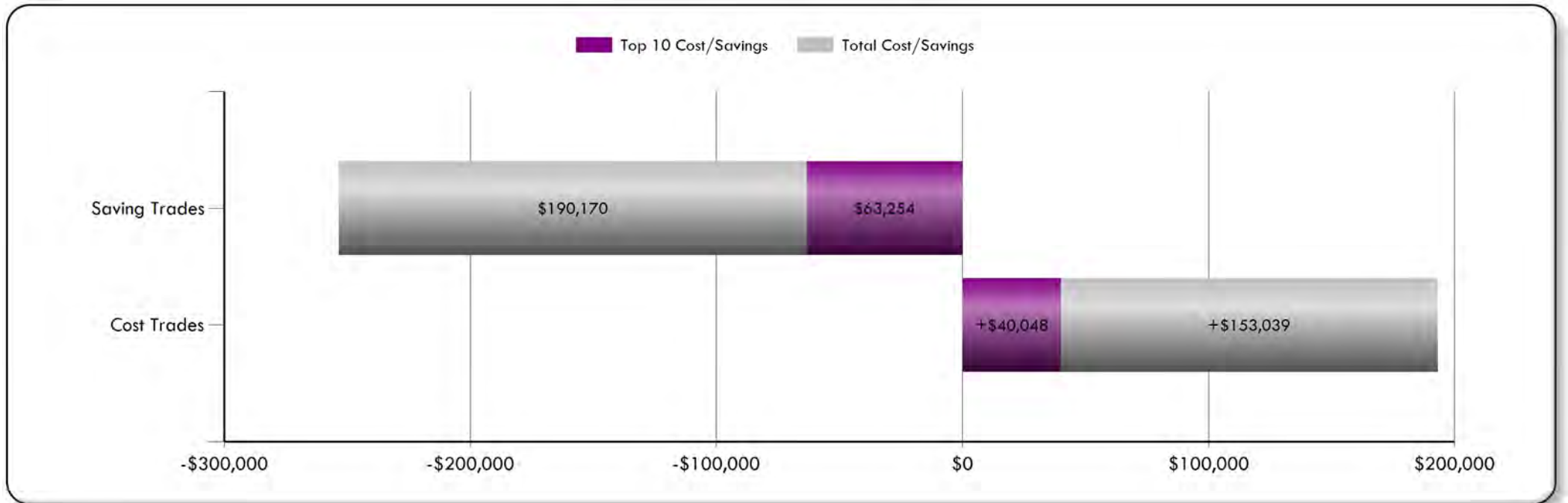
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
ROYAL DUTCH SHELL PLC B SHS CO	39	153,100	-5,382,852	+3.09	0.09%	-0.61	19.93
VOLVO AB B SHS COMMON STOCK SE	36	166,200	-2,949,380	+5.23	0.11%	0.34	+4.88
NATIXIS COMMON STOCK	32	302,700	-2,465,173	+5.14	0.30%	0.24	+4.20
ASSTEAD GROUP PLC COMMON STOCK	29	62,370	1,326,203	+3.00	0.21%	-0.50	30.03
PARAMOUNT BED HOLDINGS CO LT C	27	19,900	991,788	+4.75	1.54%	0.07	+5.04
RELX PLC COMMON STOCK GBP.1443	26	208,495	-4,596,974	+10.86	0.43%	-0.09	1.74
ULVAC INC COMMON STOCK	26	46,400	-672,164	+5.57	0.32%	-0.14	1.88
NESTE OYJ COMMON STOCK	26	25,600	1,858,489	+4.68	0.34%	-0.20	53.61
DOWNER EDI LTD COMMON STOCK	25	303,100	1,502,885	+7.47	1.14%	0.39	+10.10
SHIMANO INC COMMON STOCK	25	20,400	2,772,586	+11.44	0.23%	0.03	1.05



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	5,848,517	10	+76.97	20.74%
Cost Trades	67,660,553	698	+30.87	100.00%
Saving Trades	84,688,294	894	33.59	100.00%
10 Low Cost Trades	3,902,341	10	180.77	24.96%





(+) = Cost

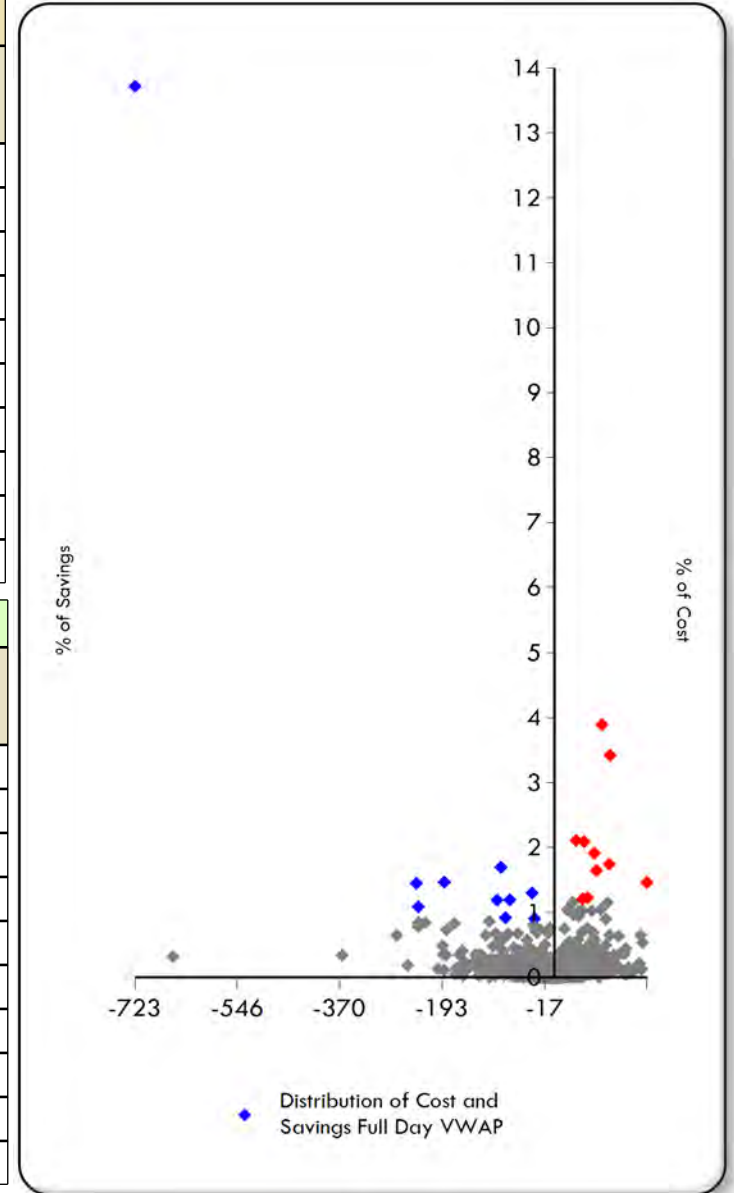
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Sell	UK	BRITISH AM	20180419	907,701	3.90%	1.47	+82.20	LAZAR	CITIG
Sell	FRA	UBISOFT EN	20180626	681,317	3.42%	1.78	+96.11	LAZAR	SOCIE
Sell	SWE	SWEDBANK A	20180411	1,084,386	2.11%	0.73	+37.48	LAZAR	CREDI
Buy	GER	VOLKSWAGEN	20180522	790,914	2.09%	1.64	+51.36	LAZAR	PERSH
Sell	FRA	FAURECIA C	20180503	532,987	1.92%	1.79	+68.92	LAZAR	GOLDM
Sell	HKG	MAN WAH HO	20180516	352,798	1.75%	0.86	+94.64	WILLI	ITG
Sell	UK	BRITISH AM	20180423	434,604	1.65%	1.82	+72.70	LAZAR	SOCIE
Sell	US	51JOB INC	20180627	174,219	1.46%	0.94	+159.77	WILLI	ITG
Sell	UK	COMPASS GR	20180503	410,061	1.23%	N/A	+57.57	LAZAR	DEUTS
Buy	JAP	TOKYO ELEC	20180628	479,530	1.21%	0.24	+48.97	LSV A	CITIG

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	US	GLOBANT SA	20180621	446,316	13.72%	-3.04	722.83	WILLI	GOLDM
Buy	GER	COVESTRO A	20180628	464,482	1.70%	-1.18	91.87	LSV A	DEUTS
Buy	US	ACCENTURE	20180628	192,817	1.47%	-1.47	189.54	LAZAR	BARCL
Sell	FIN	NESTE OYJ	20180426	158,574	1.45%	-0.98	237.64	LSV A	UBS
Buy	UK	BUNZL PLC	20180430	862,337	1.30%	-1.49	38.14	LAZAR	SOCIE
Buy	UK	ROYAL DUTC	20180524	392,844	1.20%	-1.17	76.64	LSV A	HSBC
Buy	UK	ROYAL DUTC	20180615	303,731	1.19%	-1.93	98.61	LSV A	HSBC
Sell	FIN	NESTE OYJ	20180426	120,780	1.09%	-0.96	234.38	LSV A	SOCIE
Sell	GER	BAYER AG R	20180627	280,185	0.92%	-1.12	84.14	LSV A	MERRI
Sell	ITA	UNICREDIT	20180516	680,275	0.91%	-0.25	33.96	LAZAR	GOLDM





(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BRITISH AMERICAN TOBACCO PLC C - 20180419

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	UK	GBP	0287580	04/19/2018 08:00:00	04/19/2018 16:30:00	907,701	36.75	37.06	+7,523	+82.19	1.47	0.16



NOTES

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

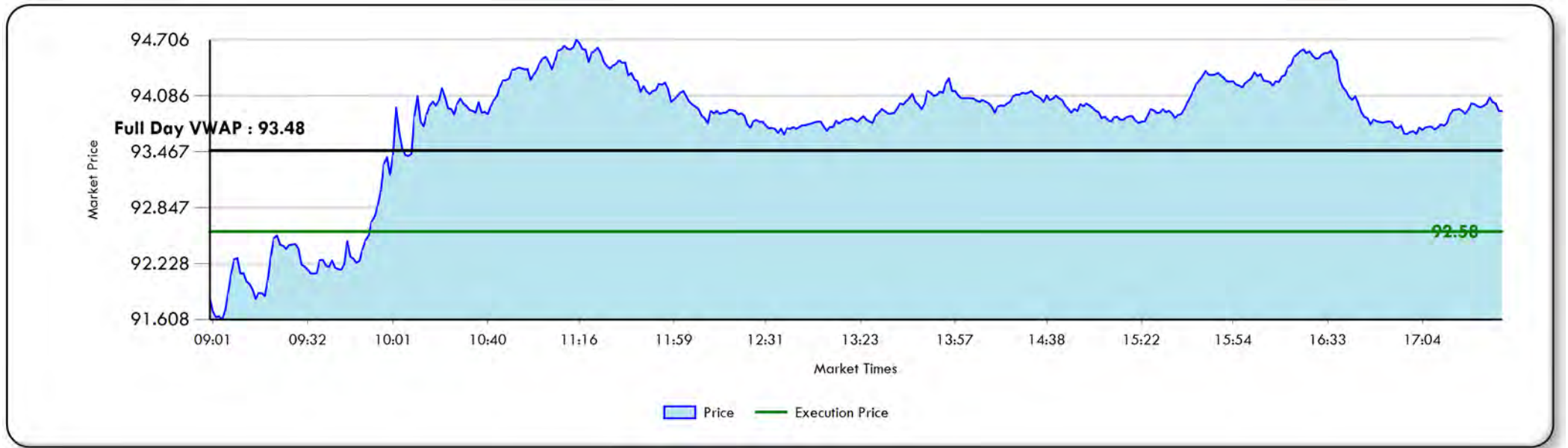


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

UBISOFT ENTERTAINMENT COMMON S - 20180626

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	FRA	EUR	B1L3CS6	06/26/2018 09:00:00	06/26/2018 17:30:00	681,317	92.58	93.48	+6,612	+96.10	1.78	2.36



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.

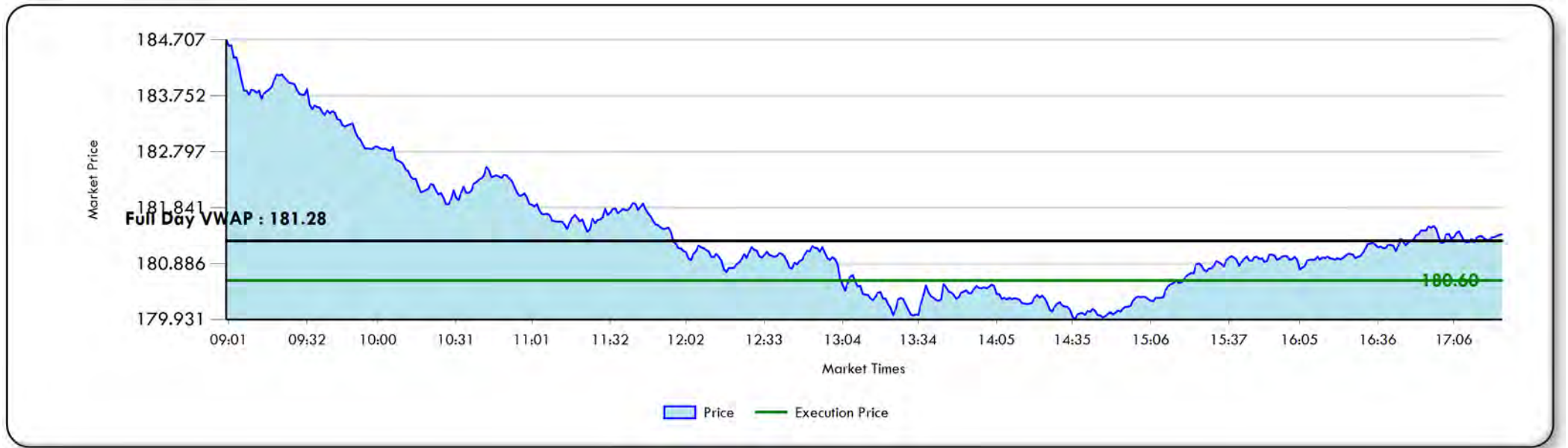


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SWEDBANK AB A SHARES COMMON - 20180411

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	CREDIT SUISSE	SWE	SEK	4846523	04/11/2018 09:00:00	04/11/2018 17:30:00	1,084,386	180.60	181.28	+4,080	+37.48	0.73	1.37



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.11% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VOLKSWAGEN AG PREF PREFERENCE - 20180522

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	PERSHING	GER	EUR	5497168	05/22/2018 09:00:00	05/22/2018 17:30:00	790,914	176.33	175.43	+4,042	+51.36	1.64	0.39



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.09% of your market impact cost.

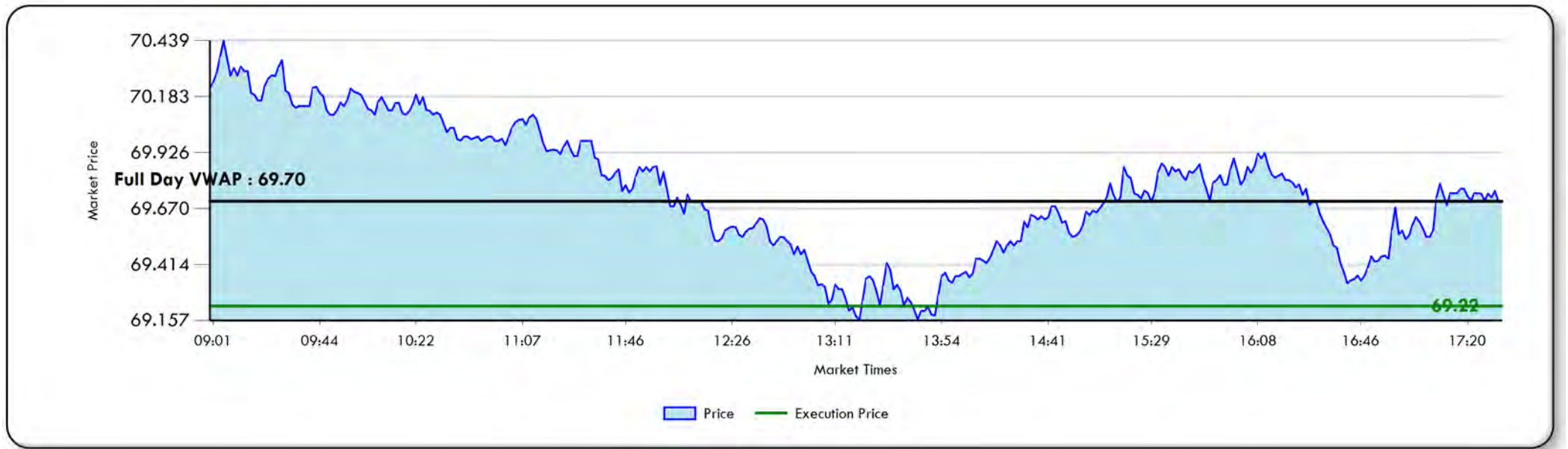


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

FAURECIA COMMON STOCK EUR7. - 20180503

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	GOLDMAN SACHS	FRA	EUR	4400446	05/03/2018 09:00:00	05/03/2018 17:30:00	532,987	69.22	69.70	+3,699	+68.92	1.79	3.78



NOTES

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

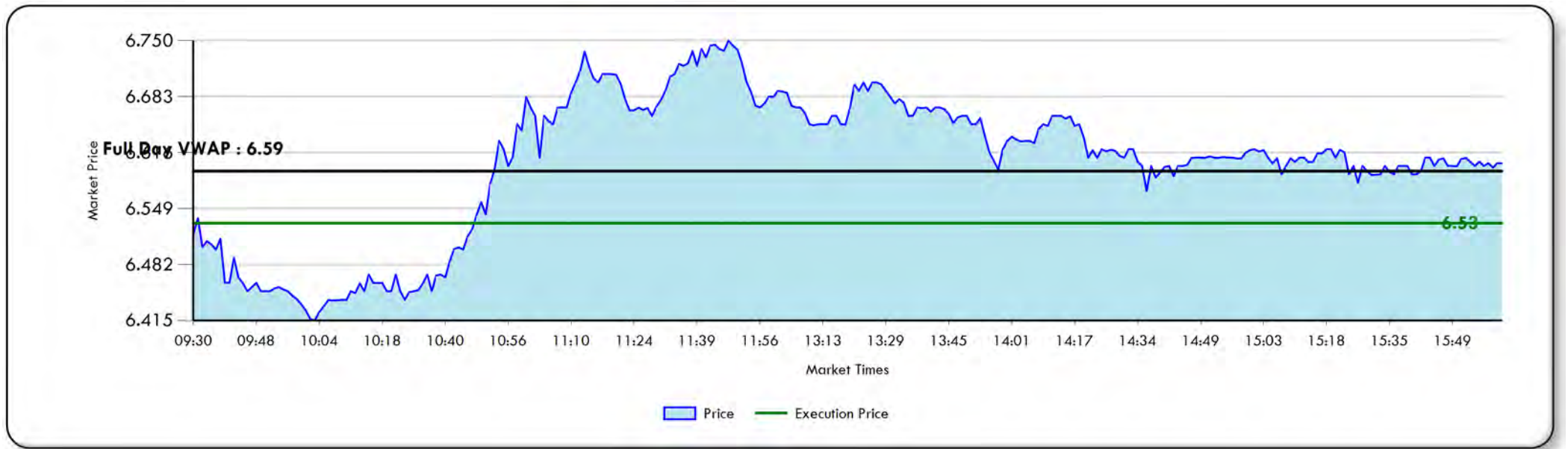


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MAN WAH HOLDINGS LTD COMMON ST - 20180516

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	ITG	HKG	HKD	B58YWF7	05/16/2018 09:30:00	05/16/2018 16:00:00	352,798	6.53	6.59	+3,371	+94.64	0.86	1.97



NOTES

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

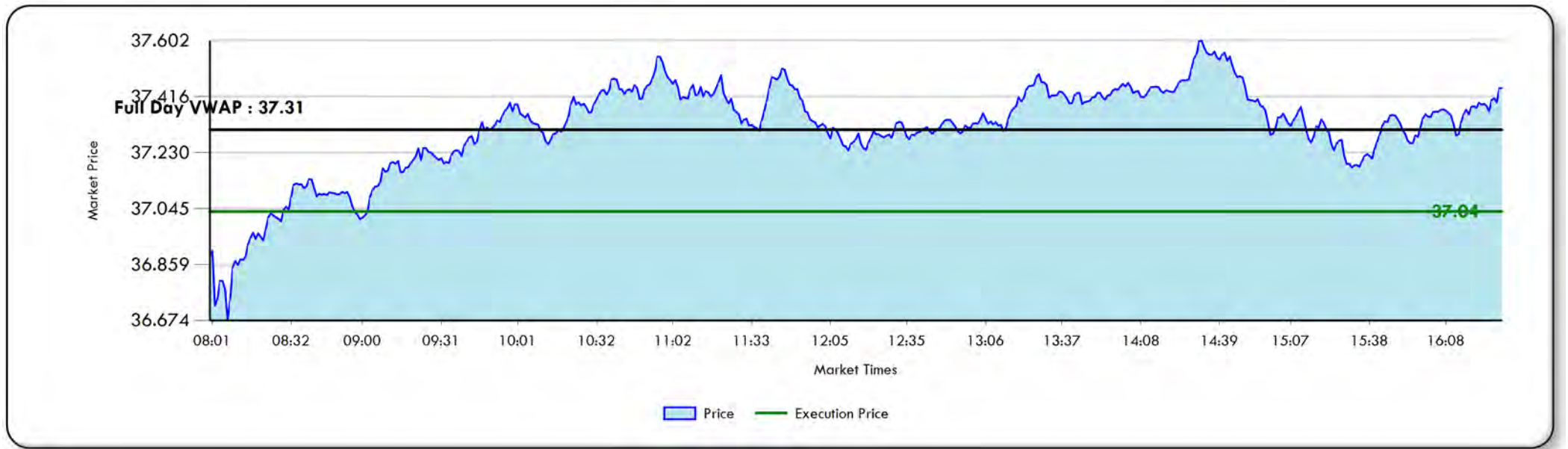


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BRITISH AMERICAN TOBACCO PLC C - 20180423

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	UK	GBP	0287580	04/23/2018 08:00:00	04/23/2018 16:30:00	434,604	37.04	37.31	+3,183	+72.69	1.82	0.19



NOTES

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

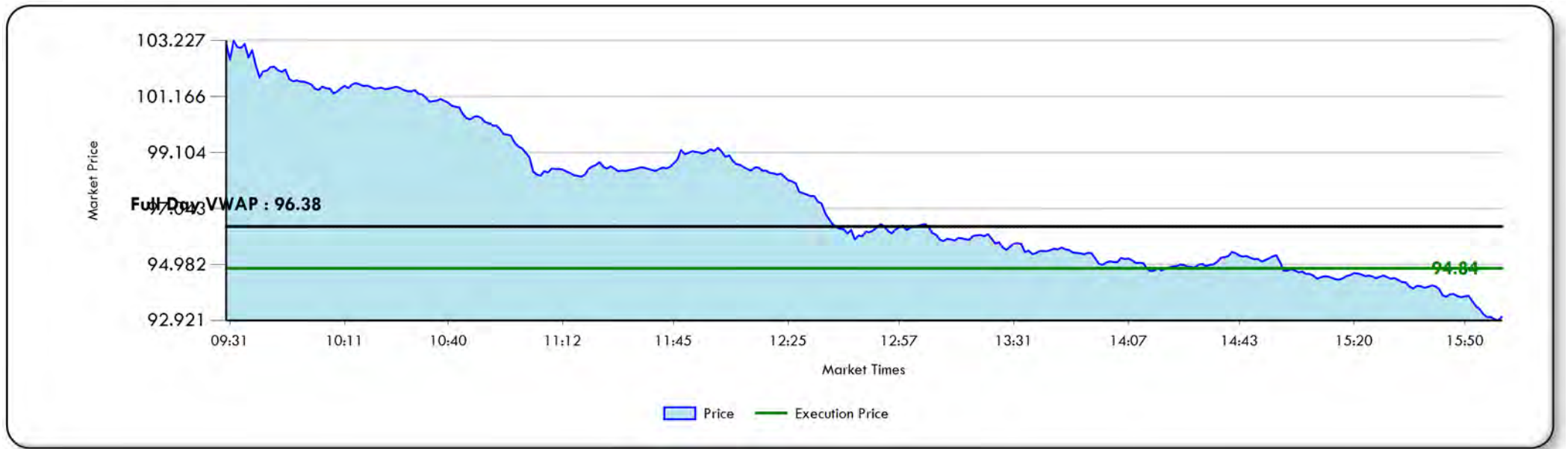


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

51JOB INC ADR ADR USD.0001 - 20180627

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	ITG	US	USD	B02TT74	06/27/2018 09:30:00	06/27/2018 16:00:00	174,219	94.84	96.38	+2,829	+159.76	0.94	0.35



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.46% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

COMPASS GROUP PLC COMMON STOCK - 20180503

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	DEUTSCHE BANK	UK	GBP	BD6K457	05/03/2018 08:00:00	05/03/2018 16:30:00	410,061	15.64	15.73	+2,374	+57.56	N/A	0.31



NOTES

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

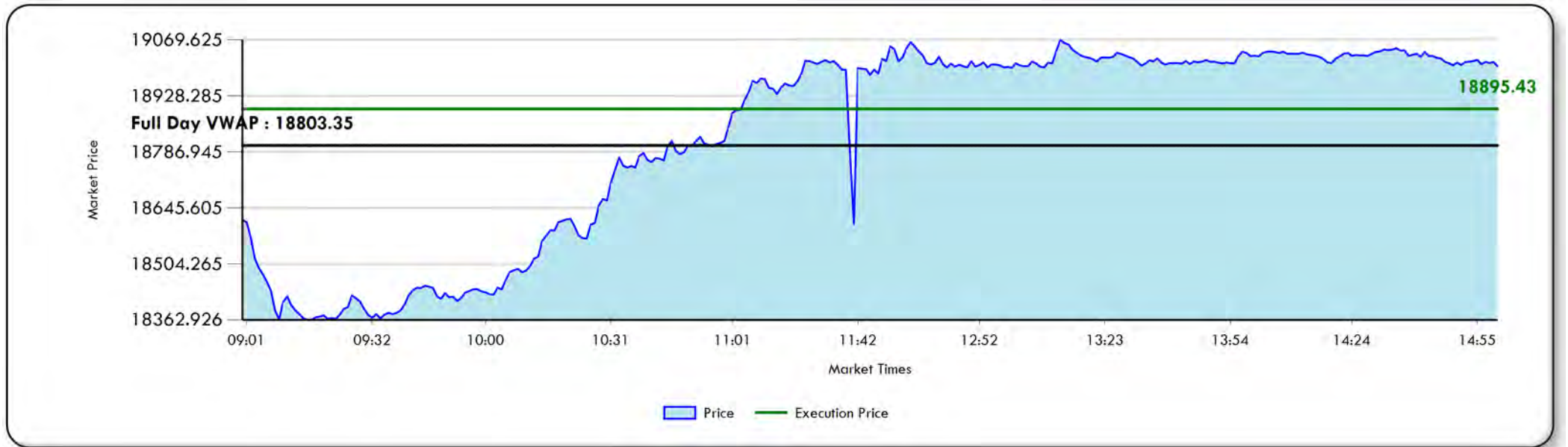


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TOKYO ELECTRON LTD COMMON STOC - 20180628

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	CITIGROUP	JAP	JPY	6895675	06/28/2018 09:00:00	06/28/2018 15:00:00	479,530	18895.43	18803.35	+2,337	+48.96	0.24	0.17



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.21% of your market impact cost.

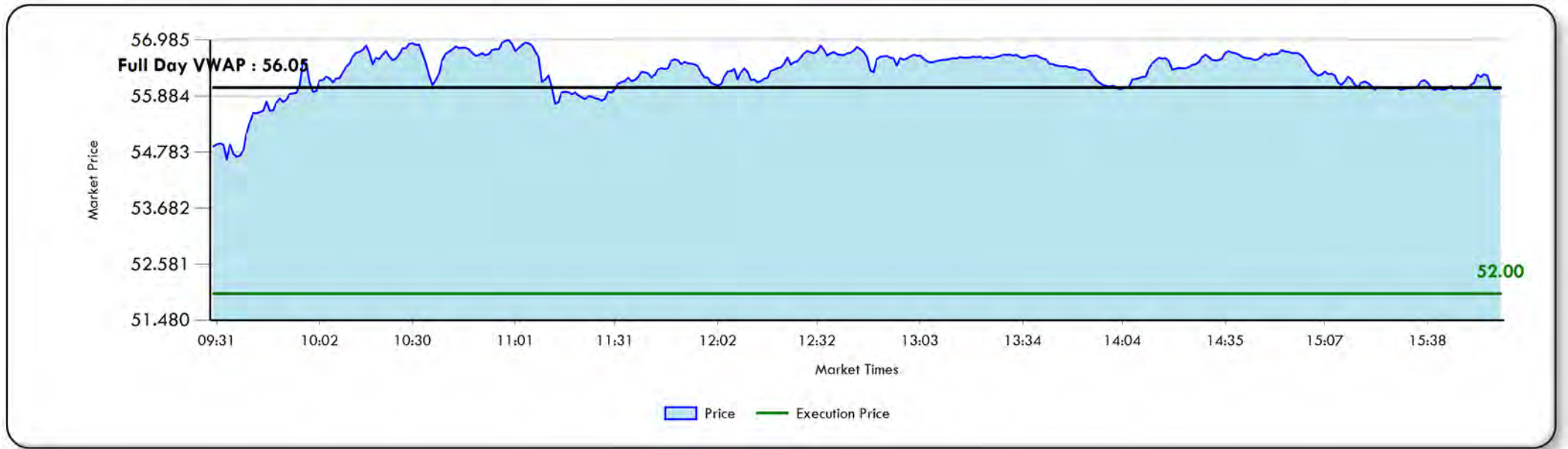


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GLOBANT SA COMMON STOCK USD1.2 - 20180621

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	GOLDMAN SACHS	US	USD	BP40HF4	06/21/2018 09:30:00	06/21/2018 16:00:00	446,316	52.00	56.05	34,774	722.82	-3.04	0.32



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 13.72% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

COVESTRO AG COMMON STOCK - 20180628

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	DEUTSCHE BANK	GER	EUR	BYTBWY9	06/28/2018 09:00:00	06/28/2018 17:30:00	464,482	73.04	73.72	4,307	91.87	-1.18	0.37



NOTES

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

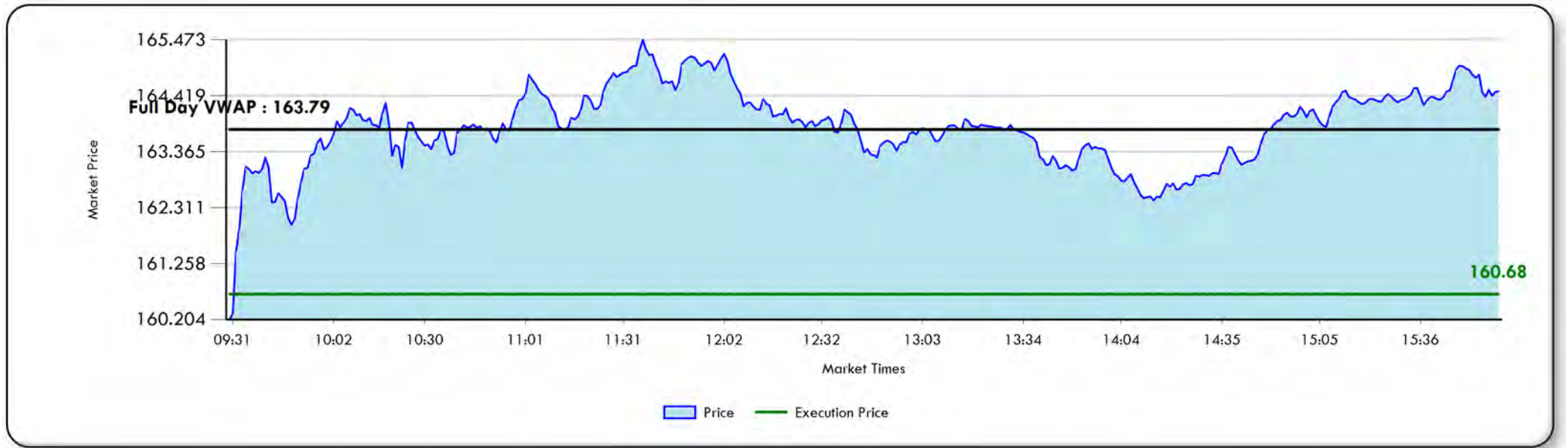


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ACCENTURE PLC CL A COMMON STOC - 20180628

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	BARCLAYS	US	USD	B4BNMY3	06/28/2018 09:30:00	06/28/2018 16:00:00	192,817	160.68	163.79	3,725	189.53	-1.47	0.02



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.47% of your market impact cost.

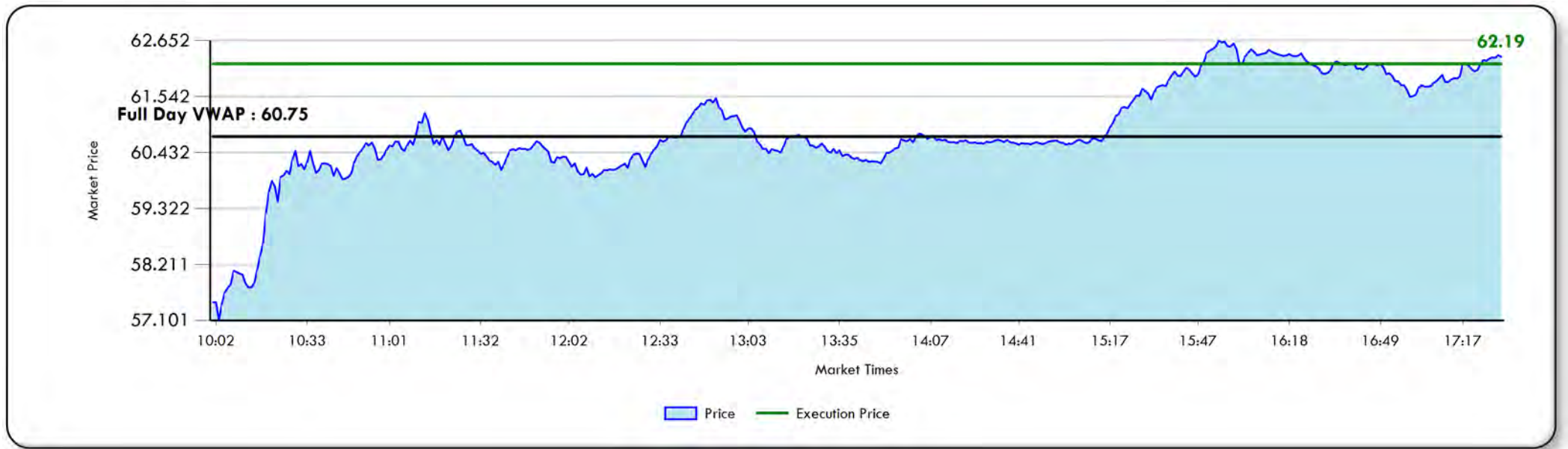


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NESTE OYJ COMMON STOCK - 20180426

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	UBS	FIN	EUR	B06YV46	04/26/2018 09:00:00	04/26/2018 17:30:00	158,574	62.19	60.75	3,681	237.63	-0.98	0.20



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BUNZL PLC COMMON STOCK GBP.321 - 20180430

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	UK	GBP	B0744B3	04/30/2018 08:00:00	04/30/2018 16:30:00	862,337	20.95	21.03	3,301	38.13	-1.49	3.45



NOTES

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

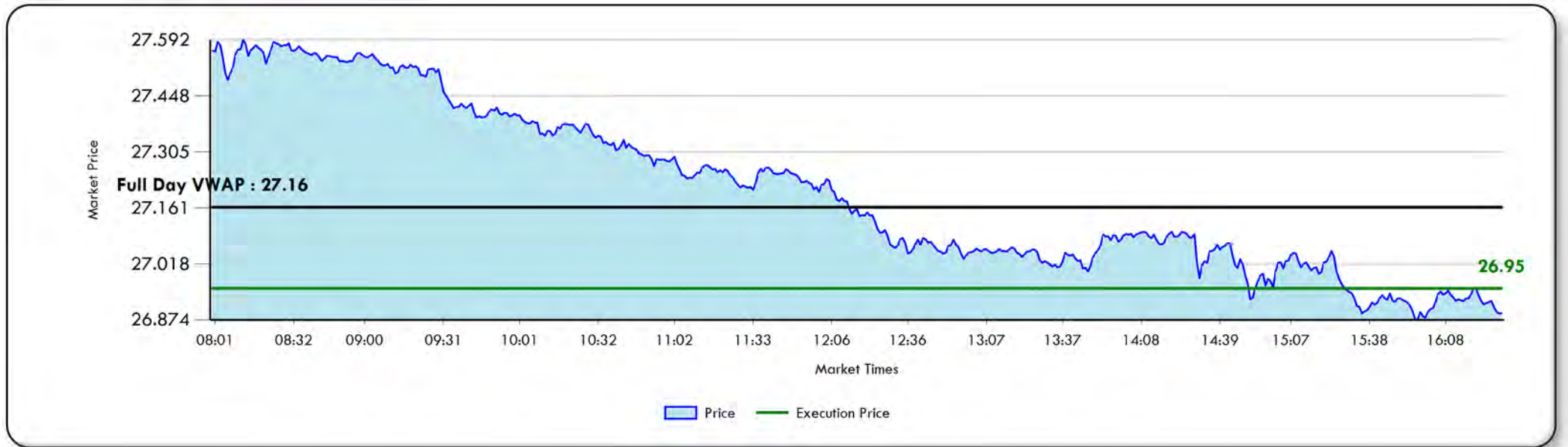


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ROYAL DUTCH SHELL PLC B SHS CO - 20180524

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	HSBC BANK	UK	GBP	B03MM40	05/24/2018 08:00:00	05/24/2018 16:30:00	392,844	26.95	27.16	3,034	76.63	-1.17	0.16



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.20% of your market impact cost.

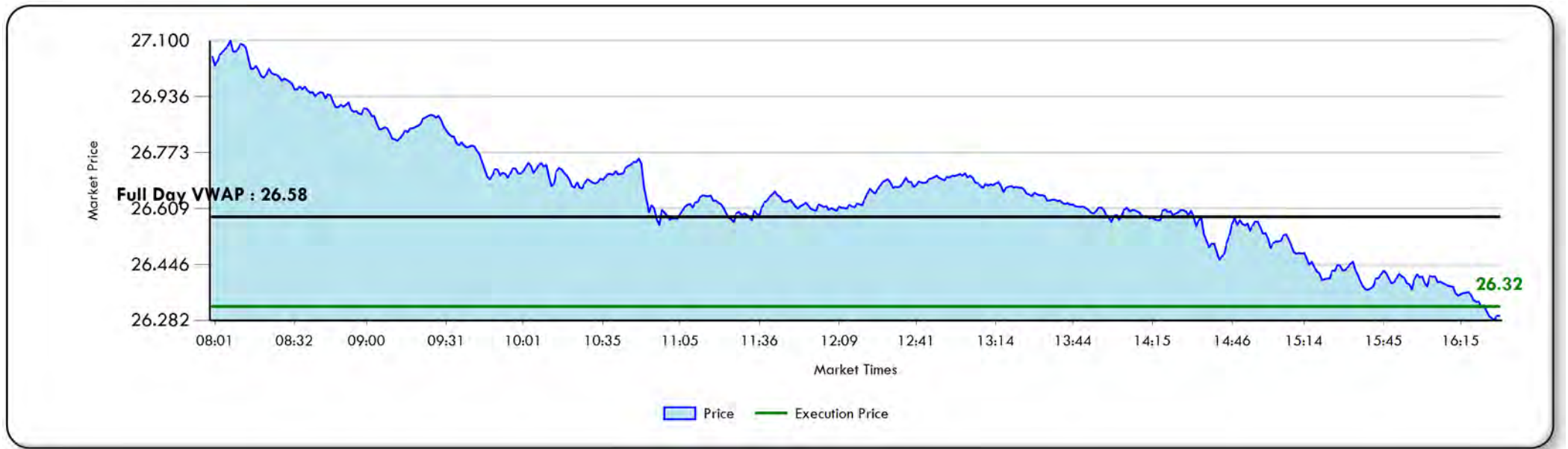


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ROYAL DUTCH SHELL PLC B SHS CO - 20180615

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	HSBC BANK	UK	GBP	B03MM40	06/15/2018 08:00:00	06/15/2018 16:30:00	303,731	26.32	26.58	3,025	98.61	-1.93	0.22



NOTES

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

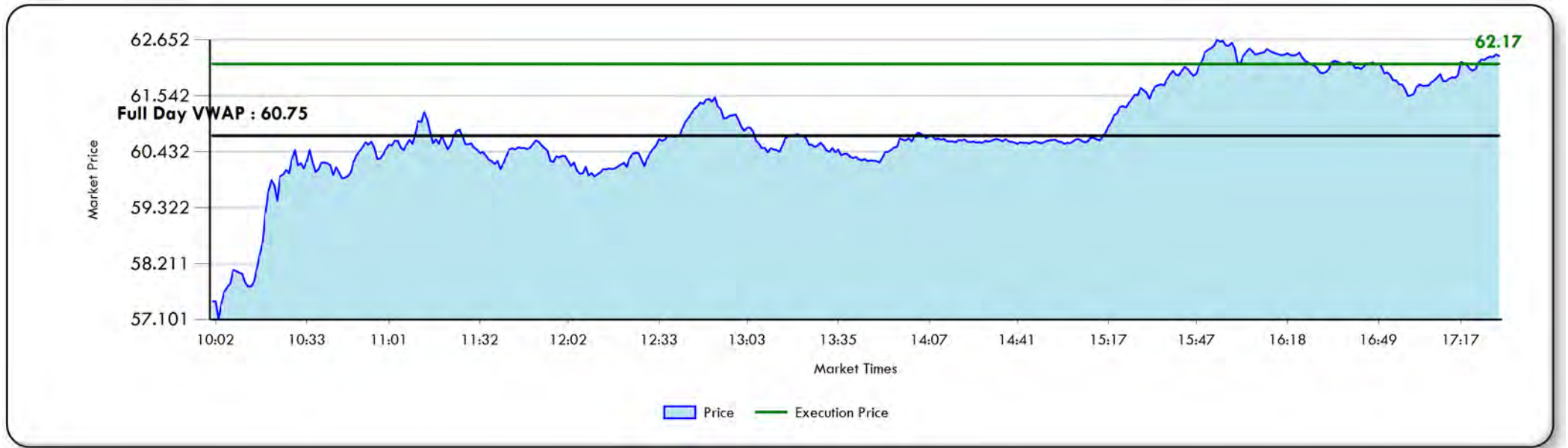


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NESTE OYJ COMMON STOCK - 20180426

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	SOCIETE GENERALE	FIN	EUR	B06YV46	04/26/2018 09:00:00	04/26/2018 17:30:00	120,780	62.17	60.75	2,766	234.37	-0.96	0.15



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.09% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BAYER AG REG COMMON STOCK - 20180627

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	MERRILL LYNCH	GER	EUR	5069211	06/27/2018 09:00:00	06/27/2018 17:30:00	280,185	96.59	95.79	2,338	84.13	-1.12	0.09



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.92% of your market impact cost.

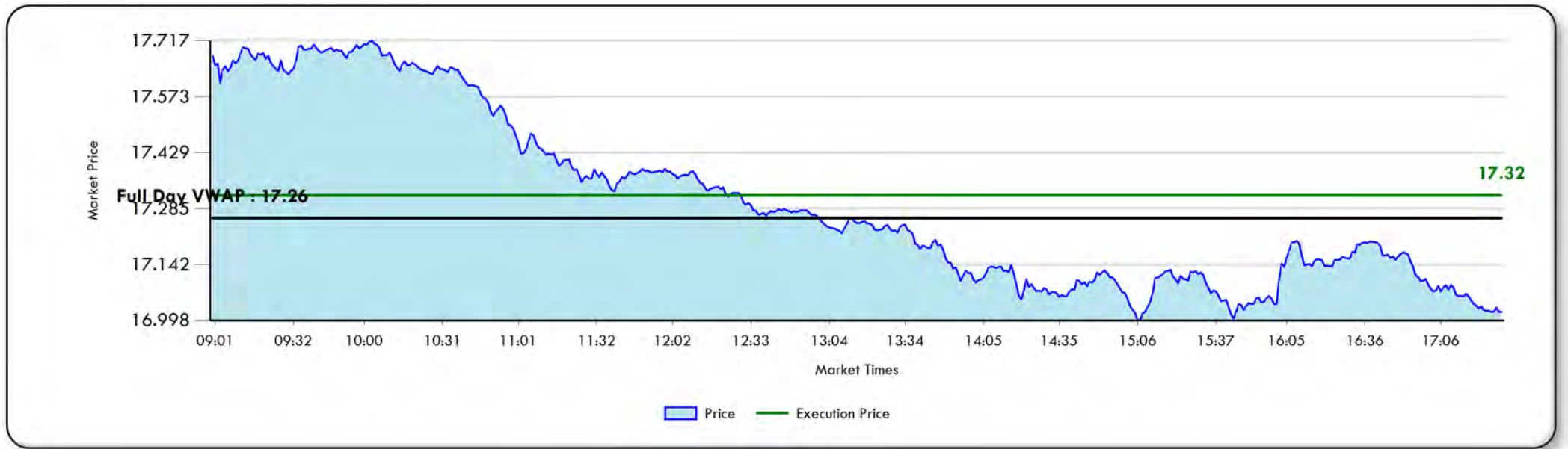


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

UNICREDIT SPA COMMON STOCK - 20180516

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	GOLDMAN SACHS	ITA	EUR	BYMXPS7	05/16/2018 09:00:00	05/16/2018 17:30:00	680,275	17.32	17.26	2,303	33.96	-0.25	0.13

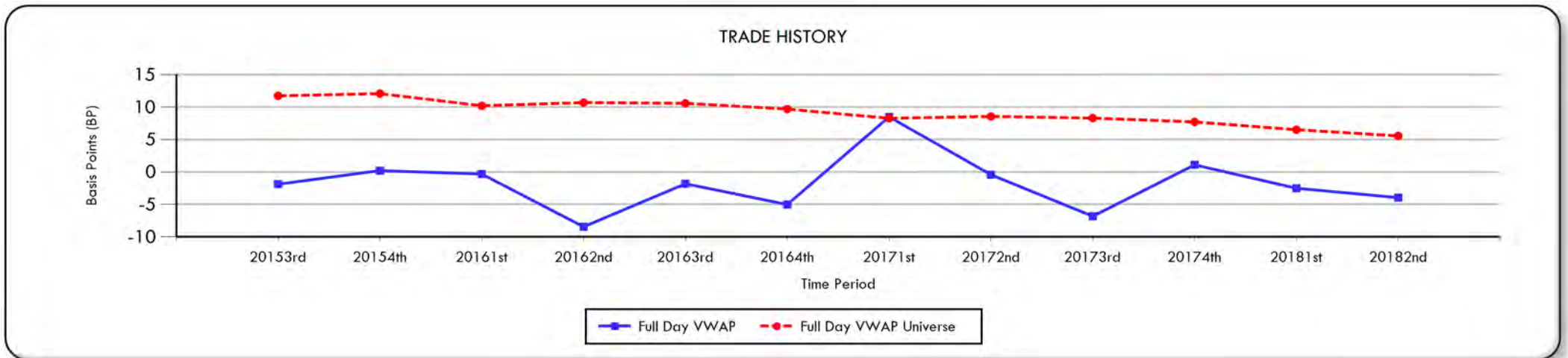


NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.91% 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)
20153rd	125,280,679	+8.08	+15.73	+6.43	+6.85	1.90	+11.72	21.69
20154th	149,071,955	+8.39	+15.71	+3.87	+4.30	+0.20	+12.06	19.60
20161st	122,988,471	+7.80	+15.62	+4.75	+5.22	0.33	+10.19	18.81
20162nd	188,544,188	+7.40	+16.20	+5.32	+5.52	8.45	+10.68	28.14
20163rd	170,434,065	+7.69	+16.36	+6.62	+6.96	1.82	+10.56	21.39
20164th	200,915,200	+7.12	+16.08	+5.97	+6.25	5.02	+9.68	23.94
20171st	193,287,065	+8.16	+15.81	+6.67	+6.60	+8.47	+8.26	7.37
20172nd	199,438,944	+6.90	+14.86	+4.37	+4.99	0.43	+8.55	17.56
20173rd	186,109,779	+7.65	+14.45	+5.00	+5.31	6.83	+8.29	22.23
20174th	198,018,280	+7.13	+14.19	+3.98	+4.19	+1.09	+7.70	13.88
20181st	207,232,838	+8.30	+14.33	+5.34	+5.43	2.52	+6.50	15.12
20182nd	152,374,616	+7.46	+14.16	+10.17	+6.65	3.96	+5.55	12.69



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	7.23 BP	14.04 BP	0.94 BP	4.71 BP	19.69 BP
AUSTRIA	26.20 BP	14.00 BP	0.04 BP	8.69 BP	22.73 BP
BELGIUM	80.91 BP	13.71 BP	0.02 BP	5.12 BP	18.85 BP
BRAZIL	6.54 BP	14.31 BP	1.59 BP	9.12 BP	25.02 BP
CANADA	13.30 BP	14.35 BP	0.02 BP	5.16 BP	19.53 BP
CHILE	0.38 BP	18.95 BP	0.78 BP	5.13 BP	24.86 BP
CHINA	4.86 BP	15.83 BP	3.26 BP	2.47 BP	21.56 BP
COLOMBIA	1.65 BP	18.71 BP	0.73 BP	14.00 BP	33.44 BP
CZECH REPUBLIC	13.03 BP	18.94 BP	0.00 BP	4.24 BP	23.18 BP
DENMARK	72.24 BP	13.80 BP	0.00 BP	7.53 BP	21.33 BP
EGYPT	1.04 BP	25.99 BP	7.15 BP	10.15 BP	43.29 BP
FINLAND	20.53 BP	13.80 BP	0.01 BP	8.37 BP	22.18 BP
FRANCE - BUYS	57.82 BP	13.89 BP	30.00 BP	4.05 BP	47.94 BP
FRANCE - SELLS	54.69 BP	14.13 BP	0.00 BP	4.17 BP	18.30 BP
GERMANY	56.33 BP	13.85 BP	0.02 BP	5.10 BP	18.97 BP
GREECE	2.12 BP	15.09 BP	2.27 BP	17.77 BP	35.13 BP
HONG KONG	2.45 BP	14.00 BP	10.19 BP	1.89 BP	26.08 BP
HUNGARY	12.93 BP	24.23 BP	0.04 BP	3.58 BP	27.85 BP
INDONESIA	0.33 BP	16.62 BP	9.72 BP	4.57 BP	30.91 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDIA	10.01 BP	15.22 BP	10.75 BP	3.35 BP	29.32 BP
IRELAND - BUYS	0.33 BP	14.38 BP	100.00 BP	3.64 BP	118.02 BP
IRELAND - SELLS	6.96 BP	13.35 BP	0.00 BP	21.92 BP	35.27 BP
ISRAEL	5.30 BP	18.02 BP	0.12 BP	5.07 BP	23.21 BP
ITALY - BUYS	6.67 BP	13.68 BP	12.00 BP	3.36 BP	29.04 BP
ITALY - SELLS	10.13 BP	13.37 BP	0.00 BP	9.69 BP	23.06 BP
JAPAN	18.17 BP	13.85 BP	0.02 BP	6.99 BP	20.86 BP
KOREA - BUYS	94.19 BP	16.35 BP	0.00 BP	7.02 BP	23.37 BP
KOREA - SELLS	105.43 BP	17.98 BP	28.52 BP	3.96 BP	50.46 BP
LUXEMBOURG	14.36 BP	28.98 BP	0.09 BP	42.09 BP	71.16 BP
MALAYSIA	1.46 BP	15.62 BP	2.89 BP	2.05 BP	20.56 BP
MEXICO	2.42 BP	14.51 BP	0.00 BP	1.84 BP	16.35 BP
NORWAY	13.60 BP	12.87 BP	0.03 BP	8.08 BP	20.98 BP
NETHERLANDS	33.58 BP	13.74 BP	0.10 BP	4.87 BP	18.71 BP
NEW ZEALAND	3.54 BP	14.75 BP	0.01 BP	7.98 BP	22.74 BP
PERU	1.22 BP	19.00 BP	0.27 BP	7.38 BP	26.65 BP
PHILIPPINES - BUYS	0.51 BP	17.88 BP	3.96 BP	2.78 BP	24.62 BP
PHILIPPINES - SELLS	0.68 BP	21.84 BP	53.23 BP	1.53 BP	76.60 BP
POLAND	11.32 BP	14.50 BP	0.00 BP	5.75 BP	20.25 BP
PORTUGAL	6.48 BP	13.54 BP	0.02 BP	8.77 BP	22.33 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.03 BP	0.00 BP	0.01 BP	21.68 BP	21.69 BP
SOUTH AFRICA - BUYS	12.99 BP	15.70 BP	23.97 BP	6.35 BP	46.02 BP
SOUTH AFRICA - SELLS	8.23 BP	14.23 BP	0.08 BP	4.76 BP	19.07 BP
SINGAPORE	3.18 BP	14.04 BP	3.53 BP	2.68 BP	20.25 BP
SPAIN	8.41 BP	14.08 BP	0.01 BP	4.74 BP	18.83 BP
SWEDEN	15.04 BP	14.00 BP	0.02 BP	1.75 BP	15.77 BP
SWITZERLAND	64.87 BP	14.57 BP	0.05 BP	4.64 BP	19.26 BP
TAIWAN - BUYS	2.22 BP	15.05 BP	0.00 BP	2.25 BP	17.30 BP
TAIWAN - SELLS	2.58 BP	20.42 BP	29.30 BP	4.29 BP	54.01 BP
THAILAND	1.83 BP	16.90 BP	0.83 BP	3.69 BP	21.42 BP
TURKEY	2.64 BP	14.94 BP	0.00 BP	5.52 BP	20.46 BP
U.K. - BUYS	8.06 BP	14.23 BP	26.89 BP	2.69 BP	43.81 BP
U.K. - SELLS	8.92 BP	14.35 BP	0.00 BP	17.30 BP	31.65 BP
U.S.	49.85 BP	14.87 BP	0.13 BP	2.99 BP	17.99 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	17.88 BP	16.63 BP	6.78 BP	7.73 BP	31.13 BP

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SACRAMENTO COUNTY

US Fixed Income Analysis

Period End June 30, 2018



Sacramento County
Period End June 30, 2018
(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 April 01,2018 to June 30,2018. The analysis included trading of 378 trades in 169 different issues representing \$779,481,537 in principal across mortgages, governments And corporates.

Methodology:

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

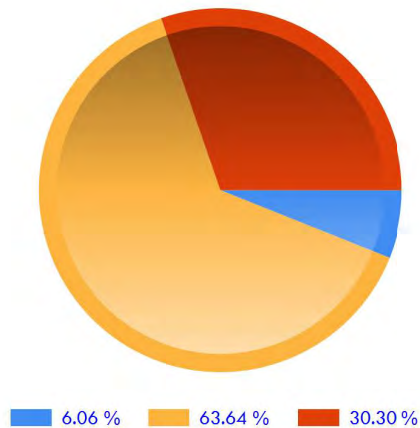
Results:

	GRAND TOTAL PERFORMANCE							TRADE COST HISTORICAL PERFORMANCE				
	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Buy/Sell												
BUYS	356	158	111	+397.13	+11.14	+10.22	+32.75	+0.92	+8.36	+9.82	+5.81	+8.74
SELLS	423	220	95	193.27	4.57	+9.03	575.47	13.60	8.91	10.65	7.15	8.67
GRAND TOTAL	779	378	169	+203.86	+2.62	+9.58	542.73	6.96	+0.68	0.60	0.96	0.14

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	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Governments	494	227	59	+60.43	+1.22	+11.09	487.55	9.87	+4.09	+0.03	+0.10	+0.20
Mortgages	236	85	48	+152.25	+6.46	+5.69	+18.16	+0.77	1.82	2.65	2.35	1.17
Corporates	50	66	62	8.82	1.77	+12.97	73.33	14.74	17.49	+1.35	+6.87	+4.11

Bonds by Principal Traded



Historical Trade Cost Trend

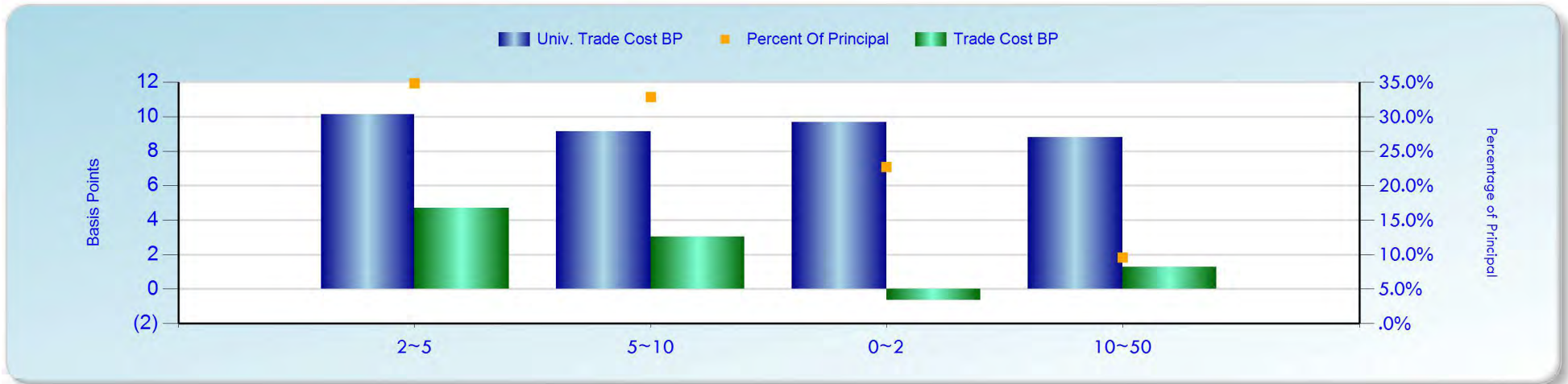




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

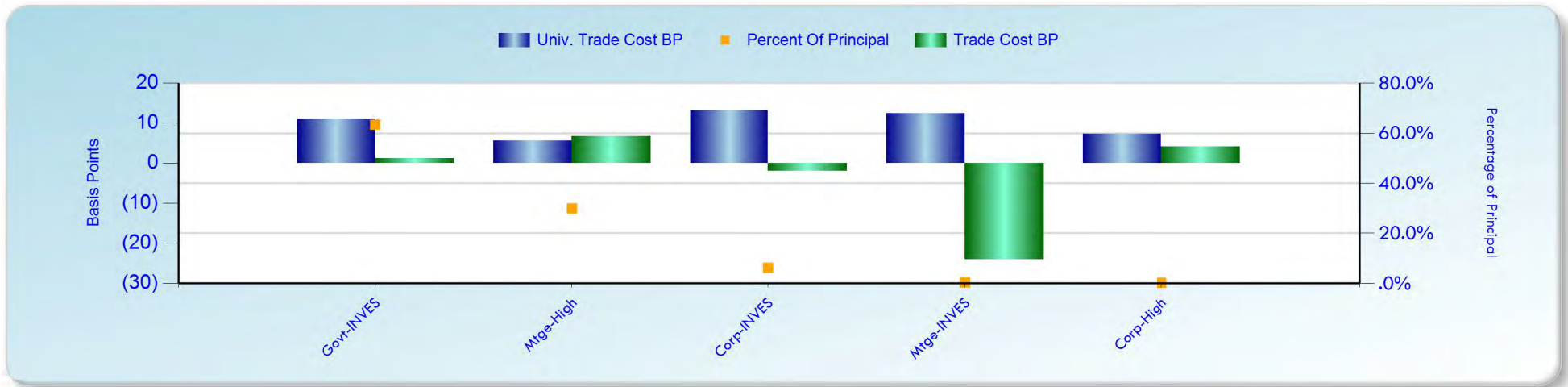
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
2~5	272	91	43	+127.57	+4.70	+10.13	147.41	5.43
5~10	256	35	20	+78.01	+3.05	+9.15	156.33	6.10
0~2	177	246	137	11.26	0.64	+9.69	182.76	10.33
10~50	75	6	4	+9.53	+1.28	+8.80	56.22	7.52



EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
Govt-INVESTMENT GRADE	494	227	59	+60.43	+1.22	+11.09	487.55	9.87
Mtge-High Yield	233	82	46	+157.99	+6.77	+5.62	+26.87	+1.15
Corp-INVESTMENT GRADE	48	64	60	9.42	1.95	+13.14	72.90	15.09
Mtge-INVESTMENT GRADE	2	3	2	5.74	24.03	+12.49	8.72	36.52
Corp-High Yield	1	2	2	+0.59	+4.20	+7.26	0.43	3.06



EXECUTIVE SUMMARY

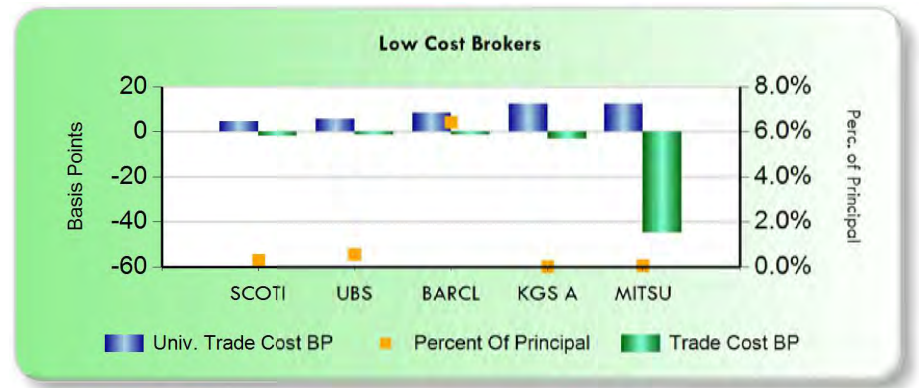
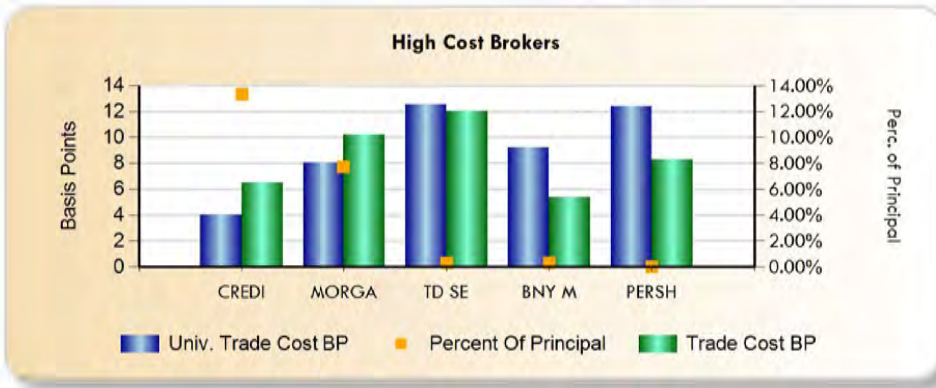
RATING SUMMARY

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	496.50	230	61	+54.69	+1.10	+11.10	496.27	10.00
NR	231.00	81	45	+127.98	+5.54	+5.56	0.37	0.02
BBB+	12.28	12	12	1.18	0.96	+8.11	11.14	9.07
BBB-	10.15	19	19	7.19	7.08	+13.72	21.12	20.80
A-	7.50	8	6	1.78	2.37	+6.56	6.70	8.93
BBB	6.60	11	10	+2.81	+4.27	+8.13	2.55	3.86
A+	5.26	6	6	2.27	4.32	+12.53	8.86	16.85
A	4.87	6	5	+0.50	+1.02	+42.42	20.15	41.40
B	2.25	1	1	+30.01	+133.33	+12.29	+27.25	+121.04
BB+	1.41	2	2	+0.59	+4.20	+7.26	0.43	3.06



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
CREDIT SUISSE	104	26	18	+67.69	+6.51	+4.01	+26.03	+2.50
MORGAN STANLEY	60	22	21	+61.66	+10.21	+8.05	+13.06	+2.16
TD SECURITIES	2	1	1	+2.87	+12.02	+12.52	0.12	0.50
BNY MELLON	3	2	2	+1.36	+5.38	+9.24	0.98	3.86
PERSHING	<1	1	1	+0.10	+8.28	+12.38	0.05	4.10
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
SCOTIA CAPITAL	2	2	2	0.42	1.89	+4.67	1.46	6.56
UBS	4	11	10	0.56	1.29	+5.54	2.96	6.83
BARCLAYS	50	34	27	6.27	1.25	+8.31	47.86	9.56
KGS ALPHACAPITAL MKT	<1	1	1	0.03	3.16	+12.40	0.12	15.56
MITSUBISHI UFJ SECS	<1	1	1	1.84	44.91	+12.45	2.35	57.36





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	423	220	95	193.27	4.57	+9.03	575.47	13.60

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	Q1 2018	Q4 2017	Q3 2017	Q2 2017
METROPOLITAN WEST MG	716	298	124	+186.78	+2.61	+9.68	506.45	7.07	+0.45	0.89	0.65	0.41
NEUBERGER BERMAN	43	24	18	+11.64	+2.73	+10.22	31.85	7.49	+1.39	+0.04	2.33	+0.75
BARCLAYS 1-10 YR TIP	21	56	28	+5.44	+2.58	+4.68	4.42	2.10	4.70	0.86	+1.53	2.32

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		Q1	Q4	Q3	Q2
							(Thous. \$)	BP	2018	2017	2017	2017
CREDIT SUISSE	104	26	18	+67.69	+6.51	+4.01	+26.03	+2.50	1.77	+2.95	0.91	0.12
NOMURA	96	56	16	+7.43	+0.77	+12.23	110.13	11.46	+2.12	1.34	0.20	0.26
JP MORGAN CHASE	92	46	34	+19.20	+2.09	+8.08	55.15	5.99	+8.71	2.93	1.28	0.27
GOLDMAN SACHS	86	53	37	+29.38	+3.42	+10.53	61.07	7.11	+0.59	1.06	2.20	+0.50
CITIGROUP	74	27	23	+1.90	+0.26	+13.43	97.68	13.17	4.25	1.44	0.61	+1.26
BANK OF AMERICA	64	39	31	0.33	0.05	+9.14	58.57	9.19	+5.91	+0.93	+0.04	1.41
MORGAN STANLEY	60	22	21	+61.66	+10.21	+8.05	+13.06	+2.16	+1.11	+6.05	3.19	0.56
BARCLAYS	50	34	27	6.27	1.25	+8.31	47.86	9.56	2.81	3.67	0.54	0.21
RBS	28	7	6	0.37	0.13	+12.42	34.98	12.55	+5.21	2.00	1.27	0.80
RBC CAPITAL MARKETS	26	7	7	+8.90	+3.38	+4.02	1.70	0.64	0.32	+6.79	1.66	+2.37
DEUTSCHE BANK	22	11	10	+1.63	+0.75	+13.41	27.62	12.66	+5.10	0.57	0.59	+1.52
HSBC BANK	21	11	6	+8.33	+3.88	+19.51	33.51	15.63	1.29	+2.73	+1.99	+1.07
CITADEL SECURITIES	21	6	5	+0.87	+0.42	+15.17	30.63	14.75	+3.54	+4.76	-	0.63
NESBITT BURNS	14	3	3	+0.62	+0.43	+7.06	9.60	6.63	1.16	+6.16	-	4.08
WELLS FARGO	6	7	7	+1.13	+1.98	+8.83	3.92	6.85	6.97	4.33	4.29	0.85
UBS	4	11	10	0.56	1.29	+5.54	2.96	6.83	8.52	+0.35	+0.93	4.65
BNY MELLON	3	2	2	+1.36	+5.38	+9.24	0.98	3.86	+1.80	+10.94	0.14	+5.13
TD SECURITIES	2	1	1	+2.87	+12.02	+12.52	0.12	0.50	-	-	-	-
SCOTIA CAPITAL	2	2	2	0.42	1.89	+4.67	1.46	6.56	16.42	+48.34	+4.05	-
MERRILL LYNCH	2	2	2	+0.47	+2.98	+9.97	1.11	6.99	16.69	+6.06	-	+12.84

TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Highest Cost Trades											
B	01F03265 FNCL 3.5 5/11	Mtge	04/06/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,846,150	100.063	99.477	+58.56	+57,662
B	01F03266 FNCL 3.5 6/11	Mtge	05/09/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,723,150	98.813	98.264	+55.56	+54,022
B	61690TAT MORGAN STANLEY REREMIC TRUST	Mtge	04/02/2018 04/26/2047	METROPOLITAN WE MORGAN STANLEY	US	USD	2,014,293	99.688	98.050	+164.26	+33,087
B	64352VNY NEW CENTURY HOME EQUITY LOAN	Mtge	04/30/2018 12/25/2035	METROPOLITAN WE MORGAN STANLEY	US	USD	2,250,843	99.375	98.050	+133.33	+30,011
B	02R03265 FGLMC 3.5 5/12	Mtge	04/06/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,886,803	100.063	99.308	+75.42	+21,773
B	9128283W US TREASURY N/B 02/28 2.75	Govt	04/04/2018 02/15/2028	METROPOLITAN WE NOMURA	US	USD	6,444,961	99.922	99.601	+32.13	+20,705
B	01F04265 FNCL 4.5 5/10	Mtge	04/05/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	7,317,783	104.391	104.141	+23.93	+17,513
S	912810SA US TREASURY N/B 02/48 3	Govt	06/14/2018 02/15/2048	METROPOLITAN WE BARCLAYS	US	USD	4,001,637	98.563	98.986	+42.94	+17,184
B	02R04267 FGLMC 4.5 7/10	Mtge	06/26/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,068,172	104.006	103.483	+50.32	+15,439
B	01F03047 FNCL 3 7/11	Mtge	06/08/2018 02/25/2029	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,024,230	98.984	98.315	+67.59	+13,683
B	01F03267 FNCL 3.5 7/11	Mtge	06/08/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,736,987	98.953	98.834	+12.09	+11,772
B	912810SC US TREASURY N/B 05/48 3.125	Govt	05/16/2018 05/15/2048	METROPOLITAN WE CITIGROUP	US	USD	1,994,750	98.750	98.168	+58.95	+11,758
B	01F04266 FNCL 4.5 6/09	Mtge	05/03/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	7,289,305	103.984	103.831	+14.75	+10,752
B	02R03267 FGLMC 3.5 7/12	Mtge	06/08/2018 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	2,856,150	99.000	98.655	+34.85	+9,953



S	912810SA US TREASURY N/B 02/48 3	Govt	05/11/2018 02/15/2048	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,392,196	97.758	98.026	+27.42	+9,303
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TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Lowest Cost Trades											
S	01F03265 FNCL 3.5 5/11	Mtge	05/09/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,736,026	98.943	98.477	47.13	45,890
S	01F04264 FNCL 4.5 4/10	Mtge	04/05/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	7,330,378	104.570	104.191	36.27	26,590
S	9128283F US TREASURY N/B 11/27 2.25	Govt	04/04/2018 11/15/2027	METROPOLITAN WE NOMURA	US	USD	6,472,083	95.670	95.359	32.50	21,032
B	912810SC US TREASURY N/B 05/48 3.125	Govt	06/14/2018 05/15/2048	METROPOLITAN WE BARCLAYS	US	USD	4,014,750	101.000	101.428	42.35	17,004
S	01F03264 FNCL 3.5 4/11	Mtge	04/06/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	9,860,371	100.207	100.039	16.77	16,534
S	912810SA US TREASURY N/B 02/48 3	Govt	05/16/2018 02/15/2048	METROPOLITAN WE CITIGROUP	US	USD	1,989,659	96.352	95.783	59.04	11,747
S	01F04064 FNCL 4 4/10	Mtge	04/06/2018 12/31/2099	METROPOLITAN WE BARCLAYS	US	USD	2,376,040	102.637	102.184	44.08	10,474
S	01F03044 FNCL 3 4/11	Mtge	04/09/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,040,127	99.762	99.254	50.86	10,377
S	01F04066 FNCL 4 6/10	Mtge	06/07/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,352,302	101.611	101.199	40.55	9,538
B	912810SC US TREASURY N/B 05/48 3.125	Govt	05/11/2018 05/15/2048	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,406,375	100.188	100.460	27.16	9,251
S	9128284S US TREASURY N/B 05/23 2.75	Govt	06/28/2018 05/31/2023	METROPOLITAN WE GOLDMAN SACHS	US	USD	17,310,060	100.232	100.181	5.09	8,816
S	01F04265 FNCL 4.5 5/10	Mtge	05/03/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	7,302,722	104.176	104.060	11.16	8,151
S	01F04065 FNCL 4 5/10	Mtge	05/09/2018 12/31/2099	METROPOLITAN WE BARCLAYS	US	USD	2,350,222	101.521	101.186	33.09	7,778
S	9128283W US TREASURY N/B 02/28 2.75	Govt	06/20/2018 02/15/2028	METROPOLITAN WE RBS	US	USD	2,802,725	98.688	98.433	25.79	7,229
B	9128283W US TREASURY N/B 02/28 2.75	Govt	04/06/2018 02/15/2028	METROPOLITAN WE HSBC BANK	US	USD	3,686,125	99.625	99.818	19.41	7,155



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	50	66	62	8.82	1.77	+12.97	73.33	14.74

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	494	227	59	+60.43	+1.22	+11.09	487.55	9.87

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	236	85	48	+152.25	+6.46	+5.69	+18.16	+0.77

MORTGAGES





MUNICIPALS





RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	494	227	59	+60.43	+1.22	+11.09	487.55	9.87

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	231	81	45	+127.98	+5.54	+5.56	0.37	0.02
AAA	2	3	2	5.74	24.03	+12.49	8.72	36.51
B	2	1	1	+30.01	+133.33	+12.29	+27.25	+121.05

RATING BY EACH BOND TYPE

CORPORATES - 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
BBB+	12	12	12	1.18	0.96	+8.11	11.14	9.07
BBB-	10	19	19	7.19	7.08	+13.72	21.12	20.80
A-	8	8	6	1.78	2.37	+6.56	6.70	8.93
BBB	7	11	10	+2.81	+4.27	+8.13	2.55	3.86
A+	5	6	6	2.27	4.32	+12.53	8.86	16.84
A	5	6	5	+0.50	+1.02	+42.42	20.15	41.40
BB+	1	2	2	+0.59	+4.20	+7.26	0.43	3.06
AA	<1	1	1	0.40	4.38	+12.50	1.54	16.88
AA+	<1	1	1	+0.09	+1.15	+12.48	0.85	11.33

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
04/01/2018-06/30/2018	779,482	378	169	+203.86	+2.62	+9.58	542.73	6.96
01/01/2018-03/31/2018	1,666,649	1608	992	+113.13	+0.68	+8.88	1,367.40	8.20
Year-Ending 2018	2,446,130	1986		+316.98	+1.30	+9.10	1,910.13	7.81
10/01/2017-12/31/2017	624,736	649	254	37.30	0.60	+6.59	448.75	7.19
07/01/2017-09/30/2017	733,365	712	245	70.43	0.96	+7.13	593.40	8.09
04/01/2017-06/30/2017	789,018	849	277	11.21	0.14	+6.26	504.99	6.40
01/01/2017-03/31/2017	710,311	779	281	+88.61	+1.25	+7.07	413.59	5.82
Year-Ending 2017	2,857,429	2989		30.32	0.11	+6.76	1,960.73	6.86
10/01/2016-12/31/2016	711,667	646	221	68.72	0.97	+6.26	514.24	7.23
07/01/2016-09/30/2016	589,731	684	203	14.71	0.25	+6.35	389.30	6.60
04/01/2016-06/30/2016	619,130	801	269	67.81	1.10	+8.74	608.75	9.84
01/02/2016-03/31/2016	710,978	1117	262	193.39	2.72	+6.08	625.45	8.80
Year-Ending 2016	2,631,505	3248		344.62	1.31	+6.81	2,137.74	8.12
10/01/2015-12/31/2015	820,526	980	212	138.86	1.69	+8.52	837.57	10.21
07/01/2015-09/30/2015	992,841	1625	204	225.86	2.27	+3.74	596.77	6.01
04/01/2015-06/30/2015	1,141,971	1504	246	310.14	2.72	+7.36	1,150.64	10.08
01/01/2015-03/31/2015	944,141	1100	191	8.38	0.09	+6.57	628.26	6.66
Year-Ending 2015	3,899,478	5209		683.23	1.75	+6.49	3,213.25	8.24
10/01/2014-12/31/2014	676,216	885	213	+41.55	+0.61	+5.86	354.40	5.25
07/01/2014-09/30/2014	905,295	785	133	+534.89	+5.91	+6.85	85.46	0.94
04/01/2014-06/30/2014	727,152	957	240	48.64	0.67	+7.04	560.46	7.71
01/02/2014-03/31/2014	920,513	1033	210	131.04	1.42	+6.54	733.34	7.96
Year-Ending 2014	3,229,176	3660		+396.76	+1.23	+6.60	1,733.66	5.37
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
07/01/2013-09/30/2013	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
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	50	47	BLOOMBERGTERMINAL	76.35 %
	13	13	MARKETAXESS-TRADES	19.22 %
	3	3	ISSUE PRICE	4.43 %
GOVERNMENTS	227	59	BLOOMBERGTERMINAL	100.00 %
MORTGAGES	47	25	TULLET PREBON	70.42 %
	38	23	BLOOMBERGTERMINAL	29.58 %

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SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End June 30, 2018



Sacramento County
Period End June 30, 2018
(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 April 01,2018 to June 30,2018. The analysis included trading of 217 trades in 112 different issues representing \$77,478,900 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.

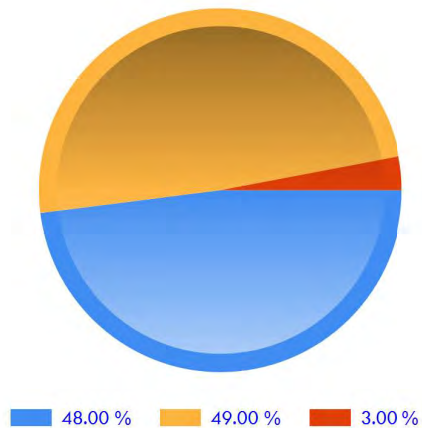
Results:

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	Q1 2018	Q4 2017	Q3 2017	Q2 2017
BUYS	48	122	71	6.77	1.41	+5.51	33.33	6.92	1.88	+0.15	1.96	0.87
SELLS	29	95	56	+19.31	+6.60	+5.51	+3.18	+1.09	+1.58	9.10	+5.23	+5.09
GRAND TOTAL	77	217	112	+12.54	+1.62	+5.51	30.15	3.89	0.20	4.64	+1.49	+1.65

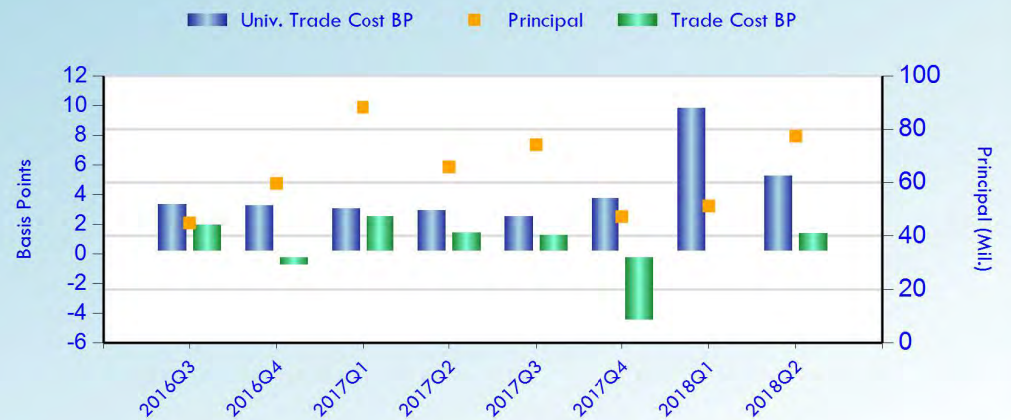
EXECUTIVE SUMMARY

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	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Governments	38	105	27	+6.13	+1.62	+5.51	14.75 3.89	+2.21	+0.05	+1.09	+0.35
Corporates	37	105	79	+0.05	+0.01	+5.51	20.52 5.50	+8.64	2.85	+4.20	+5.70
Mortgages	2	7	6	+6.36	+28.04	+5.51	+5.11 +22.53	54.51	29.94	5.72	-

Bonds by Principal Traded



Historical Trade Cost Trend

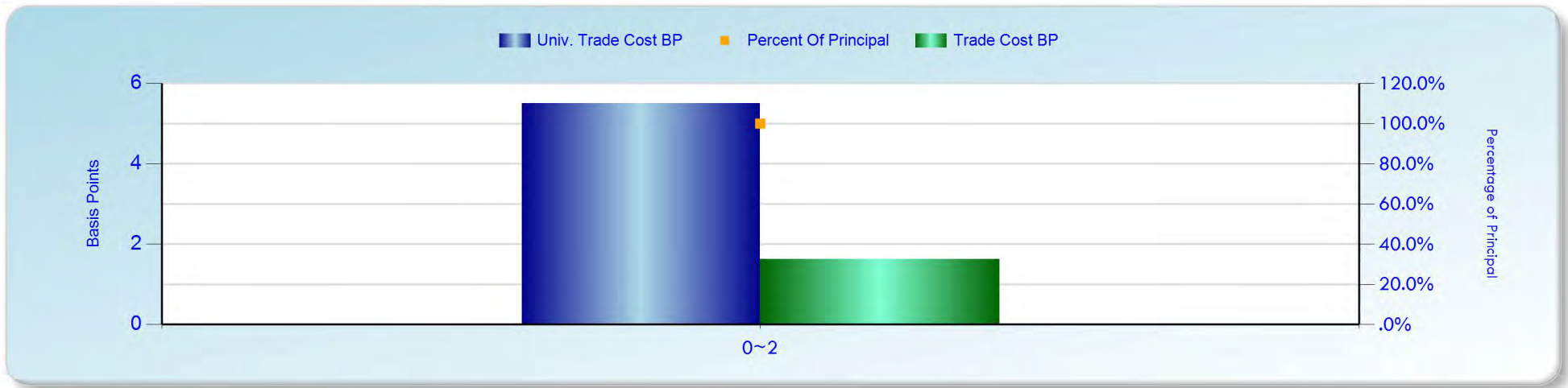




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

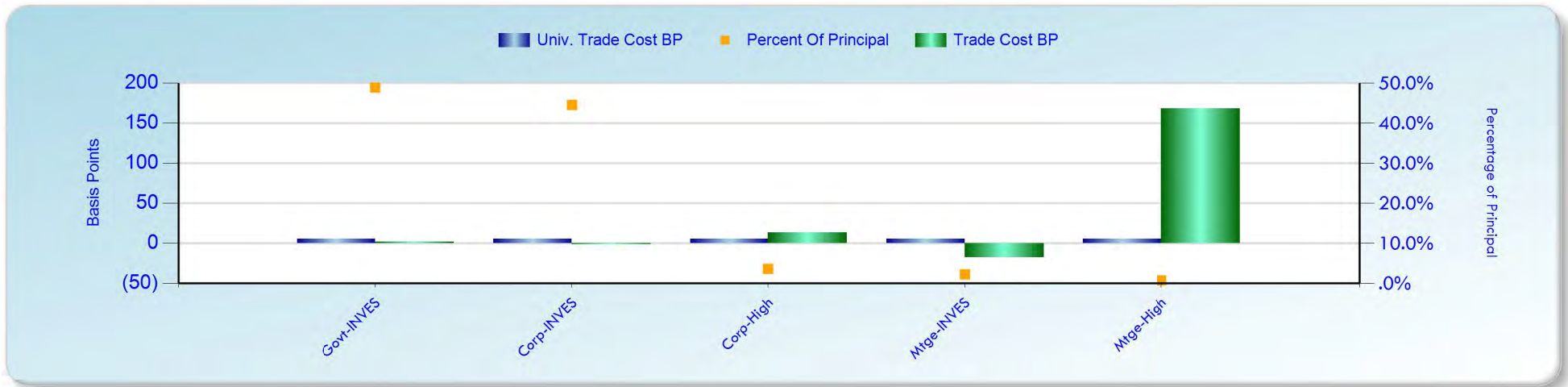
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	77	217	112	+12.54	+1.62	+5.51	30.15	3.89



EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
Govt-INVESTMENT GRADE	38	105	27	+6.13	+1.62	+5.51	14.75	3.89
Corp-INVESTMENT GRADE	35	92	71	3.61	1.04	+5.51	22.63	6.55
Corp-High Yield	3	13	8	+3.65	+13.08	+5.51	+2.12	+7.57
Mtge-INVESTMENT GRADE	2	5	4	3.04	17.77	+5.51	3.98	23.28
Mtge-High Yield	<1	2	2	+9.40	+168.31	+5.51	+9.10	+162.80



EXECUTIVE SUMMARY

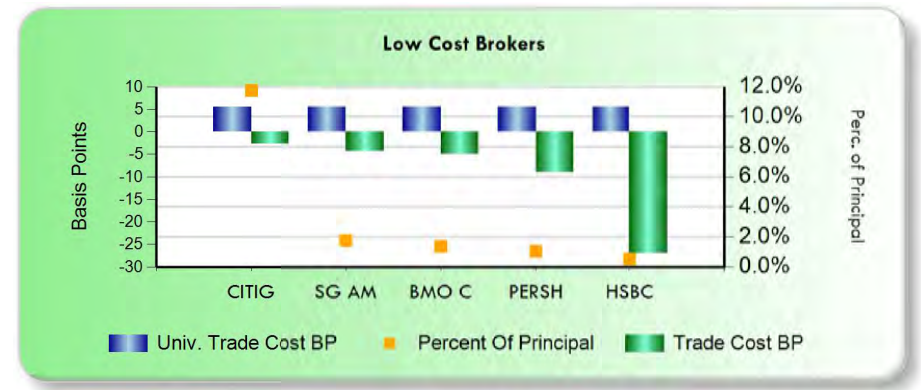
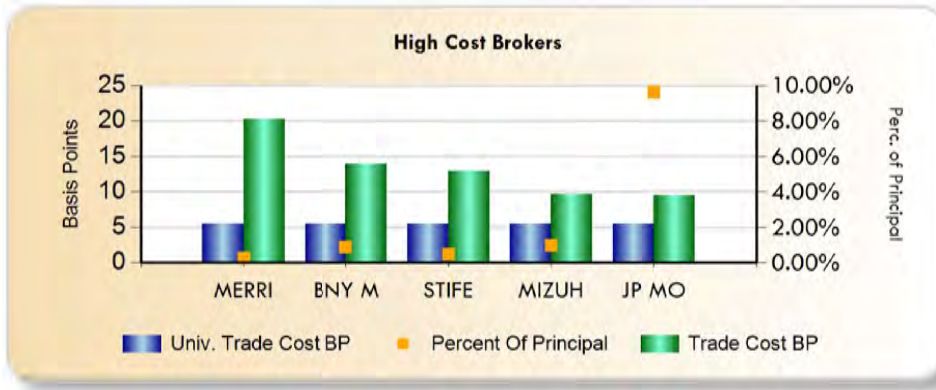
RATING SUMMARY

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	39.60	110	31	+3.09	+0.78	+5.51	18.73	4.73
BBB+	8.86	24	15	+2.23	+2.51	+5.51	2.66	3.00
A+	7.84	14	13	0.94	1.20	+5.51	5.26	6.71
BBB	7.24	20	17	2.28	3.14	+5.51	6.27	8.65
A	4.23	12	8	2.00	4.73	+5.51	4.33	10.24
AA-	2.70	3	2	0.19	0.69	+5.51	1.68	6.20
BBB-	2.35	12	10	0.95	4.03	+5.51	2.24	9.54
A-	1.31	7	6	+0.52	+3.96	+5.51	0.20	1.55
BB+	1.27	3	3	+2.15	+17.00	+5.51	+1.46	+11.49
B+	<1	3	2	+0.70	+7.68	+5.51	+0.20	+2.17



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
MERRILL LYNCH	<1	1	1	+0.43	+20.27	+5.51	+0.32	+14.76
BNY MELLON	<1	4	4	+0.95	+13.93	+5.51	+0.58	+8.42
STIFEL NICOLAUS & CO	<1	2	2	+0.49	+12.89	+5.51	+0.28	+7.38
MIZUHO	<1	3	3	+0.74	+9.67	+5.51	+0.32	+4.16
JP MORGAN CHASE	7	23	18	+7.11	+9.53	+5.51	+3.00	+4.02
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
CITIGROUP	9	18	16	2.41	2.64	+5.51	7.43	8.15
SG AMERICAS	1	3	3	0.58	4.23	+5.51	1.33	9.74
BMO CAPITAL MARKETS	1	4	4	0.52	4.94	+5.51	1.11	10.45
PERSHING	<1	1	1	0.73	9.02	+5.51	1.18	14.53
HSBC BANK	<1	1	1	1.08	26.96	+5.51	1.30	32.47



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		Q1 2018	Q4 2017	Q3 2017	Q2 2017
UNITED STATES	77	217	112	+12.54	+1.62	+5.51	30.15	3.89	0.57	4.97	+1.48	+1.65



COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country	Side	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
UNITED STATES	SELLS	29	95	56	+19.31	+6.60	+5.51	+3.18	+1.09
	BUYS	48	122	71	6.77	1.41	+5.51	33.33	6.92

Manager PERFORMANCE

Manager PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q1 2018	Q4 2017	Q3 2017	Q2 2017
PRUDENTIAL INVESTMEN	77	217	112	+12.54	+1.62	+5.51	30.15	3.89	0.20	4.64	+1.49	+1.65

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		Q1	Q4	Q3	Q2
							(Thous. \$)	BP	2018	2017	2017	2017
BARCLAYS	9	25	17	0.58	0.62	+5.51	5.75	6.13	+5.09	6.14	+4.04	+3.98
CITIGROUP	9	18	16	2.41	2.64	+5.51	7.43	8.15	1.53	68.48	0.69	0.94
JEFFERIES & CO	7	14	11	+1.75	+2.35	+5.51	2.36	3.16	+5.71	0.03	+7.07	+15.79
JP MORGAN CHASE	7	23	18	+7.11	+9.53	+5.51	+3.00	+4.02	+2.71	0.97	0.81	+1.14
GOLDMAN SACHS	7	20	17	+2.11	+3.01	+5.51	1.76	2.50	14.92	+6.45	1.23	+2.07
RBC CAPITAL MARKETS	6	22	17	+0.14	+0.25	+5.51	3.07	5.26	+2.92	+2.57	+4.95	+5.08
TD SECURITIES	4	6	6	+0.08	+0.19	+5.51	2.36	5.32	0.16	+0.35	+2.52	0.63
CREDIT SUISSE	4	15	12	+1.94	+4.94	+5.51	0.23	0.57	22.22	+1.23	+8.77	-
MORGAN STANLEY	4	5	5	+0.30	+0.85	+5.51	1.64	4.66	0.17	1.71	0.11	+2.24
BANK OF AMERICA	3	15	14	+1.01	+3.35	+5.51	0.65	2.16	+6.51	+0.30	+2.20	+5.18
NOMURA	3	3	2	+0.35	+1.32	+5.51	1.09	4.19	+0.57	+0.34	+1.11	+1.88
WELLS FARGO	2	7	7	0.39	2.15	+5.51	1.38	7.66	13.27	+1.90	+10.58	+7.31
CREDIT AGRICOLE	1	2	2	0.02	0.13	+5.51	0.83	5.64	-	-	-	0.49
SG AMERICAS	1	3	3	0.58	4.23	+5.51	1.33	9.74	-	-	4.09	-
DEUTSCHE BANK	1	11	9	+0.77	+6.20	+5.51	+0.09	+0.69	+1.73	7.93	8.53	4.97
MITSUBISHI UFJ SECS	1	4	4	+0.23	+1.94	+5.51	0.42	3.57	-	-	-	+10.20
BMO CAPITAL MARKETS	1	4	4	0.52	4.94	+5.51	1.11	10.45	4.46	-	-	0.55
UBS	<1	2	2	+0.25	+2.82	+5.51	0.24	2.69	-	2.09	+6.03	+2.78
CITADEL SECURITIES	<1	2	2	+0.01	+0.17	+5.51	0.46	5.34	-	1.29	-	-
PERSHING	<1	1	1	0.73	9.02	+5.51	1.18	14.53	-	-	-	-
MIZUHO	<1	3	3	+0.74	+9.67	+5.51	+0.32	+4.16	-	-	+0.16	+9.11
BNY MELLON	<1	4	4	+0.95	+13.93	+5.51	+0.58	+8.42	+15.49	+0.00	+4.73	+0.00



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	Q1 2018	Q4 2017	Q3 2017	Q2 2017
BAIRD, ROBERT W	<1	4	2	+0.16	+2.90	+5.51	0.14	2.61	-	-	-	-
HSBC BANK	<1	1	1	1.08	26.96	+5.51	1.30	32.47	+20.55	-	-	-
STIFEL NICOLAUS & CO	<1	2	2	+0.49	+12.89	+5.51	+0.28	+7.38	-	-	-	6.96
MERRILL LYNCH	<1	1	1	+0.43	+20.27	+5.51	+0.32	+14.76	-	4.34	+3.81	-

TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Highest Cost Trades											
B	46650AAD JP MORGAN MORTGAGE TRUST JPM	Mtge	06/21/2018 04/25/2046	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	500,000	100.000	98.120	+188.00	+9,400
S	9128284M US TREASURY N/B 04/25 2.875	Govt	05/29/2018 04/30/2025	PRUDENTIAL INVE BARCLAYS	US	USD	878,360	100.384	100.949	+56.31	+4,946
B	912810SA US TREASURY N/B 02/48 3	Govt	05/14/2018 02/15/2048	PRUDENTIAL INVE JEFFERIES & CO	US	USD	996,715	97.717	97.431	+29.27	+2,918
B	912810SA US TREASURY N/B 02/48 3	Govt	05/14/2018 02/15/2048	PRUDENTIAL INVE TD SECURITIES	US	USD	1,073,999	97.636	97.431	+21.01	+2,257
S	00206RCN AT+T INC SR UNSECURED 05/25	Corp	06/28/2018 05/15/2025	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	1,182,812	93.874	94.051	+18.85	+2,229
S	260543CG DOW CHEMICAL CO/THE SR UNSEC	Corp	06/28/2018 11/15/2042	PRUDENTIAL INVE BARCLAYS	US	USD	754,160	94.270	94.549	+29.54	+2,228
S	9128284L US TREASURY N/B 04/23 2.75	Govt	05/29/2018 04/30/2023	PRUDENTIAL INVE TD SECURITIES	US	USD	295,599	100.203	100.676	+47.17	+1,394
S	9128284A US TREASURY N/B 02/23 2.625	Govt	04/02/2018 02/28/2023	PRUDENTIAL INVE TD SECURITIES	US	USD	866,757	100.203	100.363	+16.00	+1,387
S	91324PCA UNITEDHEALTH GROUP INC SR UN	Corp	05/17/2018 10/15/2042	PRUDENTIAL INVE JEFFERIES & CO	US	USD	839,671	93.818	93.941	+13.06	+1,097
S	552081AM LYONDELLBASELL IND NV SR UNS	Corp	05/14/2018 02/26/2055	PRUDENTIAL INVE BARCLAYS	US	USD	287,064	95.688	96.021	+34.76	+998
S	03846JW4 ARAB REPUBLIC OF EGYPT SR UN	Govt	04/26/2018 02/21/2028	PRUDENTIAL INVE BNY MELLON	US	USD	197,500	98.750	99.193	+44.87	+886
B	9128284N US TREASURY N/B 05/28 2.875	Govt	05/23/2018 05/15/2028	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	841,201	98.965	98.869	+9.72	+817
S	12591DAC CNOOC FINANCE 2014 ULC COMPA	Corp	06/26/2018 04/30/2024	PRUDENTIAL INVE MIZUHO	US	USD	497,158	101.461	101.620	+15.72	+781
S	9128284M US TREASURY N/B 04/25 2.875	Govt	05/25/2018 04/30/2025	PRUDENTIAL INVE CITADEL SECURIT	US	USD	434,053	99.782	99.943	+16.07	+697



S	912810RZ US TREASURY N/B 11/47 2.75	Govt	04/12/2018 11/15/2047	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	304,927	94.113	94.308	+20.68	+631
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TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Lowest Cost Trades											
B	9128284R US TREASURY N/B 05/25 2.875	Govt	05/29/2018 05/31/2025	PRUDENTIAL INVE BARCLAYS	US	USD	868,243	100.375	100.945	56.83	4,934
B	74824DAA QUEENS CENTER MORTGAGE TRUST	Mtge	06/29/2018 01/11/2037	PRUDENTIAL INVE CITIGROUP	US	USD	1,170,187	97.516	97.760	25.06	2,932
S	912810RZ US TREASURY N/B 11/47 2.75	Govt	05/14/2018 11/15/2047	PRUDENTIAL INVE JEFFERIES & CO	US	USD	984,607	92.888	92.615	29.33	2,888
S	912810RZ US TREASURY N/B 11/47 2.75	Govt	05/14/2018 11/15/2047	PRUDENTIAL INVE TD SECURITIES	US	USD	1,058,946	92.809	92.615	20.85	2,208
B	06738EBD BARCLAYS PLC SR UNSECURED 05	Corp	05/09/2018 05/16/2029	PRUDENTIAL INVE BARCLAYS	US	USD	400,000	100.000	100.518	51.81	2,072
B	256746AH DOLLAR TREE INC SR UNSECURED	Corp	04/05/2018 05/15/2028	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	723,086	99.736	99.933	19.73	1,427
B	9128284S US TREASURY N/B 05/23 2.75	Govt	05/29/2018 05/31/2023	PRUDENTIAL INVE TD SECURITIES	US	USD	290,621	100.214	100.698	48.22	1,401
B	9128284D US TREASURY N/B 03/23 2.5	Govt	04/02/2018 03/31/2023	PRUDENTIAL INVE TD SECURITIES	US	USD	851,421	99.582	99.739	15.79	1,345
B	369550BE GENERAL DYNAMICS CORP COMPAN	Corp	05/08/2018 05/11/2021	PRUDENTIAL INVE WELLS FARGO	US	USD	794,440	99.305	99.455	15.11	1,200
B	404280BT HSBC HOLDINGS PLC SR UNSECUR	Corp	06/12/2018 06/19/2029	PRUDENTIAL INVE HSBC BANK	US	USD	400,000	100.000	100.270	26.96	1,078
B	404280BQ HSBC HOLDINGS PLC SR UNSECUR	Corp	05/10/2018 05/18/2021	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	685,000	100.000	100.136	13.65	935
B	025816BU AMERICAN EXPRESS CO SR UNSEC	Corp	05/14/2018 05/17/2021	PRUDENTIAL INVE BARCLAYS	US	USD	1,419,758	99.983	100.042	5.87	834
B	865622CK SUMITOMO MITSUI BANKING BANK	Corp	04/17/2018 01/17/2020	PRUDENTIAL INVE PERSHING	US	USD	814,413	99.928	100.018	9.02	735
B	292505AJ ENCANA CORP SR UNSECURED 11/	Corp	04/24/2018 11/15/2021	PRUDENTIAL INVE BARCLAYS	US	USD	1,204,321	100.780	100.840	5.91	711
B	9128284R US TREASURY N/B 05/25 2.875	Govt	05/25/2018 05/31/2025	PRUDENTIAL INVE CITADEL SECURIT	US	USD	429,025	99.773	99.932	15.91	683



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	37	105	79	+0.05	+0.01	+5.51	20.52	5.50

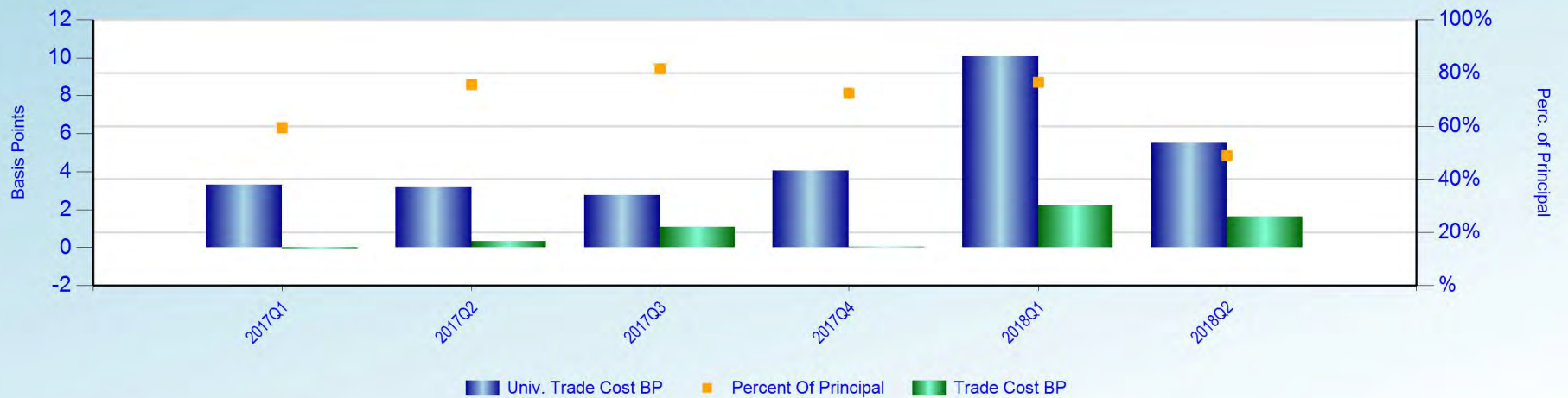
CORPORATES



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	38	105	27	+6.13	+1.62	+5.51	14.75	3.89

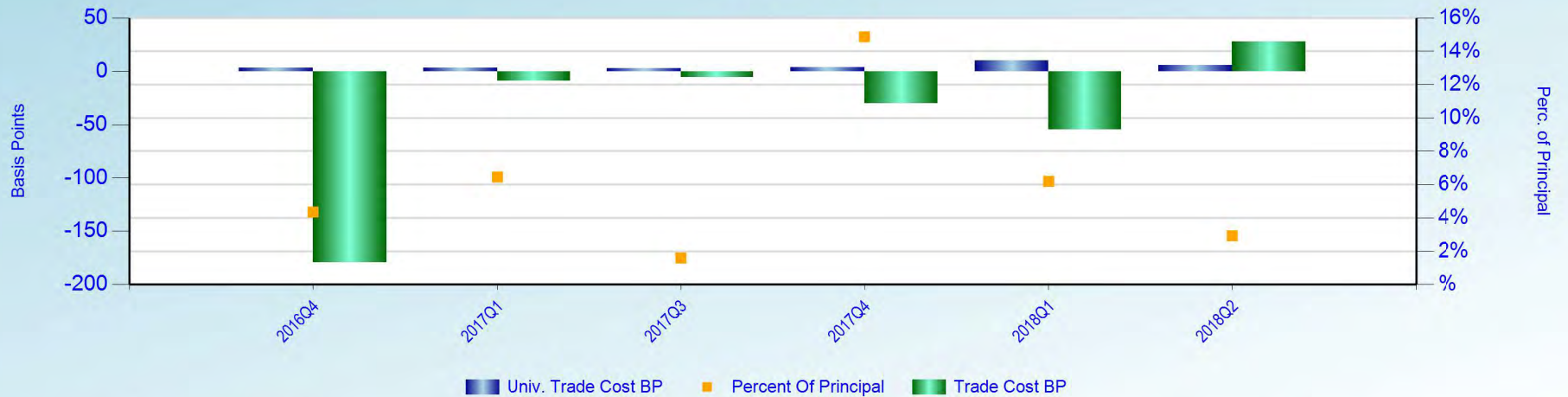
GOVERNMENTS



BOND TYPE PERFORMANCE

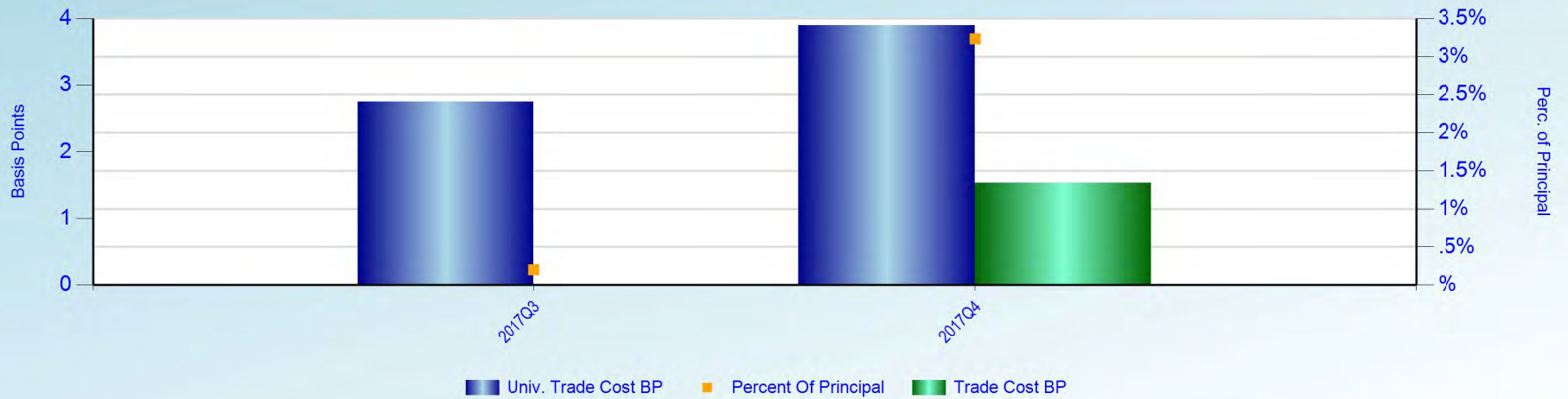
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MORTGAGES	2	7	6	+6.36	+28.04	+5.51	+5.11	+22.53

MORTGAGES



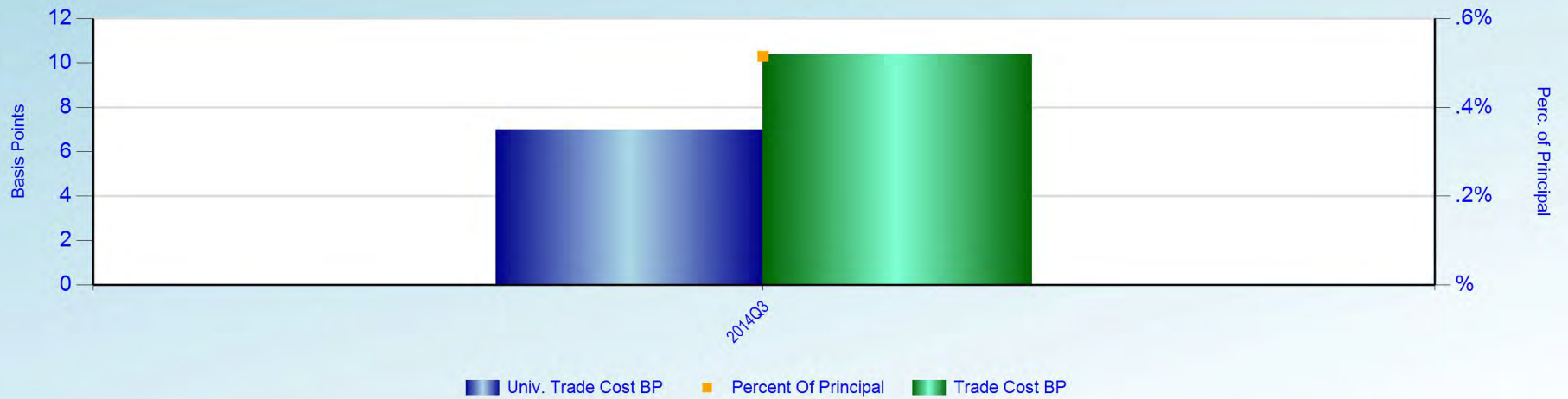


MUNICIPALS





UNCLASSIFIED





RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	38	105	27	+6.13	+1.62	+5.51	14.75	3.89

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
BBB+	9	24	15	+2.23	+2.51	+5.51	2.66	3.00
A+	8	14	13	0.94	1.20	+5.51	5.26	6.71
BBB	7	20	17	2.28	3.14	+5.51	6.27	8.65
A	4	12	8	2.00	4.73	+5.51	4.33	10.24
AA-	3	3	2	0.19	0.69	+5.51	1.68	6.20
BBB-	2	12	10	0.95	4.03	+5.51	2.24	9.54
A-	1	7	6	+0.52	+3.96	+5.51	0.20	1.55
BB+	1	3	3	+2.15	+17.00	+5.51	+1.46	+11.49
B+	<1	3	2	+0.70	+7.68	+5.51	+0.20	+2.17
B-	<1	3	2	+0.60	+18.23	+5.51	+0.42	+12.72
CCC+	<1	4	1	+0.20	+7.00	+5.51	+0.04	+1.49

RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	2	5	4	3.04	17.77	+5.51	3.98	23.28
NR	<1	2	2	+9.40	+168.31	+5.51	+9.10	+162.80



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	38	105	27	+6.13	+1.62	+5.51	14.75	3.89



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	37	105	79	+0.05	+0.01	+5.51	20.52	5.50



COUNTRIES BY EACH BOND TYPE

MORTGAGES								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	2	7	6	+6.36	+28.04	+5.51	+5.11	+22.53

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
04/01/2018-06/30/2018	77,479	217	112	+12.54	+1.62	+5.51	30.15	3.89
01/01/2018-03/31/2018	51,291	127	70	1.01	0.20	+10.09	52.77	10.29
Year-Ending 2018	128,770	344		+11.53	+0.90	+7.34	82.92	6.44
10/01/2017-12/31/2017	47,359	119	46	21.97	4.64	+4.00	40.93	8.64
07/01/2017-09/30/2017	74,271	178	73	+11.09	+1.49	+2.75	9.35	1.26
04/01/2017-06/30/2017	65,905	139	61	+10.87	+1.65	+3.17	10.02	1.52
01/01/2017-03/31/2017	88,323	207	89	+24.27	+2.75	+3.32	5.07	0.57
Year-Ending 2017	275,858	643		+24.27	+0.88	+3.25	65.38	2.37
10/01/2016-12/31/2016	59,762	110	50	5.73	0.96	+3.49	26.57	4.45
07/01/2016-09/30/2016	44,927	135	53	+9.79	+2.18	+3.58	6.28	1.40
04/01/2016-06/30/2016	76,455	102	58	+22.49	+2.94	+5.97	23.17	3.03
01/02/2016-03/31/2016	91,594	125	57	42.69	4.66	+4.69	85.61	9.35
Year-Ending 2016	272,738	472		16.14	0.59	+4.60	141.63	5.19
10/01/2015-12/31/2015	43,193	60	34	29.83	6.91	+7.18	60.85	14.09
07/01/2015-09/30/2015	20,663	41	24	68.34	33.07	+4.30	77.22	37.37
04/01/2015-06/30/2015	143,060	122	71	98.11	6.86	+5.55	177.48	12.41
01/01/2015-03/31/2015	116,093	109	56	60.79	5.24	+5.51	124.75	10.75
Year-Ending 2015	323,008	332		257.06	7.96	+5.67	440.30	13.63
10/01/2014-12/31/2014	48,315	72	50	+9.25	+1.91	+5.72	18.39	3.81
07/01/2014-09/30/2014	266,740	204	99	216.37	8.11	+7.08	405.13	15.19
04/01/2014-06/30/2014	244,265	204	138	+42.48	+1.74	+8.55	166.48	6.81
01/02/2014-03/31/2014	187,634	187	128	+186.20	+9.92	+8.13	+33.59	+1.79
Year-Ending 2014	746,953	667		+21.55	+0.29	+7.74	556.41	7.45
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
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
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	73	51	BLOOMBERGTERMINAL	49.70 %
	25	24	MARKETAXESS-TRADES	42.57 %
	7	7	ISSUE PRICE	7.73 %
GOVERNMENTS	101	24	BLOOMBERGTERMINAL	97.35 %
	4	4	ISSUE PRICE	2.65 %
MORTGAGES	7	6	BLOOMBERGTERMINAL	100.00 %

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