



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 6

MEETING DATE: November 5, 2018

SUBJECT: Trading Activity and Commission Recapture Report

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Quarterly Trading Activity and Commission Recapture Report for the quarter ending September 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.

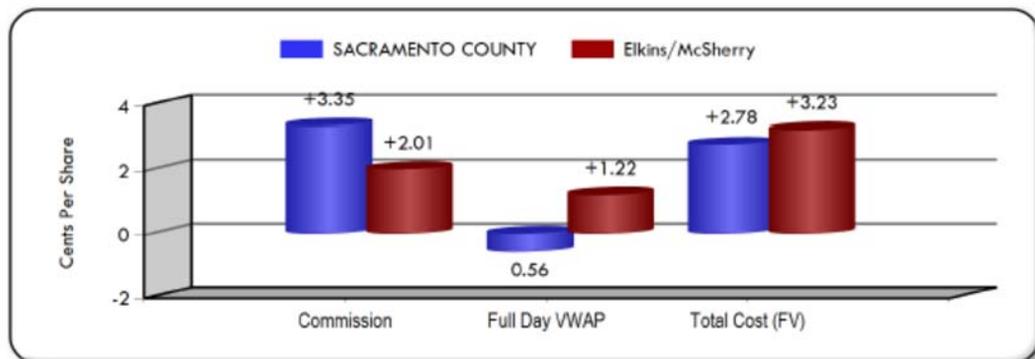
3. Total trading costs.

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

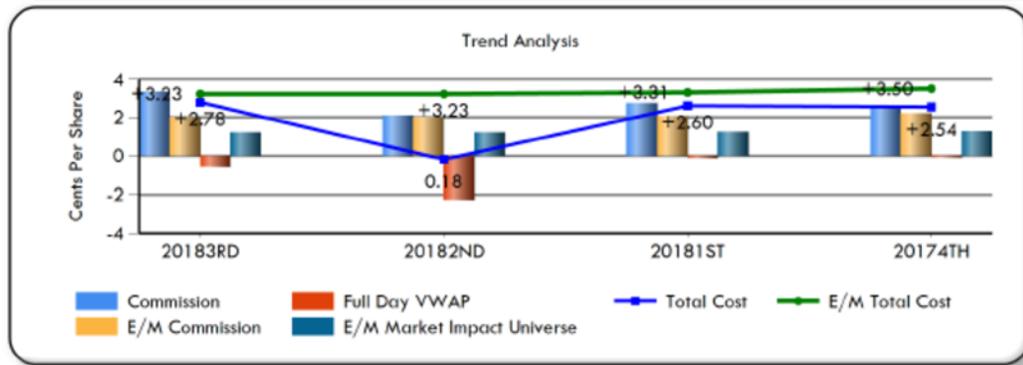
SCERS TRADE COST SUMMARY

U.S. EQUITY

- SCERS’ U.S. equity managers traded 1.2 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$52.6 million in principal, and ranked in the 63rd percentile among the E/M U.S. Equity universe.
- SCERS’ total trading costs equaled +2.78 cps, which is 0.45 cps lower than the peer group at +3.23 cps, as follows:
 - Commission cost of +3.35 cps versus +2.01 cps
 - Market impact cost of -0.56 cps versus +1.22 cps



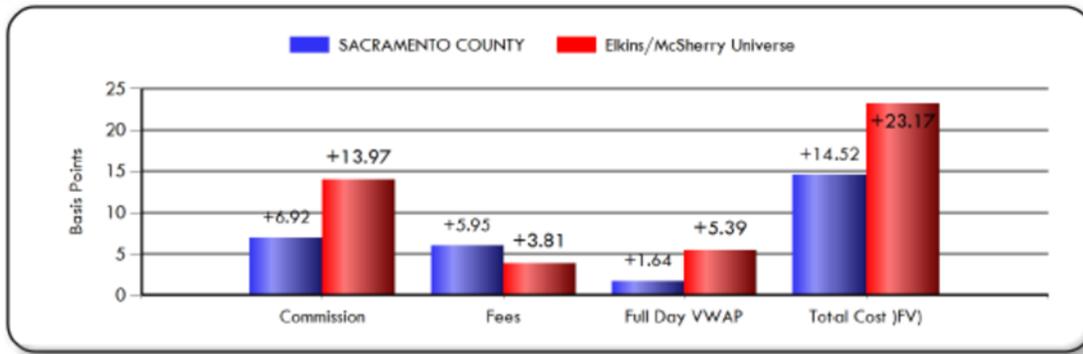
- SCERS’ total trading costs were better than 59% of the peer group.
- A majority of SCERS’ U.S. Equity managers experienced unfavorable commission costs compared to the U.S. Equity peer group. Managers with commission costs greater than the average peer group cost of +2.01 cps include:
 - Weatherbie at +3.57 cps
 - DGHM at +3.51 cps
 - Eagle Capital at +3.24 cps
- As illustrated below, SCERS’ managers generally generate 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 1.38 cps over the past four quarters.



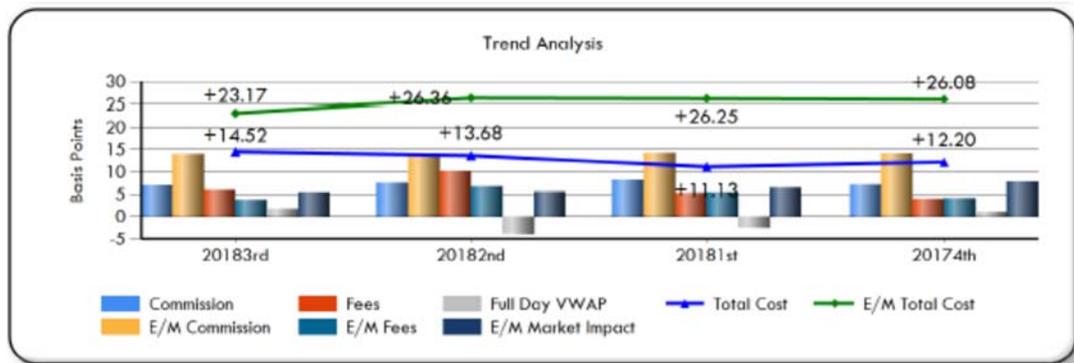
- The U.S. small cap managers (Weatherbie and DGHM) will typically incur additional commission costs in the form of a soft dollar relationship where, in return for conducting trades through a brokerage firm, the manager receives the brokerage firm's research, generally an additional +2.0 cps.
- According to Elkins / McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.71 cps, which is higher than all of SCERS' U.S. Small Cap managers in the second quarter.
- The following SCERS' U.S. Equity managers experienced market impact costs that were greater than the peer group cost of +1.22 cps:
 - Alliance Bernstein at +22.28 cps
 - Weatherbie at +4.00 cps
- SCERS restructured the U.S. Equity portfolio during the second quarter of 2018, which included terminating the relationship with several domestic equity managers. The number of shares and principal amount traded during the third quarter was significantly below prior quarters.

INTERNATIONAL EQUITY

- SCERS' International Equity managers traded 5.8 million shares totaling \$84.7 million in principal across 25 countries.
- Total trading cost equaled +14.52 bps, which is 8.65 bps lower than the peer group at +23.17 bps, as follows:
 - Commission cost of +6.92 bps versus +13.97 bps
 - Fees (country taxes, tariffs) of +5.95 bps versus +3.81 bps
 - Market impact cost of +1.64 bps versus +5.39 bps



- All of SCERS’ International Equity managers analyzed generated commission costs (ranging from +4.28 bps to +9.85 bps), significantly less than the E/M peer group (ranging from +13.88 bps to +14.11 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), with the exception of Lazard Asset Management at +6.01 bps versus +5.45 bps for the benchmark.
- SCERS’ total international trading costs have been consistently below the total trading costs of the E/M universe, with the difference averaging 12.58 bps over the past four quarters.



U.S. FIXED INCOME

- SCERS’ U.S. Fixed Income managers conducted 315 trades totaling \$579 million in principal, as follows:
 - Governments: 170 trades totaling \$308 million
 - Mortgages: 98 trades totaling \$246 million
 - Corporates: 46 trades totaling \$23 million
 - Municipals: 1 trade for less the \$1 million
- Total trading cost equaled +0.04 bps, which is 7.27 bps lower than the E/M peer group, as follows:

- Governments at -0.10 bps versus +8.17 bps
 - Mortgages at +0.15 bps versus +6.08 bps
 - Corporates at +0.71 bps versus +8.81 bps
 - Municipals at +3.33 bps versus +12.41 bps
- As illustrated below, the total trade cost (in basis points) is consistent with previous quarters' trade costs versus 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 +0.03 bps versus +7.25 bps
 - NeubergerBerman (Treasury) at +0.92 bps versus +8.66 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 102 international trades totaling \$37.7 million in principal as follows:
 - Governments: 70 trades totaling \$27 million
 - Corporates: 27 trades totaling \$9 million
 - Mortgages: 5 trades totaling \$1 million

- Total trading cost was +0.05 bps, which was 5.19 bps lower than the E/M peer group cost of +5.24 bps, as follows:
 - Governments at -0.61 bps versus +5.24 bps
 - Corporates at +5.88 bps versus +5.24 bps
 - Mortgages at -24.86 bps versus +5.24 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 third quarter of 2018, SCERS' brokerage partners provided a rebate back to SCERS for approximately 51% of the commissions paid.
 - For the quarter ending September 30, 2018, the commission rebate totaled \$3,688.
 - Year to date through September 30, 2018, the commission rebate totaled \$32,178.
 - For comparison, the commission rebate for the year to date through September 30, 2017 totaled \$33,136.

ATTACHMENTS

1. Elkins / McSherry Trading Cost Summary report for the quarter ending September 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:

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SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End September 30, 2018



REPORT CONTENTS

Tab 1 : Executive Summary

- **Results / Methodology**
- **Performance vs. Universe / Trading Components**
- **Short Term Alpha**
- **Market Capitalization Performance**
- **Order Size Performance**
- **Commission Review**

Tab 2 : Trade Detail

- **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 July 1, 2018 to September 30, 2018. The analysis included trading of 1,200,559 shares representing \$52.56 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 +3.35 cps (+7.64 bp) or +\$40,162 (+1.33 cps (+3.05 bp) worse than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact savings was 0.56 cps (1.29 bp) or 1.78 cps (4.07 bp) better than the Elkins/McSherry Universe Your overall trading cost of +2.78 cps (+6.35 bp) was 0.45 cps (1.02 bp) better than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 80% Total Cost Universe Rank: 59% 	<ul style="list-style-type: none"> E-Score Rank : 63 E-Score : 0.48

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program		Full Day VWAP
+3.71	+2.01	+1.03	+1.46	Median	+1.22
				75 %	0.12
				25 %	+2.96



(+) = Cost

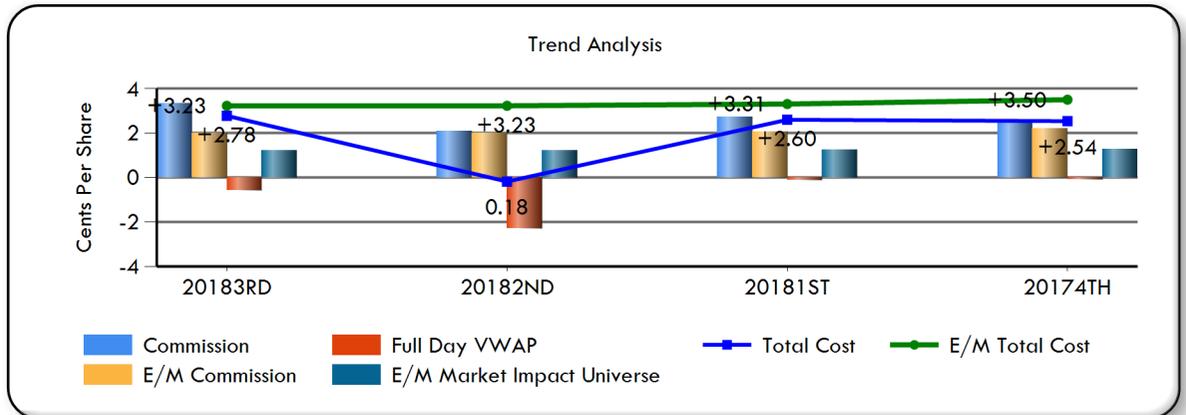
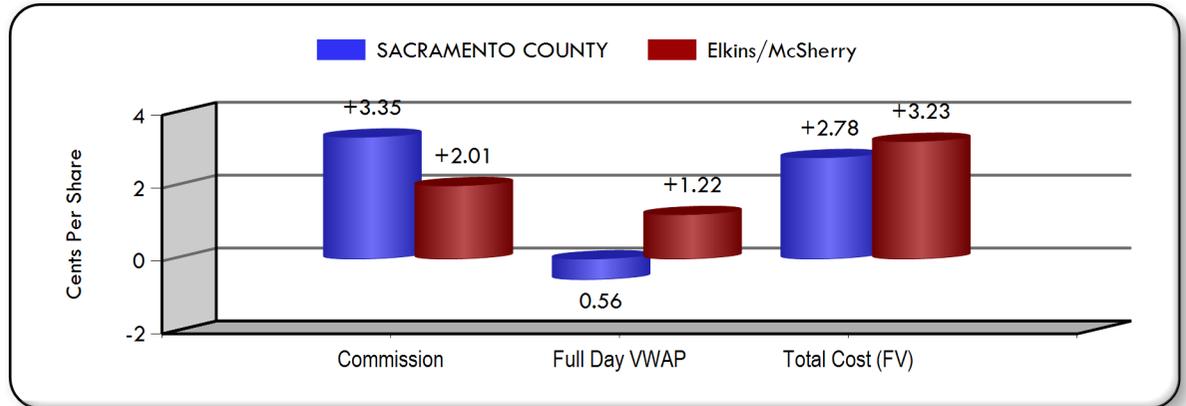
EXECUTIVE SUMMARY

TOTAL PORTFOLIO COST PERFORMANCE

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E - Score	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)	E - Score (Rank)	E -Score
Buys	+3.29	+2.01	+3.71	2.26	+1.22	+1.03	2.20	61	0.51
Sells	+3.40	+2.01	+3.71	+1.07	+1.22	+4.47	+1.24	66	0.44
Total	+3.35	+2.01	+3.71	0.56	+1.22	+2.78	0.45	63	0.48

TRADING COMPONENTS

	Buys	Sells
Trade Principal	25,583,937	26,980,732
Shares	588,764	611,795
Unique Names	63	43
Liquidity (% ADV)	0.182	0.193
Avg. Execution Size	2,247	4,219
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	262	145



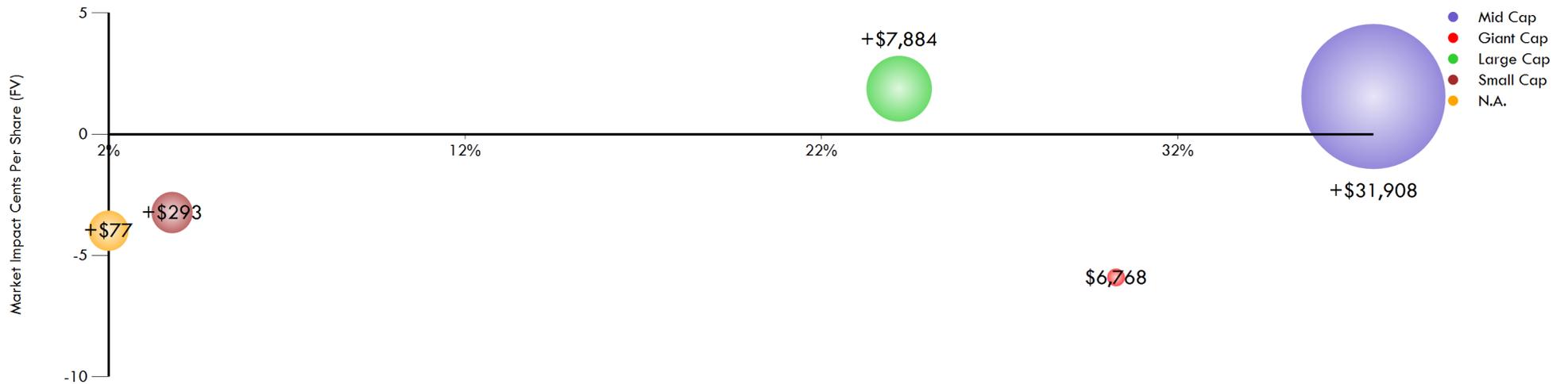
(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded (\$)	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score (Rank)	E - Score	Market Cap Definition
			Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP %	(cps)	Commission+ Full Day VWAP Vs. Universe (cps)			
Mid Cap	37.94 %	2,589	+3.47	+2.01	+1.55	+1.01	42 %	+5.03	+2.01	60	0.52	\$1 B To \$5 B
Giant Cap	30.72 %	19,108	+3.38	+2.01	5.91	+1.32	87 %	2.53	5.87	61	0.51	Over \$25 B
Large Cap	24.64 %	2,601	+2.58	+2.01	+1.88	+1.76	49 %	+4.46	+0.69	71	0.38	\$5 B To \$25 B
Small Cap	4.24 %	1,215	+3.54	+2.01	3.23	+0.45	89 %	+0.31	2.15	62	0.49	\$250 M To \$1 B
N.A.	2.46 %	13,500	+4.27	+2.01	3.98	+1.22	96 %	+0.29	2.94	75	0.32	

Total Cost by Market Cap: (USD)

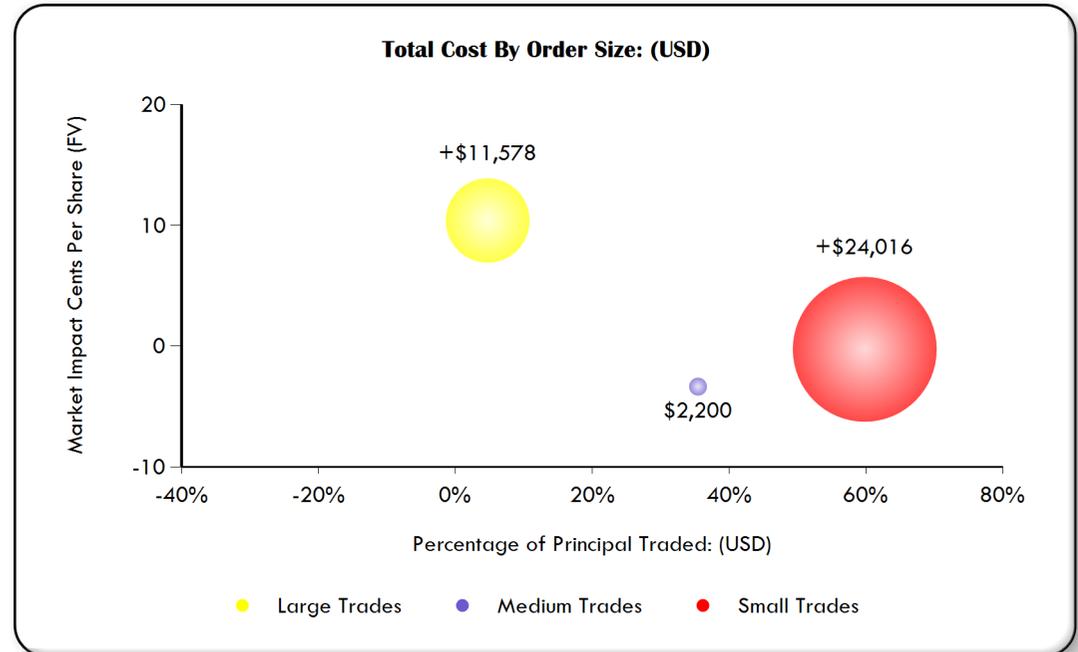
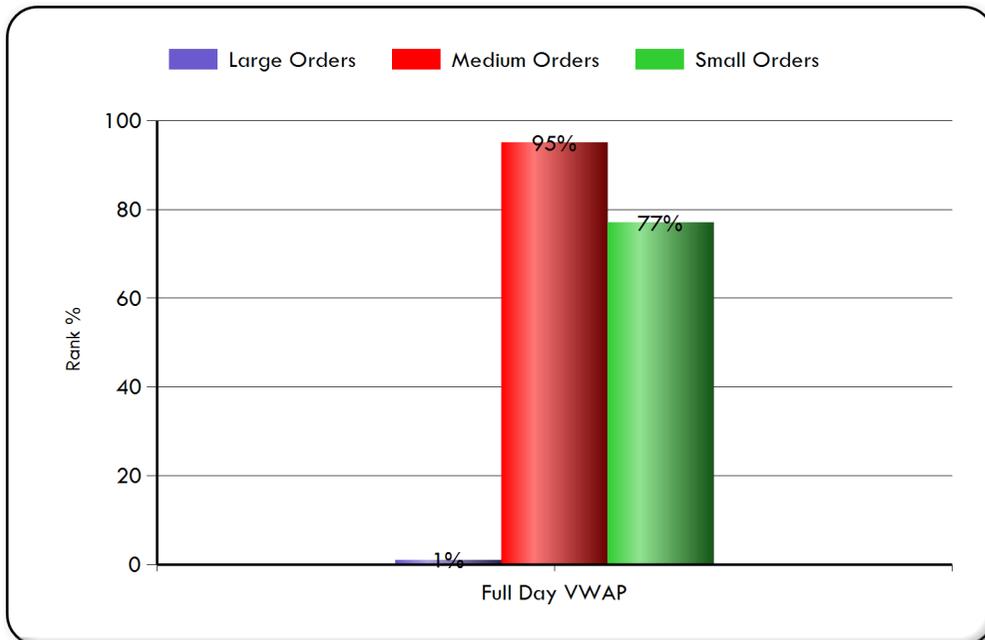


(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Shares Per Order	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score (Rank)	E - Score	Absolute Size (Shares)
				Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP	(cps)	Commission+Full Day VWAP Vs. Universe (cps)			
Large Orders	1	80,443	N/A	+4.00	+2.01	+10.39	+1.22	1 %	+14.39	+11.16	73	0.34	50K Or More
Med. Orders	21	18,622	N/A	+2.80	+2.01	3.36	+1.22	95 %	0.56	3.79	68	0.42	10K-50K
Small Orders	385	1,894	N/A	+3.57	+2.01	0.27	+1.22	77 %	+3.29	+0.07	60	0.52	10K Or Less





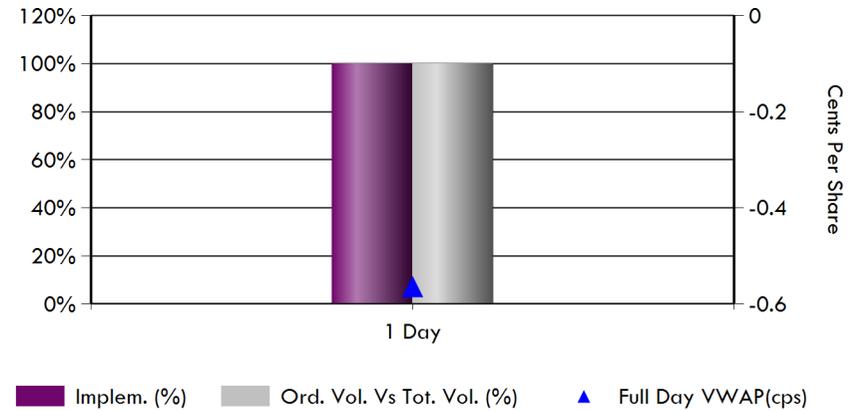
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EXECUTIVE SUMMARY

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%	0.56	63	0.48

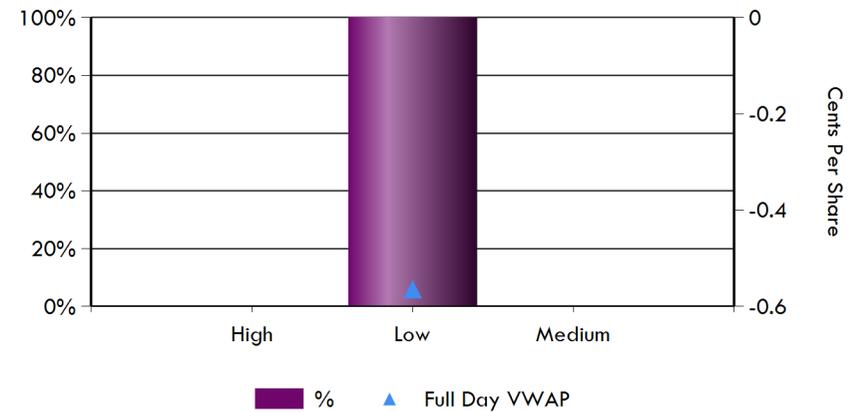
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score (Rank)	E - Score
0%~20% of daily vol.	L	100%	0.56	63	0.48

Avg. % of Daily Volume





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EXECUTIVE SUMMARY

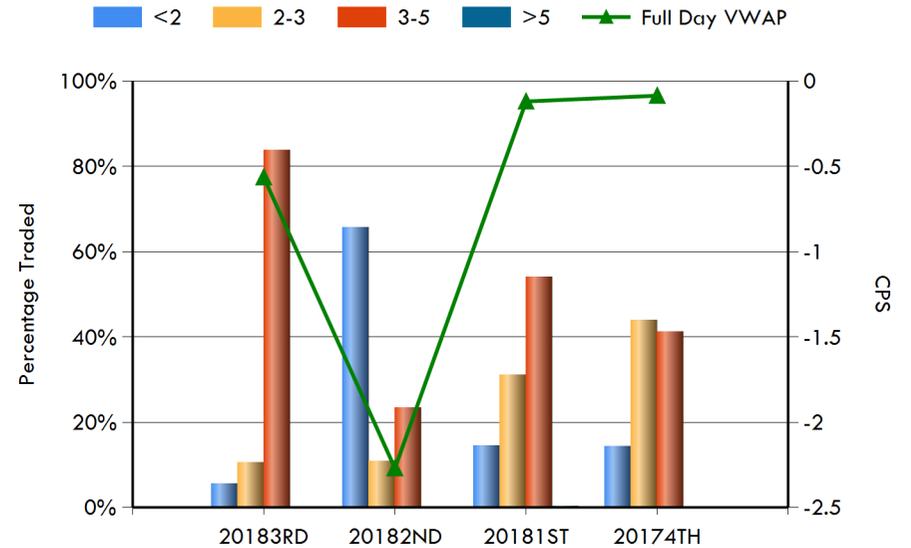
COMMISSION REVIEW

Top 10 Broker

Commission Trends

Broker	Total Commission (\$)	Commission 20183rd (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20182ND (cps)	20181ST (cps)	20174TH (cps)
THEMIS TRA	4,833	+3.60	+2.01	+3.71	+3.60	+3.32	+1.60
COWEN & CO	4,486	+3.78	+2.01	+3.71	+3.89	+3.27	+3.27
ITG	3,700	+3.60	+2.01	+3.71	+2.56	+3.42	+3.28
SC BERNSTE	3,218	+4.00	+2.01	+3.71	+2.35	+2.01	+1.77
LIQUIDNET	3,004	+3.20	+2.01	+3.71	+2.26	+2.64	+2.42
CAPITAL IN	2,893	+3.31	+2.01	+3.71	+3.08	+2.99	+3.47
JP MORGAN	2,346	+4.84	+2.01	+3.71	+1.09	+3.49	+4.21
RBC CAPITA	1,810	+2.69	+2.01	+3.71	+2.82	+3.28	+2.16
CITIGROUP	1,782	+4.00	+2.01	+3.71	+0.05	+0.31	+1.41
CONVERGEX	1,309	+1.50	+2.01	+3.71	+3.93	+4.65	+4.08

Commission Category Trend



NOTES



(+) = Cost

TRADE CYCLE DETAIL

Manager Performance (Full Day VWAP)

						COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Manager	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score Rank	E - Score	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	2018 2ND (%)	2018 1ST (%)	2017 4TH (%)
EAGLE CAPITAL MANAGE	22	18,990	360,801	71	0.37	+3.24	+2.01	5.01	98 %	5.00	97	97	87
WEATHERBIE	18	1,472	347,277	62	0.49	+3.57	+2.01	+4.00	18 %	+4.34	4	32	79
DALTON, GREINER, HAR	11	3,140	458,422	55	0.59	+3.51	+2.01	2.22	92 %	1.94	93	95	95
ALLIANCE R 3000 CAPI	2	5,677	34,059	28	1.05	+0.04	+2.01	+22.28	1 %	+19.09	99	93	99

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.71	+2.01	+1.03	+1.46	+1.22

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 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		20182ND (%)	20181ST (%)	20174TH (%)
THEMIS TRADING LLC	7	1,617	134,248	68	0.42	4,833	+3.60	+2.01	+3.53	20 %	+3.91	1	6	92
ITG	6	1,168	102,779	60	0.53	3,700	+3.60	+2.01	+11.64	1 %	+12.01	99	35	55
LIQUIDNET	5	2,287	93,768	75	0.31	3,004	+3.20	+2.01	1.87	92 %	1.90	96	94	87
CONVERGEX	5	21,816	87,264	86	0.18	1,309	+1.50	+2.01	+5.62	12 %	+3.89	98	98	99
JP MORGAN CHASE	3	9,703	48,515	44	0.76	2,346	+4.84	+2.01	9.03	99 %	7.42	30	1	34
COWEN & CO	3	3,212	118,843	52	0.64	4,486	+3.78	+2.01	2.10	92 %	1.56	40	60	10
MERRILL LYNCH	3	15,590	15,590	40	0.82	156	+1.00	+2.01	112.10	99 %	114.33	75	2	24
SC BERNSTEIN	2	80,443	80,443	73	0.34	3,218	+4.00	+2.01	+10.39	1 %	+11.16	87	99	7
CREDIT SUISSE	2	12,443	24,886	87	0.16	995	+4.00	+2.01	2.52	93 %	1.75	99	92	97
CAPITAL INSTL SVCS	2	6,724	87,411	32	0.98	2,893	+3.31	+2.01	5.33	99 %	5.25	33	95	93

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.71	+2.01	+1.03	+1.46	+1.22

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	20182ND (%)	20181ST (%)	20174TH (%)
RBC CAPITAL MARKETS	2	2,103	67,286	67	0.43	1,810	+2.69	+2.01	3.22	95 %	3.76	92	98	97
MORGAN STANLEY	2	12,952	38,857	66	0.44	835	+2.15	+2.01	+5.24	13 %	+4.16	89	96	7
CITIGROUP	1	44,562	44,562	95	0.06	1,782	+4.00	+2.01	+0.57	63 %	+1.34	99	60	97
UBS	1	661	661	59	0.54	7	+1.00	+2.01	1,556.87	99 %	1,559.10	95	52	79
WILLIAM BLAIR	1	2,419	21,774	63	0.49	784	+3.60	+2.01	30.56	99 %	30.19	98	93	99
ISI GROUP INC	<1	19,700	19,700	88	0.16	788	+4.00	+2.01	1.97	92 %	1.20	99	99	33
WEEDEN & CO	<1	2,272	29,540	65	0.45	1,034	+3.50	+2.01	3.27	95 %	3.00	83	38	93
NEEDHAM & CO INC	<1	1,793	19,725	66	0.43	710	+3.60	+2.01	+6.10	10 %	+6.47	7	12	61
GOLDMAN SACHS	<1	2,212	8,848	68	0.41	234	+2.64	+2.01	+26.91	1 %	+26.32	84	97	9
JEFFERIES & CO	<1	1,660	16,601	78	0.29	489	+2.95	+2.01	+7.84	5 %	+7.56	62	84	23

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.71	+2.01	+1.03	+1.46	+1.22

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	20182ND (%)	20181ST (%)	20174TH (%)
DEUTSCHE BANK	<1	2,670	2,670	8	1.70	0	+0.00	+2.01	+189.35	1 %	+186.12	-	94	99
BAIRD, ROBERT W	<1	3,850	15,400	67	0.43	693	+4.50	+2.01	+4.19	17 %	+5.46	84	99	14
KEYBANC	<1	5,790	17,371	76	0.31	692	+3.98	+2.01	1.35	88 %	0.60	1	91	32
PIPER JAFFRAY	<1	2,666	5,331	66	0.44	218	+4.09	+2.01	12.45	99 %	11.59	1	89	96
CRAIG - HALLUM	<1	1,787	8,935	25	1.13	322	+3.60	+2.01	+3.47	21 %	+3.84	99	-	70
STEPHENS & CO INC	<1	1,454	8,726	60	0.53	330	+3.78	+2.01	4.51	98 %	3.96	1	15	98
OPPENHEIMER & CO INC	<1	1,441	4,323	57	0.57	156	+3.60	+2.01	+24.43	1 %	+24.80	3	45	96
RAYMOND JAMES	<1	1,952	3,903	46	0.72	141	+3.60	+2.01	+61.41	1 %	+61.78	77	86	7
WOLFE TRAHAN SECS	<1	9,700	9,700	90	0.13	437	+4.50	+2.01	1.33	88 %	0.06	99	90	-
INSTINET	<1	3,042	21,292	64	0.47	639	+3.00	+2.01	+2.33	32 %	+2.10	1	6	98

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.71	+2.01	+1.03	+1.46	+1.22

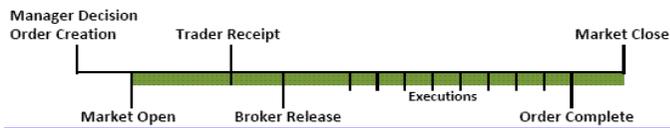
NOTES

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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	20182ND (%)	20181ST (%)
SANDLER ONEILL	<1	2,479	14,876	34	0.94	595	+4.00	+2.01	4.47	98 %	3.70	-	81	-
AUTREPAT-DISTRIBUT	<1	5,690	11,379	20	1.24	0	+0.00	+2.01	+10.37	1 %	+7.14	8	-	1
STIFEL NICOLAUS & CO	<1	716	716	57	0.56	26	+3.60	+2.01	103.82	99 %	103.45	1	22	46
ALARIS TRADING PARTN	<1	9,100	9,100	82	0.24	273	+3.00	+2.01	1.35	88 %	1.58	-	-	-
GREEN STREET	<1	4,030	4,030	77	0.29	161	+4.00	+2.01	1.30	88 %	0.53	-	96	36
KEEFE BRUYETTE WOODS	<1	753	1,506	13	1.46	68	+4.50	+2.01	12.49	99 %	11.22	99	98	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.71	+2.01	+1.03	+1.46	+1.22

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	20182ND (%)	20181ST (%)	20174TH (%)
DEUTSCHE BANK	<1	2,670	2,670	8	1.70	0	+0.00	+2.01	+189.35	1 %	+186.12	-	91	-
MORGAN STANLEY	<1	17,984	17,984	71	0.37	0	+0.00	+2.01	+4.00	18 %	+0.77	1	99	-
AUTREPAT-DISTRIBUT	<1	5,690	11,379	20	1.24	0	+0.00	+2.01	+10.37	1 %	+7.14	8	-	1
GOLDMAN SACHS	<1	920	920	36	0.90	6	+0.60	+2.01	+80.78	1 %	+78.15	-	4	99
JP MORGAN CHASE	<1	1,106	1,106	70	0.38	7	+0.60	+2.01	9.89	99 %	12.52	18	-	-
Grand Total	2	5,677	34,059	28	1.05	12	+0.04	+2.01	+22.28	1 %	+19.09	99	93	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	20182ND (%)	20181ST (%)	20174TH (%)
COWEN & CO	2	3,247	113,637	55	0.60	4,383	+3.86	+2.01	2.02	92 %	1.39	66	92	52
CAPITAL INSTL SVCS	2	6,724	87,411	32	0.98	2,893	+3.31	+2.01	5.33	99 %	5.25	27	74	88
RBC CAPITAL MARKETS	2	2,103	67,286	67	0.43	1,810	+2.69	+2.01	3.22	95 %	3.76	92	99	98
LIQUIDNET	2	2,335	58,379	61	0.51	2,043	+3.50	+2.01	+0.36	68 %	+0.63	99	99	52
WEEDEN & CO	<1	2,272	29,540	65	0.45	1,034	+3.50	+2.01	3.27	95 %	3.00	90	1	93
BAIRD, ROBERT W	<1	3,850	15,400	67	0.43	693	+4.50	+2.01	+4.19	17 %	+5.46	99	34	-
KEYBANC	<1	5,790	17,371	76	0.31	692	+3.98	+2.01	1.35	88 %	0.60	1	96	99
WOLFE TRAHAN SECS	<1	9,700	9,700	90	0.13	437	+4.50	+2.01	1.33	88 %	0.06	99	90	-
INSTINET	<1	3,042	21,292	64	0.47	639	+3.00	+2.01	+2.33	32 %	+2.10	2	98	-
SANDLER ONEILL	<1	2,479	14,876	34	0.94	595	+4.00	+2.01	4.47	98 %	3.70	-	69	-
PIPER JAFFRAY	<1	2,900	2,900	71	0.38	131	+4.50	+2.01	3.79	96 %	2.52	71	99	-
ALARIS TRADING PARTN	<1	9,100	9,100	82	0.24	273	+3.00	+2.01	1.35	88 %	1.58	-	-	-
STEPHENS & CO INC	<1	3,951	3,951	93	0.09	158	+4.00	+2.01	0.57	80 %	+0.20	17	98	-
GREEN STREET	<1	4,030	4,030	77	0.29	161	+4.00	+2.01	1.30	88 %	0.53	-	-	-
KEEFE BRUYETTE WOODS	<1	753	1,506	13	1.46	68	+4.50	+2.01	12.49	99 %	11.22	99	97	-
JP MORGAN CHASE	<1	2,043	2,043	55	0.59	72	+3.50	+2.01	+4.00	18 %	+4.27	97	1	-
Grand Total	11	3,140	458,422	55	0.59	16,080	+3.51	+2.01	2.22	92 %	1.94	93	95	95



(+) = 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	20182ND (%)	20181ST (%)	20174TH (%)
CONVERGEX	5	21,816	87,264	86	0.18	1,309	+1.50	+2.01	+5.62	12 %	+3.89	-	-	-
JP MORGAN CHASE	3	15,122	45,366	44	0.76	2,268	+5.00	+2.01	9.59	99 %	7.82	-	-	-
MERRILL LYNCH	3	15,590	15,590	40	0.82	156	+1.00	+2.01	112.10	99 %	114.33	90	-	-
LIQUIDNET	3	15,269	15,269	94	0.07	237	+1.55	+2.01	+3.29	23 %	+1.61	98	99	75
SC BERNSTEIN	2	80,443	80,443	73	0.34	3,218	+4.00	+2.01	+10.39	1 %	+11.16	98	-	-
CREDIT SUISSE	2	12,443	24,886	87	0.16	995	+4.00	+2.01	2.52	93 %	1.75	-	-	-
CITIGROUP	1	44,562	44,562	95	0.06	1,782	+4.00	+2.01	+0.57	63 %	+1.34	-	-	-
UBS	1	661	661	59	0.54	7	+1.00	+2.01	1,556.87	99 %	1,559.10	89	94	-
MORGAN STANLEY	<1	10,437	20,873	63	0.48	835	+4.00	+2.01	+6.31	10 %	+7.08	77	-	-
ISI GROUP INC	<1	19,700	19,700	88	0.16	788	+4.00	+2.01	1.97	92 %	1.20	-	-	-
GOLDMAN SACHS	<1	2,200	2,200	72	0.36	22	+1.00	+2.01	+10.92	1 %	+8.69	1	-	-
COWEN & CO	<1	3,987	3,987	16	1.35	60	+1.50	+2.01	12.81	99 %	14.54	-	-	-
Grand Total	22	18,990	360,801	71	0.37	11,677	+3.24	+2.01	5.01	98 %	5.00	97	97	87



(+) = 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	20182ND (%)	20181ST (%)	20174TH (%)
THEMIS TRADING LLC	7	1,617	134,248	68	0.42	4,833	+3.60	+2.01	+3.53	20 %	+3.91	1	6	92
ITG	6	1,168	102,779	60	0.53	3,700	+3.60	+2.01	+11.64	1 %	+12.01	42	25	16
WILLIAM BLAIR	1	2,419	21,774	63	0.49	784	+3.60	+2.01	30.56	99 %	30.19	98	98	99
LIQUIDNET	<1	1,341	20,120	52	0.64	724	+3.60	+2.01	12.26	99 %	11.89	1	20	91
NEEDHAM & CO INC	<1	1,793	19,725	66	0.43	710	+3.60	+2.01	+6.10	10 %	+6.47	1	12	61
JEFFERIES & CO	<1	1,660	16,601	78	0.29	489	+2.95	+2.01	+7.84	5 %	+7.56	18	92	8
CRAIG - HALLUM	<1	1,787	8,935	25	1.13	322	+3.60	+2.01	+3.47	21 %	+3.84	99	-	70
OPPENHEIMER & CO INC	<1	1,441	4,323	57	0.57	156	+3.60	+2.01	+24.43	1 %	+24.80	95	45	96
PIPER JAFFRAY	<1	2,431	2,431	64	0.46	88	+3.60	+2.01	22.78	99 %	22.41	1	1	97
RAYMOND JAMES	<1	1,952	3,903	46	0.72	141	+3.60	+2.01	+61.41	1 %	+61.78	21	87	-
STEPHENS & CO INC	<1	955	4,775	52	0.64	172	+3.60	+2.01	7.78	99 %	7.41	1	13	99
GOLDMAN SACHS	<1	2,864	5,728	75	0.32	206	+3.60	+2.01	+24.40	1 %	+24.77	99	-	1
STIFEL NICOLAUS & CO	<1	716	716	57	0.56	26	+3.60	+2.01	103.82	99 %	103.45	1	-	1
COWEN & CO	<1	1,219	1,219	67	0.43	44	+3.60	+2.01	+24.71	1 %	+25.08	55	22	1
Grand Total	18	1,472	347,277	62	0.49	12,393	+3.57	+2.01	+4.00	18 %	+4.34	4	32	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)
BAC	2	125,005	3,852,309	+4.00	0.10%	0.24	+6.89
ACCO	30	96,882	1,300,449	+3.34	0.76%	0.37	0.42
CHS	6	64,969	573,777	+2.94	0.25%	0.63	+1.76
LM	10	49,161	1,563,350	+4.24	0.66%	0.48	2.19
ORCL	3	44,926	2,182,716	+3.44	0.12%	0.51	+2.66
DISH	2	44,350	1,602,800	+1.50	1.00%	0.33	+3.58
PBH	14	35,103	1,352,652	+3.18	0.67%	0.29	0.25
FMBI	12	34,892	943,122	+3.25	0.99%	0.50	3.87
WRB	1	32,800	2,576,965	+1.50	1.91%	0.00	+7.95
KW	6	31,541	686,951	+3.47	0.66%	0.51	+1.52

Names Most Traded - Total Orders

							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
PBYI	12	28,351	1,384,137	+3.60	0.31%	0.54	+22.10
W	11	13,686	1,656,853	+3.60	0.10%	0.35	23.34
LM	10	49,161	1,563,350	+4.24	0.66%	0.48	2.19
ORCL	3	44,926	2,182,716	+3.44	0.12%	0.51	+2.66
BAC	2	125,005	3,852,309	+4.00	0.10%	0.24	+6.89
DISH	2	44,350	1,602,800	+1.50	1.00%	0.33	+3.58
MHK	2	9,800	1,789,719	+3.33	0.55%	0.09	+4.05
FB	2	30,859	5,058,618	+1.27	0.07%	0.45	55.01
WRB	1	32,800	2,576,965	+1.50	1.91%	0.00	+7.95
C	1	26,300	1,821,538	+5.00	0.24%	0.77	10.71



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	7,231,607	10	+69.00	39.28%
Cost Trades	30,090,205	215	+22.22	100.00%
Saving Trades	22,474,465	192	28.66	100.00%
10 Low Cost Trades	6,783,579	10	233.78	61.19%





(+) = Cost

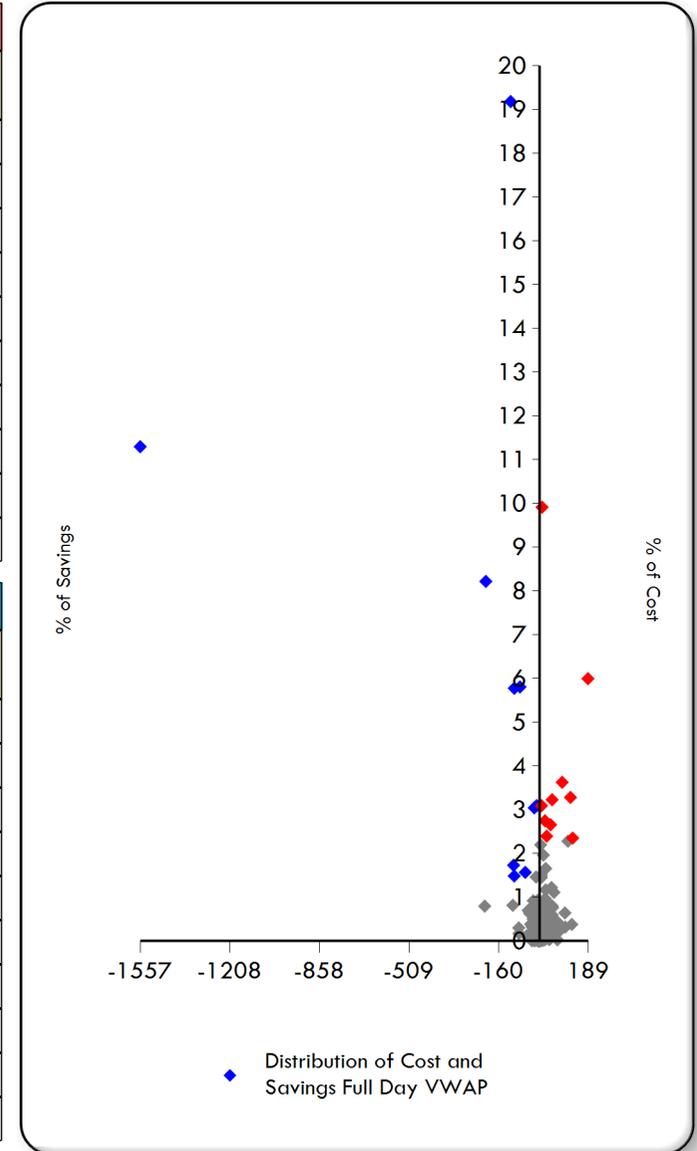
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	BAC	2018/09/19	80,443	9.91	0.34	+10.39	EAGLE CAPI	SC BERNSTE
Sell	AAPL	2018/09/21	2,670	5.99	1.70	+189.35	ALLIANCE R	DEUTSCHE B
Buy	AVLR	2018/08/15	3,445	3.63	1.41	+88.77	WEATHERBIE	THEMIS TRA
Sell	TTD	2018/09/07	2,286	3.28	0.65	+121.07	WEATHERBIE	THEMIS TRA
Buy	WAGE	2018/09/13	5,490	3.23	0.66	+49.59	WEATHERBIE	THEMIS TRA
Sell	WRB	2018/09/25	32,800	3.09	0.00	+7.95	EAGLE CAPI	CONVERGEX
Buy	BPR	2018/08/28	10,677	2.75	1.11	+21.70	ALLIANCE R	AUTREPAT-D
Buy	PTLA	2018/08/27	5,174	2.66	0.53	+43.30	WEATHERBIE	THEMIS TRA
Buy	PBYI	2018/09/06	7,164	2.39	0.77	+28.20	WEATHERBIE	ITG
Sell	TTD	2018/09/25	1,530	2.35	0.00	+129.68	WEATHERBIE	THEMIS TRA

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	FB	2018/09/21	15,590	19.18	0.82	112.10	EAGLE CAPI	MERRILL LY
Sell	AMZN	2018/07/27	661	11.29	0.54	1,556.87	EAGLE CAPI	UBS
Buy	GKOS	2018/08/29	3,581	8.22	0.83	209.06	WEATHERBIE	THEMIS TRA
Buy	WAGE	2018/09/13	6,958	5.80	1.02	76.01	WEATHERBIE	WILLIAM BL
Buy	ACOR	2018/09/10	5,359	5.77	0.61	98.18	WEATHERBIE	THEMIS TRA
Buy	C	2018/09/11	26,300	3.09	0.77	10.71	EAGLE CAPI	JP MORGAN
Sell	WPX	2018/07/26	13,690	3.04	2.42	20.25	DALTON, GR	CAPITAL IN
Sell	GTT	2018/08/06	1,561	1.73	1.35	100.97	WEATHERBIE	LIQUIDNET
Sell	GTT	2018/08/13	2,589	1.57	1.27	55.20	WEATHERBIE	CRAIG - HA
Sell	PODD	2018/09/07	1,376	1.49	1.53	98.43	WEATHERBIE	LIQUIDNET



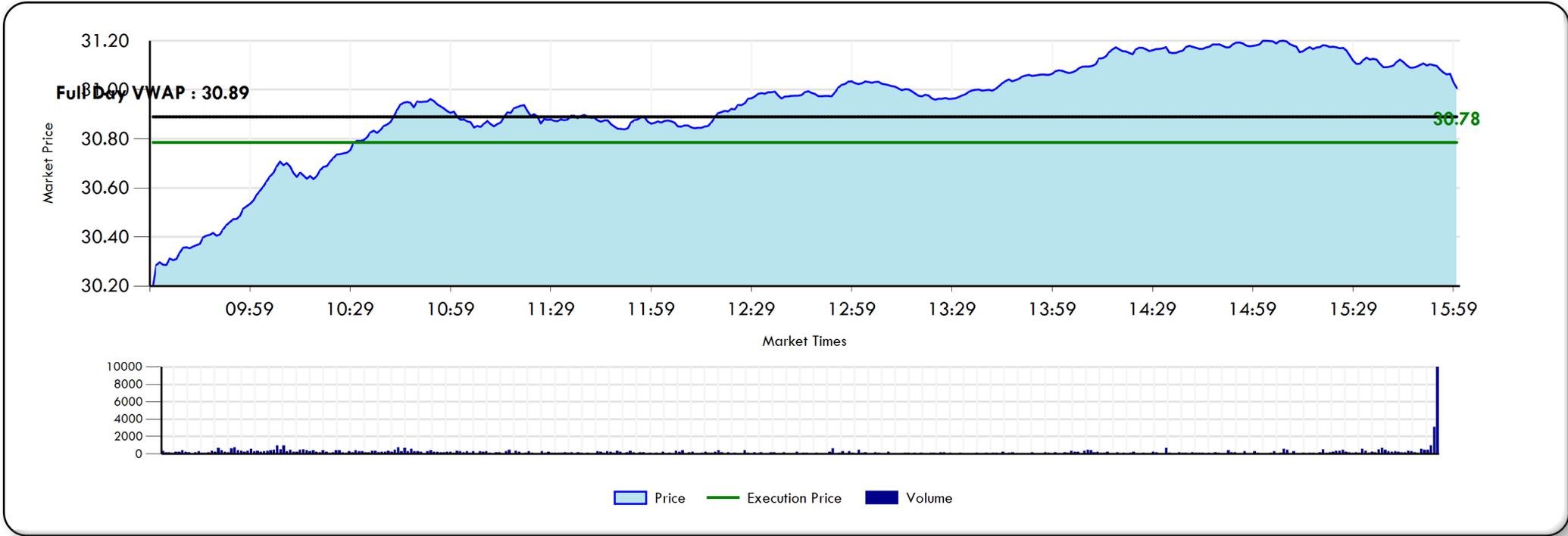


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAC - 2018/09/19

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	SC BERNSTEIN	09/19/2018 09:30:00	09/19/2018 16:00:00	80,443	30.7827	30.8866	+8,360	+10.39	0.34	0.10



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 9.91% of your market impact cost.

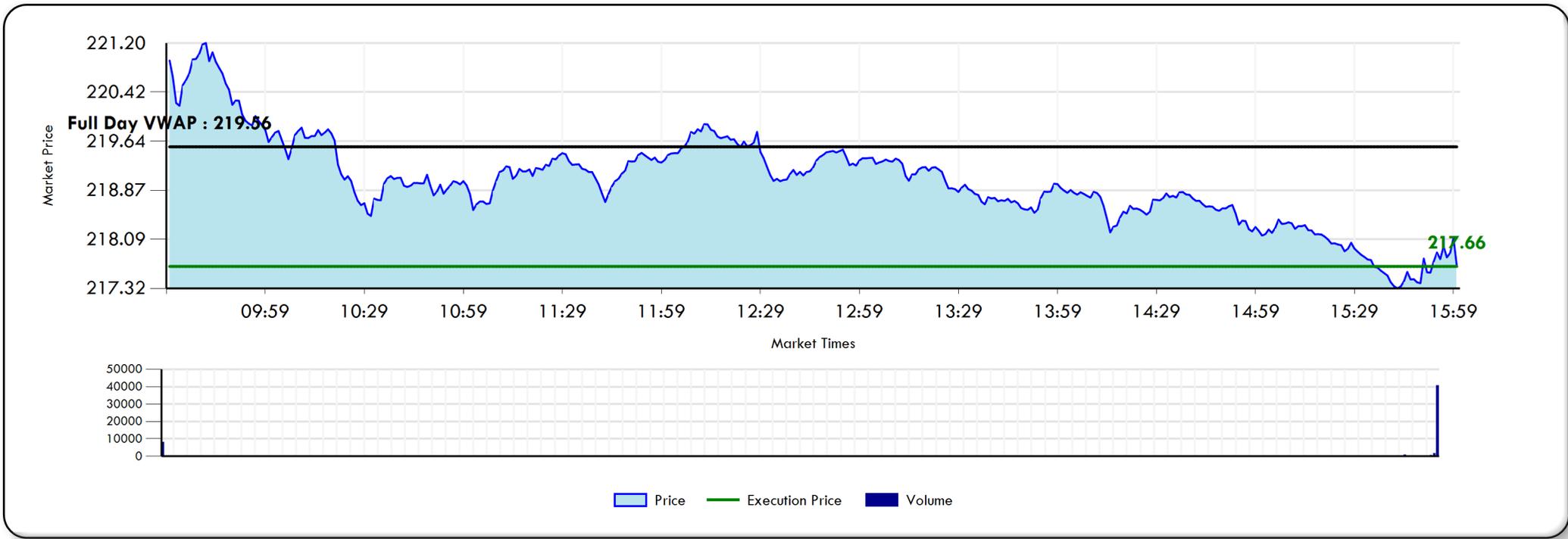


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AAPL - 2018/09/21

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	DEUTSCHE BANK	09/21/2018 09:30:00	09/21/2018 16:00:00	2,670	217.6615	219.5550	+5,056	+189.35	1.70	0.01



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 5.99% of your market impact cost.

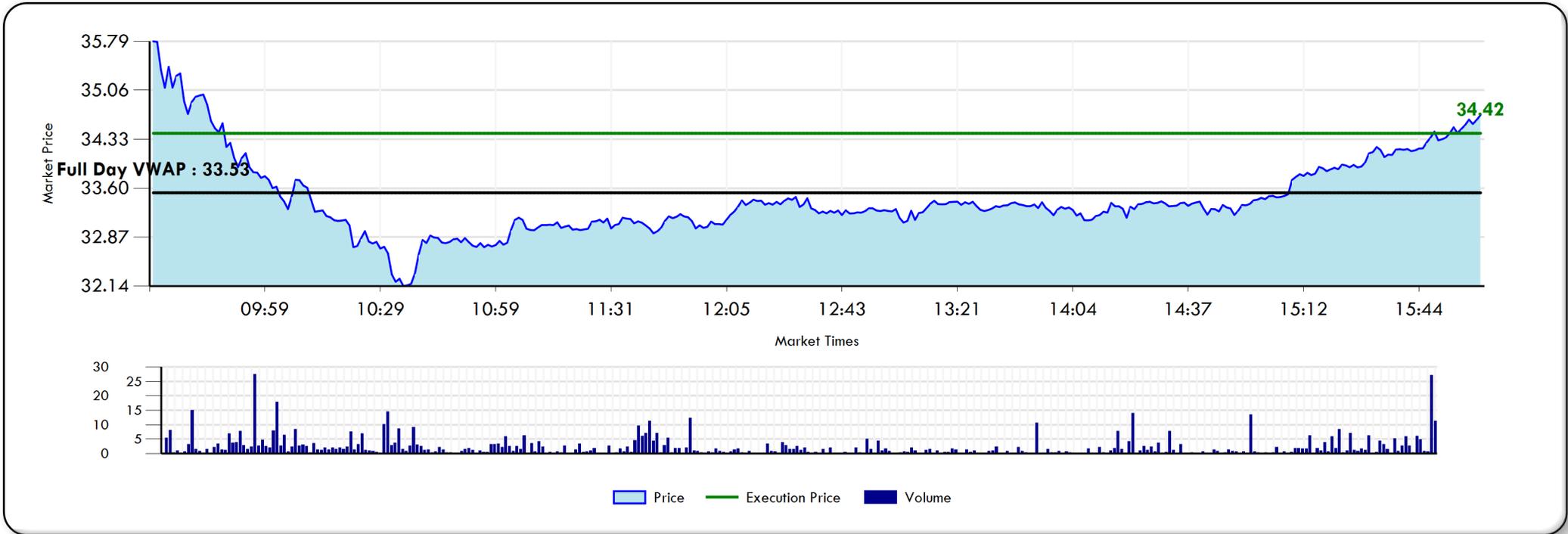


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AVLR - 2018/08/15

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	THEMIS TRADING LLC	08/15/2018 09:30:00	08/15/2018 16:00:00	3,445	34.4191	33.5314	+3,058	+88.77	1.41	0.47



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.63% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TTD - 2018/09/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	09/07/2018 09:30:00	09/07/2018 16:00:00	2,286	142.1728	143.3835	+2,768	+121.07	0.65	0.29



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.28% of your market impact cost.

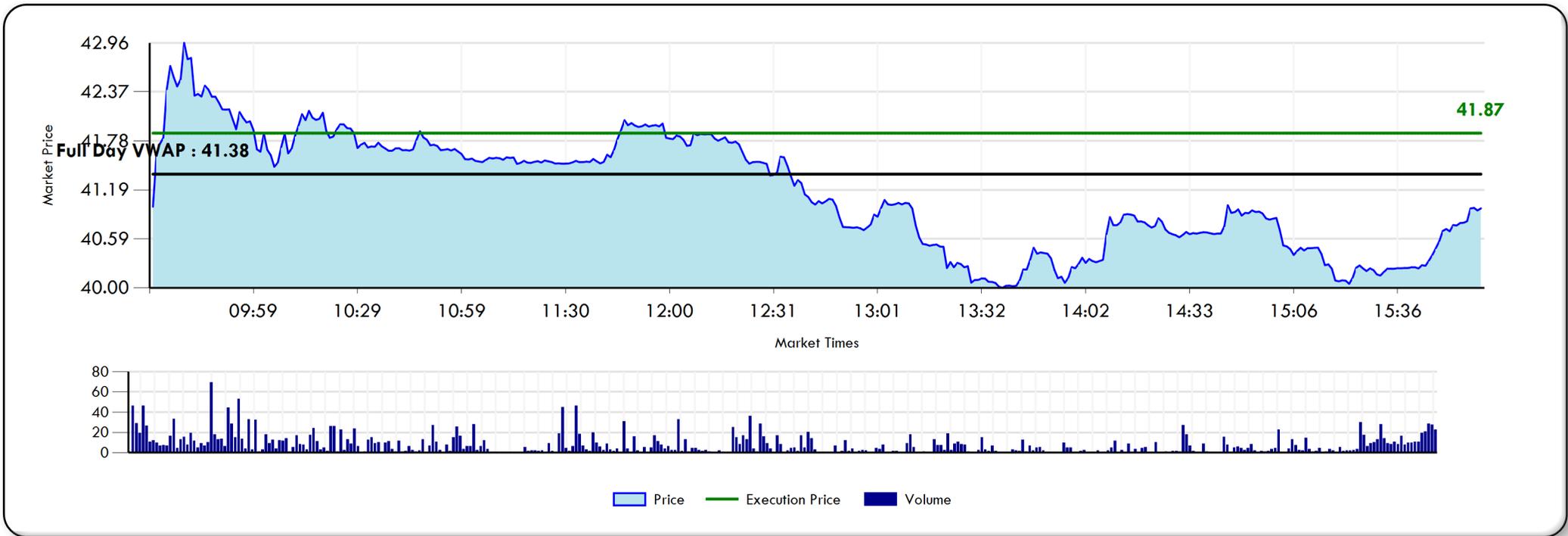


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WAGE - 2018/09/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	THEMIS TRADING LLC	09/13/2018 09:30:00	09/13/2018 16:00:00	5,490	41.8719	41.3760	+2,722	+49.59	0.66	0.19



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.23% of your market impact cost.

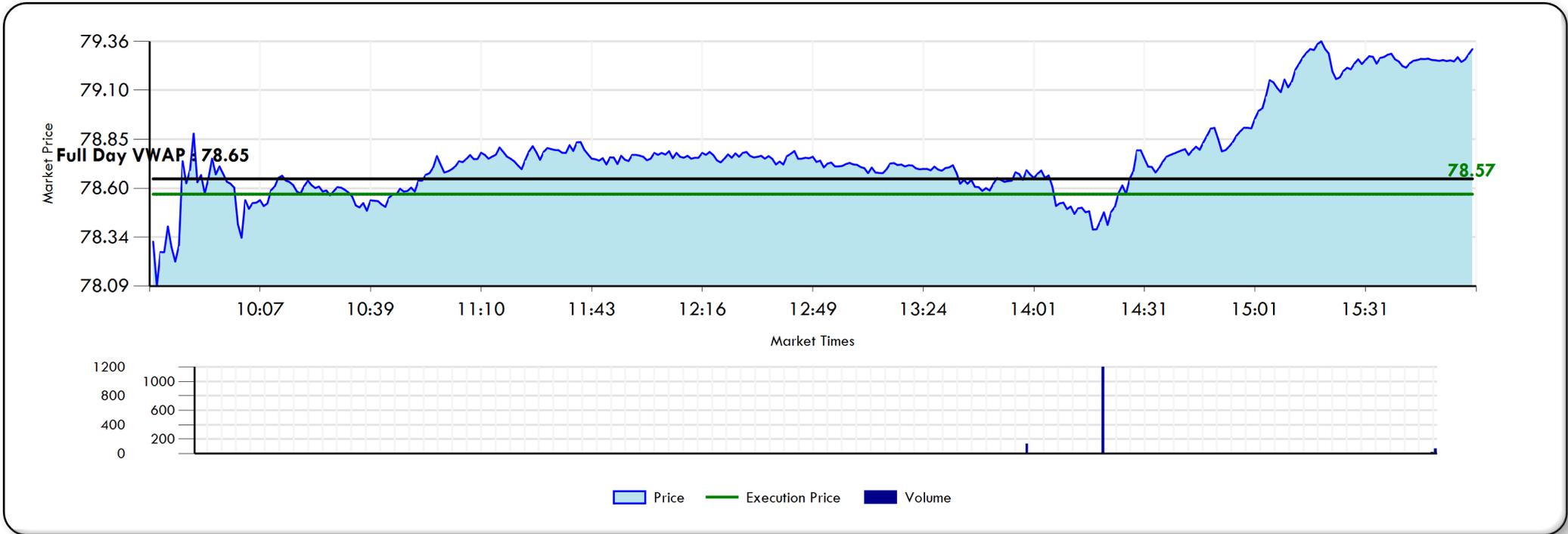


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WRB - 2018/09/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	CONVERGEX	09/25/2018 09:30:00	09/25/2018 16:00:00	32,800	78.5660	78.6455	+2,608	+7.95	0.00	1.91



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.09% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BPR - 2018/08/28

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	AUTREPAT-DISTRIBUT	08/28/2018 09:30:00	08/28/2018 16:00:00	10,677	21.0000	20.7830	+2,317	+21.70	1.11	0.17



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.75% of your market impact cost.

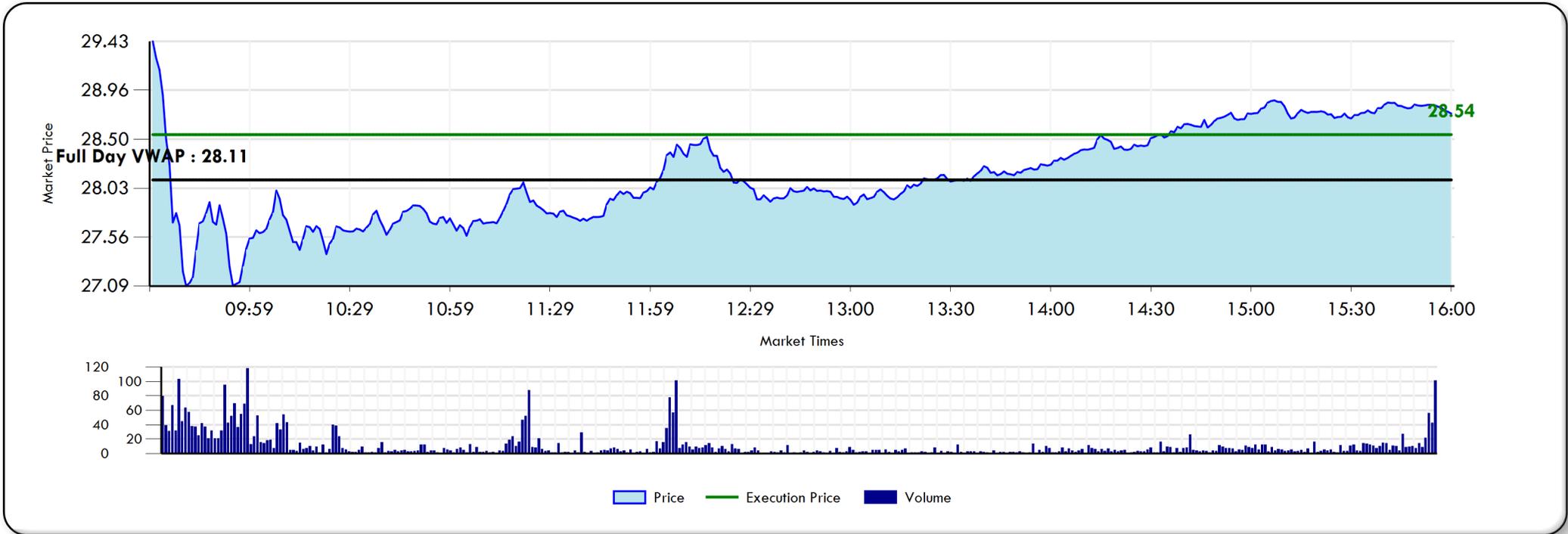


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PTLA - 2018/08/27

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 (%)
Buy	WEATHERBIE	THEMIS TRADING LLC	08/27/2018 09:30:00	08/27/2018 16:00:00	5,174	28.5393	28.1063	+2,241	+43.30	0.53	0.12



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PBYI - 2018/09/06

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	ITG	09/06/2018 09:30:00	09/06/2018 16:00:00	7,164	45.1365	44.8545	+2,020	+28.20	0.77	0.89



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.39% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TTD - 2018/09/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	09/25/2018 09:30:00	09/25/2018 16:00:00	1,530	149.3714	150.6682	+1,984	+129.68	0.00	0.07



NOTES

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

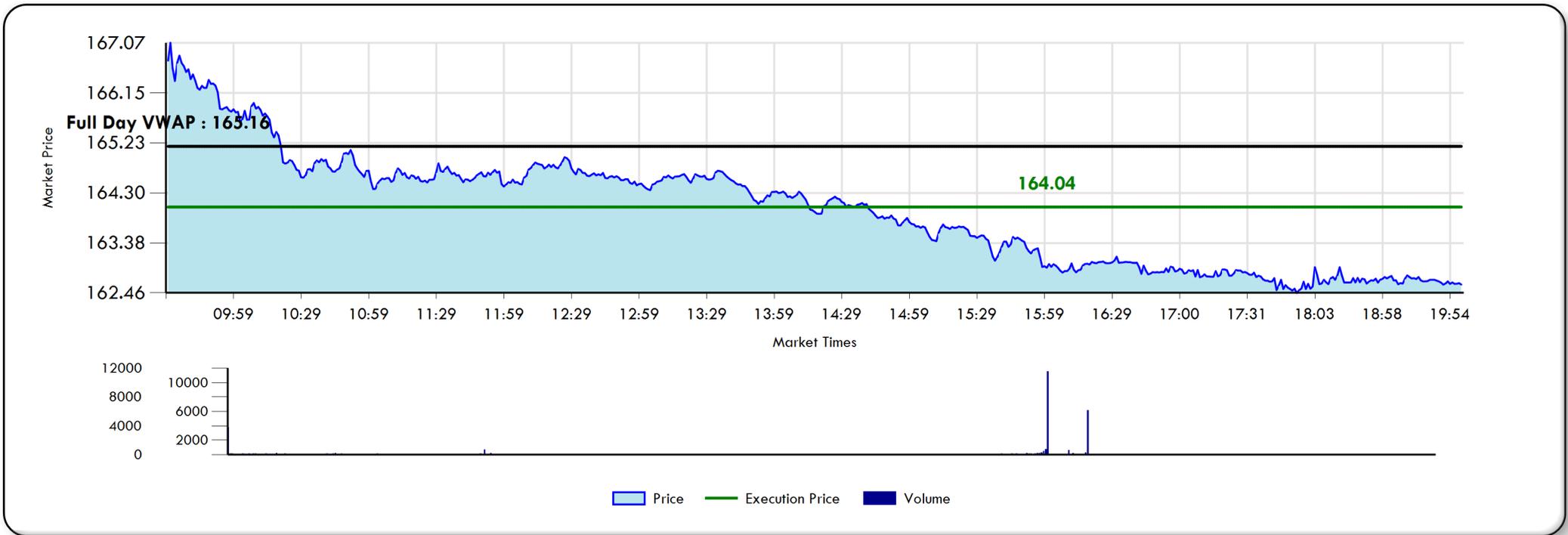


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FB - 2018/09/21

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	MERRILL LYNCH	09/21/2018 09:30:00	09/21/2018 16:00:00	15,590	164.0427	165.1637	17,476	112.10	0.82	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 19.18% of your market impact savings.

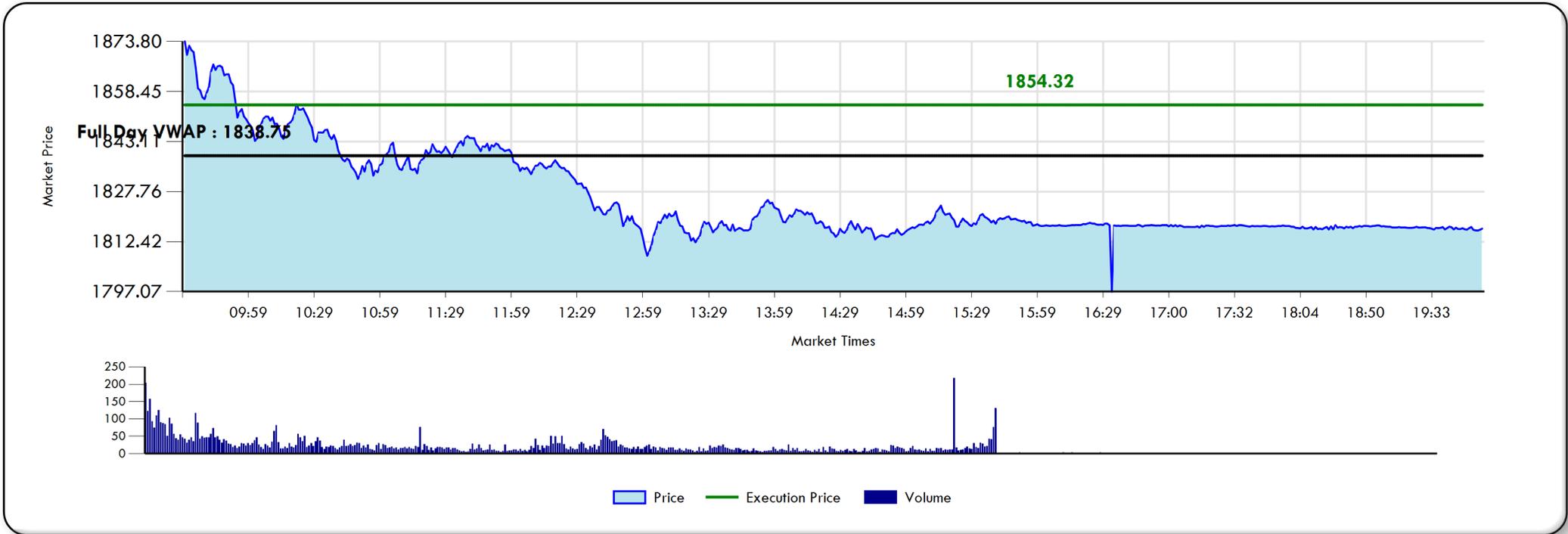


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

AMZN - 2018/07/27

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	EAGLE CAPITAL MANAGEMENT	UBS	07/27/2018 09:30:00	07/27/2018 16:00:00	661	1854.3237	1838.7550	10,291	1,556.87	0.54	0.01



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 11.29% of your market impact savings.

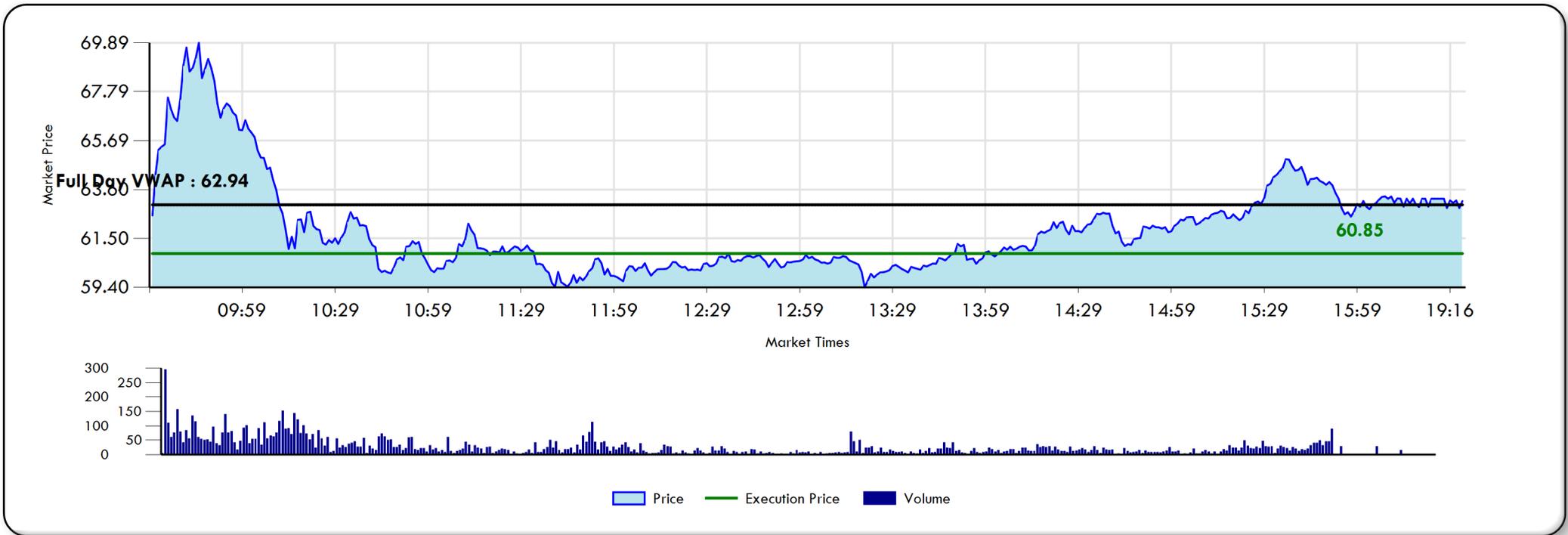


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GKOS - 2018/08/29

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	08/29/2018 09:30:00	08/29/2018 16:00:00	3,581	60.8479	62.9385	7,486	209.06	0.83	0.03



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 8.22% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

WAGE - 2018/09/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	WILLIAM BLAIR	09/13/2018 09:30:00	09/13/2018 16:00:00	6,958	40.6159	41.3760	5,289	76.01	1.02	0.24



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 5.80% of your market impact savings.

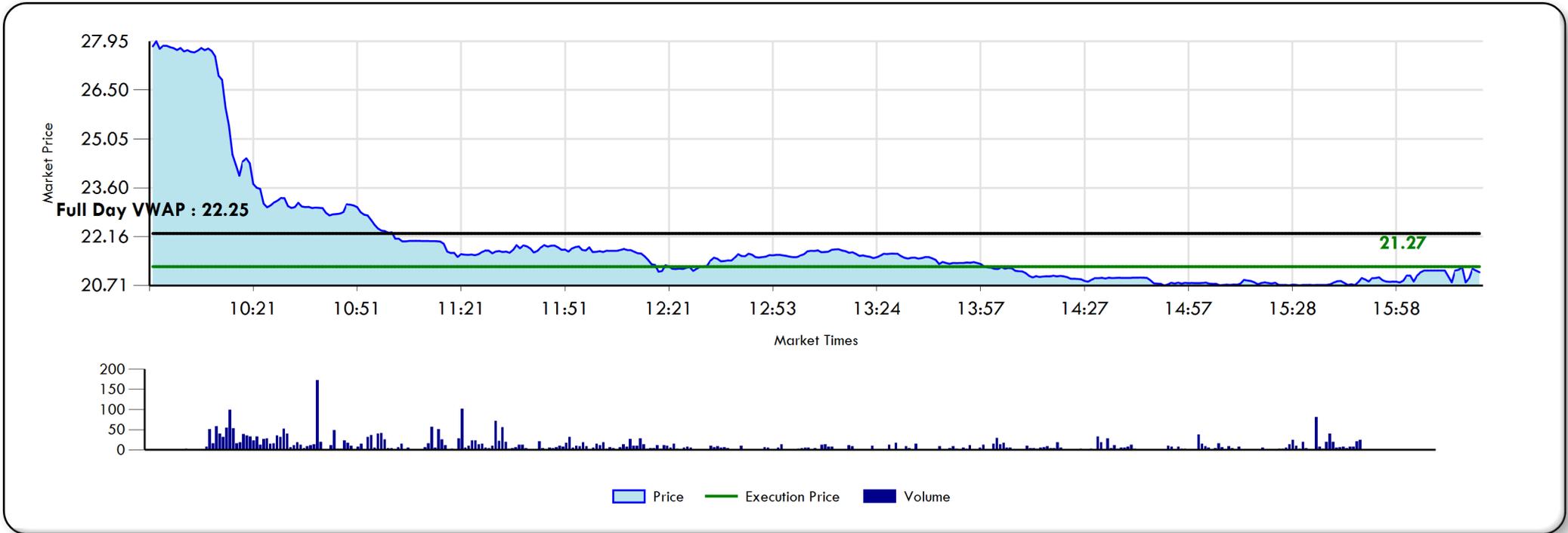


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ACOR - 2018/09/10

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	WEATHERBIE	THEMIS TRADING LLC	09/10/2018 09:30:00	09/10/2018 16:00:00	5,359	21.2671	22.2489	5,262	98.18	0.61	0.15



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 5.77% of your market impact savings.

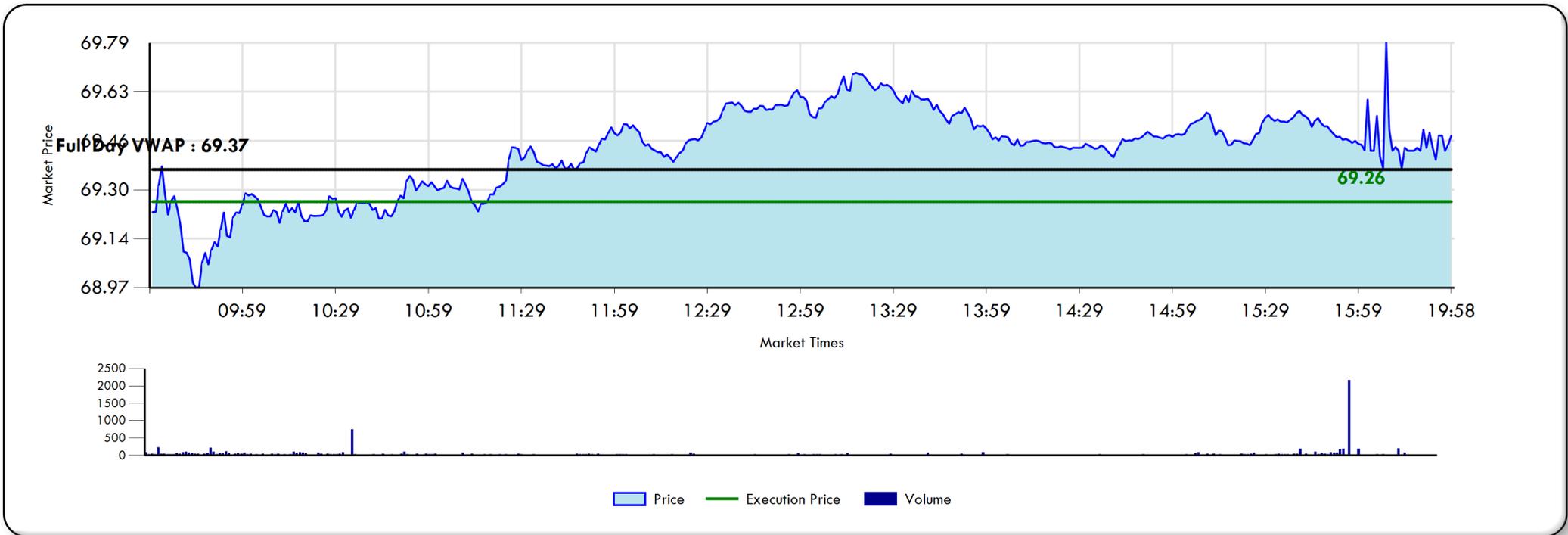


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

C - 2018/09/11

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 (%)
Buy	EAGLE CAPITAL MANAGEMENT	JP MORGAN CHASE	09/11/2018 09:30:00	09/11/2018 16:00:00	26,300	69.2600	69.3671	2,818	10.71	0.77	0.24



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.09% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

WPX - 2018/07/26

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 (%)
Sell	DALTON, GREINER, HARTMAN, MAHER	CAPITAL INSTL SVCS	07/26/2018 09:30:00	07/26/2018 16:00:00	13,690	19.5737	19.3712	2,772	20.25	2.42	0.35



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.04% of your market impact savings.



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GTT - 2018/08/06

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	WEATHERBIE	LIQUIDNET	08/06/2018 09:30:00	08/06/2018 16:00:00	1,561	39.3500	38.3403	1,576	100.97	1.35	0.06



NOTES

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

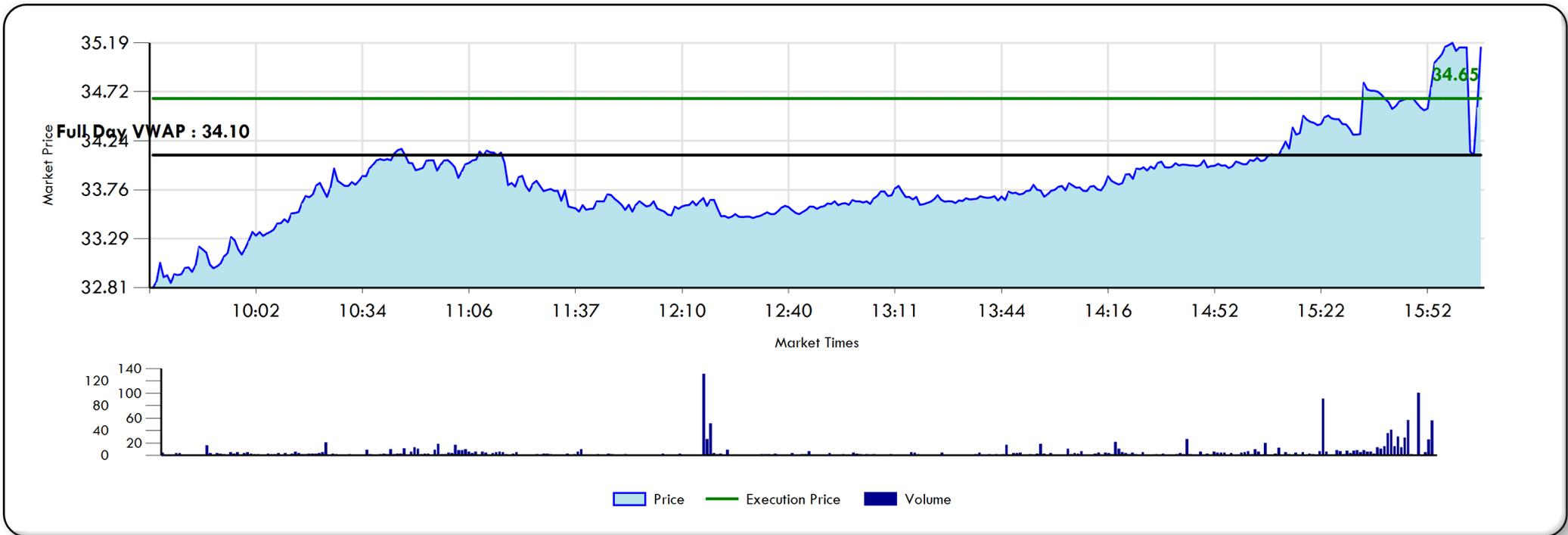


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GTT - 2018/08/13

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	WEATHERBIE	CRAIG - HALLUM	08/13/2018 09:30:00	08/13/2018 16:00:00	2,589	34.6529	34.1009	1,429	55.20	1.27	0.18



NOTES

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

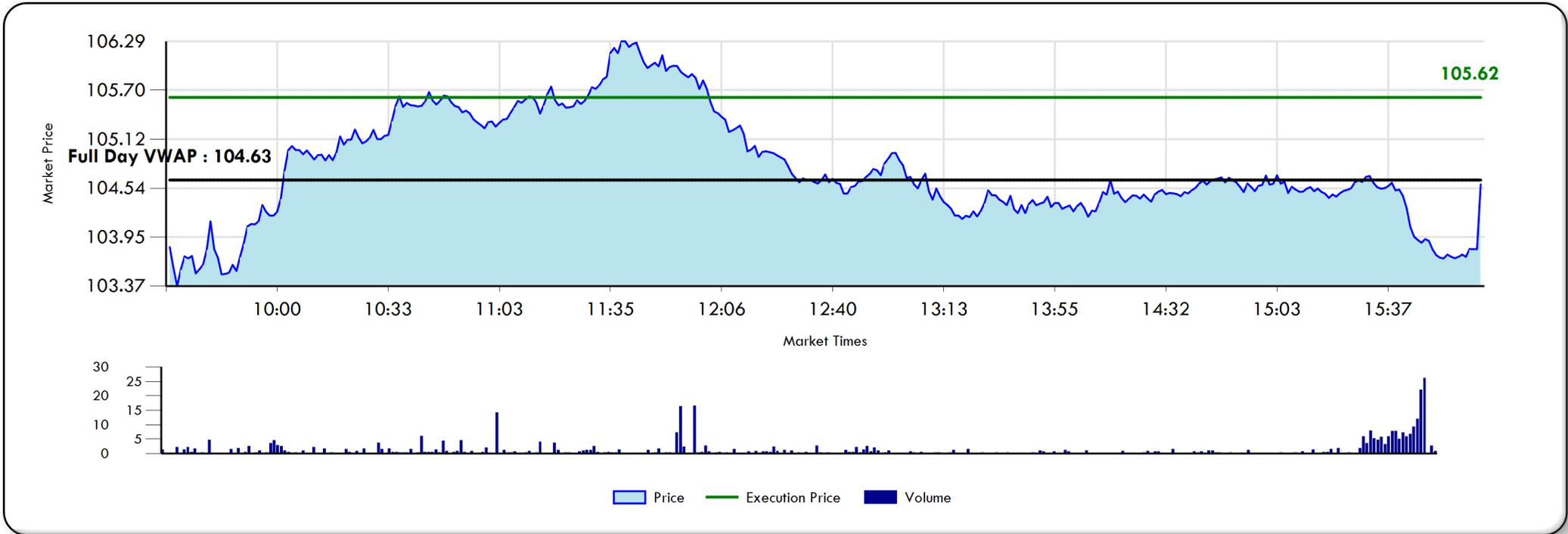


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PODD - 2018/09/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	LIQUIDNET	09/07/2018 09:30:00	09/07/2018 16:00:00	1,376	105.6177	104.6334	1,354	98.43	1.53	0.36



NOTES

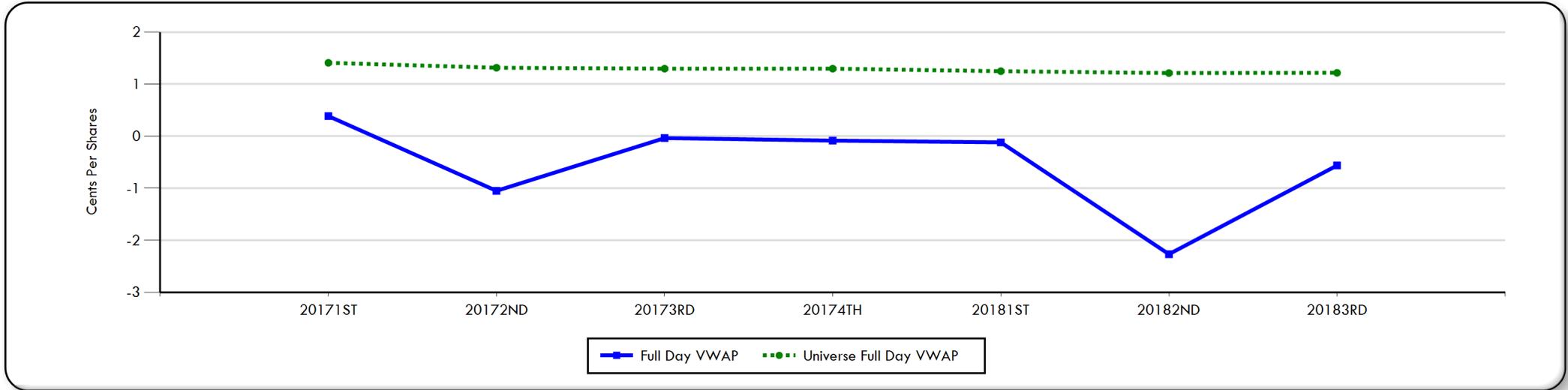
- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.49% of your market impact savings.



(+) = Cost

TRADE HISTORY

Trade History						
Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP	Full Day VWAP Universe Rank
			(cps)	(\$)	(cps)	(%)
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
20183RD	1,200,559	52,564,669	+3.35	40,162	0.56	80



Note on Universes:

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

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SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End September 30, 2018





REPORT CONTENTS

Tab 1 : Executive Summary

- **Results / Methodology**
- **Performance vs. Universe / Trading Components**
- **Short Term Alpha**
- **Market Capitalization Performance**
- **Order Size Performance**
- **Implementation days / Liquidity By Trade Performance**
- **Country Performance**
- **High / Low Cost Managers**
- **Commission Review**

Tab 2 : Trade Detail

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

Tab 3 : High / Low Cost Trades

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



(+) = 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 July 1, 2018 to September 30, 2018. The analysis included trading of 5,838,537 shares representing \$84.66 million in principal across 25 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 +6.92 bp or \$ +\$58,622 (7.05 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +5.95 bp or \$ +50,383 (+2.14 bp worse than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact cost was +1.64 bp or \$+13,930 (3.75 bp better than the Elkins/McSherry Universe) Your overall trading cost of +14.52 bp was 8.65 bp better than the Elkins/McSherry Universe. Sacramento County trading was higher than the Elkins/McSherry Universe in 11 countries and lower than the Elkins/McSherry Universe in 17 countries. 8 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 32 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : 0.05



(+) = Cost

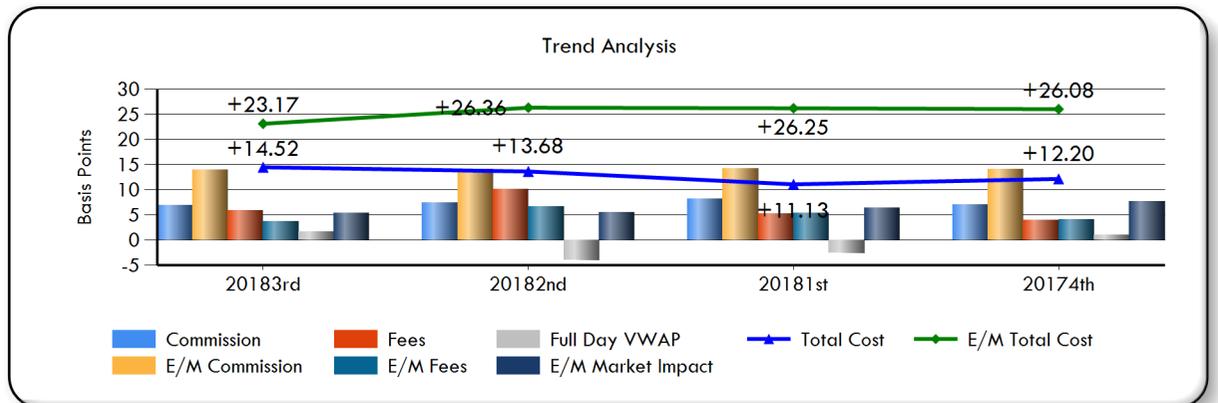
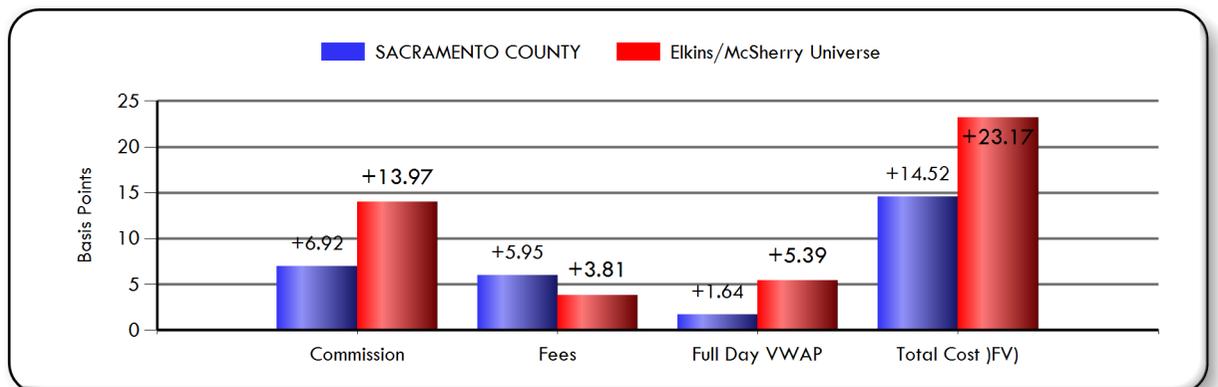
EXECUTIVE SUMMARY

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	+7.39	+13.93	+4.53	+0.80	+0.79	+5.09	+6.66	+13.29	8.09	0.14
Buy	+6.48	+14.01	+4.61	+10.89	+6.72	1.67	+4.16	+15.70	9.19	-0.05
Total	+6.92	+13.97	+4.57	+5.95	+3.81	+1.64	+5.39	+14.52	8.65	0.05

TRADING COMPONENTS

	Buys	Sells
Trade Principal	43,186,821	41,476,465
Shares	1,988,143	3,850,394
Unique Names	67	71
Liquidity (% POV)	0.304	0.420
Avg. Order Size	3,668	7,491
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	542	514





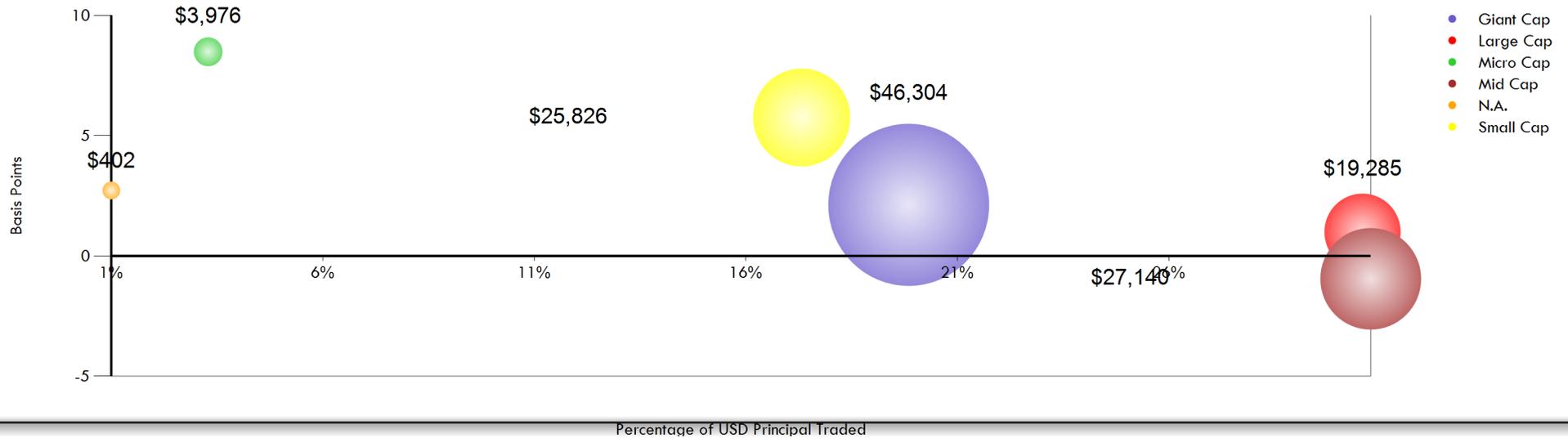
(+) = Cost

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	30.30 %	73,513	+7.05	+14.01	0.95	+6.18	+10.58	12.76	0.05	\$1 Billion To \$5 Billion
Large Cap	30.11 %	90,717	+6.15	+13.86	+0.99	+5.13	+7.57	11.95	0.10	\$5 Billion To \$25 Billion
Giant Cap	19.38 %	165,750	+7.56	+13.95	+2.12	+4.00	+28.22	+0.20	-0.01	Over \$25 Billion
Small Cap	16.85 %	52,842	+7.41	+14.10	+5.76	+6.01	+18.10	5.73	0.01	\$250 Million To \$1 Billion
Micro Cap	2.82 %	54,295	+6.69	+14.30	+8.49	+4.78	+16.64	6.68	0.00	Under \$250 Million
N.A.	0.53 %	34,606	+6.22	+13.39	+2.72	+8.72	+8.94	13.17	-0.12	

Total Cost by Market Cap: (USD)





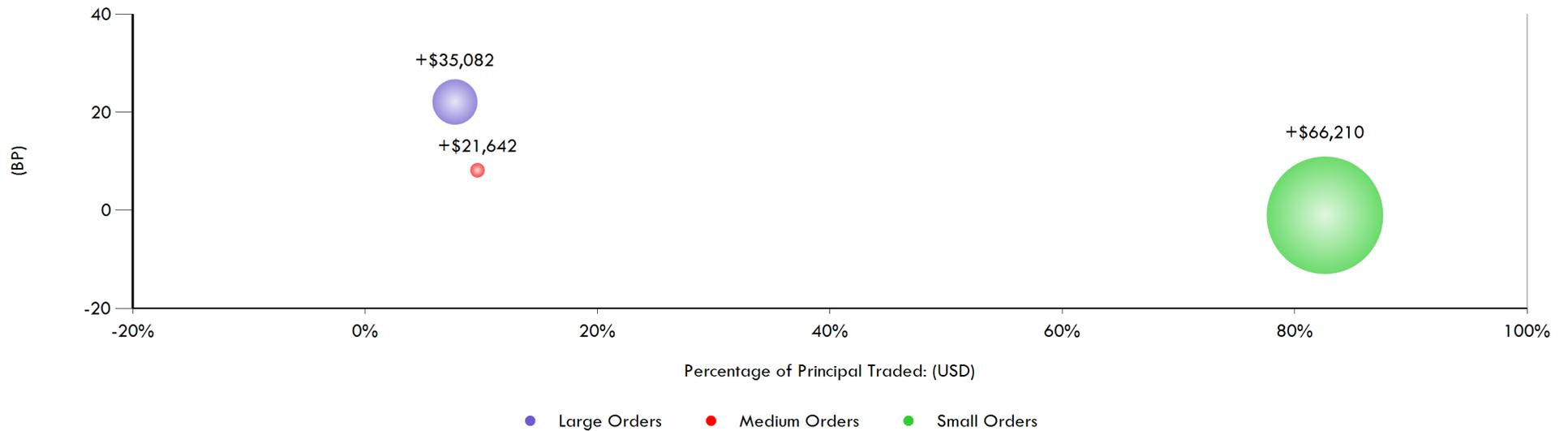
(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Principal Per Order (\$)	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Absolute Size (Principal)
				Your Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	(bp)	Commission+Fees +Full Day VWAP Vs. Universe (bp)		
Large Orders	4	1,636,980	N/A	+9.18	+13.95	+22.09	+4.75	+53.52	+22.76	0.85	1M or Greater
Medium Orders	11	744,530	N/A	+9.18	+13.85	+8.15	+4.65	+26.42	+2.94	0.10	Between 500k - 1M
Small Orders	1,041	67,172	N/A	+6.45	+13.99	1.03	+5.53	+9.46	12.96	-0.04	500K or Less

Total Cost By Order Size: (USD)





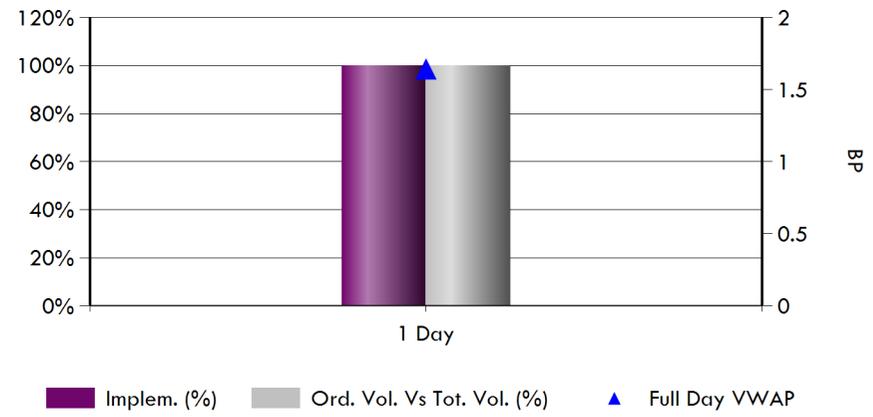
(+) = Cost

EXECUTIVE SUMMARY

IMPLEMENTATION DAYS BY TRADE

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (bp)	E - Score
1 Day	100.00	100%	+1.64	0.05

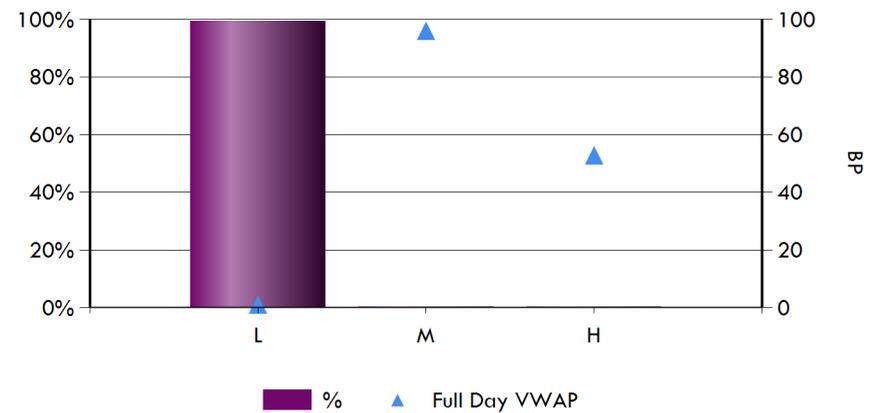
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
50%+ of daily vol.	H	0%	+52.88	N/A
0%~20% of daily vol.	L	99%	+1.14	0.05
20%~50% of daily vol.	M	0%	+96.11	N/A

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										
NEW ZEALAND	<1	0.09%	+8.00	+14.37	+0.00	+0.01	+122.17	+7.18	+108.61	1.64
AUSTRIA	<1	0.26%	+7.00	+14.00	+0.00	+0.03	+60.96	+7.82	+46.12	0.99
INDIA	<1	0.52%	+12.00	+14.72	+11.93	+10.67	+30.75	+3.01	+26.28	-0.05
NETHERLANDS	4	4.37%	+10.28	+13.85	+0.00	+0.09	+32.25	+4.38	+24.21	0.42
BELGIUM	1	1.21%	+6.72	+13.77	+0.00	+0.01	+31.07	+4.61	+19.40	-0.09
U.K. - BUYS	9	10.82%	+8.45	+14.24	+47.43	+27.03	+2.59	+2.42	+14.78	0.07
DENMARK	<1	0.33%	+4.67	+13.87	+0.00	+0.00	+24.60	+6.78	+8.62	0.87
AUSTRALIA	3	3.44%	+7.37	+13.54	+0.00	+0.50	+15.39	+4.24	+4.48	0.10
PORTUGAL	2	2.78%	+4.00	+13.64	+0.00	+0.02	+20.01	+7.90	+2.45	1.58
NORWAY	4	4.87%	+9.43	+12.87	+0.00	+0.07	+12.31	+7.27	+1.53	0.21
ITALY - BUYS	<1	0.64%	+6.96	+13.82	+10.00	+12.00	+12.08	+3.02	+0.19	0.10

EXECUTIVE SUMMARY

COUNTRY PERFORMANCE

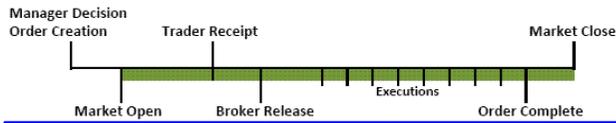
Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
LOWEST COST COUNTRIES - Total Cost Universe Difference										
THAILAND	<1	0.27%	+19.47	+18.55	+0.94	+0.83	32.08	+3.32	34.37	-0.24
U.K. - SELLS	4	4.37%	+5.25	+14.12	+0.15	+0.00	7.64	+15.57	31.94	-0.10
SWITZERLAND	3	3.45%	+5.00	+14.21	+0.00	+0.03	15.89	+4.17	29.30	-0.37
KOREA - SELLS	<1	0.53%	+9.57	+17.03	+30.00	+28.40	14.87	+3.56	24.30	-0.16
IRELAND - SELLS	1	1.36%	+6.92	+13.54	+0.11	+0.00	+2.08	+19.73	24.15	0.13
GERMANY	9	10.62%	+5.11	+13.88	+0.00	+0.04	10.54	+4.59	23.94	-0.10
FRANCE - SELLS	1	1.39%	+5.00	+14.66	+0.00	+0.00	4.15	+3.75	17.56	-0.12
CANADA	7	8.54%	+7.40	+13.98	+0.00	+0.04	4.52	+4.65	15.79	-0.08
JAPAN	19	22.68%	+6.27	+13.86	+0.00	+0.02	0.33	+6.29	14.22	-0.05
HONG KONG	2	2.09%	+11.24	+14.11	+10.78	+10.23	10.01	+1.70	14.03	-0.25
U.S.	3	3.71%	+2.24	+14.87	+0.08	+0.12	+1.37	+2.69	13.99	0.02
SPAIN	2	2.70%	+6.78	+13.96	+0.00	+0.01	0.89	+4.27	12.36	-0.13
SWEDEN	4	4.44%	+5.62	+14.00	+0.00	+0.03	1.91	+1.58	11.90	-0.08
FRANCE - BUYS	<1	1.12%	+12.74	+13.88	+25.43	+30.00	1.62	+3.64	10.97	-0.03
BRAZIL	<1	0.24%	+11.55	+14.26	+3.25	+1.60	+2.29	+8.20	6.97	-0.05
ISRAEL	1	1.64%	+13.45	+14.83	+0.00	+0.17	+2.04	+4.56	4.07	0.39
ITALY - SELLS	1	1.53%	+6.53	+13.39	+0.00	+0.00	+13.76	+8.72	1.82	0.11



(+) = Cost

TRADE CYCLE DETAIL

1 HIGHEST COST MANAGER (Full Day VWAP)



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal Traded	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)	20182nd	20181st	20174th
LAZARD ASSET MANAGEM	20	120	23.47%	165,575	0.08	+9.85	+13.88	+6.01	+5.45	+1.71	5.39	13.25	6.32

NOTES

- Managers above made up 23.47 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

2 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)	20182nd (bp)	20181st (bp)	20174th (bp)
WILLIAM BLAIR & COMP	33	508	38.96%	64,936	0.06	+7.71	+14.11	+3.25	+5.38	7.30	17.99	14.73	8.44
LSV ASSET MANAGEMENT	32	428	37.57%	74,315	0.00	+4.28	+13.89	2.74	+5.34	16.53	17.28	21.78	19.83

NOTES

- Manager above made up 76.53 % of principal traded.



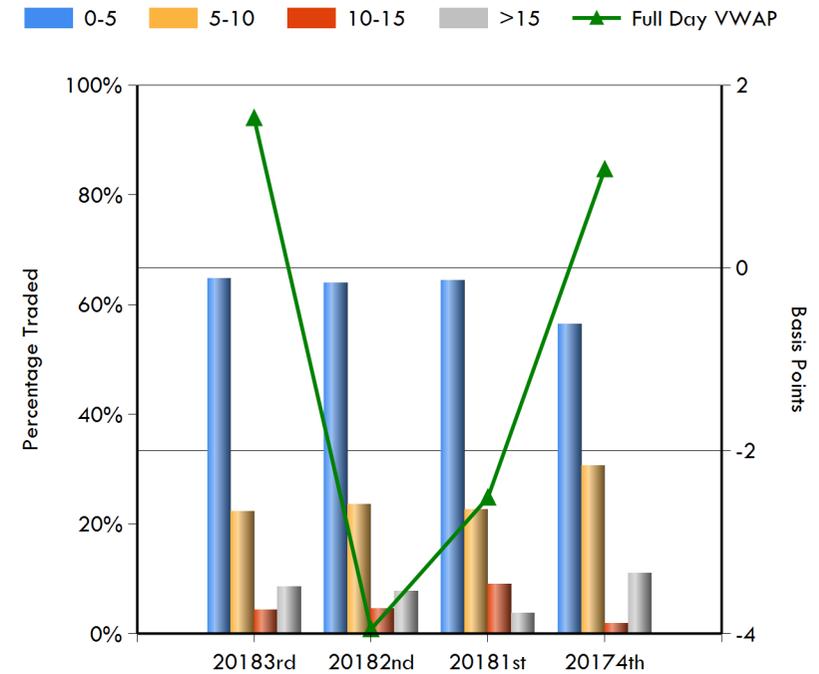
(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					2018 2nd	2018 1st	2017 4th
CREDIT SUI	14,564	+8.08	+13.87	+4.48	+6.94	+9.12	+5.90
MERRILL LY	5,719	+6.91	+13.80	+4.40	+8.45	+6.37	+6.67
DEUTSCHE B	4,418	+7.32	+13.88	+4.22	+9.24	+8.03	+8.90
UBS	3,963	+6.61	+13.98	+4.61	+7.60	+9.17	+6.84
JP MORGAN	3,259	+11.04	+14.11	+4.46	+9.53	+10.71	+9.58
RBC DOMINI	3,192	+8.27	+13.98	+6.12	+4.47	+10.36	+17.83
MORGAN STA	2,657	+6.87	+13.60	+4.85	+10.67	+20.18	+7.43
SOCIETE GE	2,420	+4.33	+14.12	+4.22	+4.67	+5.11	+6.48
ITG	2,030	+4.69	+13.96	+4.29	+5.71	+6.52	+5.53
CITIGROUP	1,930	+6.51	+14.26	+4.43	+7.04	+6.88	+5.41
CREDIT AGR	1,816	+12.04	+13.86	+4.46	+8.14	+9.70	+9.39
GOLDMAN SA	1,499	+7.08	+14.14	+4.81	+12.71	+6.90	+9.55
NESBITT BU	1,383	+17.16	+13.98	+6.12	+12.63	+32.81	+6.64
BNP PARIBA	1,353	+7.42	+13.97	+4.50	+9.28	+7.75	+7.70
INSTINET	1,070	+4.35	+13.86	+4.82	+3.92	+3.96	+4.71
HSBC BANK	790	+3.63	+14.27	+4.12	+5.55	+5.44	+3.18
JOH BERENB	716	+7.00	+14.11	+4.03	+7.00	-	+14.00
EXANE	702	+6.75	+13.63	+4.78	+6.83	+5.29	+3.02
JEFFERIES	683	+3.57	+14.52	+4.15	+6.81	+7.25	+6.38
SMBC SECUR	595	+9.16	+13.86	+4.56	+8.50	+7.17	+7.72

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)	2018 2nd (bp)	2018 1st (bp)	2017 4th (bp)
WILLIAM BLAIR & COMP	33	508	38.96%	64,936	0.06	+7.71	+14.11	+3.25	+5.38	7.29	17.99	14.73	8.44
LSV ASSET MANAGEMENT	32	428	37.57%	74,315	0.00	+4.28	+13.89	2.74	+5.34	16.52	17.28	21.78	19.83
LAZARD ASSET MANAGEM	20	120	23.47%	165,575	0.08	+9.85	+13.88	+6.01	+5.45	+1.71	5.39	13.25	6.32

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)	2018 2nd	2018 1st	2017 4th
CREDIT SUISSE	18	146	21.28%	123,417	0.04	14,564	+8.08	+13.87	+3.15	+4.97	2.02	8.08	14.02	16.85
MERRILL LYNCH	8	61	9.77%	135,656	0.42	5,719	+6.91	+13.80	+7.93	+5.93	4.39	21.37	22.31	5.02
DEUTSCHE BANK	6	73	7.13%	82,667	0.03	4,418	+7.32	+13.88	+9.04	+4.55	1.40	+2.57	20.07	6.03
UBS	6	122	7.08%	49,109	0.02	3,963	+6.61	+13.98	+1.30	+5.06	11.24	19.26	18.64	21.64
SOCIETE GENERALE	6	79	6.61%	70,804	-0.16	2,420	+4.33	+14.12	12.80	+6.77	26.56	15.47	24.04	4.52
ITG	4	64	5.11%	67,645	-0.13	2,030	+4.69	+13.96	9.87	+5.45	21.76	9.03	8.16	14.45
MORGAN STANLEY	4	52	4.57%	74,401	0.52	2,657	+6.87	+13.60	+26.06	+4.86	+14.41	+6.42	+9.36	15.30
RBC DOMINION SECS	4	33	4.56%	116,972	0.04	3,192	+8.27	+13.98	0.83	+4.65	11.24	22.33	6.83	+10.17
CITIGROUP	3	49	3.50%	60,553	-0.09	1,930	+6.51	+14.26	+3.55	+4.56	8.80	7.16	13.67	15.74
JP MORGAN CHASE	3	39	3.49%	75,668	0.06	3,259	+11.04	+14.11	3.67	+8.09	14.92	+1.91	3.86	11.50

NOTES

- Brokers above made up 73.10 % 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)	2018 2nd (bp)	2018 1st (bp)	2017 4th (bp)
INSTINET	2	37	2.90%	66,412	-0.07	1,070	+4.35	+13.86	+3.61	+5.85	11.80	23.48	23.31	18.01
HSBC BANK	2	31	2.57%	70,072	-0.61	790	+3.63	+14.27	33.37	+4.67	31.30	17.39	25.63	49.21
GOLDMAN SACHS	2	22	2.50%	96,318	0.02	1,499	+7.08	+14.14	+2.26	+4.30	13.23	36.48	14.07	4.04
JEFFERIES & CO	2	33	2.26%	57,999	0.09	683	+3.57	+14.52	+23.77	+2.91	+16.48	20.44	+0.98	+0.43
BNP PARIBAS	2	24	2.15%	75,957	-0.40	1,353	+7.42	+13.97	23.37	+4.58	34.30	13.93	7.01	24.12
CREDIT AGRICOLE	2	31	1.78%	48,683	0.01	1,816	+12.04	+13.86	+1.50	+5.01	5.38	16.99	22.29	9.30
LIQUIDNET	1	18	1.52%	71,541	-0.22	408	+3.17	+14.58	38.09	+3.33	52.88	11.47	29.48	49.00
EXANE	1	27	1.23%	38,519	0.04	702	+6.75	+13.63	+1.67	+5.79	11.61	21.32	21.27	20.52
JOH BERENBERG GOSSLE	1	10	1.21%	102,352	0.40	716	+7.00	+14.11	+30.41	+8.33	+20.10	18.38	-	4.06
SC BERNSTEIN	<1	3	1.04%	294,881	0.37	357	+4.03	+13.94	+19.76	+4.47	+5.34	9.74	17.82	4.97

NOTES

- Brokers above made up 19.17 % 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)	20182nd (bp)	20181st (bp)	20174th (bp)
NESBITT BURNS	<1	6	0.95%	134,325	0.06	1,383	+17.16	+13.98	2.37	+4.65	3.88	+6.21	+2.74	24.15
SCOTIA CAPITAL	<1	11	0.89%	68,837	-0.17	83	+1.10	+13.98	9.49	+4.65	27.06	23.58	27.21	27.08
DAVY STOCKBROKERS	<1	5	0.85%	143,317	0.08	520	+7.26	+13.55	+0.28	+19.63	25.54	+73.01	22.61	-
DAIWA SECURITIES	<1	11	0.79%	60,510	0.30	508	+7.64	+14.06	+36.55	+2.53	+28.04	4.54	11.80	13.03
SMBC SECURITIES INC	<1	9	0.77%	72,180	0.17	595	+9.16	+13.86	1.05	+6.29	12.06	15.72	15.49	10.54
BARCLAYS	<1	14	0.64%	38,802	0.23	299	+5.51	+14.13	+0.15	+14.65	21.25	19.86	48.23	12.30
TD WATERHOUSE	<1	5	0.40%	68,536	-0.56	60	+1.76	+13.98	10.61	+4.65	27.52	15.69	+47.73	10.24
MITSUBISHI UFJ SECS	<1	5	0.39%	65,906	0.31	198	+6.00	+13.86	+13.55	+6.29	0.62	10.94	10.67	10.11
WOORI INVESTMENT SEC	<1	7	0.37%	44,667	-0.25	313	+10.00	+17.03	24.02	+3.56	33.01	67.80	-	-
SVENSKA HANDELSBANKE	<1	7	0.29%	34,626	-0.04	170	+7.00	+14.00	2.34	+1.58	10.95	2.04	-	-

NOTES

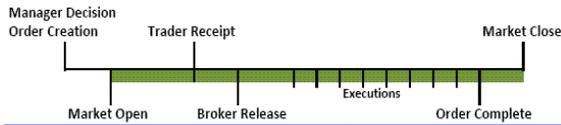
- Brokers above made up 6.34 % of principal traded.



(+) = 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)	2018 2nd (bp)	2018 1st (bp)	2017 4th (bp)
BRDESCO	<1	3	0.24%	67,981	-0.05	236	+11.55	+14.26	+2.29	+8.20	6.97	+12.28	12.11	-
CIBC WORLD MARKETS	<1	2	0.23%	96,461	-0.61	93	+4.80	+13.98	29.97	+4.65	43.85	18.69	+19.72	-
INDIA INFOLINE LTD	<1	1	0.23%	191,736	0.21	230	+12.00	+14.72	+88.48	+3.01	+84.24	-	27.67	-
KEPLER EQUITIES	<1	3	0.17%	48,329	0.32	101	+7.00	+13.88	+28.61	+3.64	11.91	22.83	5.59	-
MIZUHO	<1	2	0.15%	63,079	-0.06	83	+6.55	+13.93	+2.12	+5.03	10.16	10.73	3.44	9.35
SKANDINAVISKA ENSKIL	<1	2	0.10%	41,581	0.42	58	+7.00	+12.87	+27.48	+7.27	+14.27	-	17.60	40.29
MACQUARIE	<1	4	0.09%	19,968	-0.16	46	+5.79	+17.43	36.90	+3.50	50.89	19.44	7.89	13.32
LIBERUM CAPITAL LTD	<1	1	0.07%	60,337	N/A	42	+7.00	+14.24	51.09	+2.42	37.56	25.84	10.60	+29.72
PAREL	<1	2	0.07%	29,201	1.17	41	+6.95	+13.81	+69.54	+3.12	+57.59	42.88	128.16	-
FIDELITY	<1	2	0.04%	18,042	0.22	16	+4.46	+13.98	+1.81	+4.65	12.41	-	-	-

NOTES

- Brokers above made up 1.39 % 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)	20182nd (bp)	20181st (bp)	20174th (bp)
GRAND TOTAL	20	120	23.47%	165,575	0.08	19,577	+9.85	+13.88	+6.01	+5.45	+1.71	5.39	13.25	6.32
CREDIT SUISSE	7	8	7.89%	834,773	0.29	8,014	+12.00	+13.77	+14.85	+4.07	+24.16	3.78	9.85	15.71
RBC DOMINION SECS	4	33	4.56%	116,972	0.04	3,192	+8.27	+13.98	0.83	+4.65	11.24	22.33	10.45	+12.61
DEUTSCHE BANK	2	4	2.46%	519,787	0.20	2,495	+12.00	+13.85	+29.12	+4.37	+22.92	+13.30	23.04	4.09
GOLDMAN SACHS	1	12	1.75%	123,115	-0.04	1,034	+7.00	+13.96	+1.66	+4.27	9.58	2.04	26.53	+2.16
JP MORGAN CHASE	1	11	1.72%	132,446	-0.02	1,064	+7.30	+14.05	1.88	+11.10	19.41	+2.50	12.26	13.01
MERRILL LYNCH	1	12	1.47%	103,766	-0.26	872	+7.00	+13.87	15.79	+6.10	28.10	1.00	27.07	+1.83
NESBITT BURNS	<1	6	0.95%	134,325	0.06	1,383	+17.16	+13.98	2.37	+4.65	3.88	14.68	+166.42	24.15
SOCIETE GENERALE	<1	7	0.58%	70,250	-0.77	258	+5.25	+14.00	30.10	+7.90	46.70	4.88	31.28	+0.47
SMBC SECURITIES INC	<1	2	0.40%	171,180	0.30	411	+12.00	+13.86	0.74	+6.29	8.91	6.77	15.79	14.74
DAVY STOCKBROKERS	<1	3	0.35%	100,001	0.13	229	+7.62	+13.54	+6.24	+19.73	19.26	-	-	-



(+) = 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 2nd (bp)	2018 1st (bp)	2017 4th (bp)
GRAND TOTAL	32	428	37.57%	74,315	0.00	13,627	+4.28	+13.89	2.74	+5.34	16.52	17.28	21.78	19.83
CREDIT SUISSE	10	114	11.78%	87,473	-0.14	4,986	+5.00	+13.94	4.52	+5.58	19.09	11.37	17.33	19.42
MERRILL LYNCH	5	29	5.77%	168,551	0.78	1,956	+4.00	+13.76	+10.47	+6.35	5.68	34.85	46.33	27.02
UBS	3	71	3.99%	47,562	-0.12	1,688	+5.00	+13.89	3.97	+3.80	16.77	19.68	20.30	34.24
DEUTSCHE BANK	3	45	3.23%	60,709	-0.12	1,093	+4.00	+13.88	6.02	+4.59	20.53	39.95	27.55	31.03
MORGAN STANLEY	2	37	2.76%	63,172	0.26	935	+4.00	+13.37	+5.17	+4.81	9.06	+1.42	11.38	24.03
HSBC BANK	2	28	2.33%	70,547	-0.70	593	+3.00	+14.22	35.90	+4.68	32.66	21.54	38.24	49.78
CITIGROUP	2	32	2.05%	54,211	-0.08	694	+4.00	+13.79	+5.61	+5.82	10.12	9.96	17.74	+16.43
INSTINET	1	17	1.38%	68,535	-0.06	371	+3.18	+13.90	+9.49	+5.69	6.94	22.87	20.16	22.06
SOCIETE GENERALE	1	16	1.29%	68,522	-0.23	549	+5.01	+14.66	8.13	+3.74	21.52	47.82	24.14	14.71
ITG	1	7	1.19%	144,092	-0.33	477	+4.73	+13.81	+0.33	+7.58	16.34	24.49	+2.24	16.93



(+) = 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)	2018 2nd (bp)	2018 1st (bp)	2017 4th (bp)
GRAND TOTAL	33	508	38.96%	64,936	0.06	25,418	+7.71	+14.11	+3.25	+5.38	7.29	17.99	14.73	8.44
SOCIETE GENERALE	4	56	4.73%	71,525	-0.05	1,613	+4.03	+13.98	11.95	+7.46	25.47	18.84	11.67	3.31
ITG	3	54	3.76%	58,968	-0.02	1,480	+4.65	+14.02	12.25	+4.44	22.34	+2.64	5.70	38.48
UBS	3	50	2.98%	50,439	0.19	2,210	+8.76	+14.11	+7.30	+6.21	4.39	10.13	28.82	16.21
MERRILL LYNCH	2	20	2.53%	107,094	-0.07	2,891	+13.50	+13.85	+15.92	+4.84	+12.32	13.12	2.97	+5.91
JEFFERIES & CO	2	21	1.97%	79,432	0.03	609	+3.65	+14.63	+25.91	+2.65	+19.81	20.44	+11.76	+2.29
BNP PARIBAS	2	20	1.80%	76,357	-0.47	1,149	+7.52	+13.99	26.88	+4.25	37.35	20.52	12.02	0.76
JP MORGAN CHASE	1	28	1.76%	53,363	0.14	2,195	+14.69	+14.16	5.41	+5.16	10.55	5.33	11.74	6.12
CREDIT AGRICOLE	1	29	1.67%	48,862	0.01	1,752	+12.36	+13.86	+2.17	+4.93	4.30	19.47	+2.45	3.59
CREDIT SUISSE	1	24	1.62%	57,032	0.10	1,564	+11.43	+13.81	+2.02	+4.96	5.27	1.62	21.98	+2.85
MORGAN STANLEY	1	14	1.56%	94,158	1.00	1,627	+12.34	+13.93	+68.22	+5.00	+61.58	+13.75	9.84	16.81



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
RIO TINTO PLC COMMON STOCK GBP	4	87,534	-4,404,699	4,404,699	0.43%	0.39	+13.92
ROGERS COMMUNICATIONS INC B CO	38	68,190	-3,488,871	3,488,871	0.23%	-0.02	3.34
ROCHE HOLDING AG GENUSSCHEIN C	8	10,490	-2,575,591	2,575,591	0.15%	-0.32	13.83
EDP ENERGIAS DE PORTUGAL SA CO	4	582,600	2,352,293	2,352,293	4.40%	1.58	+20.01
EQUINOR ASA COMMON STOCK NOK2.	4	85,624	2,273,484	2,273,484	1.03%	0.06	+16.65
RED ELECTRICA CORPORACION SA C	19	100,355	-2,107,398	2,107,398	1.20%	-0.13	0.41
WOLTERS KLUWER COMMON STOCK EU	2	32,989	1,943,838	1,943,838	1.50%	0.25	+31.81
BAYER AG REG COMMON STOCK	19	16,100	1,754,321	1,754,321	0.05%	-0.04	+0.62
ASTELLAS PHARMA INC COMMON STO	13	104,700	1,660,015	1,660,015	0.11%	-0.11	5.12
CYBERAGENT INC COMMON STOCK	12	28,300	1,638,360	1,638,360	0.18%	-0.08	7.41

Names Most Traded - Total Orders (\$)

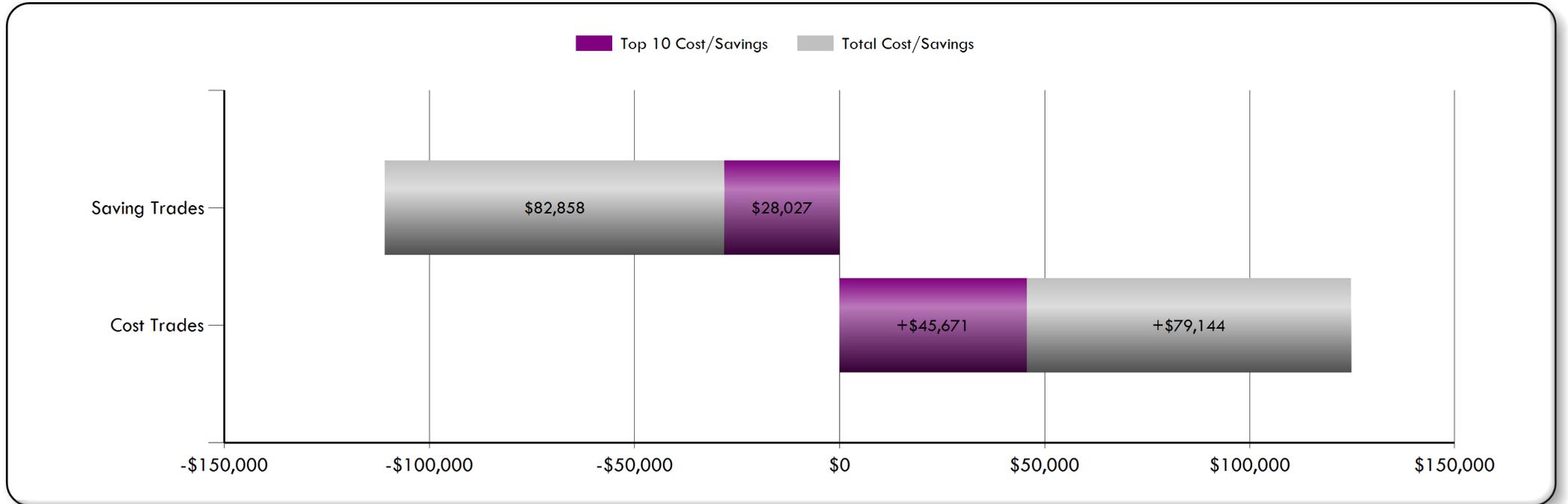
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
ROGERS COMMUNICATIONS INC B CO	38	68,190	-3,488,871	+2.84	0.23%	-0.02	3.34
VOLVO AB B SHS COMMON STOCK SE	33	76,600	-1,267,786	+5.01	0.06%	-0.27	10.31
HITACHI CAPITAL CORP COMMON ST	27	52,700	-1,387,964	+4.58	0.79%	-0.17	13.18
YARA INTERNATIONAL ASA COMMON	24	33,100	1,406,856	+4.00	0.42%	0.43	+5.28
BANCA IFIS SPA COMMON STOCK EU	22	15,578	390,818	+8.13	0.57%	0.11	+22.14
AGC INC COMMON STOCK	21	33,400	-1,329,323	+4.75	0.19%	-0.01	0.58
HITACHI HIGH TECHNOLOGIES CO C	20	31,100	-1,232,655	+5.11	0.28%	-0.14	9.54
STABILUS SA COMMON STOCK EUR.0	20	8,612	726,344	+6.58	1.43%	-0.08	+0.80
RED ELECTRICA CORPORACION SA C	19	100,355	-2,107,398	+6.76	1.20%	-0.13	0.41
BAYER AG REG COMMON STOCK	19	16,100	1,754,321	+4.00	0.05%	-0.04	+0.62



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	6,191,214	10	+148.30	36.59%
Cost Trades	42,998,487	514	+28.58	100.00%
Saving Trades	41,664,799	542	28.81	100.00%
10 Low Cost Trades	3,645,627	10	122.35	25.28%





(+) = Cost

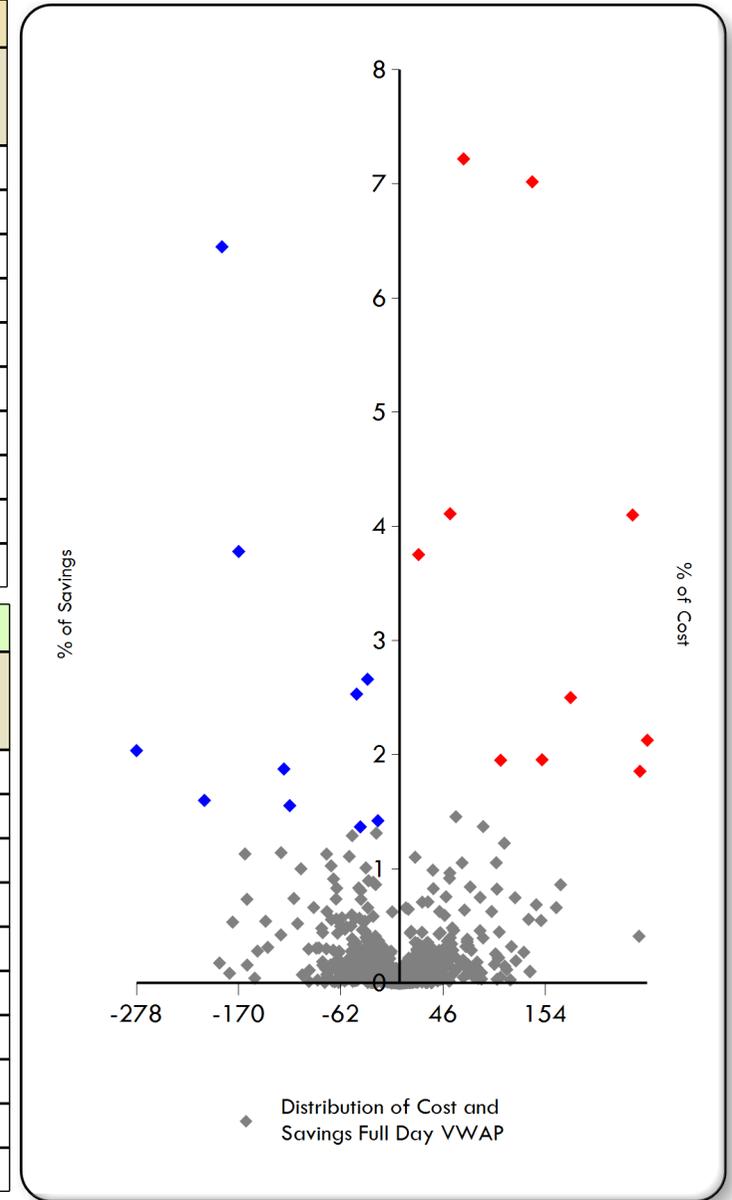
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Sell	NTH	WOLTERS KL	20180802	1,321,867	7.22%	0.89	+67.70	LAZAR	DEUTS
Buy	NTH	BASIC FIT	20180927	632,802	7.02%	2.12	+140.36	WILLI	MORGA
Buy	UK	RIO TINTO	20180919	964,130	4.11%	1.00	+53.50	LAZAR	CREDI
Buy	UK	BIG YELLOW	20180723	212,720	4.10%	2.31	+246.48	WILLI	SOCIE
Sell	POR	EDP ENERGI	20180713	2,311,563	3.75%	1.60	+20.22	LSV A	MERRI
Buy	BEL	WAREHOUSES	20180711	175,662	2.50%	N/A	+180.93	WILLI	MERRI
Sell	HKG	3SBIO INC	20180919	98,661	2.13%	1.53	+261.98	WILLI	DAIWA
Sell	NOR	EQUINOR AS	20180924	159,587	1.96%	N/A	+150.71	LAZAR	CREDI
Sell	US	BAOZUN INC	20180803	225,460	1.95%	0.77	+106.91	WILLI	JEFFE
Sell	US	NOAH HOLDI	20180806	88,761	1.86%	1.44	+254.24	WILLI	JEFFE

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	GER	CTS EVENTI	20180823	373,808	6.45%	-1.07	187.71	WILLI	SOCIE
Buy	US	GLOBANT SA	20180824	242,361	3.78%	-0.85	170.01	WILLI	LIQUI
Buy	NTH	BASIC FIT	20180803	870,271	2.66%	-0.27	33.79	WILLI	ITG
Sell	NTH	WOLTERS KL	20180801	621,971	2.53%	-1.13	45.32	LAZAR	DEUTS
Buy	UK	BIG YELLOW	20180912	78,948	2.04%	-3.58	278.02	WILLI	JP MO
Sell	HKG	MGM CHINA	20180806	172,219	1.88%	-1.94	122.20	WILLI	BNP P
Buy	JAP	HITACHI CA	20180802	84,242	1.60%	-0.94	206.24	LSV A	CREDI
Buy	UK	BIG YELLOW	20180726	146,803	1.55%	-1.44	116.05	WILLI	SOCIE
Buy	SWI	ROCHE HOLD	20180914	689,927	1.42%	-0.54	22.80	LSV A	CREDI
Buy	UK	ROTORK PLC	20180712	365,076	1.37%	N/A	41.36	WILLI	ITG



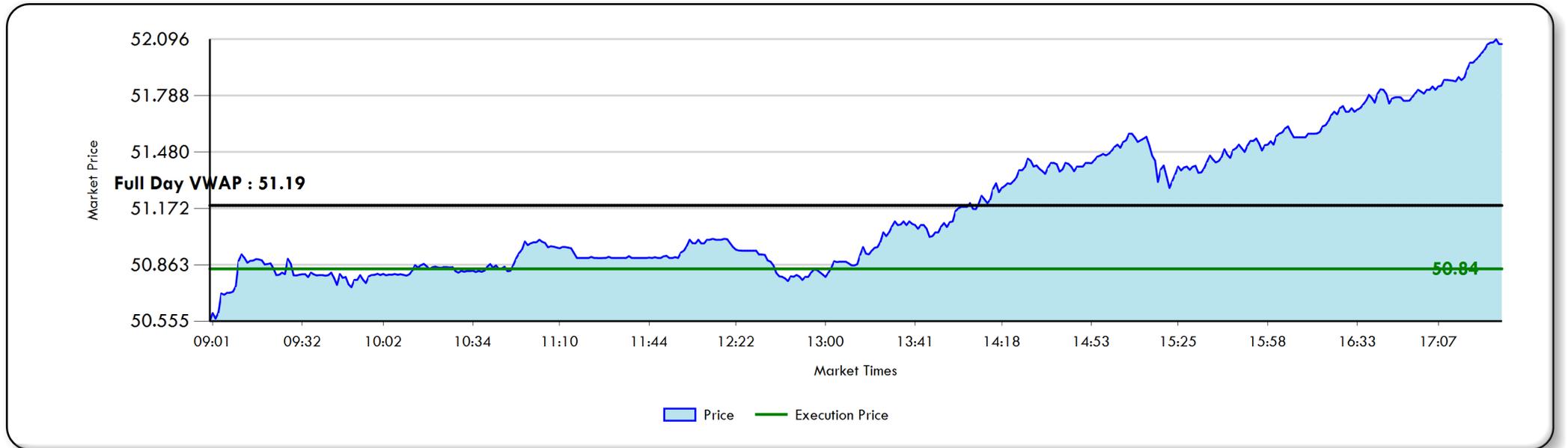


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WOLTERS KLUWER COMMON STOCK EU - 20180802

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	NTH	EUR	5671519	08/02/2018 09:00:00	08/02/2018 17:30:00	1,321,867	50.84	51.19	+9,010	+67.70	0.89	2.00



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.22% of your market impact cost.

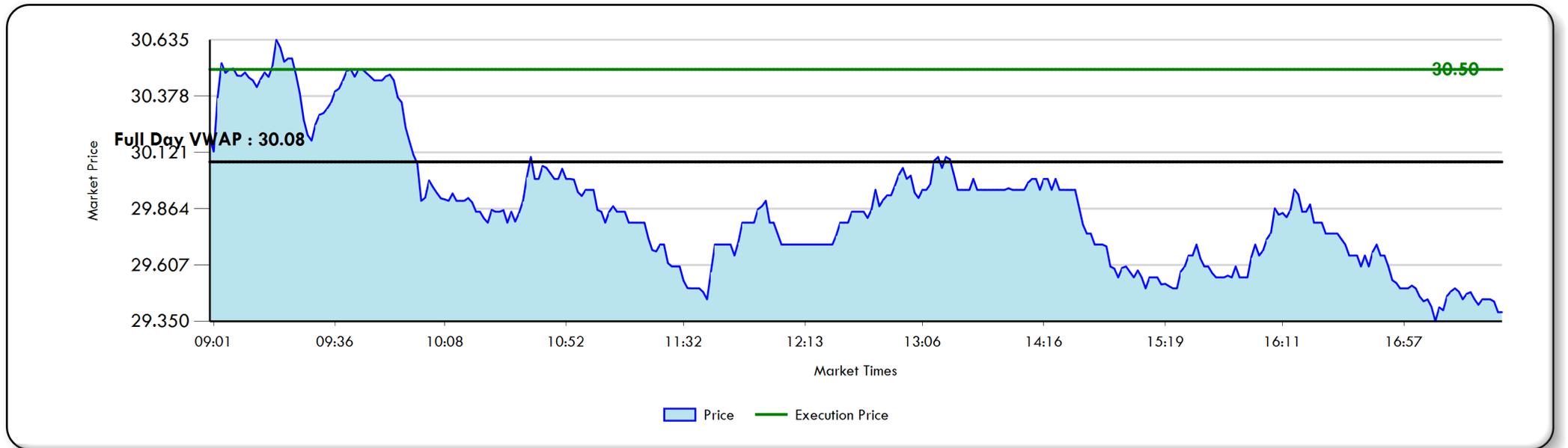


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BASIC FIT NV COMMON STOCK EUR. - 20180927

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	MORGAN STANLEY	NTH	EUR	BD9Y9B7	09/27/2018 09:00:00	09/27/2018 17:30:00	632,802	30.50	30.08	+8,759	+140.35	2.12	2.86



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.02% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

RIO TINTO PLC COMMON STOCK GBP - 20180919

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	CREDIT SUISSE	UK	GBP	0718875	09/19/2018 08:00:00	09/19/2018 16:30:00	964,130	37.09	36.90	+5,131	+53.50	1.00	0.49



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.11% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BIG YELLOW GROUP PLC REIT GBP. - 20180723

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	UK	GBP	0286941	07/23/2018 08:00:00	07/23/2018 16:30:00	212,720	9.72	9.48	+5,117	+246.47	2.31	6.97



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.10% of your market impact cost.

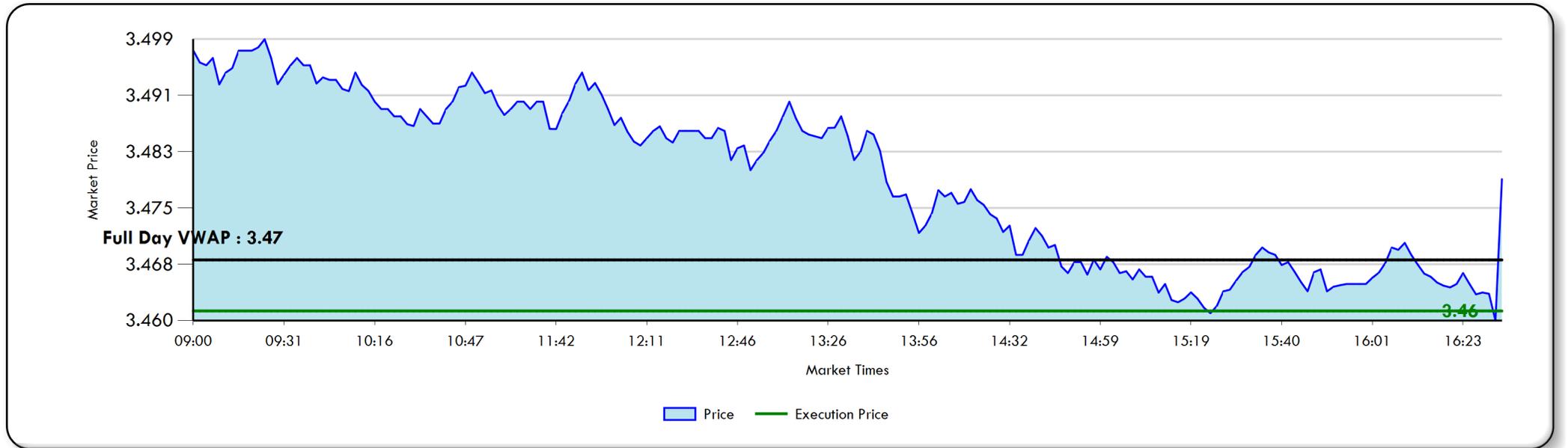


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EDP ENERGIAS DE PORTUGAL SA CO - 20180713

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	POR	EUR	4103596	07/13/2018 09:00:00	07/13/2018 17:30:00	2,311,563	3.46	3.47	+4,684	+20.22	1.60	17.38



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.75% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WAREHOUSES DE PAUW SCA REIT - 20180711

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	MERRILL LYNCH	BEL	EUR	5710360	07/11/2018 09:00:00	07/11/2018 17:30:00	175,662	113.22	111.21	+3,122	+180.93	N/A	29.02



NOTES

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

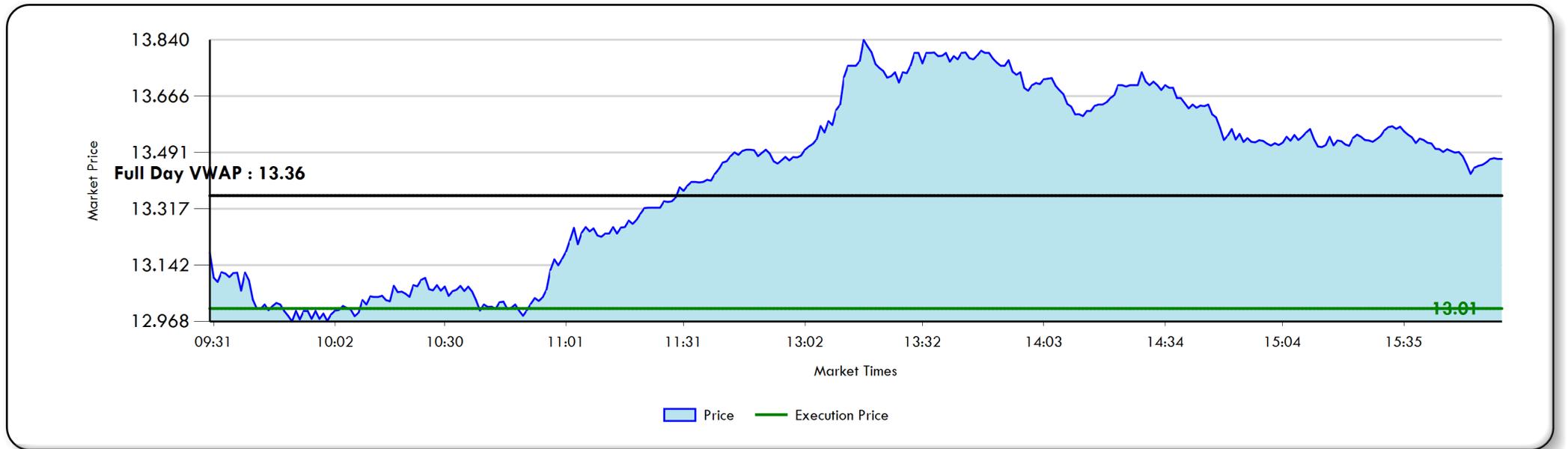


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

3SBIO INC COMMON STOCK USD.000 - 20180919

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	DAIWA SECURITIES	HKG	HKD	BY9D3L9	09/19/2018 09:30:00	09/19/2018 16:00:00	98,661	13.01	13.36	+2,654	+261.98	1.53	0.62



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.13% of your market impact cost.

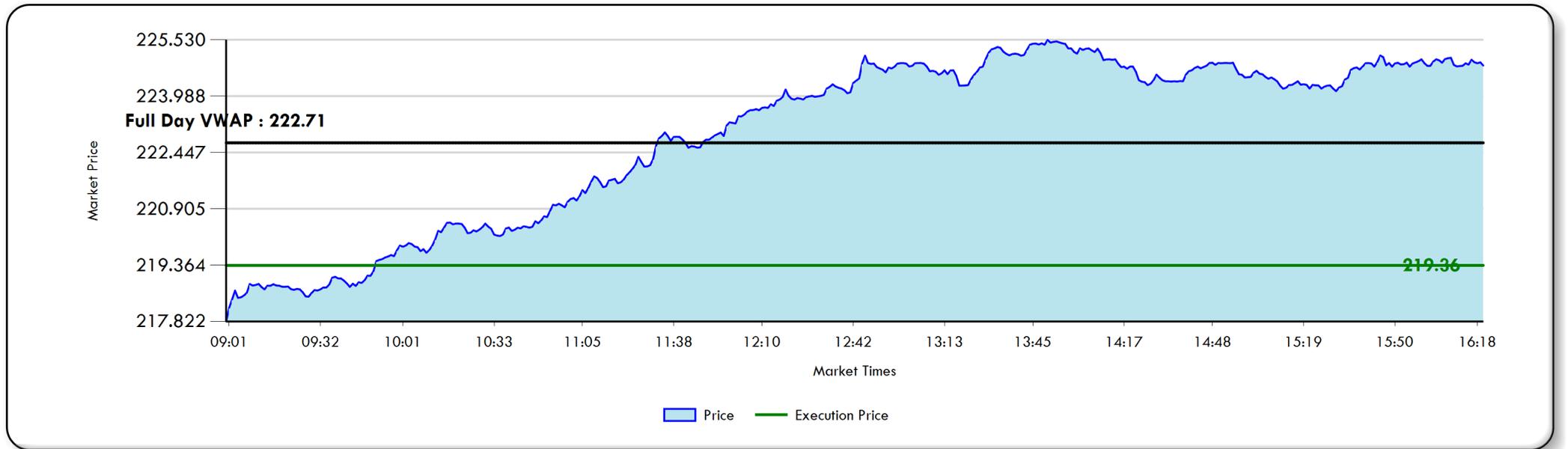


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EQUINOR ASA COMMON STOCK NOK2. - 20180924

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	NOR	NOK	7133608	09/24/2018 09:00:00	09/24/2018 16:20:00	159,587	219.36	222.71	+2,442	+150.70	N/A	0.13



NOTES

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

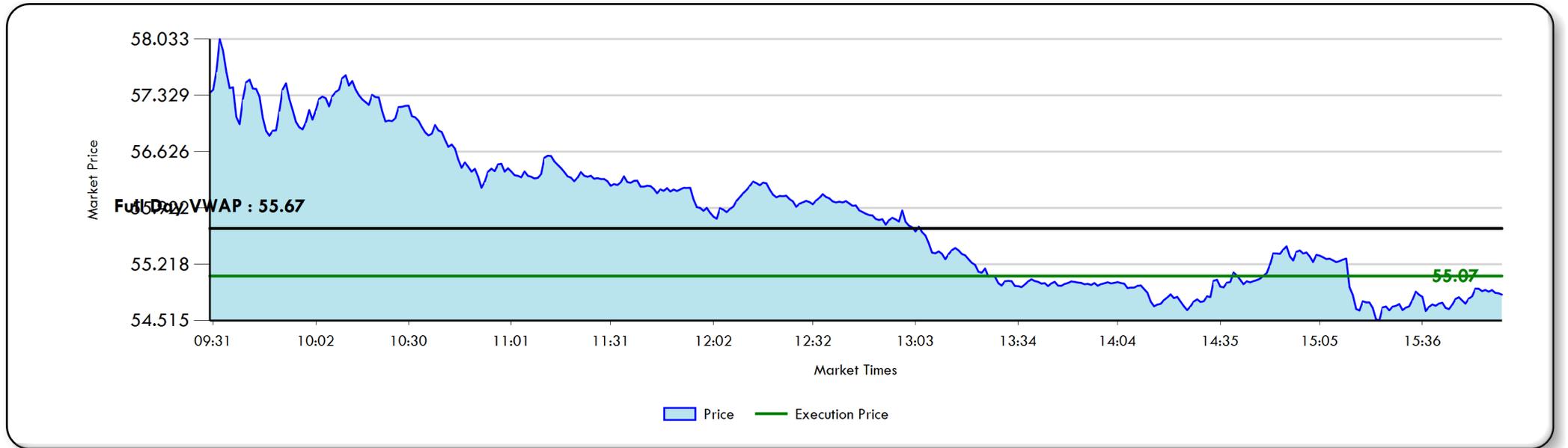


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

BAOZUN INC SPN ADR ADR USD.000 - 20180803

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	JEFFERIES & CO	US	USD	BY2ZJ69	08/03/2018 09:30:00	08/03/2018 16:00:00	225,460	55.07	55.67	+2,436	+106.90	0.77	0.22



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.95% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NOAH HOLDINGS LTD SPON ADS ADR - 20180806

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	JEFFERIES & CO	US	USD	B5MDP39	08/06/2018 09:30:00	08/06/2018 16:00:00	88,761	46.37	47.58	+2,316	+254.24	1.44	0.33



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.86% of your market impact cost.

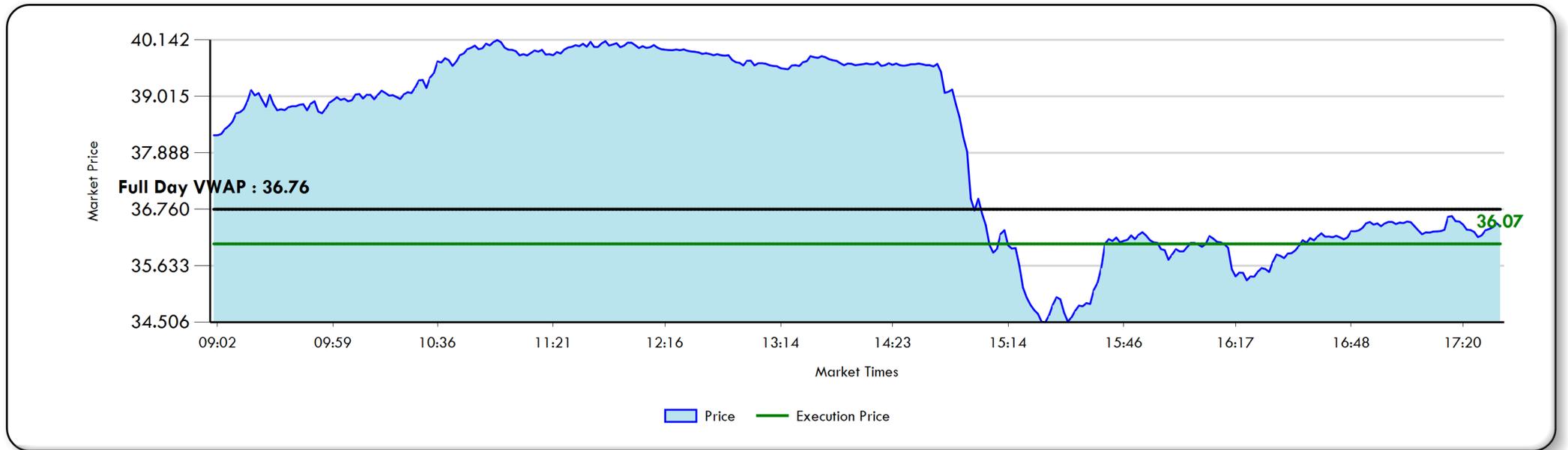


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TRADE LEVEL DETAIL - LOW COST

CTS EVENTIM AG + CO KGAA COMMO - 20180823

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	GER	EUR	5881857	08/23/2018 09:00:00	08/23/2018 17:30:00	373,808	36.07	36.76	7,151	187.70	-1.07	1.23



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 6.45% of your market impact cost.

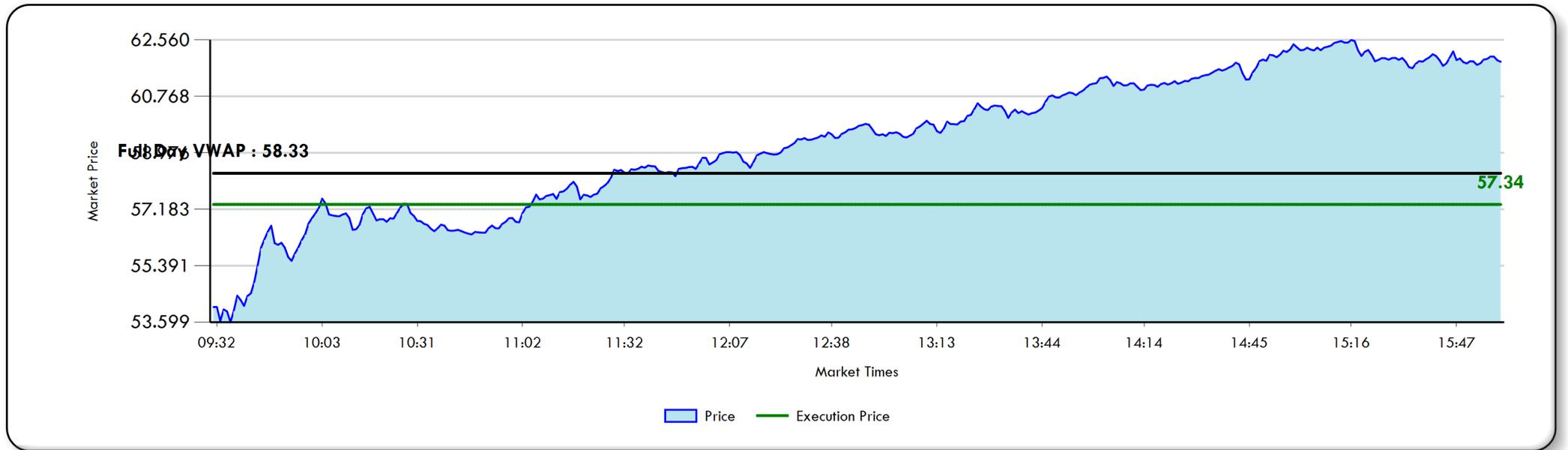


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TRADE LEVEL DETAIL - LOW COST

GLOBANT SA COMMON STOCK USD1.2 - 20180824

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	LIQUIDNET	US	USD	BP40HF4	08/24/2018 09:30:00	08/24/2018 16:00:00	242,361	57.34	58.33	4,192	170.01	-0.85	0.32



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.78% of your market impact cost.

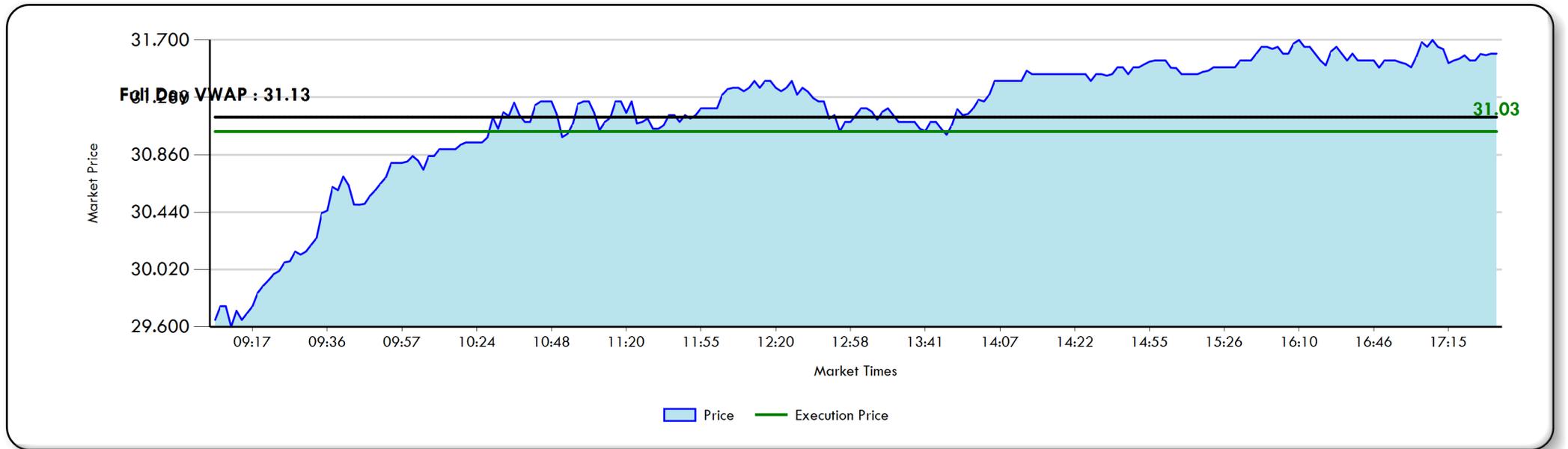


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TRADE LEVEL DETAIL - LOW COST

BASIC FIT NV COMMON STOCK EUR. - 20180803

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	ITG	NTH	EUR	BD9Y9B7	08/03/2018 09:00:00	08/03/2018 17:30:00	870,271	31.03	31.13	2,950	33.78	-0.27	19.18



NOTES

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

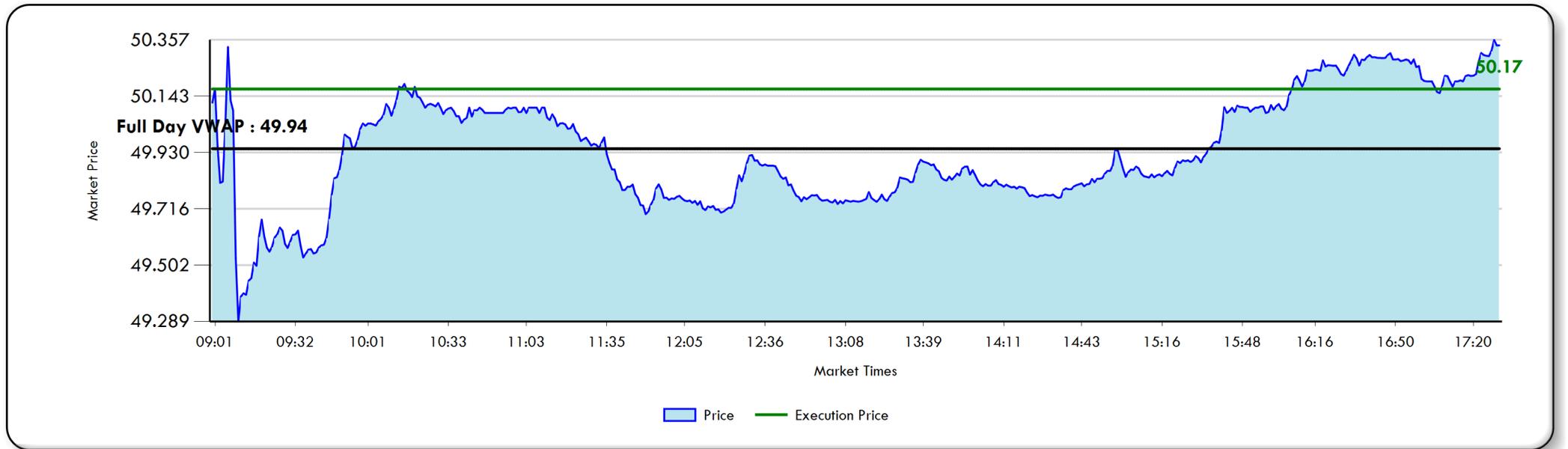


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TRADE LEVEL DETAIL - LOW COST

WOLTERS KLUWER COMMON STOCK EU - 20180801

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	NTH	EUR	5671519	08/01/2018 09:00:00	08/01/2018 17:30:00	621,971	50.17	49.94	2,806	45.32	-1.13	0.99



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.53% of your market impact cost.

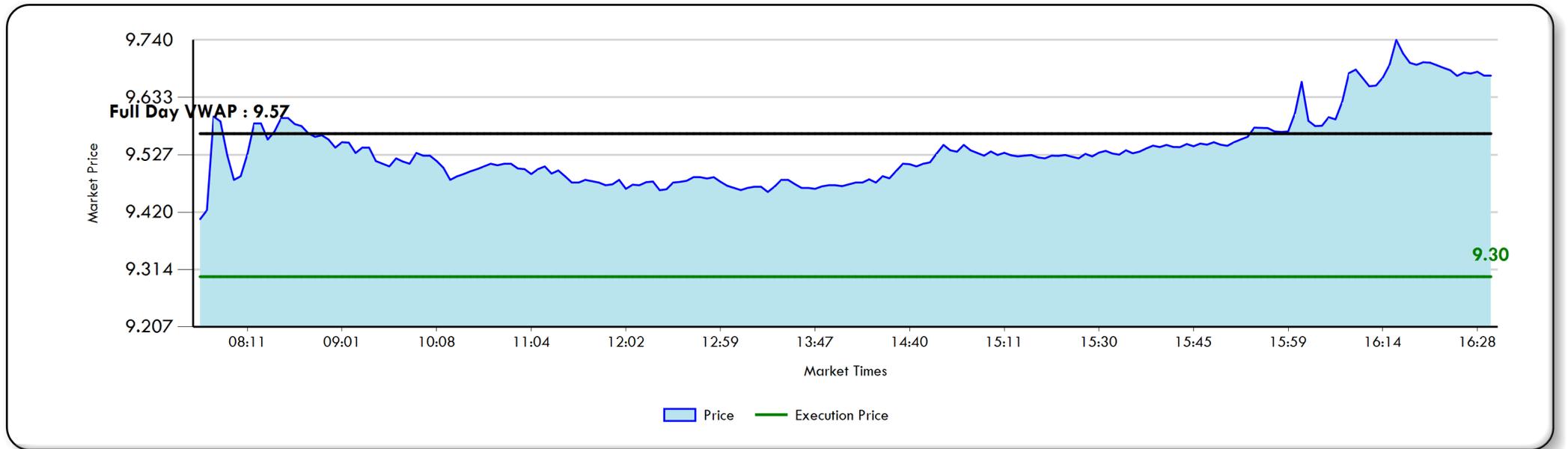


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TRADE LEVEL DETAIL - LOW COST

BIG YELLOW GROUP PLC REIT GBP. - 20180912

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	JP MORGAN CHASE	UK	GBP	0286941	09/12/2018 08:00:00	09/12/2018 16:30:00	78,948	9.30	9.57	2,258	278.01	-3.58	1.91



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.04% of your market impact cost.

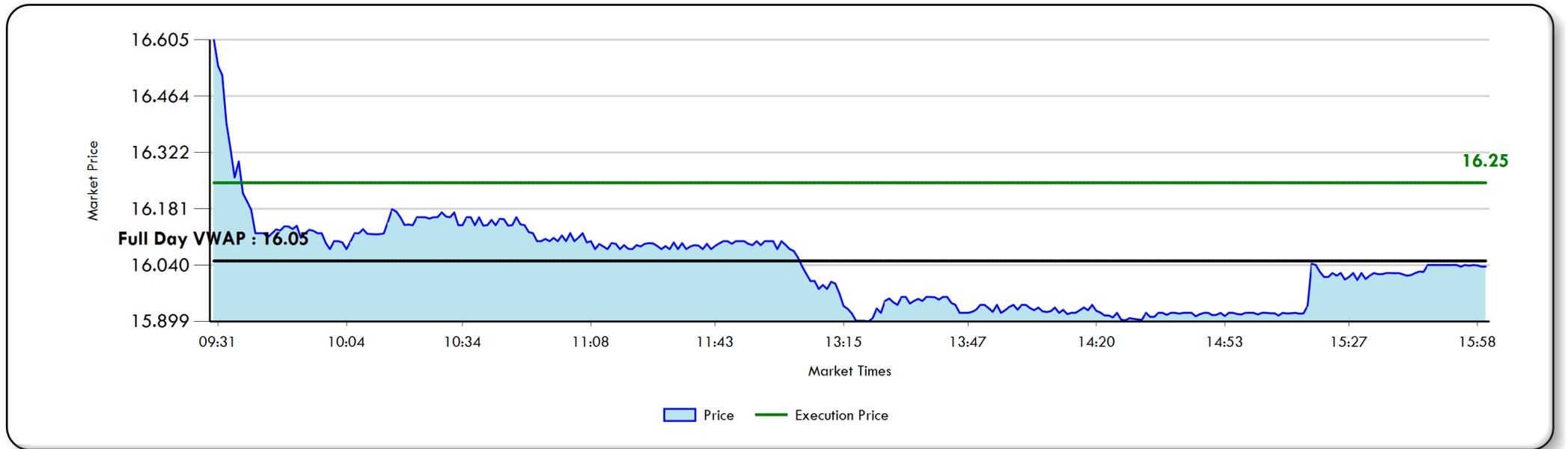


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TRADE LEVEL DETAIL - LOW COST

MGM CHINA HOLDINGS LTD COMMON - 20180806

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	BNP PARIBAS	HKG	HKD	B4P8HQ1	08/06/2018 09:30:00	08/06/2018 16:00:00	172,219	16.25	16.05	2,079	122.20	-1.94	0.75



NOTES

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

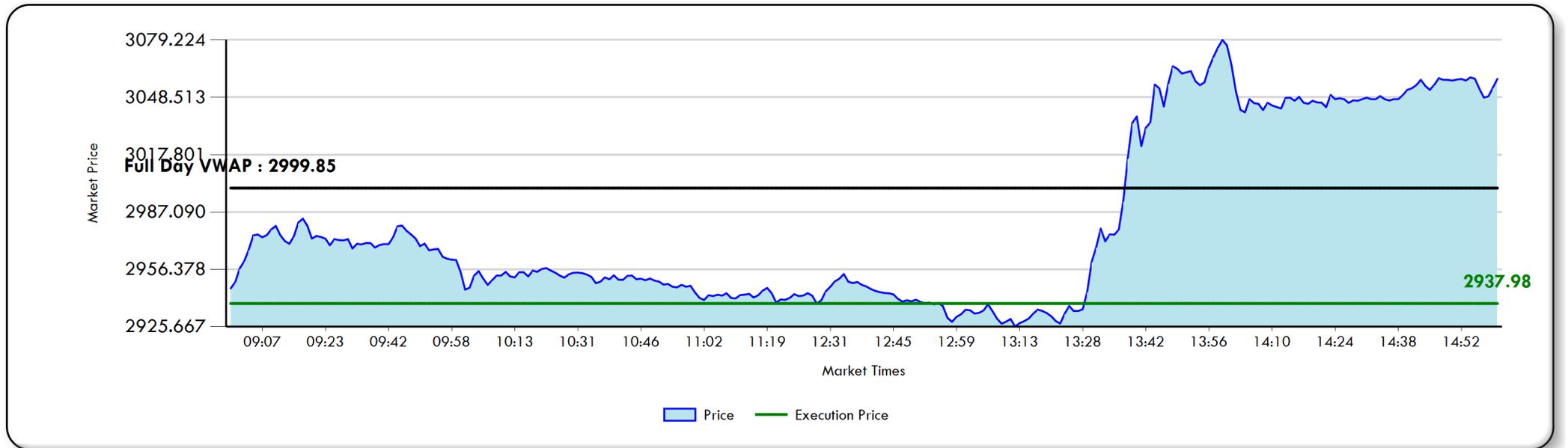


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TRADE LEVEL DETAIL - LOW COST

HITACHI CAPITAL CORP COMMON ST - 20180802

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	CREDIT SUISSE	JAP	JPY	6429159	08/02/2018 09:00:00	08/02/2018 15:00:00	84,242	2937.98	2999.85	1,774	206.23	-0.94	0.55



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.60% of your market impact cost.

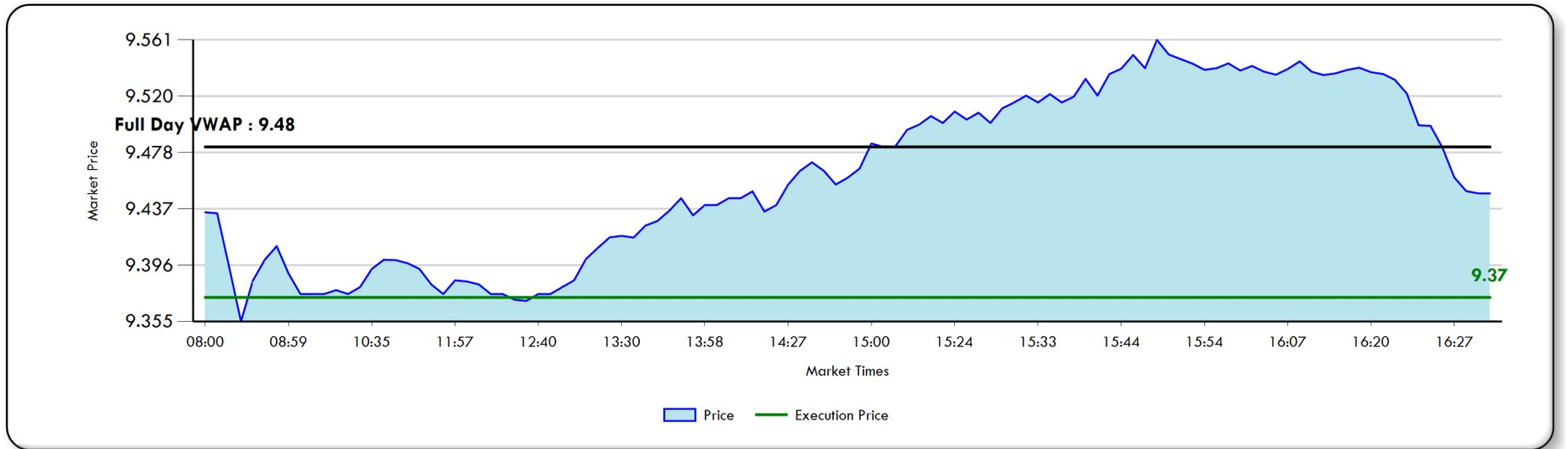


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TRADE LEVEL DETAIL - LOW COST

BIG YELLOW GROUP PLC REIT GBP. - 20180726

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	SOCIETE GENERALE	UK	GBP	0286941	07/26/2018 08:00:00	07/26/2018 16:30:00	146,803	9.37	9.48	1,724	116.05	-1.44	6.98



NOTES

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

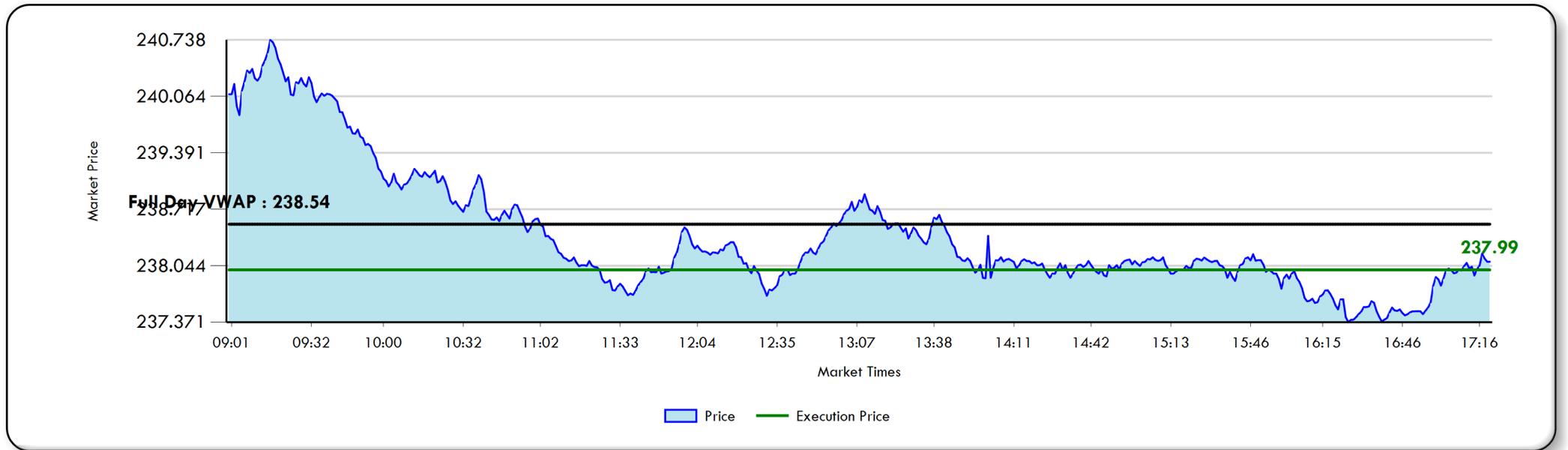


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ROCHE HOLDING AG GENUSSCHEIN C - 20180914

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	CREDIT SUISSE	SWI	CHF	7110388	09/14/2018 09:00:00	09/14/2018 17:20:00	689,927	237.99	238.54	1,577	22.80	-0.54	0.36



NOTES

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

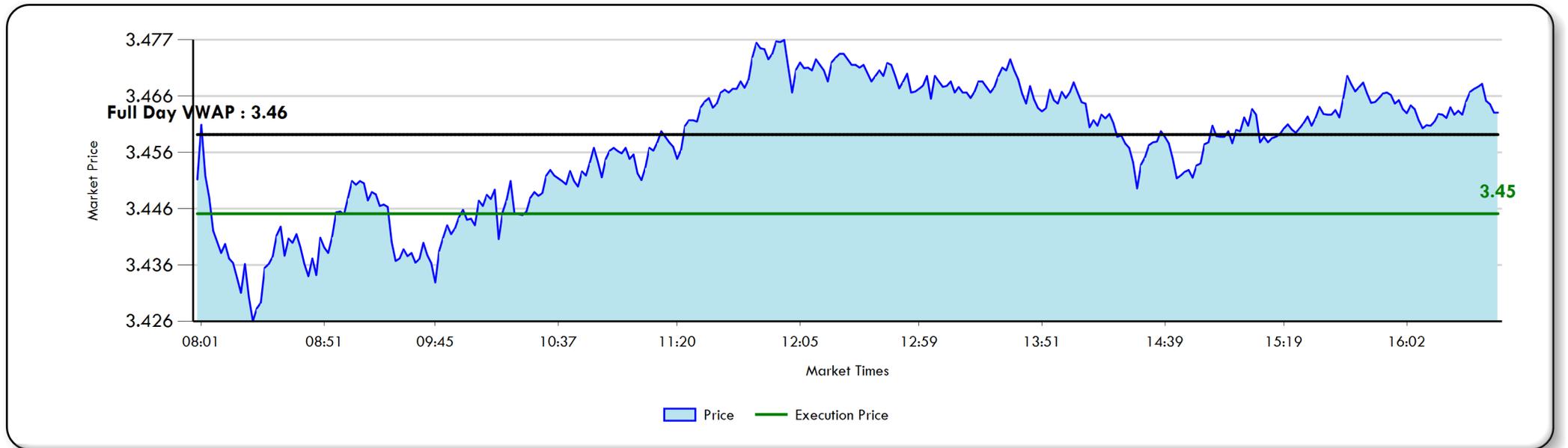


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ROTORK PLC COMMON STOCK GBP.00 - 20180712

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	ITG	UK	GBP	BVFNZH2	07/12/2018 08:00:00	07/12/2018 16:30:00	365,076	3.45	3.46	1,516	41.36	N/A	9.27



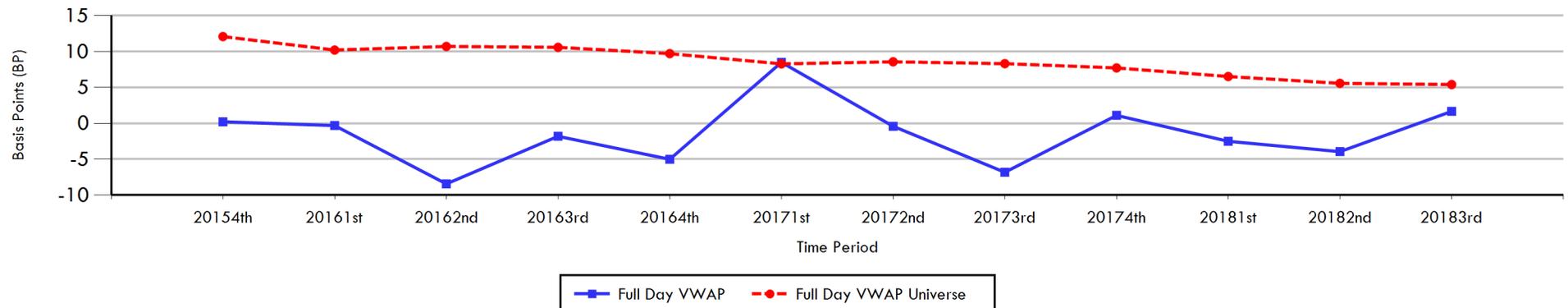
NOTES

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

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)
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
20183rd	84,663,286	+6.92	+13.97	+5.95	+3.81	+1.64	+5.39	8.65

TRADE HISTORY





Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
ARGENTINA	2.97 BP	42.15 BP	0.00 BP	24.97 BP	67.12 BP
AUSTRALIA	7.55 BP	13.54 BP	0.50 BP	4.24 BP	18.28 BP
AUSTRIA	26.64 BP	14.00 BP	0.03 BP	7.82 BP	21.85 BP
BELGIUM	78.01 BP	13.77 BP	0.01 BP	4.61 BP	18.39 BP
BRAZIL	6.59 BP	14.26 BP	1.60 BP	8.20 BP	24.06 BP
CANADA	14.41 BP	13.98 BP	0.04 BP	4.65 BP	18.67 BP
CHILE	0.42 BP	17.23 BP	0.45 BP	4.61 BP	22.29 BP
CHINA	5.44 BP	20.60 BP	2.92 BP	2.23 BP	25.75 BP
COLOMBIA	1.47 BP	24.43 BP	0.66 BP	12.60 BP	37.69 BP
CZECH REPUBLIC	15.72 BP	18.63 BP	0.00 BP	3.82 BP	22.45 BP
DENMARK	68.73 BP	13.87 BP	0.00 BP	6.78 BP	20.65 BP
EGYPT	1.04 BP	26.45 BP	11.06 BP	9.14 BP	46.65 BP
FINLAND	25.66 BP	13.96 BP	0.01 BP	7.53 BP	21.50 BP
FRANCE - BUYS	58.57 BP	13.88 BP	30.00 BP	3.64 BP	47.52 BP
FRANCE - SELLS	53.76 BP	14.66 BP	0.00 BP	3.75 BP	18.41 BP
GERMANY	57.43 BP	13.88 BP	0.04 BP	4.59 BP	18.51 BP
GREECE	1.51 BP	14.78 BP	2.08 BP	15.99 BP	32.85 BP
HONG KONG	2.56 BP	14.11 BP	10.23 BP	1.70 BP	26.04 BP
HUNGARY	11.11 BP	24.21 BP	0.10 BP	3.22 BP	27.53 BP
INDONESIA	0.30 BP	16.91 BP	9.42 BP	4.12 BP	30.45 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDIA	9.76 BP	14.72 BP	10.67 BP	3.01 BP	28.40 BP
IRELAND - BUYS	17.63 BP	14.24 BP	100.00 BP	3.28 BP	117.52 BP
IRELAND - SELLS	13.46 BP	13.54 BP	0.00 BP	19.73 BP	33.27 BP
ISRAEL	5.88 BP	14.83 BP	0.17 BP	4.56 BP	19.56 BP
ITALY - BUYS	7.64 BP	13.82 BP	12.00 BP	3.02 BP	28.84 BP
ITALY - SELLS	10.46 BP	13.39 BP	0.00 BP	8.72 BP	22.11 BP
JAPAN	18.96 BP	13.86 BP	0.02 BP	6.29 BP	20.17 BP
KOREA - BUYS	89.36 BP	18.88 BP	0.00 BP	6.32 BP	25.20 BP
KOREA - SELLS	95.80 BP	17.03 BP	28.40 BP	3.56 BP	48.99 BP
LUXEMBOURG	14.36 BP	28.98 BP	0.09 BP	37.88 BP	66.95 BP
MALAYSIA	1.47 BP	15.85 BP	3.04 BP	1.85 BP	20.74 BP
MEXICO	2.43 BP	14.53 BP	0.00 BP	1.66 BP	16.19 BP
NORWAY	12.53 BP	12.87 BP	0.07 BP	7.27 BP	20.21 BP
NETHERLANDS	34.41 BP	13.85 BP	0.09 BP	4.38 BP	18.32 BP
NEW ZEALAND	3.48 BP	14.37 BP	0.01 BP	7.18 BP	21.56 BP
PERU	1.22 BP	19.00 BP	0.29 BP	6.64 BP	25.93 BP
PHILIPPINES - BUYS	0.49 BP	17.97 BP	4.00 BP	2.50 BP	24.47 BP
PHILIPPINES - SELLS	0.75 BP	21.79 BP	55.93 BP	1.37 BP	79.09 BP
POLAND	12.24 BP	14.71 BP	0.00 BP	5.17 BP	19.88 BP
PORTUGAL	5.74 BP	13.64 BP	0.02 BP	7.90 BP	21.56 BP



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.04 BP	0.00 BP	0.00 BP	19.51 BP	19.51 BP
SOUTH AFRICA - BUYS	11.37 BP	13.65 BP	23.67 BP	5.72 BP	43.04 BP
SOUTH AFRICA - SELLS	8.08 BP	15.16 BP	0.07 BP	4.28 BP	19.51 BP
SINGAPORE	3.25 BP	13.81 BP	3.53 BP	2.41 BP	19.75 BP
SPAIN	9.58 BP	13.96 BP	0.01 BP	4.27 BP	18.24 BP
SWEDEN	15.86 BP	14.00 BP	0.03 BP	1.58 BP	15.61 BP
SWITZERLAND	73.13 BP	14.21 BP	0.03 BP	4.17 BP	18.41 BP
TAIWAN - BUYS	2.33 BP	15.23 BP	0.00 BP	2.03 BP	17.26 BP
TAIWAN - SELLS	2.52 BP	18.78 BP	29.30 BP	3.86 BP	51.94 BP
THAILAND	1.94 BP	18.55 BP	0.83 BP	3.32 BP	22.70 BP
TURKEY	2.57 BP	14.03 BP	0.00 BP	4.97 BP	19.00 BP
U.K. - BUYS	8.50 BP	14.24 BP	27.03 BP	2.42 BP	43.69 BP
U.K. - SELLS	9.67 BP	14.12 BP	0.00 BP	15.57 BP	29.69 BP
U.S.	52.13 BP	14.87 BP	0.12 BP	2.69 BP	17.68 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	18.35 BP	16.71 BP	6.87 BP	7.06 BP	30.64 BP

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SACRAMENTO COUNTY

US Fixed Income Analysis

Period End September 30, 2018



EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates U.S. fixed income executions from July 01,2018 to September 30,2018. The analysis included trading of 315 trades in 150 different issues representing \$578,565,392 in principal across municipals, mortgages, governments And corporates.

Methodology:

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

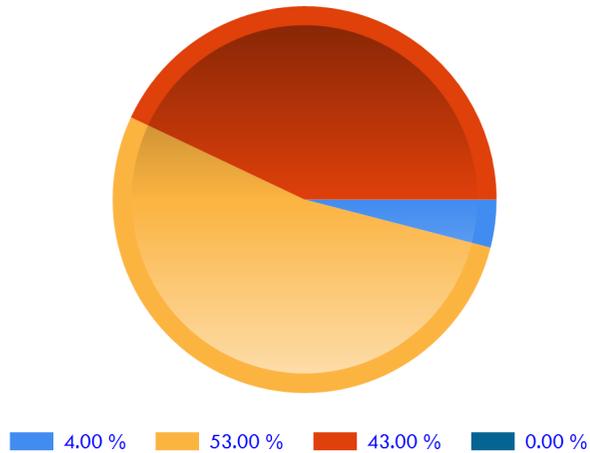
Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2018	Q1 2018	Q4 2017	Q3 2017
BUYS	284	163	109	+297.98	+10.48	+8.71	+50.30	+1.77	+11.14	+8.36	+9.82	+5.81
SELLS	294	152	85	295.53	10.05	+5.96	470.94	16.01	4.57	8.91	10.65	7.15
GRAND TOTAL	579	315	150	+2.45	+0.04	+7.31	420.64	7.27	+2.62	+0.68	0.60	0.96

EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q2 2018	Q1 2018	Q4 2017	Q3 2017
Governments	308	170	51	3.19	0.10	+8.17	255.19 8.27	+1.22	+4.09	+0.03	+0.10
Mortgages	246	98	64	+3.68	+0.15	+6.08	145.78 5.93	+6.46	1.82	2.65	2.35
Corporates	23	46	34	+1.65	+0.71	+8.81	18.83 8.10	1.77	17.49	+1.35	+6.87
Municipals	<1	1	1	+0.31	+3.33	+12.41	0.84 9.08	-	+3.87	+0.24	-

Bonds by Principal Traded



Historical Trade Cost Trend





EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

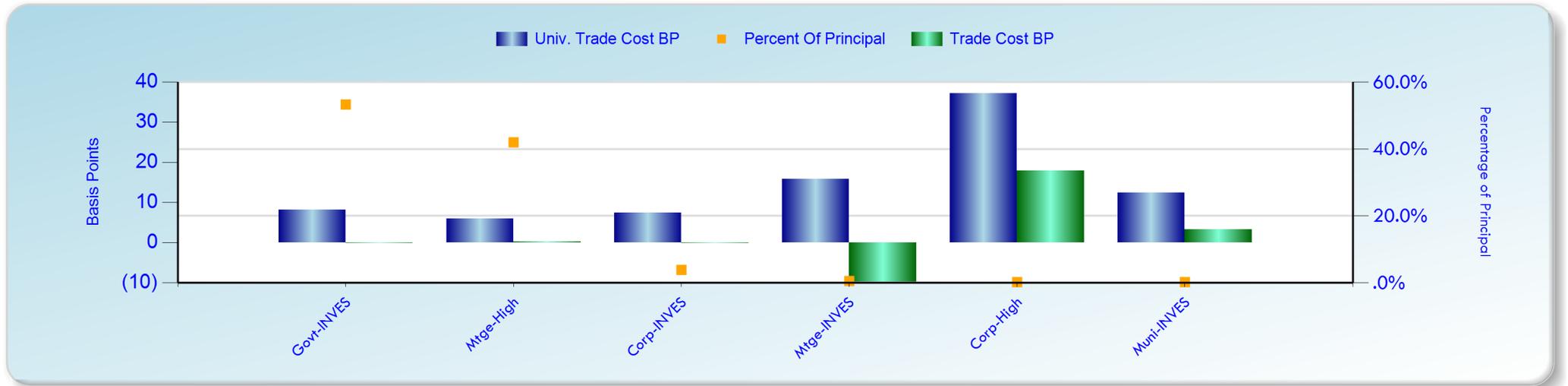
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
2~5	254	86	42	+34.41	+1.36	+6.60	133.20	5.24
5~10	163	20	13	+22.07	+1.35	+7.01	92.39	5.66
0~2	132	207	116	37.09	2.81	+8.72	152.09	11.53
10~50	30	2	2	16.94	5.73	+8.80	42.96	14.53



EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	308	170	51	3.19	0.10	+8.17	255.19	8.27
Mtge-High Yield	243	92	58	+6.60	+0.27	+5.96	138.13	5.69
Corp-INVESTMENT GRADE	22	29	29	0.25	0.11	+7.45	16.78	7.56
Mtge-INVESTMENT GRADE	3	6	6	2.92	9.73	+15.83	7.66	25.56
Corp-High Yield	1	17	5	+1.90	+17.90	+37.15	2.04	19.25
Muni-INVESTMENT GRADE	<1	1	1	+0.31	+3.33	+12.41	0.84	9.08



EXECUTIVE SUMMARY

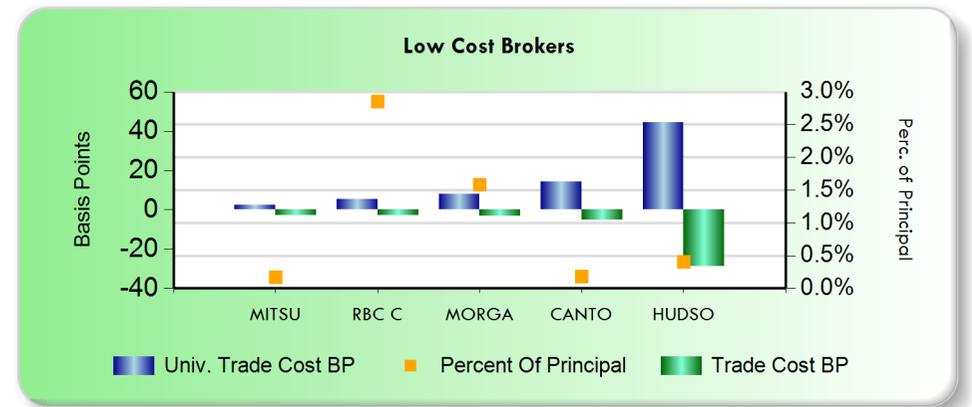
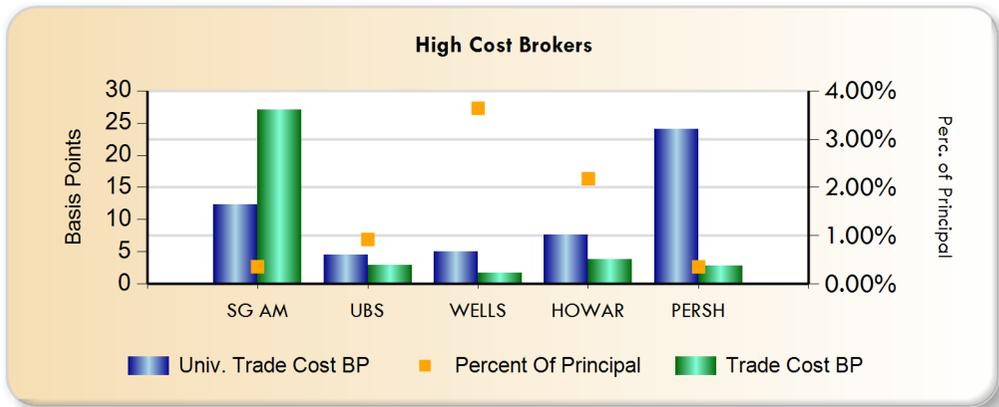
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
AAA	310.39	175	56	5.33	0.17	+8.27	262.02	8.44
NR	240.89	91	57	+0.99	+0.04	+5.90	141.17	5.86
BBB-	4.92	7	7	+1.84	+3.74	+6.27	1.24	2.53
A-	3.88	4	4	4.77	12.28	+9.74	8.55	22.02
BBB+	3.36	3	3	+0.76	+2.28	+3.53	0.42	1.25
BBB	3.32	6	6	+0.20	+0.59	+8.95	2.78	8.36
AA-	2.72	3	3	+1.79	+6.60	+7.01	0.11	0.41
A+	2.60	3	3	0.24	0.92	+7.83	2.27	8.75
B-	2.07	1	1	+5.61	+27.06	+12.38	+3.04	+14.68
A	1.72	3	3	+0.11	+0.63	+11.38	1.85	10.75



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
SG AMERICAS	2	1	1	+5.61	+27.06	+12.38	+3.04	+14.68
UBS	5	17	16	+1.54	+2.88	+4.50	0.86	1.62
WELLS FARGO	21	14	14	+3.70	+1.76	+5.06	6.96	3.30
HOWARD TAYLOR & COMP	13	3	3	+4.80	+3.81	+7.63	4.82	3.82
PERSHING	2	1	1	+0.57	+2.79	+24.05	4.36	21.26
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
MITSUBISHI UFJ SECS	1	1	1	0.29	2.89	+2.35	0.53	5.24
RBC CAPITAL MARKETS	16	7	7	4.56	2.76	+5.29	13.29	8.05
MORGAN STANLEY	9	9	9	2.73	2.98	+8.18	10.23	11.16
CANTOR FITZGERALD	1	2	2	0.54	5.07	+14.36	2.06	19.43
HUDSON VALLEY PLANNI	2	3	3	6.77	28.73	+44.42	17.23	73.15





COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country									
		Principal	No. of	No. of	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	Side	(Mil. \$)	Trades	Issues	(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	BUYS	284	163	109	+297.98	+10.48	+8.71	+50.30	+1.77
	SELLS	294	152	85	295.53	10.05	+5.96	470.94	16.01

Manager PERFORMANCE

Manager PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2018	Q1 2018	Q4 2017	Q3 2017
METROPOLITAN WEST MG	534	249	112	+1.70	+0.03	+7.28	387.53	7.25	+2.61	+0.45	0.89	0.65
NEUBERGER BERMAN	31	12	10	+2.81	+0.92	+8.66	23.75	7.74	+2.73	+1.39	+0.04	2.33
BARCLAYS 1-10 YR TIP	14	54	28	2.06	1.52	+5.38	9.36	6.90	+2.58	4.70	0.86	+1.53

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2018	Q1 2018	Q4 2017	Q3 2017
JP MORGAN CHASE	93	42	28	9.40	1.01	+6.82	72.88	7.83	+2.09	+8.71	2.93	1.28
CITIGROUP	84	25	19	+9.11	+1.08	+5.54	37.70	4.46	+0.26	4.25	1.44	0.61
GOLDMAN SACHS	80	40	31	+0.65	+0.08	+7.26	57.17	7.18	+3.42	+0.59	1.06	2.20
BANK OF AMERICA	71	23	15	8.48	1.19	+7.39	61.22	8.58	0.05	+5.91	+0.93	+0.04
CREDIT SUISSE	56	27	21	+2.60	+0.47	+5.66	28.82	5.19	+6.51	1.77	+2.95	0.91
NOMURA	41	35	22	+4.23	+1.03	+10.78	40.07	9.75	+0.77	+2.12	1.34	0.20
DEUTSCHE BANK	36	17	9	+0.70	+0.20	+9.13	31.73	8.93	+0.75	+5.10	0.57	0.59
BARCLAYS	21	19	15	+0.73	+0.35	+6.07	12.09	5.72	1.25	2.81	3.67	0.54
WELLS FARGO	21	14	14	+3.70	+1.76	+5.06	6.96	3.30	+1.98	6.97	4.33	4.29
RBC CAPITAL MARKETS	16	7	7	4.56	2.76	+5.29	13.29	8.05	+3.38	0.32	+6.79	1.66
HOWARD TAYLOR & COMP	13	3	3	+4.80	+3.81	+7.63	4.82	3.82	-	0.11	+2.83	-
HSBC BANK	10	9	9	+0.42	+0.43	+9.98	9.31	9.55	+3.88	1.29	+2.73	+1.99
MORGAN STANLEY	9	9	9	2.73	2.98	+8.18	10.23	11.16	+10.21	+1.11	+6.05	3.19
BNY MELLON	7	7	6	+0.80	+1.12	+9.22	5.79	8.10	+5.38	+1.80	+10.94	0.14
UBS	5	17	16	+1.54	+2.88	+4.50	0.86	1.62	1.29	8.52	+0.35	+0.93
CITADEL SECURITIES	4	4	4	0.07	0.17	+9.42	4.27	9.59	+0.42	+3.54	+4.76	-
HUDSON VALLEY PLANNI	2	3	3	6.77	28.73	+44.42	17.23	73.15	-	-	-	-
SG AMERICAS	2	1	1	+5.61	+27.06	+12.38	+3.04	+14.68	-	28.04	2.33	-
PERSHING	2	1	1	+0.57	+2.79	+24.05	4.36	21.26	+8.28	6.05	11.71	+5.67
WACHOVIA BANK	2	8	7	0.15	0.98	+9.93	1.72	10.91	-	+1.59	+1.34	-

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	01F0326A FNCL 3.5 10/10	Mtge	09/10/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,333,800	98.875	98.279	+60.33	+56,310
B	01F04269 FNCL 4.5 9/10	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	7,269,589	103.703	103.233	+45.31	+32,935
B	01F03268 FNCL 3.5 8/10	Mtge	07/06/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,789,262	99.484	99.178	+30.85	+30,197
B	01F04268 FNCL 4.5 8/09	Mtge	07/02/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	7,286,018	103.938	103.653	+27.42	+19,979
B	02R04268 FGLMC 4.5 8/10	Mtge	07/02/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,064,773	103.891	103.288	+58.01	+17,778
B	02R03269 FGLMC 3.5 9/12	Mtge	07/27/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	2,853,445	98.906	98.302	+61.14	+17,447
B	912810SD US TREASURY N/B 08/48 3	Govt	09/18/2018 08/15/2048	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,533,689	96.891	96.308	+60.10	+15,227
B	02R04269 FGLMC 4.5 9/10	Mtge	08/03/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,058,320	103.672	103.213	+44.31	+13,552
B	02R0426A FGLMC 4.5 10/10	Mtge	09/05/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,057,859	103.656	103.214	+42.71	+13,061
B	01F0304A FNCL 3 10/10	Mtge	09/12/2018 12/31/2099	METROPOLITAN WE JP MORGAN CHASE	US	USD	2,021,993	98.875	98.293	+58.86	+11,902
B	01F04068 FNCL 4 8/10	Mtge	07/03/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,356,055	101.773	101.261	+50.37	+11,868
B	9128284V US TREASURY N/B 08/28 2.875	Govt	09/18/2018 08/15/2028	METROPOLITAN WE DEUTSCHE BANK	US	USD	3,537,487	98.813	98.525	+29.10	+10,293
B	01F03269 FNCL 3.5 9/10	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,755,437	99.141	99.038	+10.40	+10,148
B	01F03068 FNCL 3 8/12	Mtge	07/03/2018 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	1,814,062	96.750	96.231	+53.62	+9,727



B	01F04069 FNCL 4 9/10	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,351,895	101.594	101.187	+40.09	+9,428
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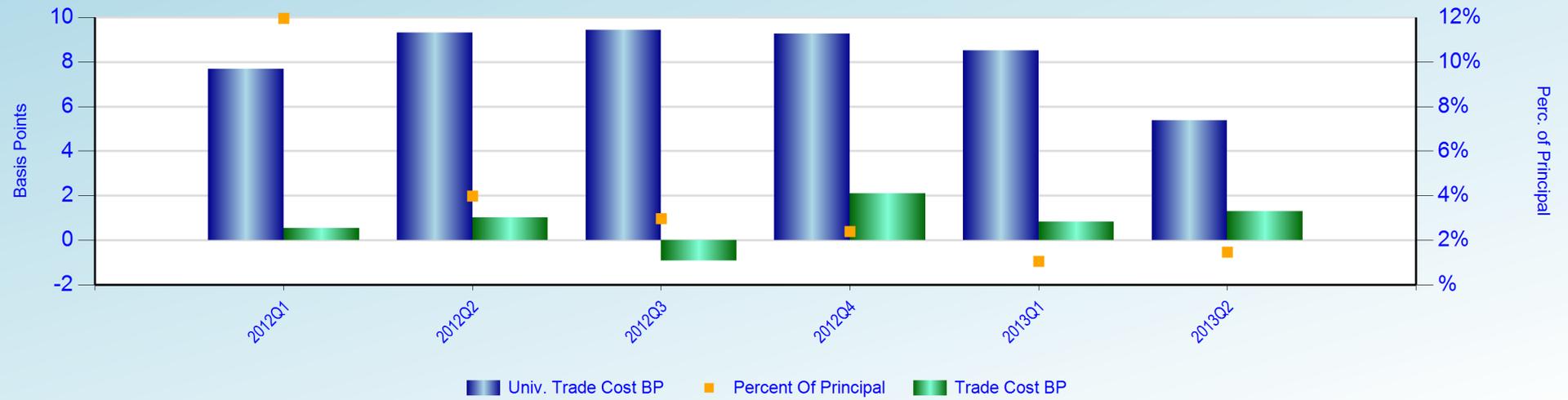


TRADE DETAILS

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	01F03269 FNCL 3.5 9/10	Mtge	09/10/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,342,834	98.971	98.485	49.13	45,897
S	01F04268 FNCL 4.5 8/10	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	7,279,720	103.848	103.277	54.95	40,003
S	01F03267 FNCL 3.5 7/11	Mtge	07/06/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,800,409	99.598	99.214	38.49	37,723
S	01F03268 FNCL 3.5 8/10	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	9,766,200	99.250	99.072	17.93	17,515
S	02R04268 FGLMC 4.5 8/10	Mtge	08/03/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,063,275	103.840	103.265	55.33	16,949
S	02R04269 FGLMC 4.5 9/10	Mtge	09/05/2018 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,061,316	103.773	103.251	50.39	15,427
S	912810SC US TREASURY N/B 05/48 3.125	Govt	09/18/2018 05/15/2048	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,568,254	99.352	98.756	59.97	15,403
S	9128284U US TREASURY N/B 06/23 2.625	Govt	07/25/2018 06/30/2023	METROPOLITAN WE JP MORGAN CHASE	US	USD	14,858,837	99.125	99.028	9.74	14,471
S	01F04068 FNCL 4 8/09	Mtge	08/06/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,355,015	101.729	101.232	48.86	11,506
S	01F03067 FNCL 3 7/12	Mtge	07/03/2018 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	1,815,893	96.848	96.266	60.09	10,911
S	9128284N US TREASURY N/B 05/28 2.875	Govt	09/18/2018 05/15/2028	METROPOLITAN WE DEUTSCHE BANK	US	USD	3,616,829	98.820	98.538	28.57	10,332
S	01F04269 FNCL 4.5 9/09	Mtge	09/06/2018 12/31/2099	METROPOLITAN WE BANK OF AMERICA	US	USD	1,867,781	103.766	103.258	48.94	9,141
S	02R03267 FGLMC 3.5 7/12	Mtge	07/03/2018 12/31/2099	METROPOLITAN WE RBC CAPITAL MAR	US	USD	2,869,391	99.459	99.149	31.17	8,943
S	01F04067 FNCL 4 7/09	Mtge	07/03/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,359,310	101.914	101.563	34.42	8,121
S	01F04069 FNCL 4 9/10	Mtge	09/07/2018 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	2,349,815	101.504	101.186	31.34	7,364



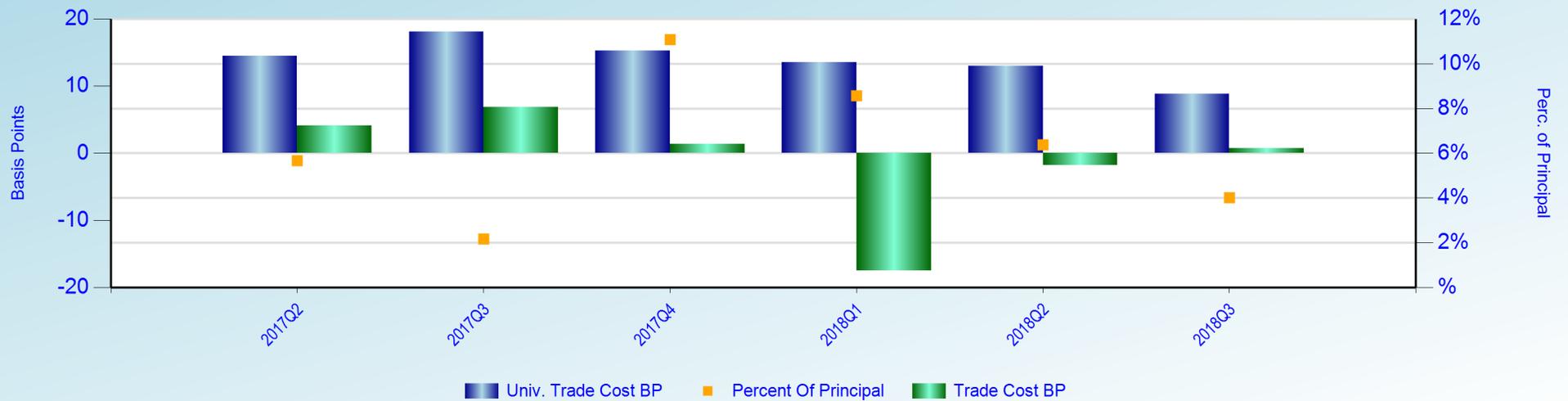
AGENCIES



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	23	46	34	+1.65	+0.71	+8.81	18.83	8.10

CORPORATES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous.\$)	BP
GOVERNMENTS	308	170	51	3.19	0.10	+8.17	255.19	8.27

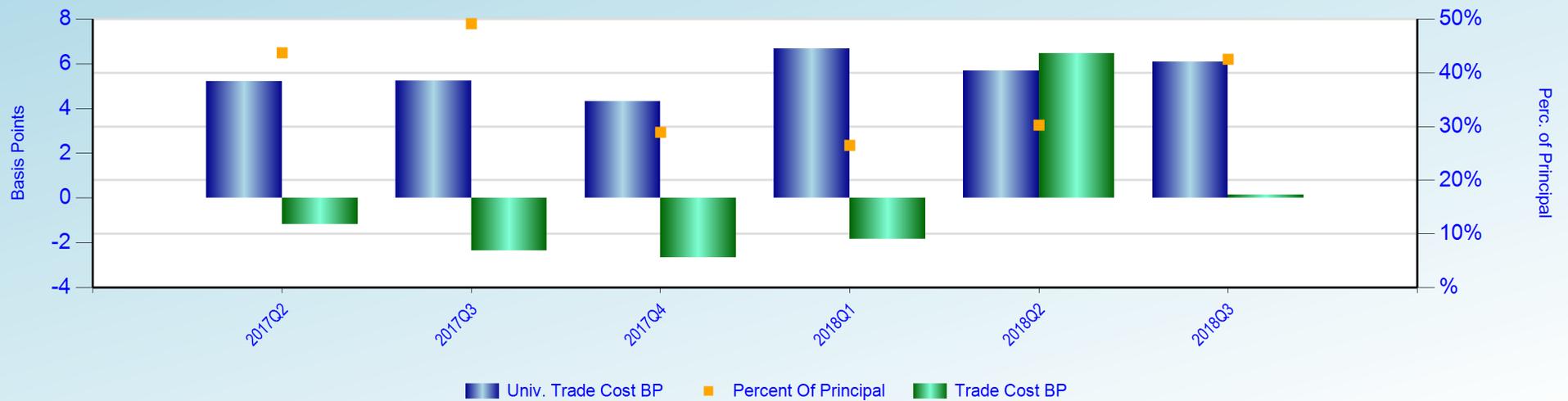
GOVERNMENTS



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MORTGAGES	246	98	64	+3.68	+0.15	+6.08	145.78	5.93

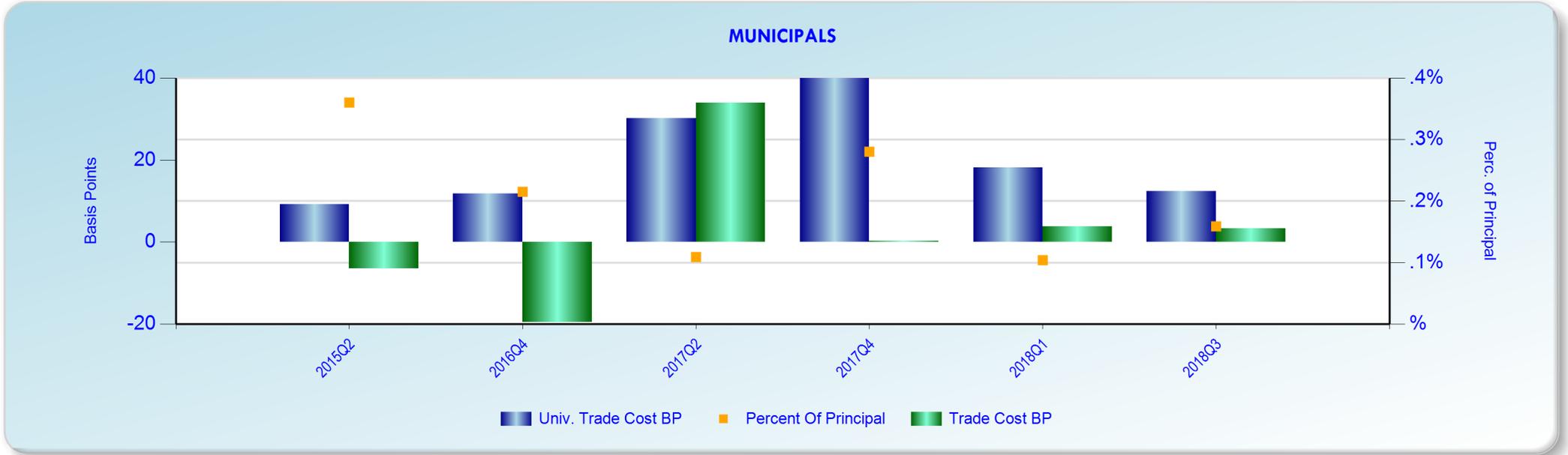
MORTGAGES





BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
MUNICIPALS	<1	1	1	+0.31	+3.33	+12.41	0.84	9.08





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	308	170	51	3.19	0.10	+8.17	255.19	8.27



RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
NR	241	91	57	+0.99	+0.04	+5.90	141.17	5.86
B-	2	1	1	+5.61	+27.06	+12.38	+3.04	+14.68
AAA	2	5	5	2.15	11.01	+23.95	6.83	34.96
AA+	1	1	1	0.77	7.34	+0.61	0.83	7.95

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
BBB-	5	7	7	+1.84	+3.74	+6.27	1.24	2.53
BBB+	3	3	3	+0.76	+2.28	+3.53	0.42	1.26
BBB	3	6	6	+0.20	+0.59	+8.95	2.78	8.36
A-	3	3	3	5.07	17.14	+8.91	7.71	26.05
AA-	3	3	3	+1.79	+6.60	+7.01	0.11	0.41
A+	3	3	3	0.24	0.92	+7.83	2.27	8.75
A	2	3	3	+0.11	+0.63	+11.38	1.85	10.75
AA	<1	1	1	+0.35	+6.01	+12.80	0.40	6.78
CCC-	<1	14	2	+1.24	+27.58	+22.72	+0.22	+4.86
BB+	<1	1	1	+0.61	+14.59	+62.44	2.00	47.85
CCC+	<1	2	2	+0.05	+2.64	+16.21	0.26	13.57



RATING BY EACH BOND TYPE

MUNICIPALS - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
A-	<1	1	1	+0.31	+3.33	+12.41	0.84	9.07

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
07/01/2018-09/30/2018	578,565	315	150	+2.45	+0.04	+7.31	420.64	7.27
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	3,024,696	2301		+319.43	+1.06	+8.76	2,330.77	7.71
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

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07
07/01/2013-09/30/2013	778,379	825	214	+21.56	+0.28	+6.25	465.02	5.97
04/01/2013-06/30/2013	937,180	803	217	51.74	0.55	+7.82	784.80	8.37
01/02/2013-03/31/2013	635,964	613	190	+89.06	+1.40	+8.12	427.14	6.72
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86
10/01/2012-12/31/2012	528,034	613	192	215.02	4.07	+7.49	610.46	11.56
07/01/2012-09/30/2012	567,084	722	230	+18.83	+0.33	+8.56	466.39	8.23
04/01/2012-06/30/2012	520,106	739	204	+102.98	+1.98	+8.39	333.44	6.41
01/02/2012-03/31/2012	136,055	131	54	+29.91	+2.20	+7.08	66.46	4.88
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	36	26	BLOOMBERGTERMINAL	78.25 %
	7	7	MARKETAXESS-TRADES	20.76 %
	3	2	ISSUE PRICE	0.99 %
GOVERNMENTS	170	51	BLOOMBERGTERMINAL	100.00 %
MORTGAGES	53	28	TULLET PREBON	71.32 %
	45	36	BLOOMBERGTERMINAL	28.68 %
MUNICIPALS	1	1	MSRB-TRADES	100.00 %

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SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End September 30, 2018



EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates global fixed income executions from July 01,2018 to September 30,2018. The analysis included trading of 102 trades in 50 different issues representing \$37,664,329 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.

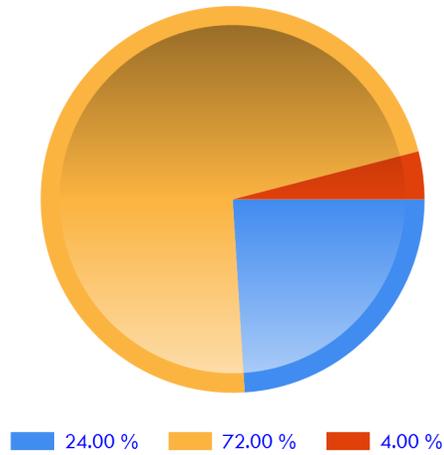
Results:

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		Q2	Q1	Q4	Q3
							(Thous. \$)	BP	2018	2018	2017	2017
BUYS	18	52	23	2.09	1.18	+5.24	11.37	6.42	1.41	1.88	+0.15	1.96
SELLS	20	50	34	+2.27	+1.14	+5.24	8.19	4.10	+6.60	+1.58	9.10	+5.23
GRAND TOTAL	38	102	50	+0.18	+0.05	+5.24	19.56	5.19	+1.62	0.20	4.64	+1.49

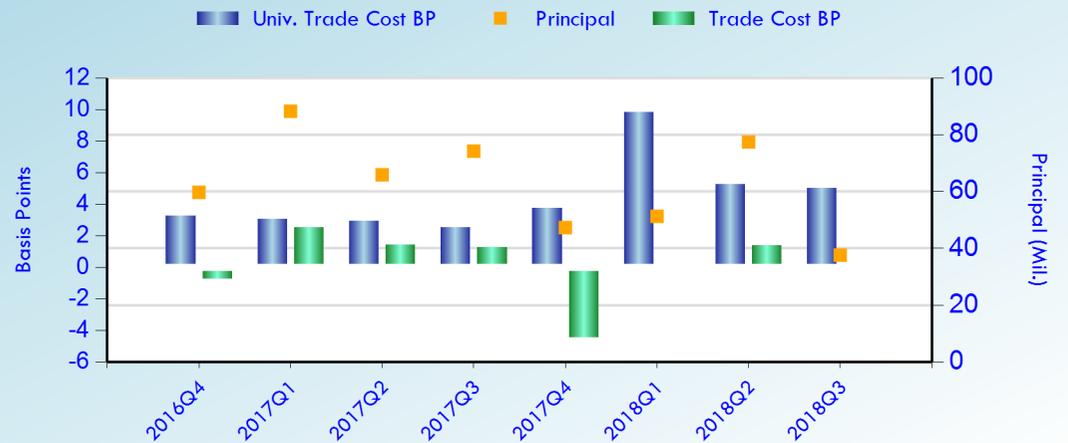
EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q2 2018	Q1 2018	Q4 2017	Q3 2017
Governments	27	70	22	1.66	0.61	+5.24	15.81 5.85	+1.62	+2.21	+0.05	+1.09
Corporates	9	27	23	+5.42	+5.88	+5.24	+0.59 +0.64	+0.01	+8.64	2.85	+4.20
Mortgages	1	5	5	3.58	24.86	+5.24	4.34 30.10	+28.04	54.51	29.94	5.72

Bonds by Principal Traded



Historical Trade Cost Trend

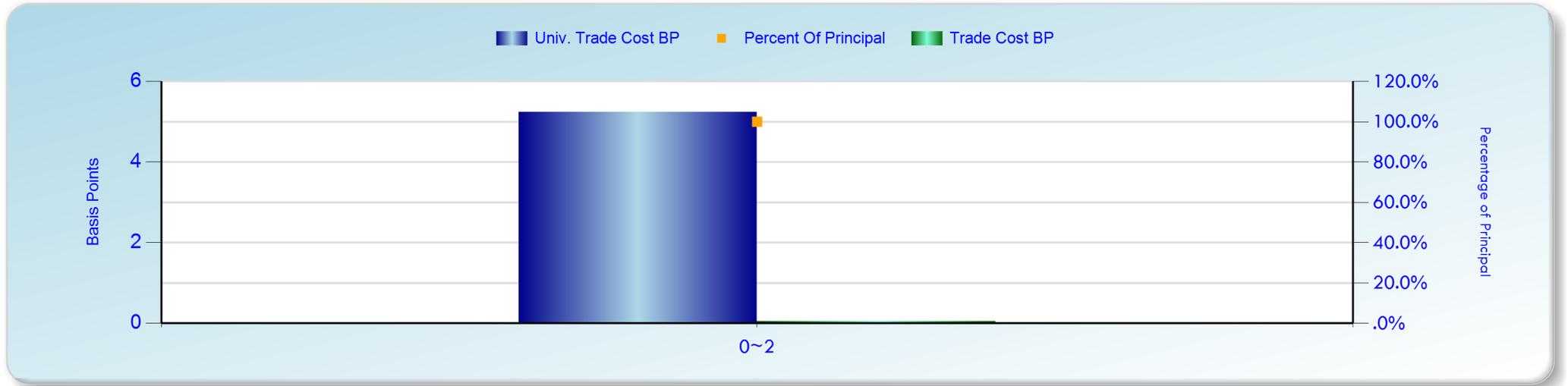




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

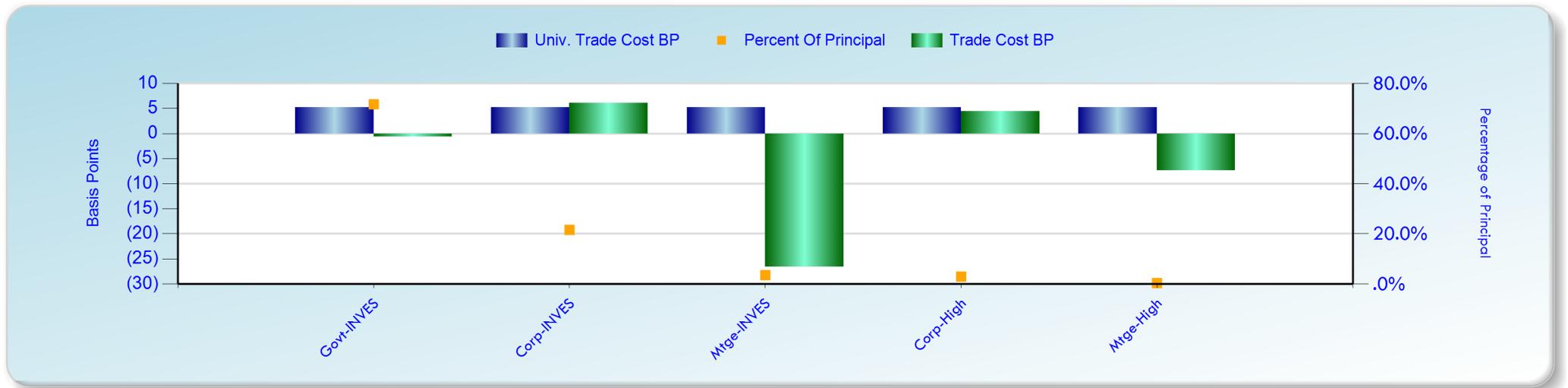
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	38	102	50	+0.18	+0.05	+5.24	19.56	5.19



EXECUTIVE SUMMARY

GRADING SUMMARY

Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	27	70	22	1.66	0.61	+5.24	15.81	5.85
Corp-INVESTMENT GRADE	8	21	20	+4.94	+6.08	+5.24	+0.68	+0.84
Mtge-INVESTMENT GRADE	1	4	4	3.49	26.61	+5.24	4.17	31.85
Corp-High Yield	1	6	3	+0.48	+4.42	+5.24	0.09	0.82
Mtge-High Yield	<1	1	1	0.10	7.33	+5.24	0.17	12.57



EXECUTIVE SUMMARY

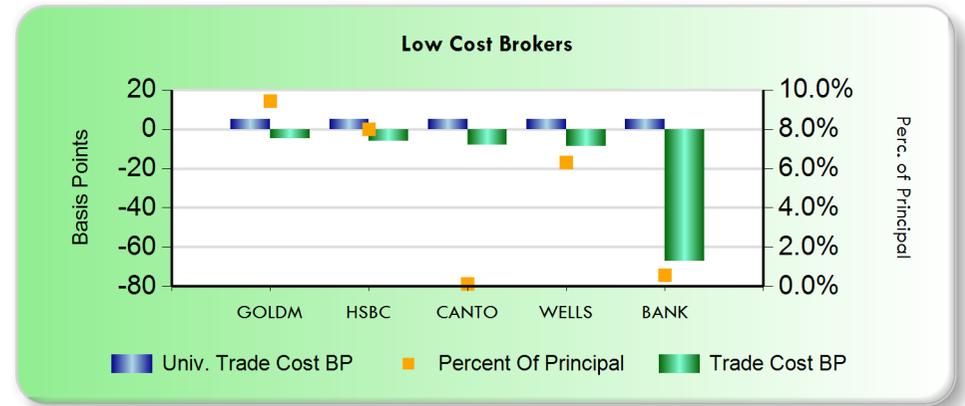
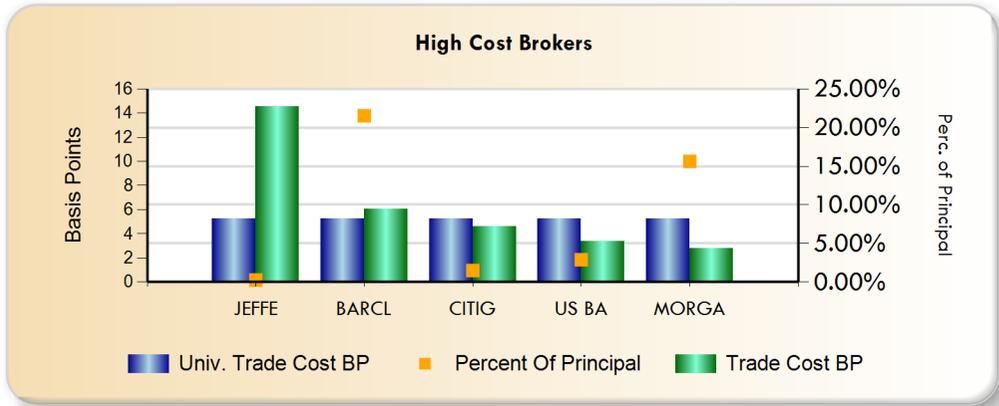
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
AAA	28.51	76	28	5.14	1.80	+5.24	20.08	7.04
BBB+	2.78	7	7	+1.91	+6.89	+5.24	+0.46	+1.65
BBB	2.77	6	6	+4.46	+16.08	+5.24	+3.00	+10.84
A	1.72	4	3	1.51	8.80	+5.24	2.41	14.04
BB	<1	4	1	0.04	0.78	+5.24	0.32	6.02
A+	<1	1	1	+0.07	+1.53	+5.24	0.17	3.71
B+	<1	1	1	+0.26	+7.49	+5.24	+0.08	+2.25
BB-	<1	1	1	+0.26	+12.10	+5.24	+0.15	+6.86
BBB-	<1	1	1	+0.00	+0.00	+5.24	0.10	5.24
NR	<1	1	1	0.10	7.33	+5.24	0.17	12.57



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)								
JEFFERIES & CO	<1	1	1	+0.14	+14.52	+5.24	+0.09	+9.28
BARCLAYS	8	18	15	+4.89	+6.03	+5.24	+0.64	+0.79
CITIGROUP	<1	3	2	+0.26	+4.60	+5.24	0.04	0.64
US BANCORP	1	2	2	+0.37	+3.39	+5.24	0.20	1.85
MORGAN STANLEY	6	9	8	+1.65	+2.80	+5.24	1.43	2.44
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
GOLDMAN SACHS	4	10	9	1.67	4.71	+5.24	3.53	9.95
HSBC BANK	3	6	6	1.85	6.15	+5.24	3.43	11.39
CANTOR FITZGERALD	<1	1	1	0.04	8.17	+5.24	0.07	13.41
WELLS FARGO	2	6	3	2.03	8.57	+5.24	3.28	13.81
BANK OF AMERICA	<1	1	1	1.46	67.01	+5.24	1.58	72.25



COUNTRY PERFORMANCE

COUNTRY SUMMARY								TRADE COST HISTORICAL PERFORMANCE				
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2018	Q1 2018	Q4 2017	Q3 2017
UNITED STATES	38	102	50	+0.18	+0.05	+5.24	19.56	5.19	+1.62	0.57	4.97	+1.48



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	20	50	34	+2.27	+1.14	+5.24	8.19	4.10

Manager PERFORMANCE

Manager PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q2 2018	Q1 2018	Q4 2017	Q3 2017
PRUDENTIAL INVESTMEN	38	102	50	+0.18	+0.05	+5.24	19.56 5.19	+1.62	0.20	4.64	+1.49

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q2 2018	Q1 2018	Q4 2017	Q3 2017
BARCLAYS	8	18	15	+4.89	+6.03	+5.24	+0.64	+0.79	0.62	+5.09	6.14	+4.04
MORGAN STANLEY	6	9	8	+1.65	+2.80	+5.24	1.43	2.44	+0.85	0.17	1.71	0.11
GOLDMAN SACHS	4	10	9	1.67	4.71	+5.24	3.53	9.95	+3.01	14.92	+6.45	1.23
HSBC BANK	3	6	6	1.85	6.15	+5.24	3.43	11.39	26.96	+20.55	-	-
CREDIT SUISSE	3	7	5	0.08	0.28	+5.24	1.60	5.52	+4.94	22.22	+1.23	+8.77
JP MORGAN CHASE	2	13	12	+0.42	+1.70	+5.24	0.87	3.54	+9.53	+2.71	0.97	0.81
DEUTSCHE BANK	2	5	5	0.47	1.93	+5.24	1.73	7.17	+6.20	+1.73	7.93	8.53
WELLS FARGO	2	6	3	2.03	8.57	+5.24	3.28	13.81	2.15	13.27	+1.90	+10.58
NOMURA	2	6	5	+0.12	+0.68	+5.24	0.84	4.56	+1.32	+0.57	+0.34	+1.11
US BANCORP	1	2	2	+0.37	+3.39	+5.24	0.20	1.85	-	-	-	-
TD SECURITIES	<1	6	5	+0.00	+0.02	+5.24	0.42	5.22	+0.19	0.16	+0.35	+2.52
RBC CAPITAL MARKETS	<1	2	1	0.09	1.25	+5.24	0.49	6.49	+0.25	+2.92	+2.57	+4.95
CITIGROUP	<1	3	2	+0.26	+4.60	+5.24	0.04	0.64	2.64	1.53	68.48	0.69
SG AMERICAS	<1	1	1	+0.14	+2.80	+5.24	0.12	2.44	4.23	-	-	4.09
CITADEL SECURITIES	<1	2	2	+0.01	+0.16	+5.24	0.24	5.08	+0.17	-	1.29	-
MERRILL LYNCH	<1	1	1	0.13	4.02	+5.24	0.30	9.26	+20.27	-	4.34	+3.81
BANK OF AMERICA	<1	1	1	1.46	67.01	+5.24	1.58	72.25	+3.35	+6.51	+0.30	+2.20
BAIRD, ROBERT W	<1	1	1	+0.00	+0.00	+5.24	0.07	5.24	+2.90	-	-	-
DANSKE BANK	<1	1	1	+0.02	+2.12	+5.24	0.03	3.12	-	-	-	-
JEFFERIES & CO	<1	1	1	+0.14	+14.52	+5.24	+0.09	+9.28	+2.35	+5.71	0.03	+7.07
CANTOR FITZGERALD	<1	1	1	0.04	8.17	+5.24	0.07	13.41	-	+7.93	-	-

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	912810SC US TREASURY N/B 05/48 3.125	Govt	07/25/2018 05/15/2048	PRUDENTIAL INVE BARCLAYS	US	USD	1,143,418	101.188	100.697	+48.50	+5,545
S	912810SA US TREASURY N/B 02/48 3	Govt	09/20/2018 02/15/2048	PRUDENTIAL INVE WELLS FARGO	US	USD	774,056	95.563	96.169	+63.45	+4,911
S	71654QCC PETROLEOS MEXICANOS COMPANY	Corp	09/18/2018 09/21/2047	PRUDENTIAL INVE BARCLAYS	US	USD	558,900	93.150	93.751	+64.53	+3,606
S	460146CP INTERNATIONAL PAPER CO SR UN	Corp	07/12/2018 02/15/2027	PRUDENTIAL INVE MORGAN STANLEY	US	USD	1,645,686	91.427	91.554	+13.85	+2,280
S	50247VAC LYB INTL FINANCE BV COMPANY	Corp	09/20/2018 03/15/2044	PRUDENTIAL INVE MORGAN STANLEY	US	USD	161,625	97.955	99.111	+118.05	+1,908
S	912810SA US TREASURY N/B 02/48 3	Govt	08/13/2018 02/15/2048	PRUDENTIAL INVE HSBC BANK	US	USD	905,612	98.974	99.146	+17.40	+1,576
B	912810SA US TREASURY N/B 02/48 3	Govt	08/06/2018 02/15/2048	PRUDENTIAL INVE BARCLAYS	US	USD	241,592	98.609	98.199	+41.63	+1,006
B	9128284Z US TREASURY N/B 08/25 2.75	Govt	09/04/2018 08/31/2025	PRUDENTIAL INVE BARCLAYS	US	USD	830,825	99.500	99.390	+11.03	+916
B	61744YAP MORGAN STANLEY SR UNSECURED	Corp	09/26/2018 01/24/2029	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	249,730	96.050	95.784	+27.73	+692
S	040114HR REPUBLIC OF ARGENTINA SR UNS	Govt	07/30/2018 01/11/2048	PRUDENTIAL INVE BARCLAYS	US	USD	157,900	78.950	79.166	+27.31	+431
B	040114GL REPUBLIC OF ARGENTINA SR UNS	Govt	07/30/2018 12/31/2033	PRUDENTIAL INVE BARCLAYS	US	USD	223,123	96.450	96.289	+16.66	+372
S	585055BS MEDTRONIC INC COMPANY GUAR 0	Corp	08/20/2018 03/15/2025	PRUDENTIAL INVE US BANCORP	US	USD	648,345	100.208	100.259	+5.11	+331
S	031162CF AMGEN INC SR UNSECURED 06/51	Corp	07/09/2018 06/15/2051	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	315,670	100.213	100.317	+10.34	+326
B	912810SA US TREASURY N/B 02/48 3	Govt	07/09/2018 02/15/2048	PRUDENTIAL INVE WELLS FARGO	US	USD	312,421	100.781	100.685	+9.54	+298



S	61746BEG MORGAN STANLEY SR UNSECURED	Corp	08/02/2018 01/22/2047	PRUDENTIAL INVE CREDIT SUISSE	US	USD	264,608	98.003	98.103	+10.22	+270
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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	912810SA US TREASURY N/B 02/48 3	Govt	07/25/2018 02/15/2048	PRUDENTIAL INVE BARCLAYS	US	USD	1,140,697	98.762	98.277	49.09	5,600
B	912810SC US TREASURY N/B 05/48 3.125	Govt	09/20/2018 05/15/2048	PRUDENTIAL INVE WELLS FARGO	US	USD	773,904	97.963	98.586	63.61	4,922
S	585055BT MEDTRONIC INC COMPANY GUAR 0	Corp	07/09/2018 03/15/2035	PRUDENTIAL INVE WELLS FARGO	US	USD	513,967	104.465	103.993	45.15	2,321
B	913017CY UNITED TECHNOLOGIES CORP SR	Corp	08/13/2018 11/16/2028	PRUDENTIAL INVE HSBC BANK	US	USD	519,812	99.964	100.385	42.07	2,187
B	912810SC US TREASURY N/B 05/48 3.125	Govt	08/13/2018 05/15/2048	PRUDENTIAL INVE HSBC BANK	US	USD	908,215	101.477	101.644	16.50	1,498
S	44974AAS IMT TRUST IMTT 2017 APTS AFX	Mtge	08/03/2018 06/15/2034	PRUDENTIAL INVE BANK OF AMERICA	US	USD	218,272	99.215	98.550	67.01	1,463
B	9128284N US TREASURY N/B 05/28 2.875	Govt	07/12/2018 05/15/2028	PRUDENTIAL INVE MORGAN STANLEY	US	USD	1,431,787	100.125	100.212	8.72	1,249
S	36197XAJ GS MORTGAGE SECURITIES TRUST	Mtge	07/13/2018 06/10/2046	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	216,519	98.418	97.980	44.50	964
S	12593FBD COMM MORTGAGE TRUST COMM 201	Mtge	07/27/2018 07/10/2048	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	683,745	100.551	100.410	14.00	957
S	912828Y7 US TREASURY N/B 07/25 2.875	Govt	09/04/2018 07/31/2025	PRUDENTIAL INVE BARCLAYS	US	USD	842,526	100.301	100.192	10.87	916
S	9128284N US TREASURY N/B 05/28 2.875	Govt	08/08/2018 05/15/2028	PRUDENTIAL INVE CREDIT SUISSE	US	USD	943,283	99.293	99.224	6.90	651
S	9128284V US TREASURY N/B 08/28 2.875	Govt	09/06/2018 08/15/2028	PRUDENTIAL INVE MORGAN STANLEY	US	USD	825,257	100.031	99.961	7.03	580
S	9128284N US TREASURY N/B 05/28 2.875	Govt	07/26/2018 05/15/2028	PRUDENTIAL INVE BARCLAYS	US	USD	228,508	99.352	99.116	23.75	543
B	912810SC US TREASURY N/B 05/48 3.125	Govt	09/20/2018 05/15/2048	PRUDENTIAL INVE MORGAN STANLEY	US	USD	122,792	98.234	98.586	35.76	439
S	9128284X US TREASURY N/B 08/23 2.75	Govt	09/18/2018 08/31/2023	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	496,093	99.219	99.148	7.13	354



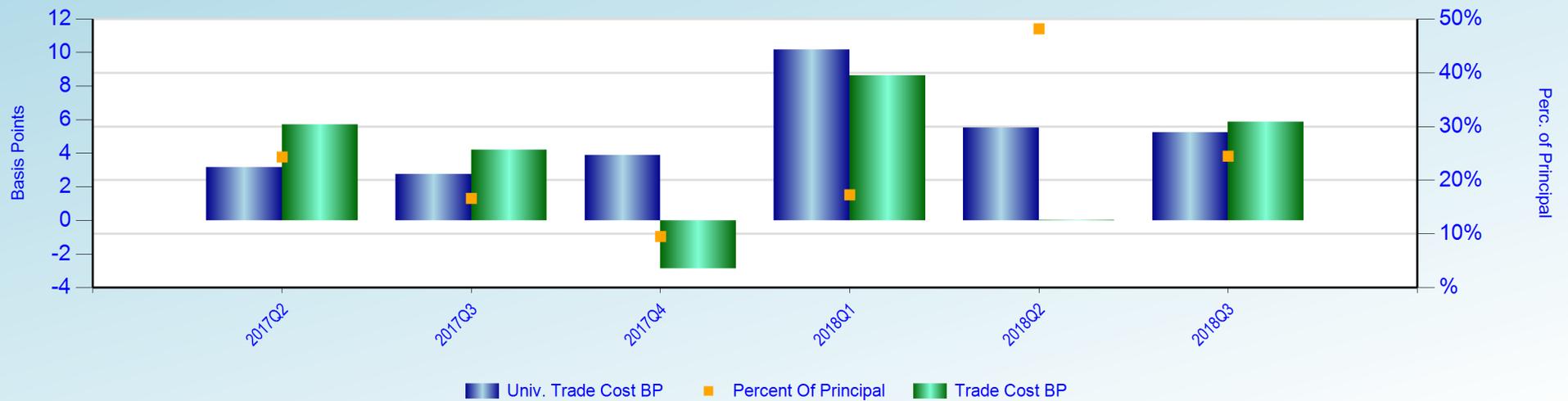
AGENCIES



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	9	27	23	+5.42	+5.88	+5.24	+0.59	+0.64

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	27	70	22	1.66	0.61	+5.24	15.81	5.85

GOVERNMENTS



BOND TYPE PERFORMANCE

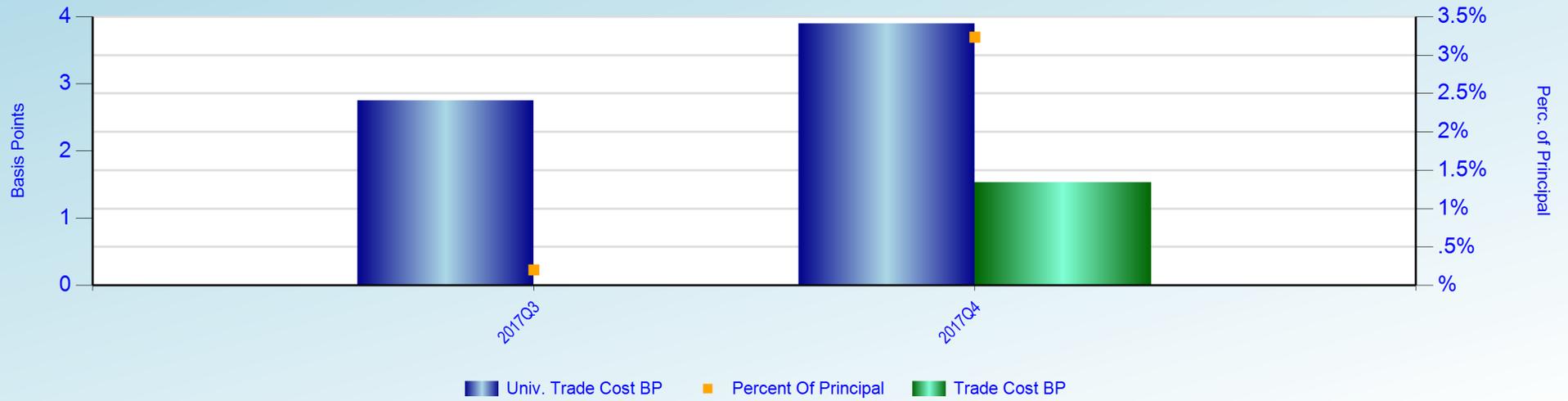
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	Cost Diff. from Universe BP
MORTGAGES	1	5	5	3.58	24.86	+5.24	4.34	30.10

MORTGAGES



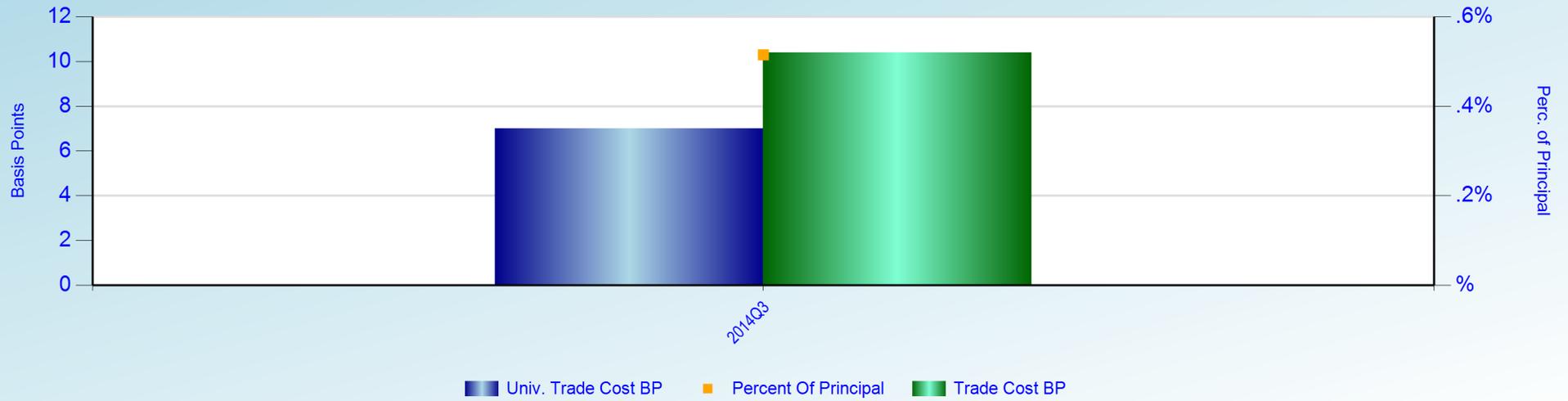


MUNICIPALS





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	27	70	22	1.66	0.61	+5.24	15.81	5.85



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+	3	7	7	+1.91	+6.89	+5.24	+0.46	+1.65
BBB	3	6	6	+4.46	+16.08	+5.24	+3.00	+10.84
A	2	4	3	1.51	8.80	+5.24	2.41	14.04
BB	<1	4	1	0.04	0.78	+5.24	0.32	6.02
A+	<1	1	1	+0.07	+1.53	+5.24	0.17	3.71
B+	<1	1	1	+0.26	+7.49	+5.24	+0.08	+2.25
BB-	<1	1	1	+0.26	+12.10	+5.24	+0.15	+6.86
BBB-	<1	1	1	+0.00	+0.00	+5.24	0.10	5.24
AAA	<1	2	2	+0.01	+0.38	+5.24	0.09	4.86

RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	1	4	4	3.49	26.61	+5.24	4.17	31.85
NR	<1	1	1	0.10	7.33	+5.24	0.17	12.57



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	27	70	22	1.66	0.61	+5.24	15.81	5.85



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	9	27	23	+5.42	+5.88	+5.24	+0.59	+0.64



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	1	5	5	3.58	24.86	+5.24	4.34	30.10

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
07/01/2018-09/30/2018	37,664	102	50	+0.18	+0.05	+5.24	19.56	5.19
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	166,434	446		+11.71	+0.70	+6.86	102.48	6.16
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

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43
07/01/2013-09/30/2013	187,166	136	90	+47.79	+2.55	+6.68	77.19	4.13
04/01/2013-06/30/2013	157,154	129	98	+104.81	+6.67	+1.44	+82.21	+5.23
01/02/2013-03/31/2013	281,064	206	156	+366.87	+13.05	+1.56	+323.04	+11.49
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44
10/01/2012-12/31/2012	132,722	116	90	+470.95	+35.48	+2.11	+442.94	+33.37
07/01/2012-09/30/2012	120,859	101	77	+125.20	+10.36	+2.09	+99.92	+8.27
04/01/2012-06/30/2012	85,150	85	60	+71.84	+8.44	+2.27	+52.54	+6.17
01/02/2012-03/31/2012	31,666	13	9	0.75	0.24	+7.38	24.12	7.62
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	22	21	BLOOMBERGTERMINAL	87.04 %
	4	2	ISSUE PRICE	7.32 %
	1	1	MARKETAXESS-TRADES	5.64 %
GOVERNMENTS	68	20	BLOOMBERGTERMINAL	98.43 %
	2	2	ISSUE PRICE	1.57 %
MORTGAGES	5	5	BLOOMBERGTERMINAL	100.00 %

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