



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 13

MEETING DATE: December 9, 2020

SUBJECT: Trading Cost Analysis and Commission Recapture
Third Quarter 2020

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends the Board receive and file the Quarterly Trading Cost Analysis Reports for the quarter ending September 30, 2020.

PURPOSE

This agenda item complies with SCERS' investment policy statement reporting requirements and contributes to the effective management and oversight of investment activities.

SUMMARY

SCERS utilizes the services of Elkins/McSherry, a trading cost consultant and wholly owned subsidiary of State Street, to monitor the trading costs of SCERS' public equity and fixed income managers. Elkins/McSherry provides detailed quarterly reports that analyze the various components of trading costs, the amount of principal dollars traded, and the brokers utilized by SCERS' external managers. Key takeaways during the third quarter of 2020 include:

- Overall U.S. trading volumes remained elevated during the third quarter, with U.S. equity shares and principal amount traded higher by 40% and 60%, respectively, compared to the third quarter of 2019. U.S. fixed income volumes in the third quarter remain slightly elevated compared to 2019 levels.
- Trading costs in U.S. equity markets were down considerably in the third quarter compared to prior periods, with market impact savings driven lower by sales transactions on securities with market capitalizations greater than \$25 billion (mega-cap stocks). SCERS' large cap equity managers significantly outperformed the Elkins/McSherry benchmarks during the quarter.
- International equity trading costs increased compared to the low levels experienced in the second quarter. Trading costs during the third quarter were back in line with average levels, but still significantly below market benchmarks. Trading volumes remained elevated, with the principal amount traded 40% higher than the third quarter of 2019.
- Total principal traded in SCERS' U.S. fixed income portfolio remains at elevated levels compared to 2019. Total trading costs, which are measured in basis points and based on

a markup or discount (spread) to face value, remain significantly below peer universe benchmarks as measured by Elkins/McSherry.

- SCERS received a rebate of approximately 54% of the commissions generated by the commission recapture program during the third quarter. The percentage rebate received during the third quarter is slightly above prior quarters; however, the total dollar amount of commission rebates received continues to decline. Year-to-date, the rebate is equal to 50% of the commission generated.

DISCUSSION

SCERS engages Elkins / McSherry (E/M) 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 trade 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

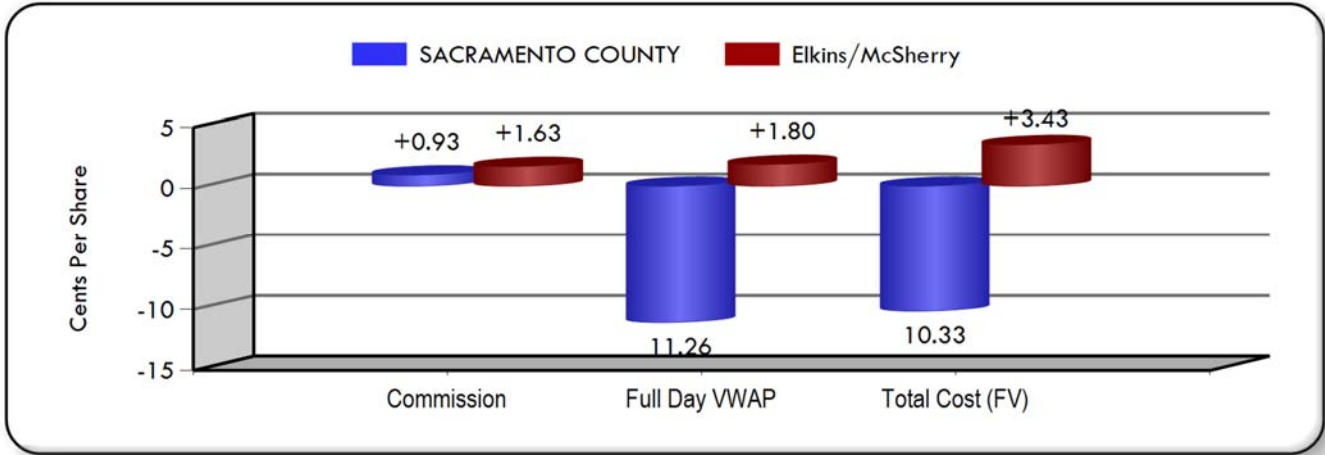
U.S. EQUITY

- SCERS' U.S. equity managers traded 6.3 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$366 million in principal. SCERS' equity managers generated an E/M E-Score¹ of -0.30 during the quarter, which signifies that costs were significantly better² than the peer universe as measured by Elkins/McSherry.
- SCERS' total trading savings equaled -10.33 cps, which is 13.76 cps lower than the peer group costs at +3.43 cps, as follows:
 - Commission cost of +0.93 cps versus peer group cost of +1.63 cps
 - Market impact savings of -11.26 cps versus peer group cost of +1.80 cps
- SCERS' total trading costs during the third quarter were significantly lower compared to prior quarters and the Elkins/McSherry universe, with third quarter trading costs better than 99% of the peer group universe. Market impact savings during the third quarter were

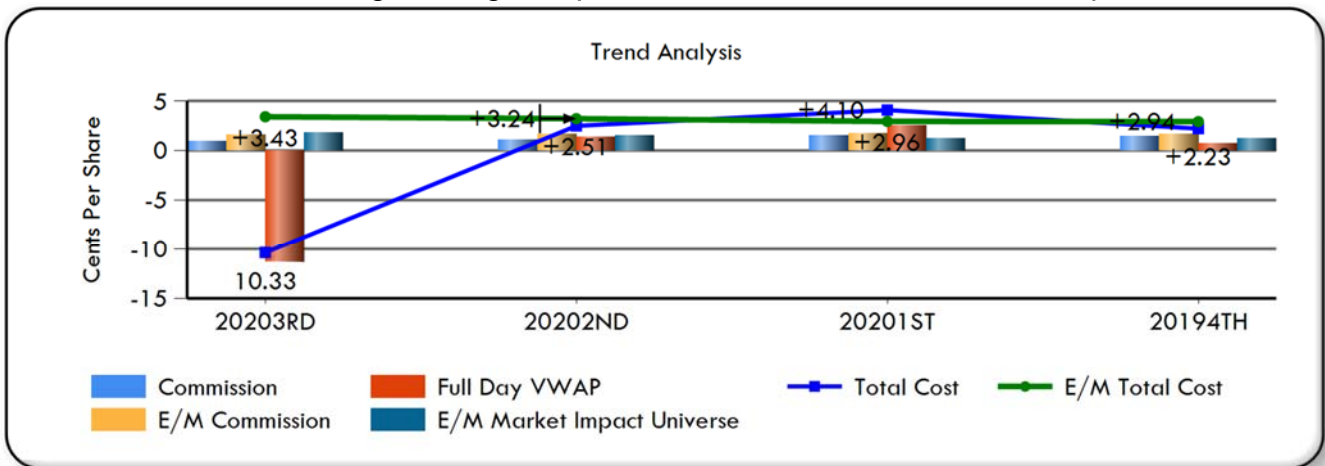
¹ Elkins/McSherry E-Score Rank evaluates transaction cost analysis, including stock specific trading ranges, to provide an assessment of execution quality compared to other market participants in the Elkins/McSherry universe.

² An E-Score of -0.30 indicates that, volatility aside, SCERS' market impact was 0.3 standard deviations better than the mean market impact of the Elkins/McSherry universe.

-11.26 cps compared to average cost of +1.56 cps over the prior four quarters. Market impact savings were primarily driven by sales transactions for mega capitalization stocks (over \$25 billion market cap), which generated savings of 25.88 cps compared to the full day VWAP.

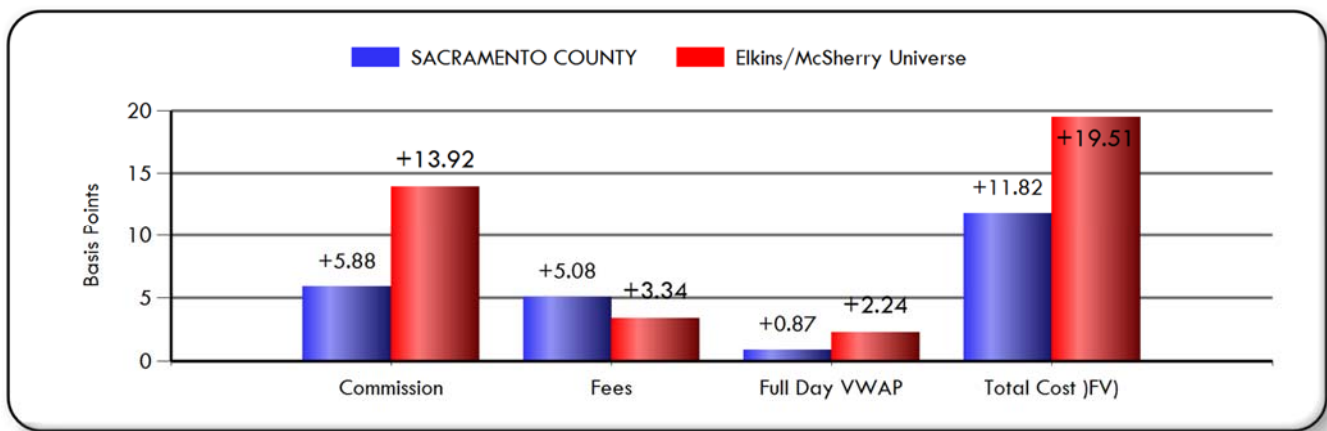


- SCERS’ total trading costs ranking was in the 99th percentile.
- SCERS’ U.S. Equity managers that experienced unfavorable total trading costs (commission plus full day VWAP) compared to the U.S. Equity peer group average cost of +3.43 cps include:
 - Weatherbie at +5.71 cps
- SCERS’ large cap equity managers (Alliance Bernstein, Eagle, AQR) all had total costs lower than the peer group average cost.
- As illustrated below, over the past four quarters SCERS’ managers have generated slightly lower commission costs than the peer group, with the exception of Q1 2020.
- U.S. small cap managers 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 +3.89 cps. Weatherbie had slightly higher costs than the Bundled cost average during the quarter due to unfavorable market impact costs.

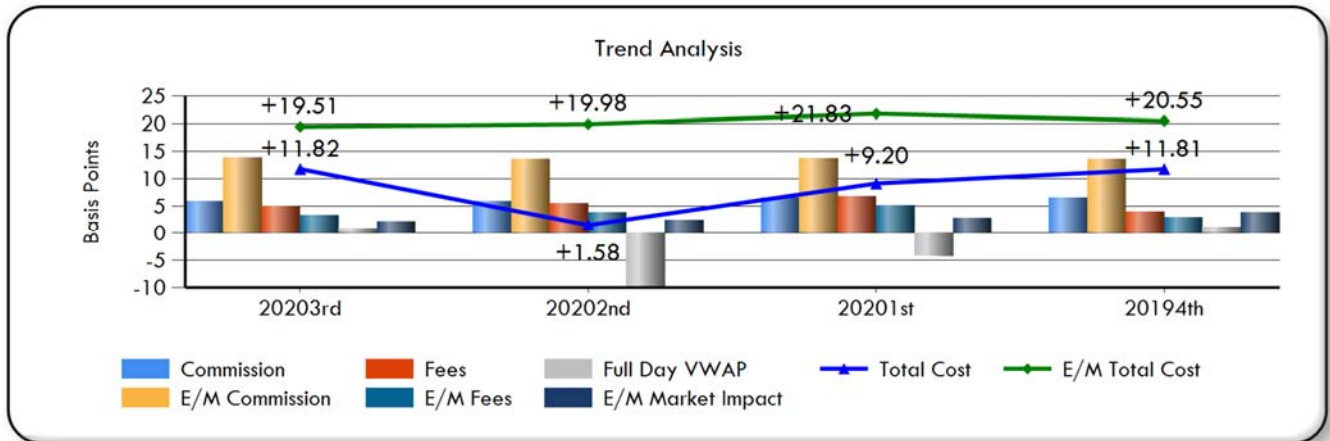


INTERNATIONAL EQUITY

- SCERS’ International Equity managers traded 7.4 million shares totaling \$112 million in principal across 25 countries.
- Total trading cost equaled +11.82 bps, which is 7.69 bps lower than the peer group at +19.51bps, as follows:
 - Commission cost of +5.88 bps versus +13.92 bps
 - Fees (country taxes, tariffs) of +5.08 bps versus +3.34 bps
 - Market impact costs of +0.87 bps versus +2.24 bps

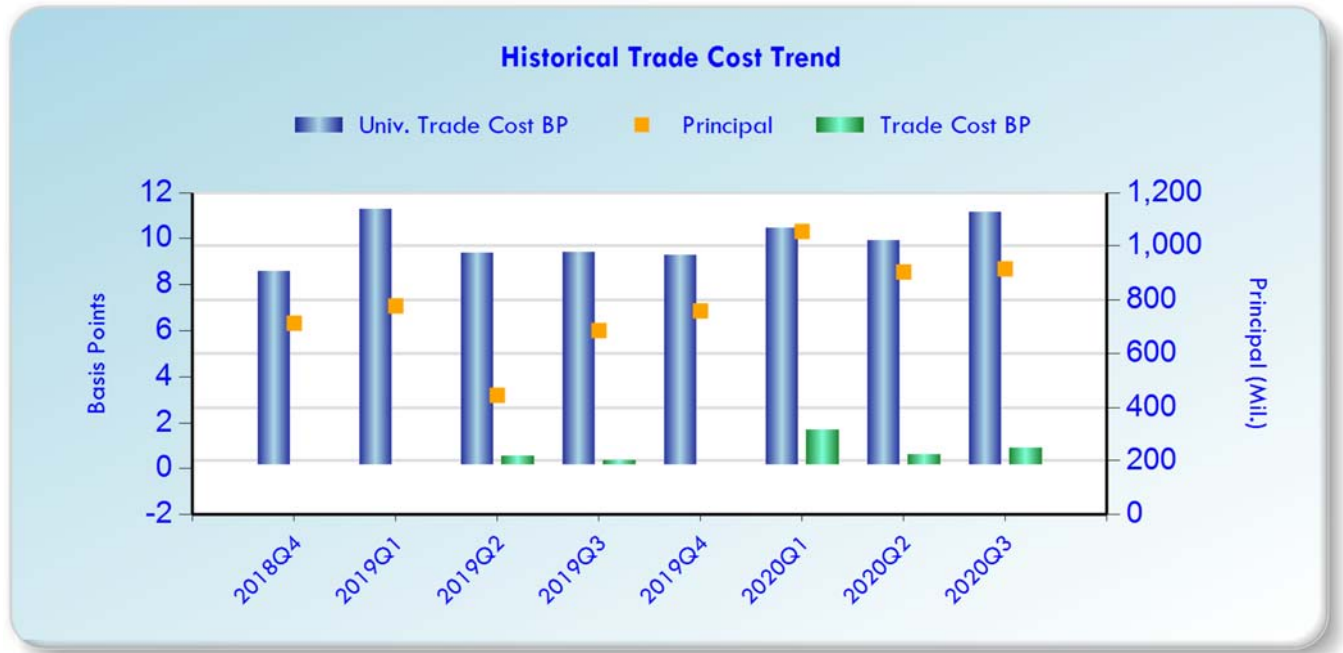


- All of SCERS’ International Equity managers analyzed generated commission costs (ranging from +4.07 bps to +6.69 bps), significantly less than the E/M peer group (ranging from +13.31 bps to +15.63 bps). This result is consistent with the previous quarters’ lower trade costs versus the peer group, as illustrated below (commission vs. E/M commission).
- SCERS’ International Equity managers generated lower market impact cost versus the peer group during the quarter (full day VWAP vs. E/M market impact), with the following exceptions:
 - William Blair at +9.81 bps versus +2.21 bps for their benchmark
- Walter Scott generated significant market savings during the quarter, with market impact savings of -5.67 bps versus the benchmark costs of +2.47 bps, resulting in total cost savings (commission and market impact) versus the benchmark of 17.09 bps.
- SCERS’ total international trading costs have been consistently below the total trading costs of the E/M universe, as shown in the chart below, with the difference averaging 11.87 bps over the past four quarters.



U.S. FIXED INCOME

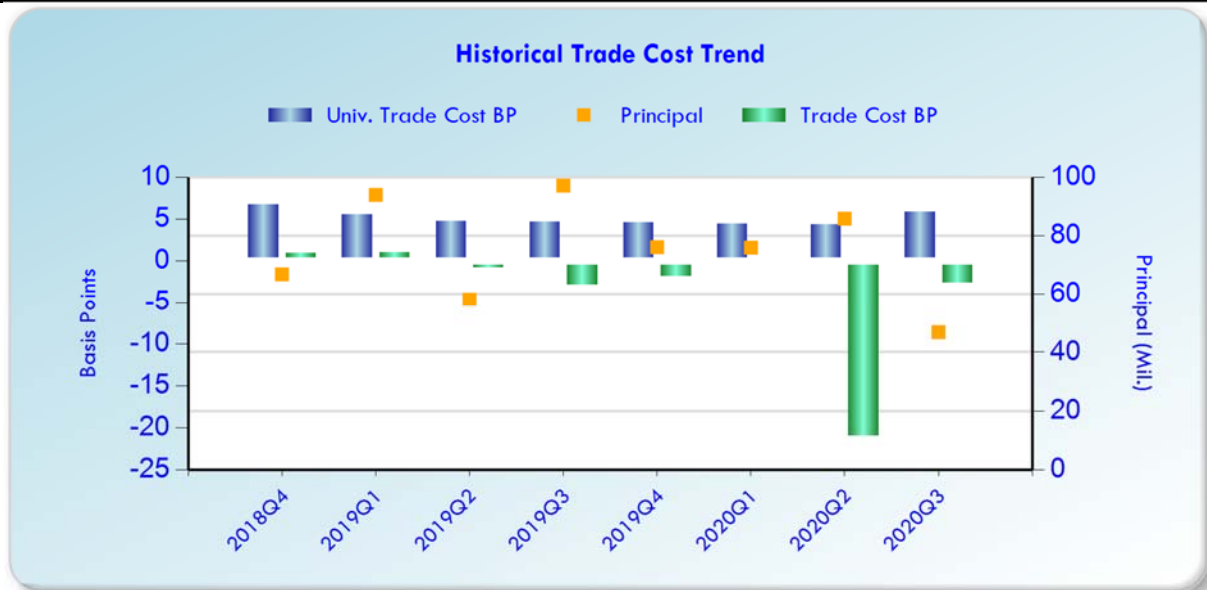
- SCERS’ U.S. Fixed Income managers conducted 532 trades totaling \$915 million in principal, as follows:
 - Governments: 347 trades totaling \$658 million
 - Mortgages: 109 trades totaling \$228 million
 - Corporates: 76 trades totaling \$29 million
- Total trading cost equaled +1.06 bps, which is 10.29 bps lower than the E/M peer group cost of +11.35 bps, as follows:
 - Governments at -0.15 bps versus +10.23 bps
 - Mortgages at +3.82 bps versus +12.90 bps
 - Corporates at +6.88 bps versus +24.69 bps
- SCERS’ Fixed Income managers generated significant cost savings across all bond types compared with the benchmark universe trading costs, with Governments generating a cost savings (versus expense) on the largest trading volume.
- As illustrated below, SCERS’ trade cost (in basis points) is consistent with the prior quarters, while overall trading volume (principal amount traded) is also consistent with the past two quarters, but slightly elevated compared to the prior year.



- 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 +0.98 bps versus +11.65 bps
 - NeubergerBerman (Treasury) at +1.62 bps versus +10.19bps

INTERNATIONAL FIXED INCOME

- SCERS is invested with Brandywine Global Fixed Income’s commingled fund; therefore, trading activity is not tracked.
- Prudential, one of SCERS’ Core Plus Fixed Income managers, is permitted up to a 20% allocation in international bonds or non-U.S. denominated bonds, which is reported as follows:
 - Prudential conducted 61 international trades totaling \$47 million in principal as follows:
 - Corporates: 40 trades totaling \$13 million
 - Governments: 13 trades totaling \$31 million
 - Mortgages: 8 trades totaling \$3 million
 - Total trading cost was -3.02 bps, which was 9.32 bps lower than the E/M peer group cost of +6.30 bps, as follows:
 - Corporates at -8.93 bps versus +6.30 bps
 - Governments at +15.68 bps versus +6.30 bps
 - Mortgages at -192.36 bps versus +6.30 bps



- Trading costs were in-line with prior quarters, with the exception of Q2 2020, which experienced noticeably lower trading costs compared to other quarters. Trade cost savings occurred in Corporates and Mortgages, while Government trading costs were higher than the benchmark.

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 2020, SCERS’ brokerage partners provided a rebate back to SCERS for approximately 54% of the commissions paid.
 - For the quarter ending September 30, 2020, the commission rebate totaled \$5,490. For comparison, the commission rebate for the quarter ending September 30, 2019 totaled \$5,290.
- Year-to-date through the end of the third quarter, SCERS’ rebate was \$17,687, which equaled 50% of the commissions generated.

ATTACHMENTS

- Elkins / McSherry Trading Cost Summary report for the quarter ending September 30, 2020 for U.S. equity, international equity, U.S. fixed income, and global fixed income.

Prepared by:

/S/

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SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End September 30, 2020





REPORT CONTENTS

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- **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, 2020 to September 30, 2020. The analysis included trading of 6,287,580 shares representing \$365.73 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 +0.93 cps (+1.59 bp) or +\$58,162 (0.70 cps (1.21 bp) better than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact savings was 11.26 cps (19.39 bp) or 13.06 cps (22.45 bp) better than the Elkins/McSherry Universe Your overall trading savings of 10.33 cps (17.80 bp) was 13.76 cps (23.65 bp) better than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 99% Total Cost Universe Rank: 99% 	<ul style="list-style-type: none"> E-Score : -0.30

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	75 %	+1.80
				25 %	+4.07



(+) = Cost

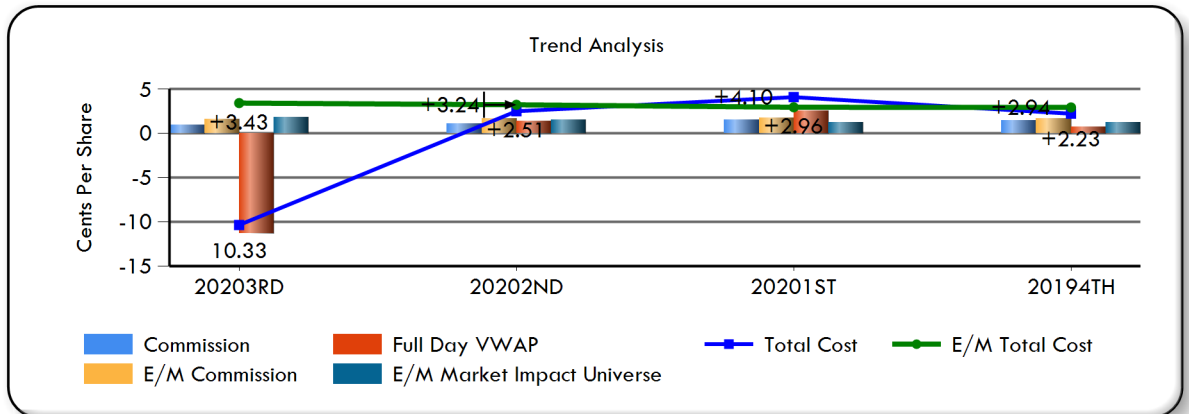
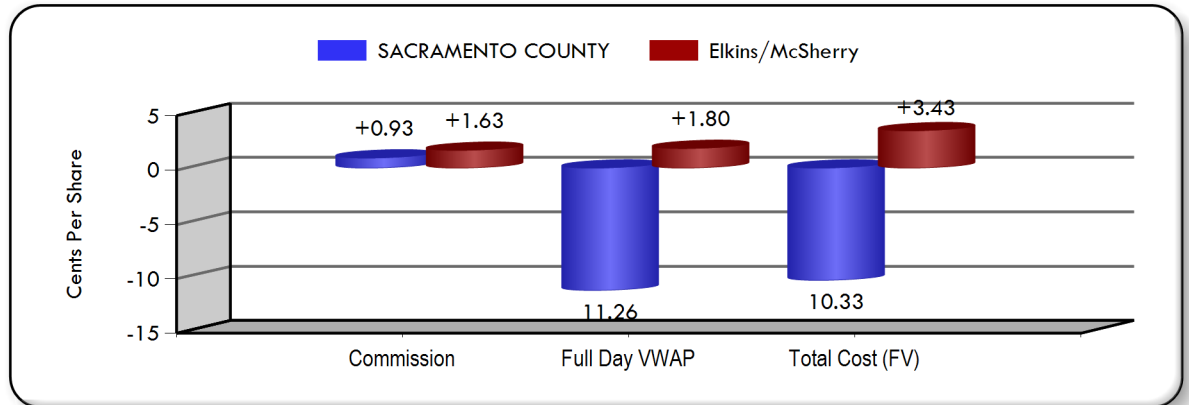
EXECUTIVE SUMMARY

TOTAL PORTFOLIO COST PERFORMANCE

Side	COMMISSION			MARKET IMPACT		Total Cost	Total Cost/Savings Vs. Universe	E -Score
	Your Avg. Commission (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	(cps)	Commission+ Full Day VWAP (cps)	
Sells	+0.76	+1.63	+3.89	20.44	+1.80	19.69	23.12	-0.45
Buys	+1.15	+1.63	+3.89	+0.87	+1.80	+2.02	1.41	0.01
Total	+0.93	+1.63	+3.89	11.26	+1.80	10.33	13.76	-0.30

TRADING COMPONENTS

	Buys	Sells
Trade Principal	115,612,005	250,122,513
Shares	2,710,862	3,576,718
Unique Names	560	1,002
Liquidity (% ADV)	0.041	0.044
Avg. Execution Size	2,121	2,039
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,278	1,754



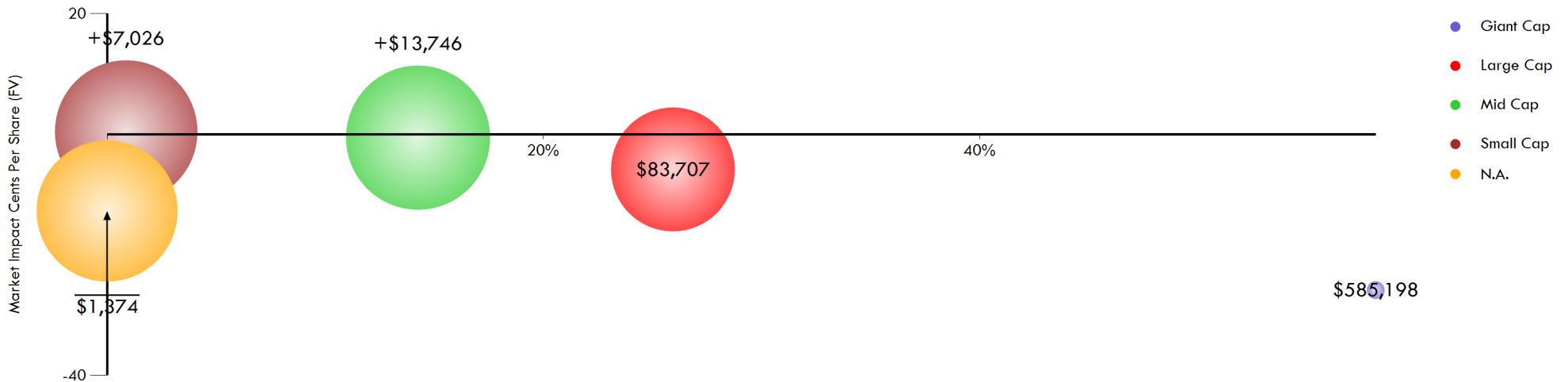
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EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	All Trading Universe	Full Day VWAP	Universe Full Day VWAP	Rank Full Day VWAP	(cps)	Commission+ Full Day VWAP Vs. Universe		
	(\$)		(cps)	(cps)	(cps)	(cps)	(cps)	(cps)			
Giant Cap	58.32 %	2,742	+0.59	+1.63	25.88	+2.94	96 %	25.29	29.85	-0.43	Over \$25 B
Large Cap	26.09 %	1,342	+0.76	+1.63	5.84	+2.41	90 %	5.08	9.11	-0.19	\$5 B To \$25 B
Mid Cap	14.41 %	2,390	+1.24	+1.63	0.58	+1.58	79 %	+0.66	2.55	-0.02	\$1 B To \$5 B
Small Cap	1.03 %	2,764	+2.60	+1.63	+0.43	+0.77	59 %	+3.03	+0.62	0.07	\$250 M To \$1 B
N.A.	0.15 %	2,221	+0.38	+1.63	12.75	+1.80	99 %	12.37	15.80	-0.45	

Total Cost by Market Cap: (USD)



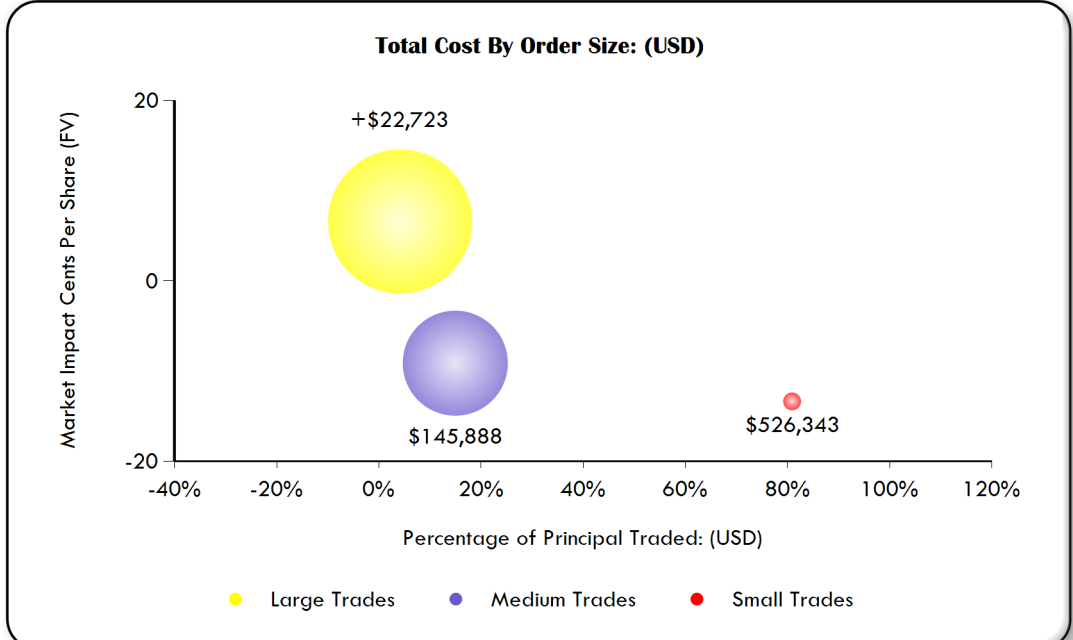
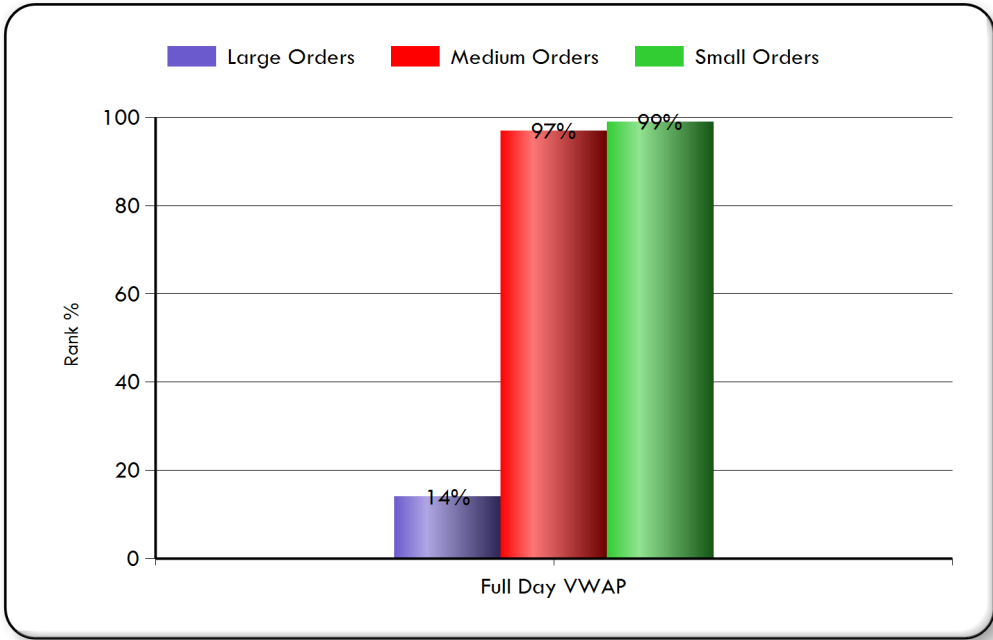


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EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Shares Per Order	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score	Absolute Size (Shares)
				Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP	(cps)	Commission+Full Day VWAP Vs. Universe (cps)		
Large Orders	5	57,309	N/A	+1.35	+1.63	+6.58	+1.80	14 %	+7.93	+4.50	0.15	50K Or More
Med. Orders	98	18,174	N/A	+1.01	+1.63	8.94	+1.80	97 %	7.93	11.36	-0.46	10K-50K
Small Orders	2,929	1,441	N/A	+0.86	+1.63	13.44	+1.80	99 %	12.58	16.01	-0.30	10K Or Less





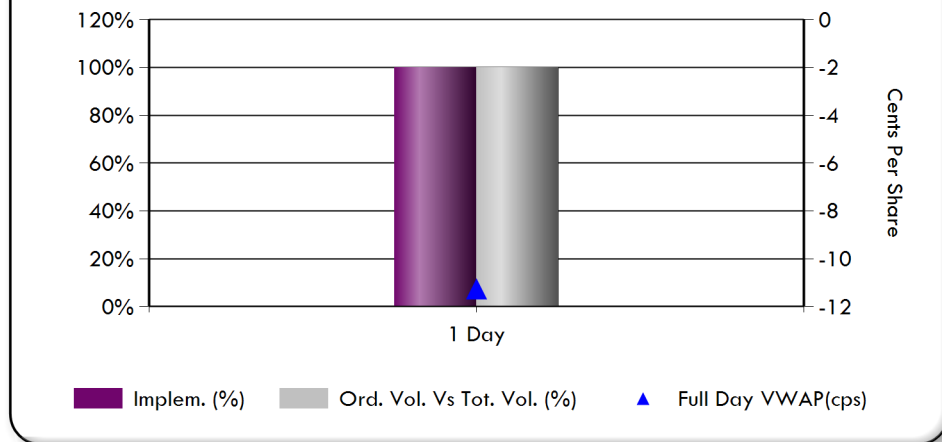
(+) = Cost

EXECUTIVE SUMMARY

IMPLEMENTATION DAYS BY TRADE

Period	Percent Traded (%)	Order Vol. Vs Total Vol. (%)	Full Day VWAP (cps)	E - Score
1 Day	100.00	100%	11.26	-0.30

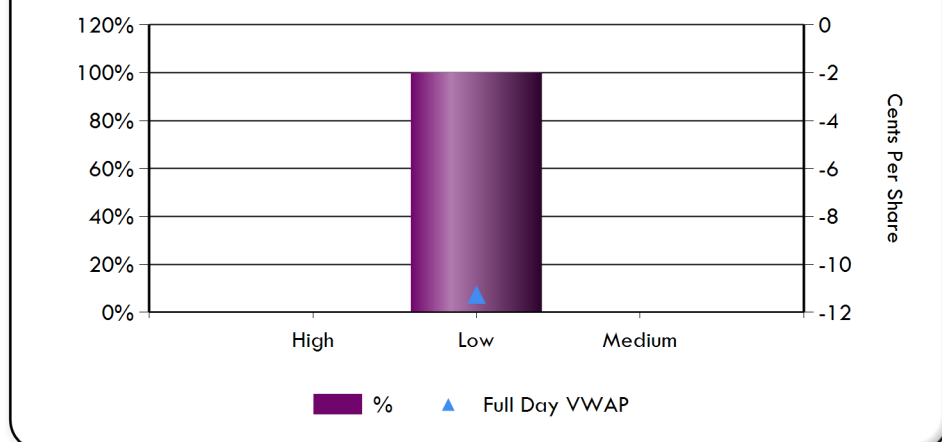
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score
0%~20% of daily vol.	L	100%	11.26	-0.30

Avg. % of Daily Volume





(+) = Cost

EXECUTIVE SUMMARY

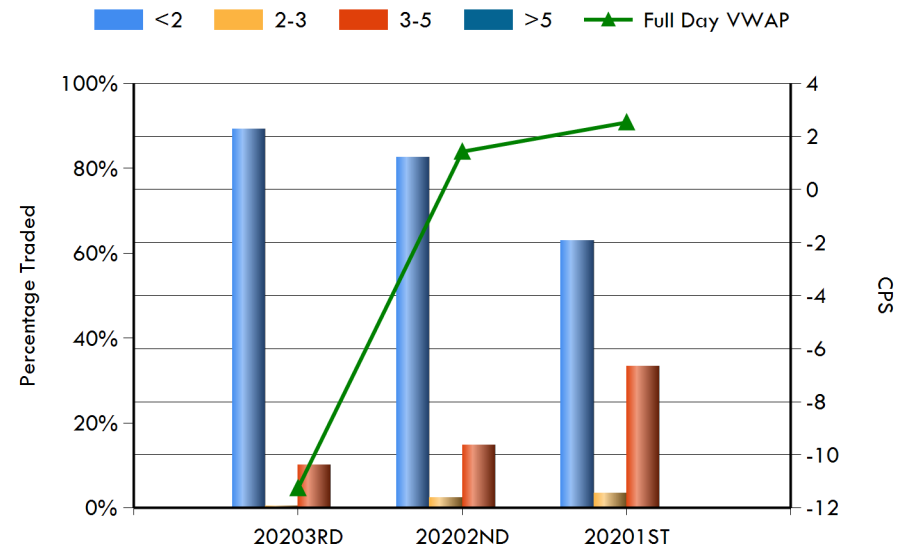
COMMISSION REVIEW

Top 10 Broker

Commission Trends

Broker	Total Commission (\$)	Commission 20203rd (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20202ND (cps)	20201ST (cps)	20194TH (cps)
JP MORGAN	10,560	+0.55	+1.63	+3.89	+0.26	+0.39	+0.15
LIQUIDNET	1,770	+1.72	+1.63	+3.89	+2.87	+3.45	+3.58
CAPITAL IN	6,058	+3.63	+1.63	+3.89	+2.84	+3.15	+3.15
ITG	3,874	+1.67	+1.63	+3.89	+2.88	+3.52	+2.78
RAYMOND JA	1,883	+3.73	+1.63	+3.89	+1.56	+3.43	+3.60
GOLDMAN SA	3,010	+0.50	+1.63	+3.89	+0.27	+0.73	+0.34
COWEN & CO	9,810	+3.87	+1.63	+3.89	+3.57	+3.06	+4.05
PIPER JAFF	1,741	+3.53	+1.63	+3.89	+3.77	+3.59	+3.52
THEMIS TRA	2,299	+1.60	+1.63	+3.89	+2.07	+3.53	+3.42
MORGAN STA	2,655	+0.57	+1.63	+3.89	+0.95	+0.08	+0.12

Commission Category Trend



NOTES

(+) = Cost

TRADE CYCLE DETAIL

Manager Performance (Full Day VWAP)

					COMMISSION		MARKET IMPACT		TOTAL COST/SAVIN GS	RANK TREND - Full Day VWAP		
Manager	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20202ND (%)	20201ST (%)	20194TH (%)
ALLIANCE R 3000 CAPI	151	1,330	1,751,656	-0.73	+0.59	+1.63	41.77	99 %	44.61	2	67	4
AQR	141	2,768	2,892,765	0.04	+0.07	+1.63	+1.22	58 %	2.14	55	40	57
WEATHERBIE	34	1,172	646,840	0.10	+2.54	+1.63	+5.71	18 %	+4.82	6	7	10
EAGLE CAPITAL MANAGE	29	15,623	468,695	-0.21	+1.84	+1.63	6.46	96 %	8.05	98	8	96
DALTON, GREINER, HAR	10	5,996	527,624	-0.21	+3.92	+1.63	3.37	90 %	2.89	84	98	92

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	+1.80

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	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	20202ND (%)	20201ST (%)	20194TH (%)
JP MORGAN CHASE	161	1,758	1,914,888	-0.70	10,560	+0.55	+1.63	38.97	99 %	41.85	9	88	36
MERRILL LYNCH	34	2,718	633,348	0.04	647	+0.10	+1.63	+1.31	57 %	2.01	72	9	50
CITIGROUP	31	1,192	633,072	0.00	902	+0.14	+1.63	+1.56	55 %	1.73	73	39	58
GOLDMAN SACHS	24	3,403	598,910	0.04	3,010	+0.50	+1.63	0.58	78 %	3.50	52	28	39
MORGAN STANLEY	20	3,539	463,647	-0.01	2,655	+0.57	+1.63	0.23	77 %	3.09	89	96	56
CREDIT SUISSE	19	2,536	377,795	0.06	372	+0.10	+1.63	+2.81	36 %	0.52	85	3	61
SC BERNSTEIN	18	2,924	295,287	0.11	496	+0.17	+1.63	+5.60	19 %	+2.34	80	99	-
THEMIS TRADING LLC	10	1,005	143,710	0.13	2,299	+1.60	+1.63	+5.56	19 %	+3.73	3	5	3
ITG	9	1,788	232,378	0.33	3,874	+1.67	+1.63	+16.62	1 %	+14.86	1	1	11
CAPITAL INSTL SVCS	8	13,902	166,825	-0.52	6,058	+3.63	+1.63	15.89	99 %	15.69	92	99	92

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	+1.80

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	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	20202ND (%)	20201ST (%)	20194TH (%)
COWEN & CO	6	4,152	253,267	-0.21	9,810	+3.87	+1.63	3.27	90 %	2.83	88	31	94
LIQUIDNET	5	1,062	102,970	-0.19	1,770	+1.72	+1.63	4.02	91 %	5.73	31	96	63
UBS	4	7,689	38,447	-0.43	577	+1.50	+1.63	20.12	99 %	22.05	99	-	-
RAYMOND JAMES	2	1,148	50,493	0.00	1,883	+3.73	+1.63	1.42	83 %	1.12	32	92	1
WILLIAM BLAIR	2	759	19,723	0.30	710	+3.60	+1.63	+24.52	1 %	+24.69	1	2	11
CANACCORD GENUITY	2	1,609	24,131	0.07	869	+3.60	+1.63	+1.28	57 %	+1.45	95	29	1
BARCLAYS	1	51,161	51,161	0.00	1,023	+2.00	+1.63	2.95	89 %	4.38	-	-	-
PIPER JAFFRAY	1	3,521	49,300	-0.01	1,741	+3.53	+1.63	+0.13	74 %	+0.24	33	99	59
NEEDHAM & CO INC	1	1,967	31,477	0.38	1,133	+3.60	+1.63	+7.17	11 %	+7.34	20	7	99
OPPENHEIMER & CO INC	1	2,068	22,747	-0.08	819	+3.60	+1.63	8.49	97 %	8.32	98	1	2

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	+1.80

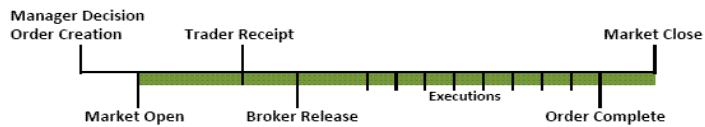
NOTES

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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	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	20202ND (%)	20201ST (%)
CRAIG - HALLUM	1	2,159	17,273	0.23	622	+3.60	+1.63	+20.58	1 %	+20.75	59	-	-
STRATEGASSECURITIES	1	5,218	5,218	-0.15	209	+4.00	+1.63	14.14	99 %	13.57	-	1	-
WELLS FARGO	1	7,448	29,792	-0.98	902	+3.03	+1.63	25.18	99 %	25.58	24	34	5
JEFFERIES & CO	<1	2,381	21,426	-0.06	916	+4.28	+1.63	+1.94	48 %	+2.79	20	1	46
BAIRD, ROBERT W	<1	6,855	13,710	-0.36	627	+4.57	+1.63	4.57	94 %	3.43	43	-	8
INSTINET	<1	6,047	24,187	-0.23	726	+3.00	+1.63	1.21	82 %	1.64	92	49	97
DAVIDSON D.A. & CO	<1	1,947	7,789	0.26	372	+4.77	+1.63	+5.63	19 %	+6.97	-	-	-
CJS SECURITIES	<1	4,250	8,500	0.22	383	+4.50	+1.63	+8.05	7 %	+9.12	-	-	-
B.RILEY & CO	<1	4,670	4,670	-0.21	234	+5.00	+1.63	12.21	99 %	10.64	-	-	69
KEEFE BRUYETTE WOODS	<1	6,469	12,938	0.00	582	+4.50	+1.63	+7.16	11 %	+8.23	70	88	93

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	+1.80

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	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	20202ND (%)	20201ST (%)	20194TH (%)
STEPHENS & CO INC	<1	2,848	5,695	-0.34	222	+3.89	+1.63	9.43	98 %	8.97	1	85	11
KEYBANC	<1	7,230	14,460	-0.53	533	+3.69	+1.63	4.26	92 %	4.01	-	1	98
HIBERNIA SOUTHCOAST	<1	4,147	12,440	-0.21	415	+3.34	+1.63	2.03	86 %	2.12	-	6	-
STIFEL NICOLAUS & CO	<1	4,181	4,181	-0.65	167	+4.00	+1.63	8.31	97 %	7.74	19	99	99
RBC CAPITAL MARKETS	<1	1,617	1,617	-0.08	45	+2.80	+1.63	0.74	79 %	1.37	99	1	85
AUTREPAT-STK	<1	108	108	0.00	0	+0.00	+1.63	+43.97	1 %	+40.54	-	-	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.89	+1.63	+1.22	+1.58	+1.80

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	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	20202ND (%)	20201ST (%)	20194TH (%)
Grand Total	151	1,330	1,751,656	-0.73	10,410	+0.59	+1.63	41.77	99 %	44.61	2	67	4
JP MORGAN CHASE	145	1,687	1,645,300	-0.77	9,872	+0.60	+1.63	45.51	99 %	48.33	2	67	5
CITIGROUP	6	294	100,029	0.04	501	+0.50	+1.63	+8.07	7 %	+5.14	99	-	-
CREDIT SUISSE	<1	6,219	6,219	0.75	37	+0.60	+1.63	+142.48	1 %	+139.65	-	-	-
AUTREPAT-STK	<1	108	108	0.00	0	+0.00	+1.63	+43.97	1 %	+40.54	-	-	-



(+) = Cost

TRADE CYCLE DETAIL

AQR Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	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	2020 2ND (%)	2020 1ST (%)	2019 4TH (%)
Grand Total	141	2,768	2,892,765	0.04	2,050	+0.07	+1.63	+1.22	58 %	2.14	55	40	57
MERRILL LYNCH	31	2,601	598,188	0.04	120	+0.02	+1.63	+1.24	58 %	2.17	72	44	50
CITIGROUP	26	2,831	532,230	0.00	373	+0.07	+1.63	+0.34	71 %	3.02	53	39	58
GOLDMAN SACHS	20	3,401	530,616	0.02	690	+0.13	+1.63	0.34	77 %	3.63	60	67	55
CREDIT SUISSE	18	2,511	371,576	0.04	334	+0.09	+1.63	+0.47	70 %	2.87	77	3	61
SC BERNSTEIN	17	2,850	285,020	0.16	342	+0.12	+1.63	+6.26	16 %	+2.95	43	-	-
MORGAN STANLEY	15	2,824	319,124	0.02	64	+0.02	+1.63	+1.73	52 %	1.68	11	82	57
JP MORGAN CHASE	14	2,327	256,011	0.00	128	+0.05	+1.63	+1.03	62 %	2.35	41	94	65



(+) = Cost

TRADE CYCLE DETAIL

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



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	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	20202ND (%)	20201ST (%)	20194TH (%)
Grand Total	10	5,996	527,624	-0.21	20,663	+3.92	+1.63	3.37	90 %	2.89	84	98	92
COWEN & CO	4	4,709	226,044	-0.19	8,830	+3.91	+1.63	1.89	85 %	1.41	91	92	94
CAPITAL INSTL SVCS	2	16,331	114,316	-0.40	4,483	+3.92	+1.63	10.20	98 %	9.71	15	99	92
JEFFERIES & CO	<1	5,162	15,485	0.03	715	+4.62	+1.63	+4.37	23 %	+5.56	87	-	33
BAIRD, ROBERT W	<1	6,855	13,710	-0.36	627	+4.57	+1.63	4.57	94 %	3.43	43	-	-
INSTINET	<1	6,047	24,187	-0.23	726	+3.00	+1.63	1.21	82 %	1.64	92	49	97
DAVIDSON D.A. & CO	<1	1,947	7,789	0.26	372	+4.77	+1.63	+5.63	19 %	+6.97	-	-	-
CJS SECURITIES	<1	4,250	8,500	0.22	383	+4.50	+1.63	+8.05	7 %	+9.12	-	-	-
JP MORGAN CHASE	<1	6,555	13,110	-0.64	553	+4.22	+1.63	7.80	97 %	7.01	99	-	-
B.RILEY & CO	<1	4,670	4,670	-0.21	234	+5.00	+1.63	12.21	99 %	10.64	-	-	69
KEEFE BRUYETTE WOODS	<1	6,469	12,938	0.00	582	+4.50	+1.63	+7.16	11 %	+8.23	70	88	93
PIPER JAFFRAY	<1	11,212	33,637	-0.11	1,177	+3.50	+1.63	0.37	78 %	0.30	89	1	64
KEYBANC	<1	7,230	14,460	-0.53	533	+3.69	+1.63	4.26	92 %	4.01	-	1	98
RAYMOND JAMES	<1	8,210	16,420	-0.48	657	+4.00	+1.63	3.76	91 %	3.19	73	-	-
HIBERNIA SOUTHCOAST	<1	4,147	12,440	-0.21	415	+3.34	+1.63	2.03	86 %	2.12	-	6	-
STIFEL NICOLAUS & CO	<1	4,181	4,181	-0.65	167	+4.00	+1.63	8.31	97 %	7.74	74	60	98
STEPHENS & CO INC	<1	4,120	4,120	-0.25	165	+4.00	+1.63	2.36	87 %	1.79	-	-	97
RBC CAPITAL MARKETS	<1	1,617	1,617	-0.08	45	+2.80	+1.63	0.74	79 %	1.37	99	1	85



(+) = Cost

TRADE CYCLE DETAIL

EAGLE CAPITAL MANAGEMENT Performance (Full Day VWAP)



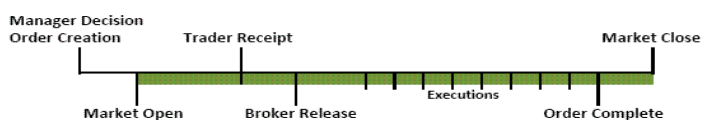
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20202ND (%)	20201ST (%)	20194TH (%)
Grand Total	29	15,623	468,695	-0.21	8,632	+1.84	+1.63	6.46	96 %	8.05	98	8	96
CAPITAL INSTL SVCS	7	10,502	52,509	-0.55	1,575	+3.00	+1.63	28.26	99 %	28.69	99	99	92
MORGAN STANLEY	5	31,092	124,366	-0.14	1,866	+1.50	+1.63	6.92	96 %	8.85	99	99	-
UBS	4	7,689	38,447	-0.43	577	+1.50	+1.63	20.12	99 %	22.05	99	-	-
ITG	3	27,389	109,556	0.67	1,643	+1.50	+1.63	+12.04	1 %	+10.11	-	-	-
MERRILL LYNCH	3	11,720	35,160	0.01	527	+1.50	+1.63	+2.61	39 %	+0.68	75	1	-
GOLDMAN SACHS	2	3,292	6,584	-0.02	99	+1.50	+1.63	+3.01	35 %	+1.08	40	1	-
SC BERNSTEIN	1	10,267	10,267	-0.48	154	+1.50	+1.63	12.86	99 %	14.79	97	99	-
BARCLAYS	1	51,161	51,161	0.00	1,023	+2.00	+1.63	2.95	89 %	4.38	-	-	-
LIQUIDNET	1	6,476	6,476	-0.57	97	+1.50	+1.63	51.59	99 %	53.52	-	-	-
STRATEGASSECURITIES	1	5,218	5,218	-0.15	209	+4.00	+1.63	14.14	99 %	13.57	-	1	-
WELLS FARGO	<1	28,484	28,484	-0.98	855	+3.00	+1.63	25.74	99 %	26.17	32	-	-
JP MORGAN CHASE	<1	234	467	0.09	7	+1.50	+1.63	+177.54	1 %	+175.61	98	99	-



(+) = Cost

TRADE CYCLE DETAIL

WEATHERBIE Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	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	20202ND (%)	20201ST (%)	20194TH (%)
Grand Total	34	1,172	646,840	0.10	16,407	+2.54	+1.63	+5.71	18 %	+4.82	6	7	10
THEMIS TRADING LLC	10	1,005	143,710	0.13	2,299	+1.60	+1.63	+5.56	19 %	+3.73	3	5	3
ITG	6	975	122,822	0.14	2,231	+1.82	+1.63	+20.70	1 %	+19.09	1	1	9
LIQUIDNET	4	1,005	96,494	-0.07	1,673	+1.73	+1.63	0.83	79 %	2.52	15	96	56
RAYMOND JAMES	2	811	34,073	0.05	1,227	+3.60	+1.63	0.30	77 %	0.13	1	92	1
WILLIAM BLAIR	2	759	19,723	0.30	710	+3.60	+1.63	+24.52	1 %	+24.69	1	2	11
GOLDMAN SACHS	2	3,428	61,710	0.29	2,222	+3.60	+1.63	3.03	89 %	2.86	1	99	4
CANACCORD GENUITY	2	1,609	24,131	0.07	869	+3.60	+1.63	+1.28	57 %	+1.45	95	29	1
NEEDHAM & CO INC	1	1,967	31,477	0.38	1,133	+3.60	+1.63	+7.17	11 %	+7.34	69	7	99
OPPENHEIMER & CO INC	1	2,068	22,747	-0.08	819	+3.60	+1.63	8.49	97 %	8.32	98	1	2
CRAIG - HALLUM	1	2,159	17,273	0.23	622	+3.60	+1.63	+20.58	1 %	+20.75	59	-	-
COWEN & CO	1	2,094	27,223	-0.27	980	+3.60	+1.63	14.71	99 %	14.54	5	14	80
PIPER JAFFRAY	1	1,424	15,663	0.01	564	+3.60	+1.63	+1.21	58 %	+1.38	10	99	29
MORGAN STANLEY	<1	1,440	20,157	0.20	726	+3.60	+1.63	+9.89	4 %	+10.06	1	34	10
JEFFERIES & CO	<1	990	5,941	-0.30	201	+3.39	+1.63	4.39	93 %	4.43	8	1	64
STEPHENS & CO INC	<1	1,575	1,575	-0.37	57	+3.60	+1.63	27.93	99 %	27.76	1	85	1
CITIGROUP	<1	271	813	-0.06	29	+3.60	+1.63	1.77	84 %	1.60	76	48	-
WELLS FARGO	<1	436	1,308	-0.79	47	+3.60	+1.63	13.12	99 %	12.95	1	34	5



(+) = 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)
WFC	11	284,767	7,111,328	+1.25	0.05%	0.20	+1.60
BDN	12	112,010	1,229,775	+2.89	0.30%	-0.29	2.10
GE	7	99,744	642,220	+0.27	0.01%	-0.40	2.82
HRB	7	93,017	1,375,417	+0.10	0.24%	0.02	+0.56
CNX	7	90,630	839,500	+3.49	0.18%	-0.12	9.64
AAPL	5	86,631	11,349,028	+0.57	0.01%	0.09	+23.11
DISH	3	70,974	2,472,123	+2.09	0.93%	-0.37	10.42
CLB	34	70,191	1,576,262	+2.13	0.20%	0.09	+1.61
F	4	70,171	484,212	+0.24	0.03%	-0.07	0.61
BAC	7	69,807	1,777,661	+0.34	0.01%	-0.52	5.67

Names Most Traded - Total Orders

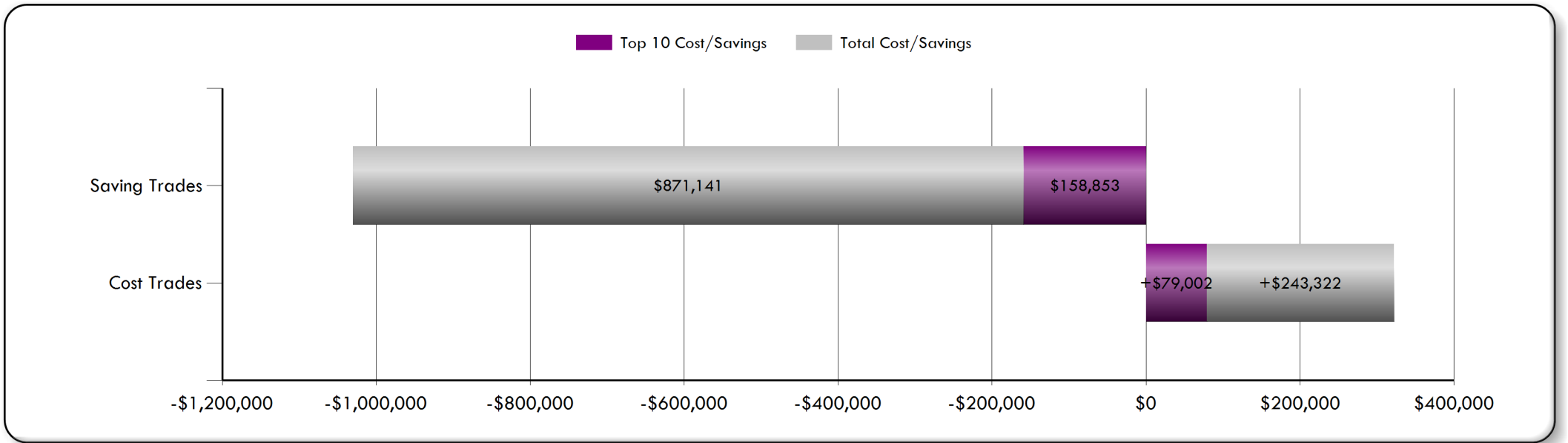
							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
EPAM	47	20,700	6,205,951	+1.87	0.06%	0.05	0.13
WFC	11	284,767	7,111,328	+1.25	0.05%	0.20	+1.60
RTX	9	54,741	3,276,301	+0.90	0.06%	-0.32	12.51
AMZN	9	3,249	10,969,908	+1.19	0.01%	-0.49	530.15
FB	7	18,549	5,261,120	+0.49	0.01%	-0.77	161.54
PG	7	22,089	3,033,095	+0.37	0.04%	-0.36	30.72
LBRDK	6	28,195	3,913,784	+1.48	0.52%	-0.26	8.97
AAPL	5	86,631	11,349,028	+0.57	0.01%	0.09	+23.11
GS	5	14,614	2,961,494	+1.00	0.06%	-0.51	48.81
MSFT	4	41,270	9,421,595	+1.01	0.03%	-0.64	95.23



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost/Savings
10 High Cost Trades	13,636,972	10	+224.67	24.51%
Cost Trades	131,408,121	1,209	+32.62	100.00%
Saving Trades	234,326,397	1,823	55.61	100.00%
10 Low Cost Trades	25,987,394	10	270.87	15.42%





(+) = Cost

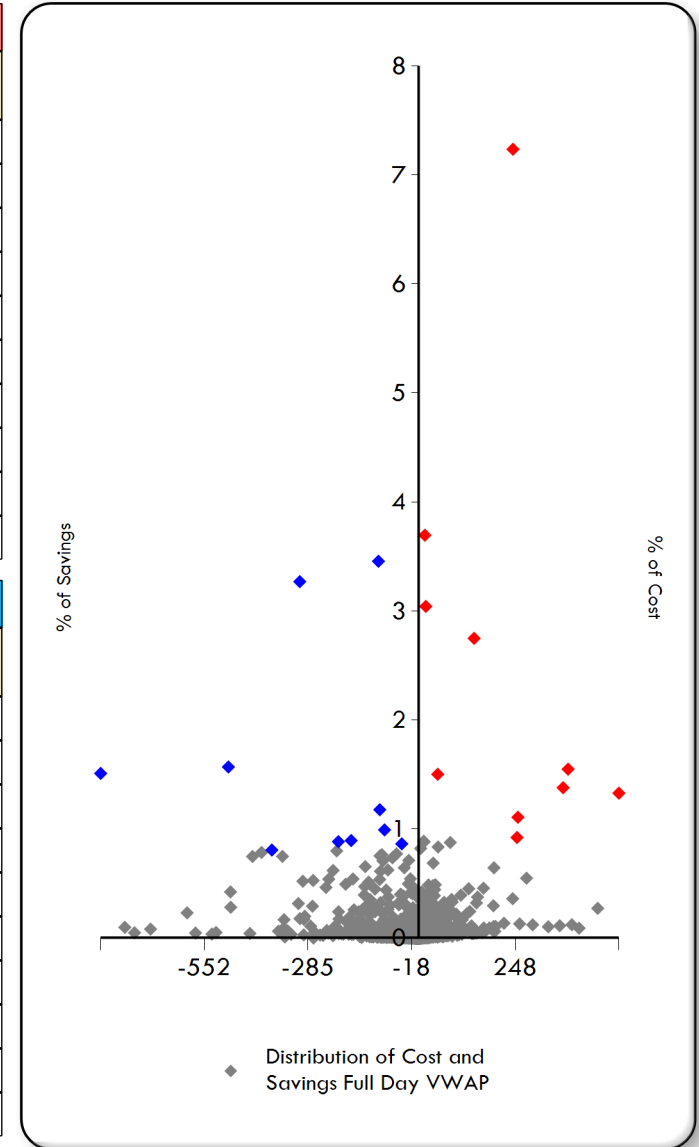
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	NTRA	2020/08/17	9,618	7.24	0.83	+242.46	WEATHERBIE	ITG
Sell	AAPL	2020/09/02	75,100	3.69	0.05	+15.86	ALLIANCE R	JP MORGAN
Buy	WFC	2020/07/17	53,813	3.04	0.93	+18.22	EAGLE CAPI	ITG
Sell	AAPL	2020/09/18	6,219	2.75	0.75	+142.48	ALLIANCE R	CREDIT SUI
Buy	ROKU	2020/09/11	1,299	1.55	1.59	+384.31	AQR	SC BERNSTE
Sell	AMCX	2020/07/09	9,899	1.50	0.41	+48.89	AQR	MERRILL LY
Buy	PYPL	2020/09/11	1,197	1.38	1.09	+371.41	AQR	MORGAN STA
Buy	ANTM	2020/07/09	832	1.33	2.47	+514.97	AQR	SC BERNSTE
Buy	CRWD	2020/09/21	1,400	1.11	0.62	+255.19	ALLIANCE R	CITIGROUP
Buy	NTRA	2020/08/17	1,175	0.92	0.87	+252.93	WEATHERBIE	LIQUIDNET

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	MSFT	2020/09/02	34,300	3.46	-0.70	103.77	ALLIANCE R	JP MORGAN
Sell	FB	2020/09/02	11,000	3.27	-1.30	306.11	ALLIANCE R	JP MORGAN
Sell	TSLA	2020/09/02	3,300	1.57	-0.23	489.79	ALLIANCE R	JP MORGAN
Sell	AMZN	2020/09/02	1,900	1.51	-0.77	818.50	ALLIANCE R	JP MORGAN
Sell	JNJ	2020/09/02	12,100	1.18	-1.13	100.23	ALLIANCE R	JP MORGAN
Sell	MRK	2020/09/02	11,600	0.99	-1.17	88.11	ALLIANCE R	JP MORGAN
Sell	PYPL	2020/09/02	5,300	0.89	-0.86	173.81	ALLIANCE R	JP MORGAN
Sell	UNH	2020/09/02	4,400	0.88	-1.17	206.84	ALLIANCE R	JP MORGAN
Buy	VERX	2020/07/29	20,389	0.86	0.00	43.65	WEATHERBIE	GOLDMAN SA
Sell	NEE	2020/09/02	2,200	0.81	-0.93	377.86	ALLIANCE R	JP MORGAN



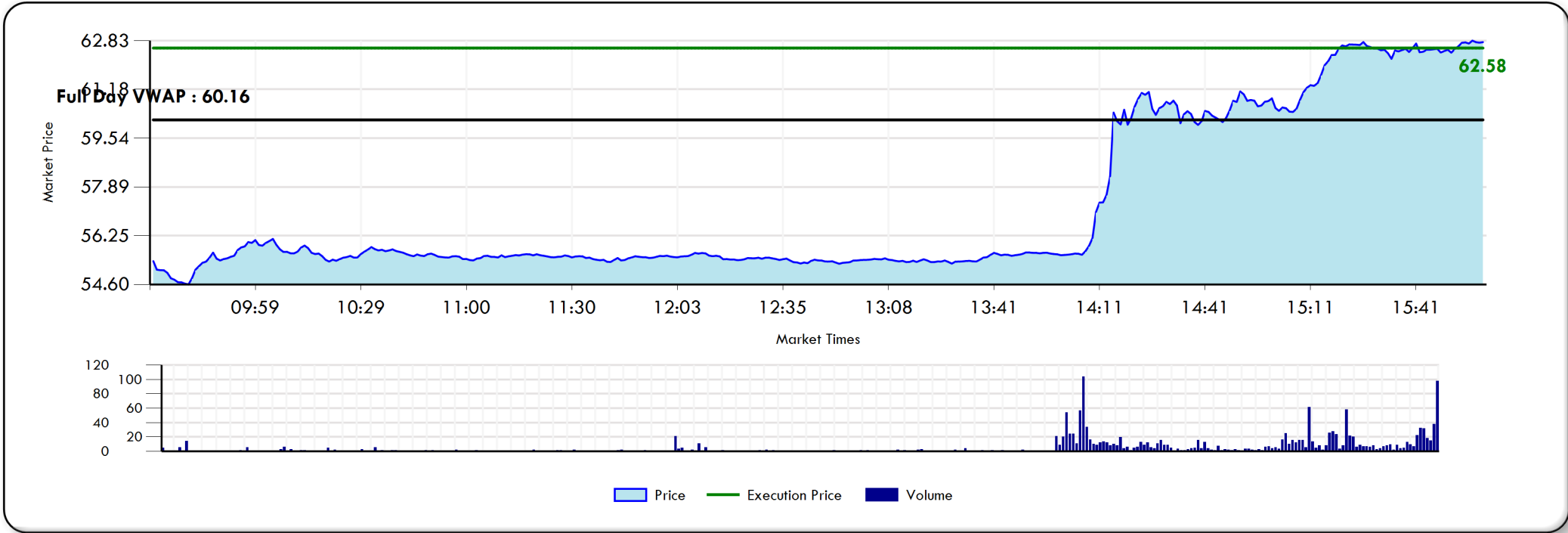


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NTRA - 2020/08/17

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	ITG	08/17/2020 09:30:00	08/17/2020 16:00:00	9,618	62.5803	60.1557	+23,320	+242.46	0.83	0.55



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.24% of your market impact cost.

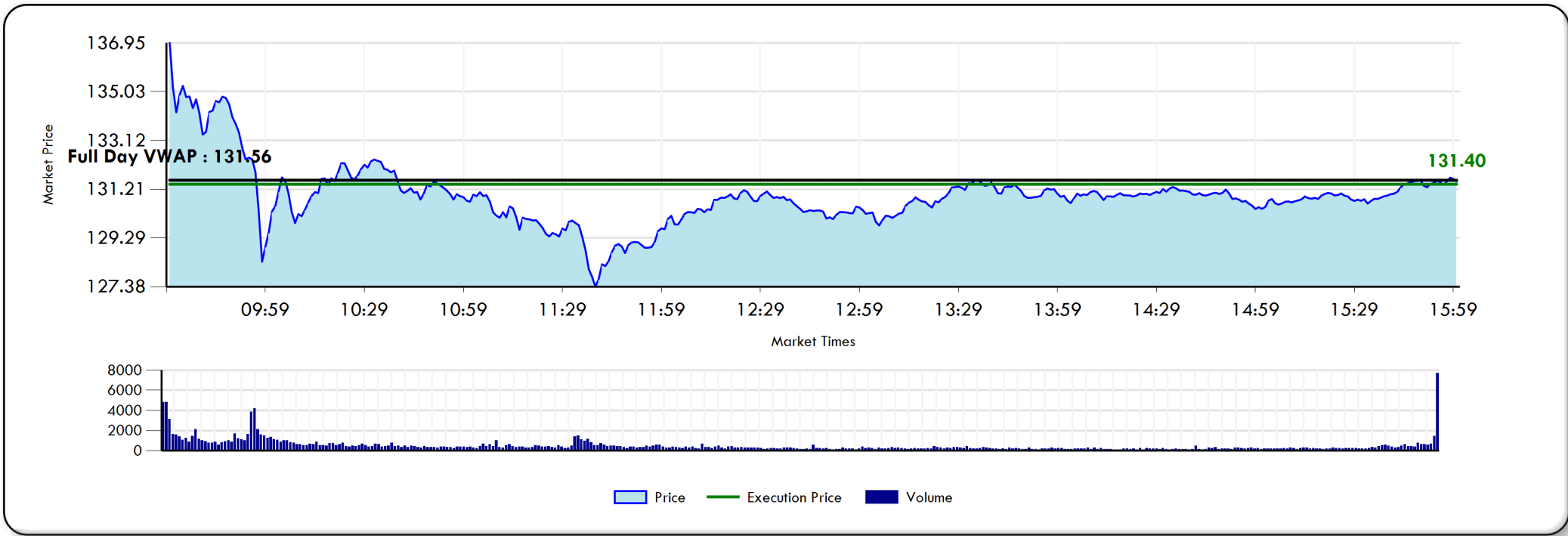


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AAPL - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	75,100	131.4000	131.5586	+11,909	+15.86	0.05	0.04



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.69% of your market impact cost.

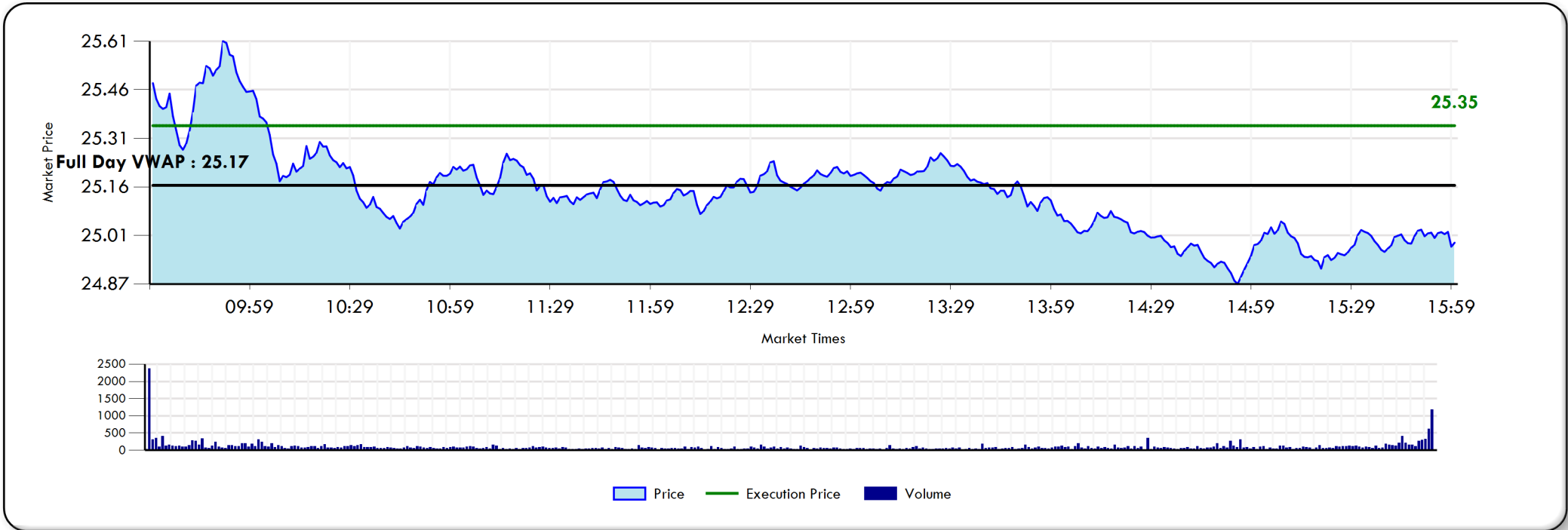


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WFC - 2020/07/17

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	ITG	07/17/2020 09:30:00	07/17/2020 16:00:00	53,813	25.3484	25.1662	+9,805	+18.22	0.93	0.11



NOTES

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

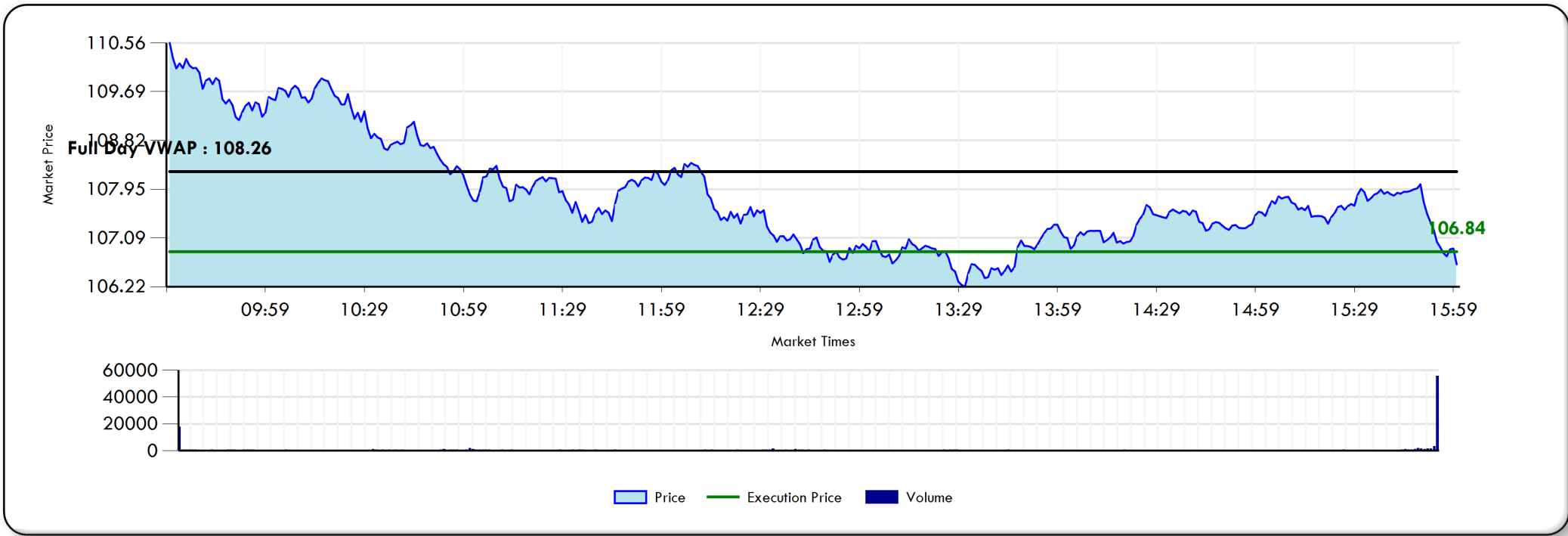


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AAPL - 2020/09/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	CREDIT SUISSE	09/18/2020 09:30:00	09/18/2020 16:00:00	6,219	106.8400	108.2648	+8,861	+142.48	0.75	0.00



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

ROKU - 2020/09/11

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	AQR	SC BERNSTEIN	09/11/2020 09:30:00	09/11/2020 16:00:00	1,299	160.5062	156.6631	+4,992	+384.31	1.59	0.03



NOTES

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

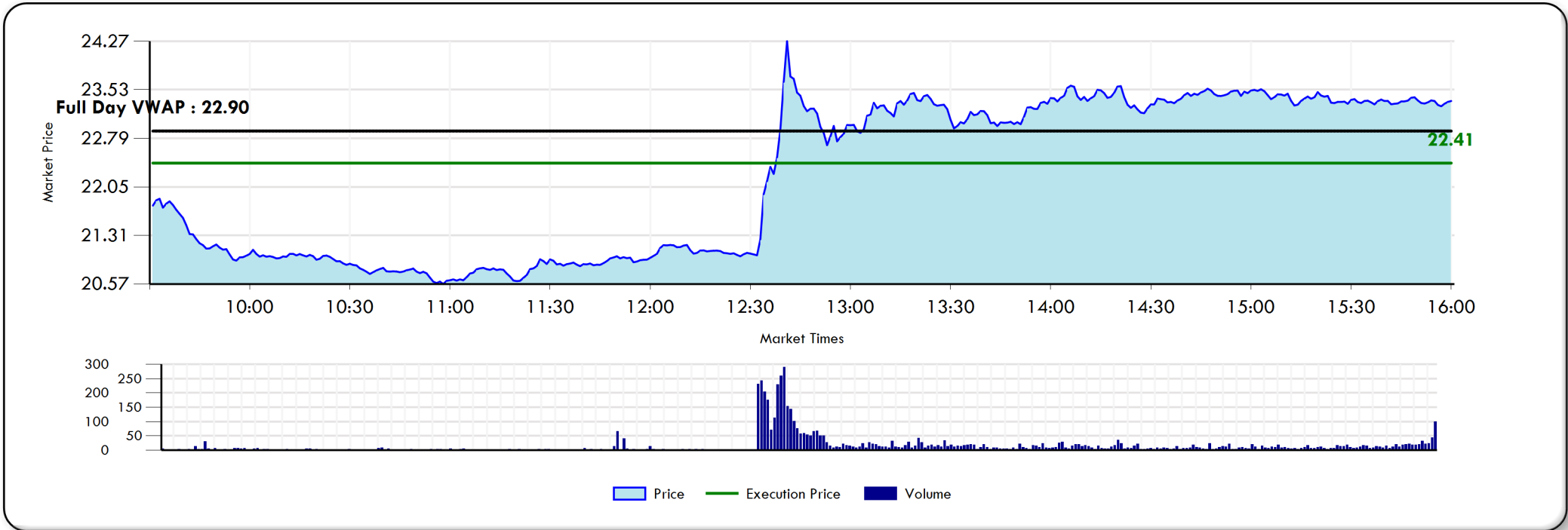


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AMCX - 2020/07/09

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	AQR	MERRILL LYNCH	07/09/2020 09:30:00	07/09/2020 16:00:00	9,899	22.4126	22.9015	+4,840	+48.89	0.41	0.17



NOTES

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

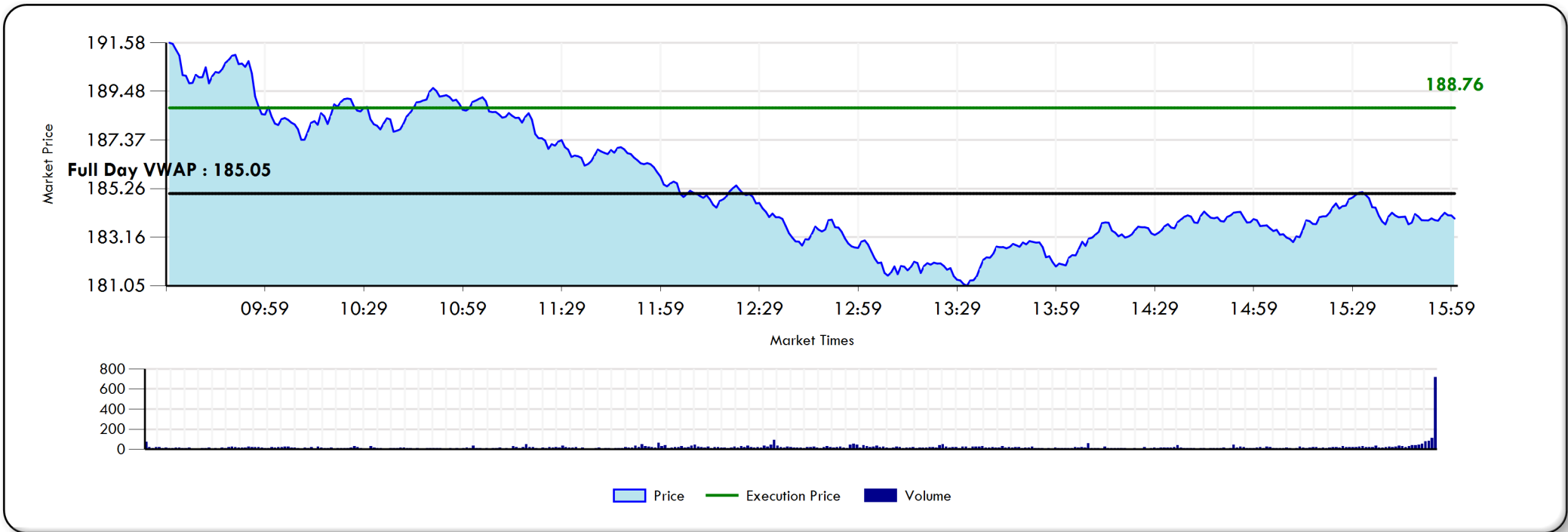


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PYPL - 2020/09/11

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	AQR	MORGAN STANLEY	09/11/2020 09:30:00	09/11/2020 16:00:00	1,197	188.7618	185.0478	+4,446	+371.41	1.09	0.01



NOTES

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

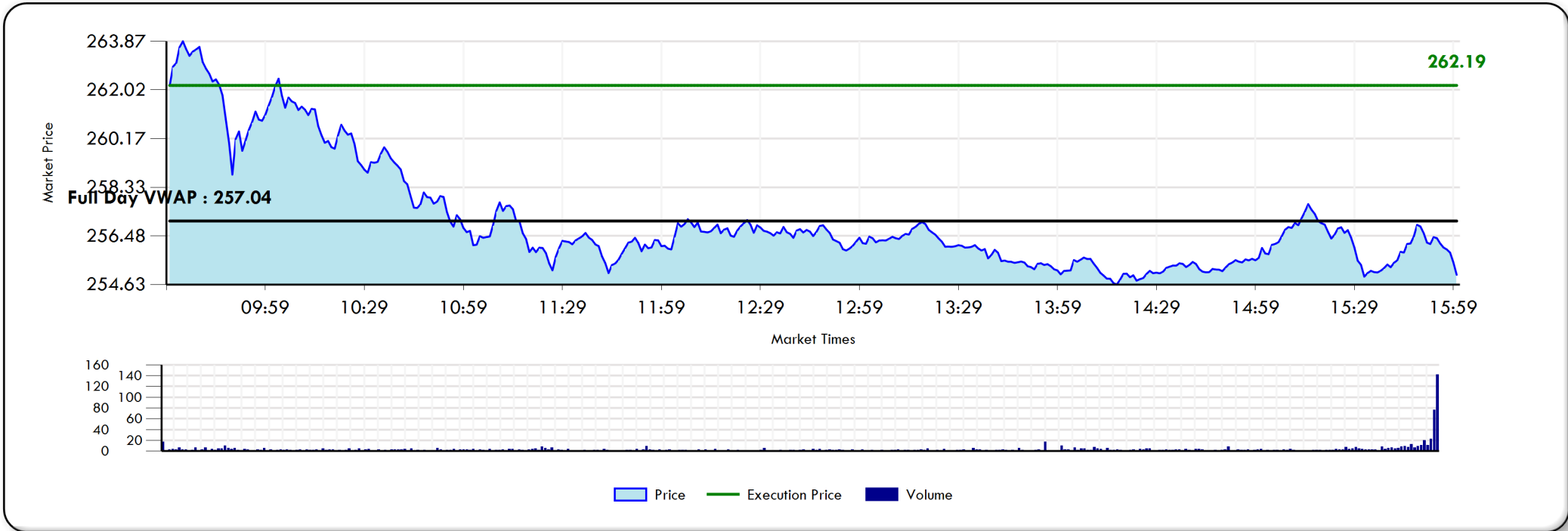


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ANTM - 2020/07/09

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	AQR	SC BERNSTEIN	07/09/2020 09:30:00	07/09/2020 16:00:00	832	262.1937	257.0441	+4,285	+514.97	2.47	0.05



NOTES

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

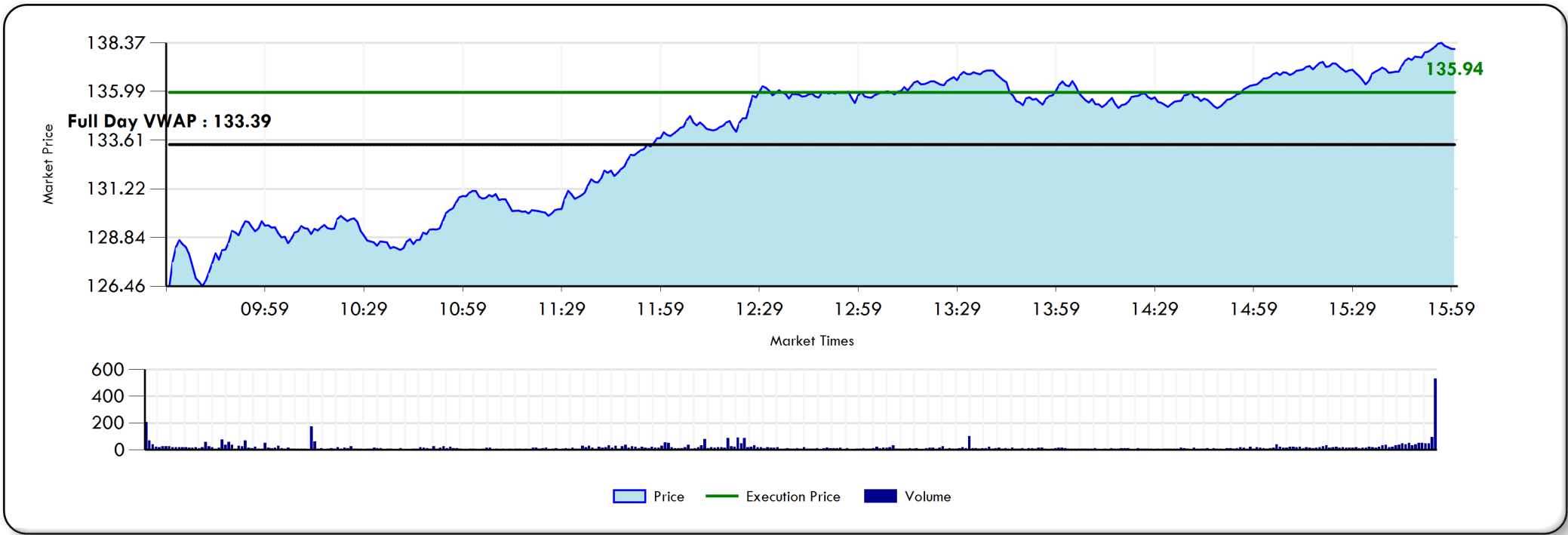


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CRWD - 2020/09/21

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	ALLIANCE R 3000 CAPITAL MANAGEM	CITIGROUP	09/21/2020 09:30:00	09/21/2020 16:00:00	1,400	135.9400	133.3881	+3,573	+255.19	0.62	0.02



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.11% of your market impact cost.

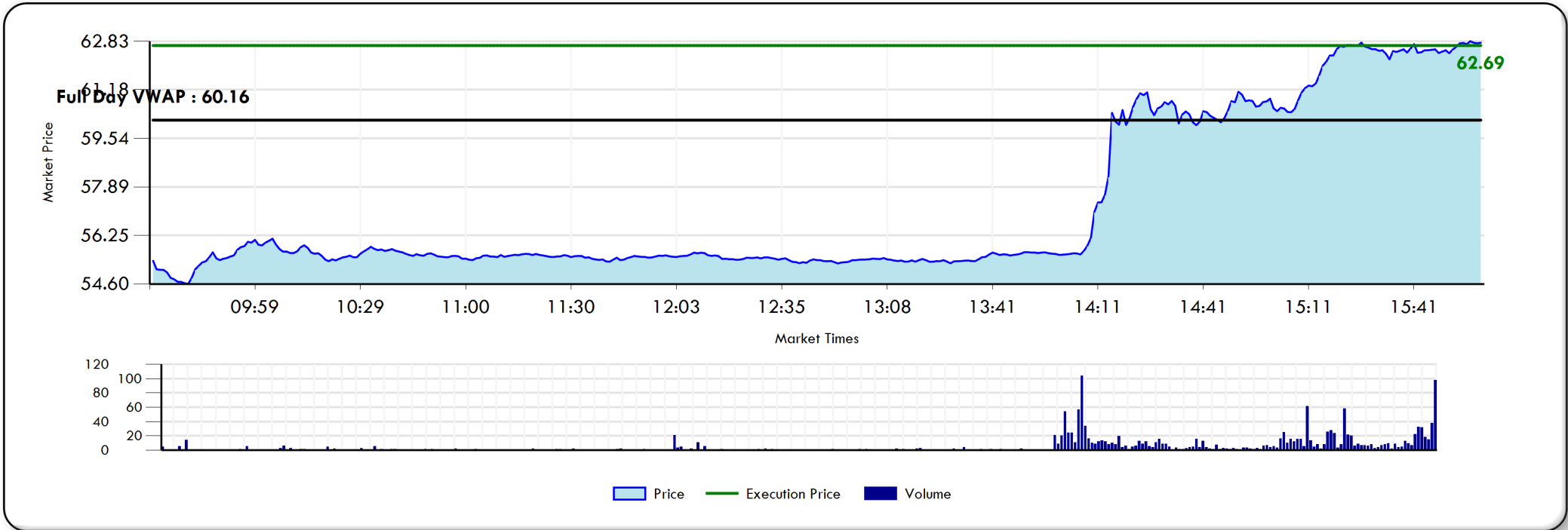


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NTRA - 2020/08/17

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	LIQUIDNET	08/17/2020 09:30:00	08/17/2020 16:00:00	1,175	62.6850	60.1557	+2,972	+252.93	0.87	0.07



NOTES

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

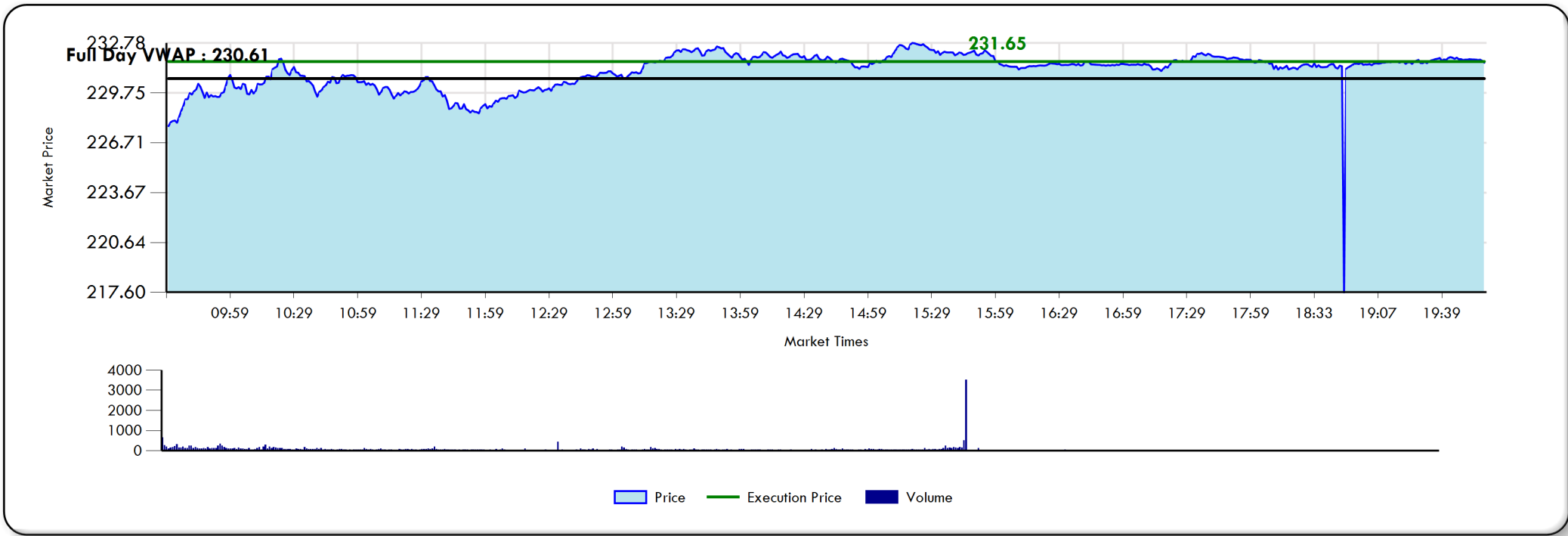


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MSFT - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	34,300	231.6500	230.6123	35,592	103.77	-0.70	0.10



NOTES

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

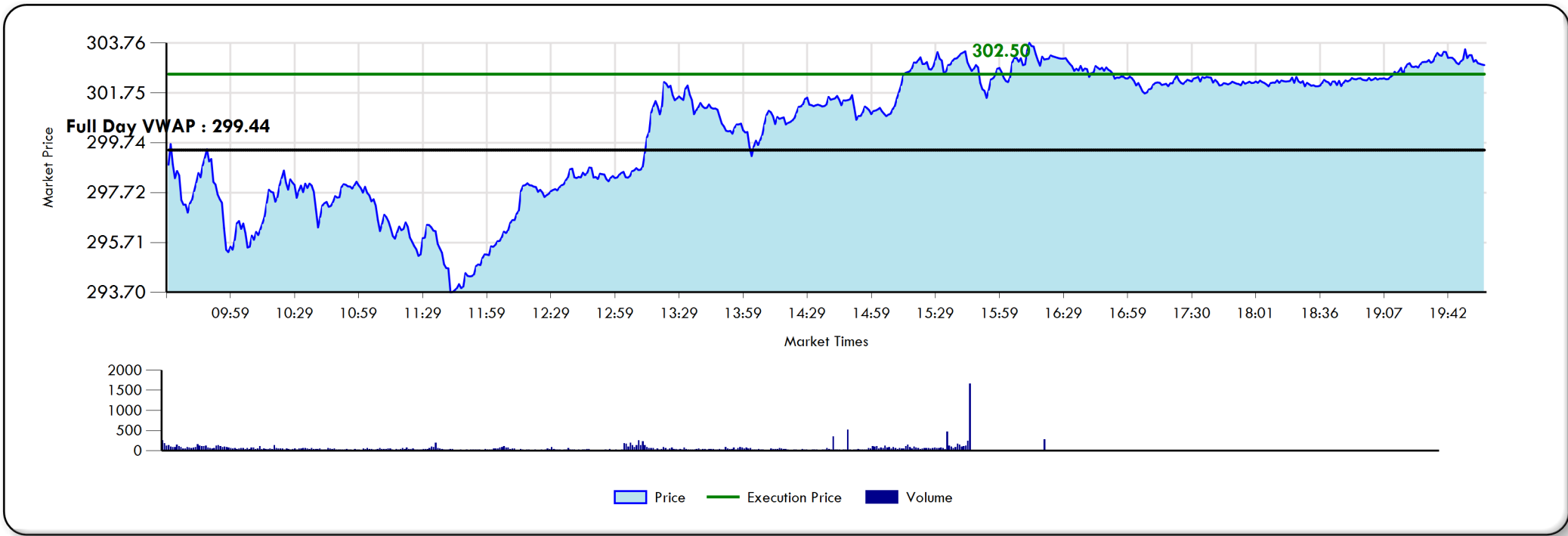


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

FB - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	11,000	302.5000	299.4389	33,672	306.11	-1.30	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.27% of your market impact savings.

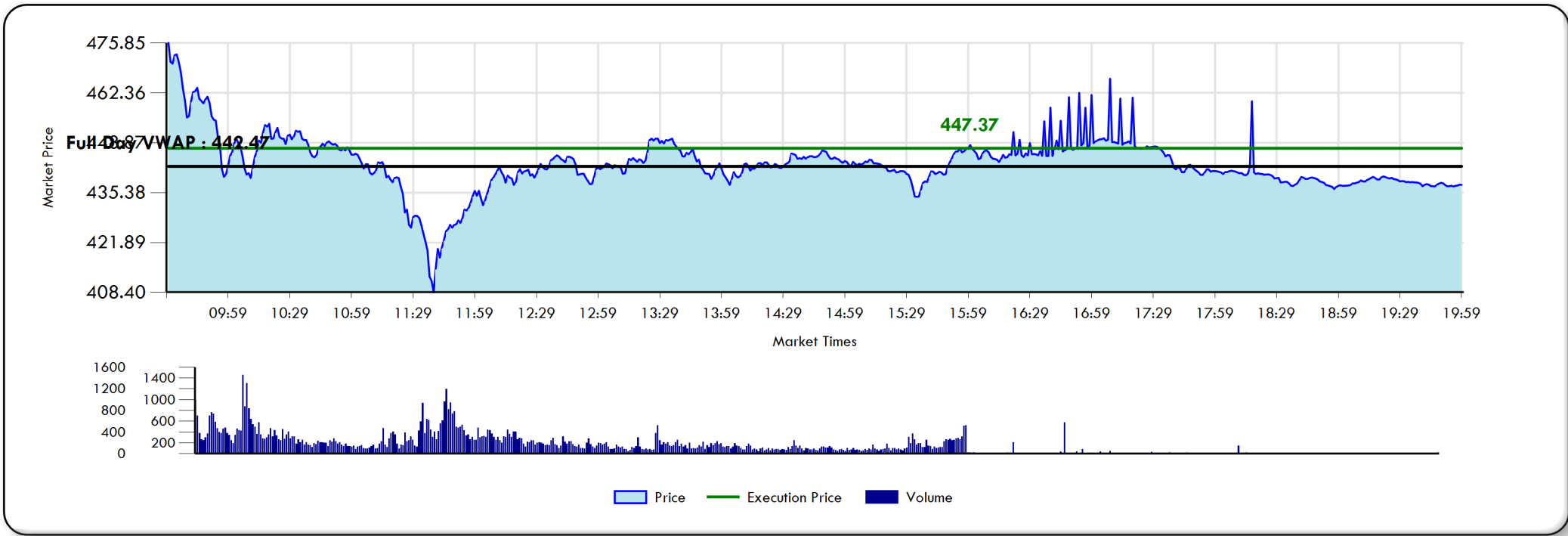


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TSLA - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	3,300	447.3700	442.4721	16,163	489.79	-0.23	0.00



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.

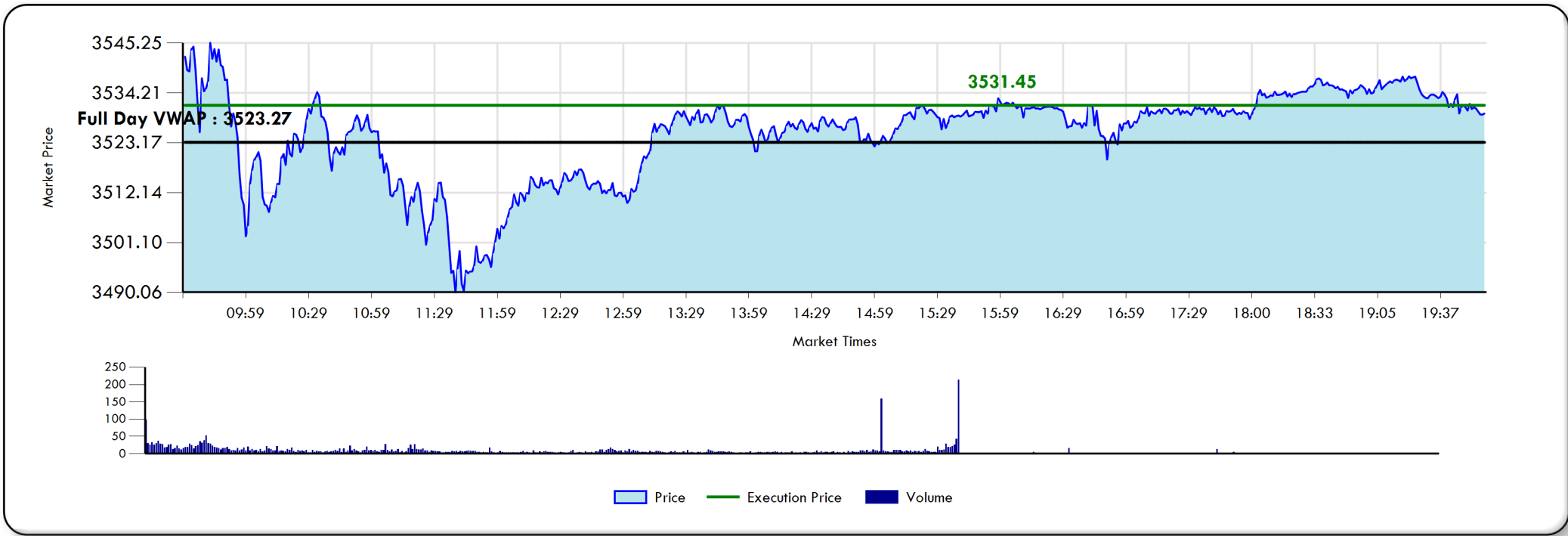


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

AMZN - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	1,900	3531.4500	3523.2650	15,551	818.50	-0.77	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.51% of your market impact savings.

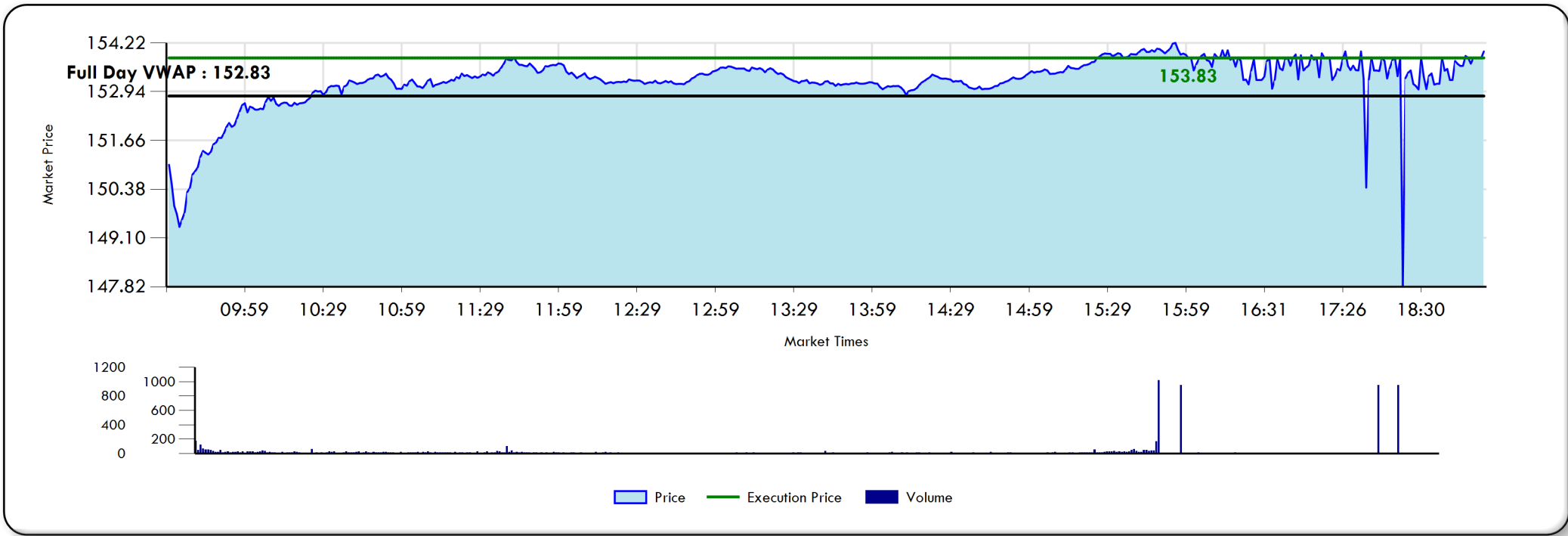


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

JNJ - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	12,100	153.8300	152.8277	12,127	100.23	-1.13	0.12



NOTES

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

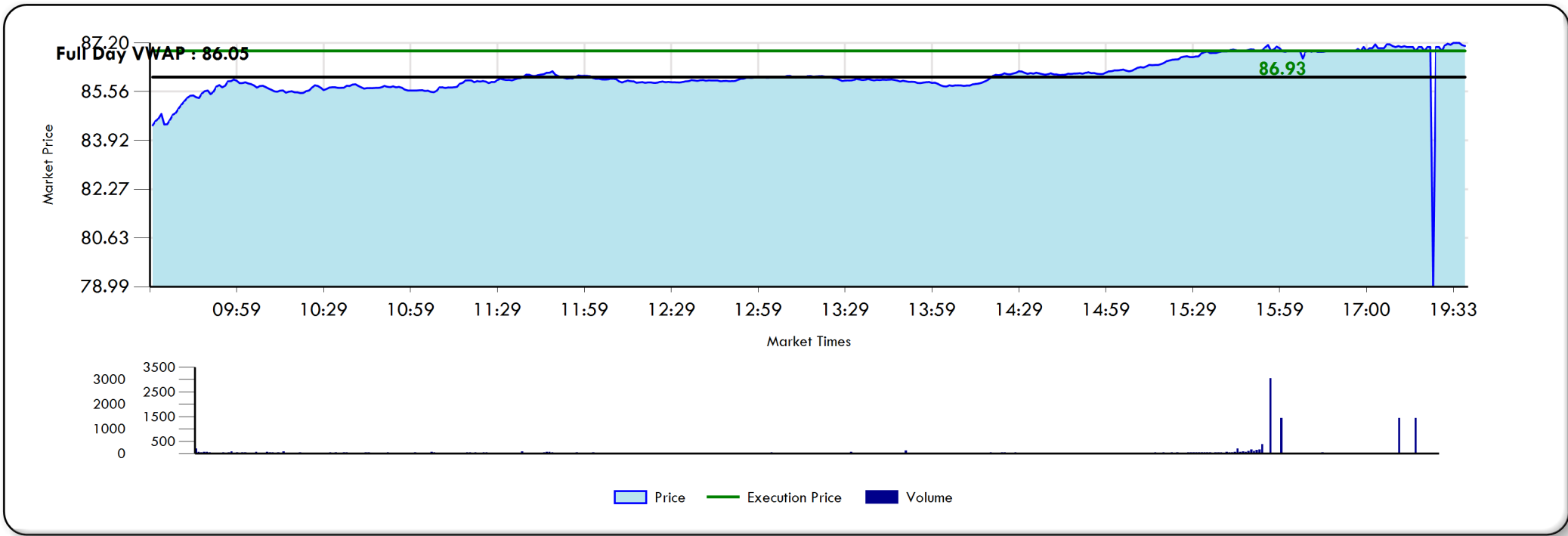


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MRK - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	11,600	86.9300	86.0489	10,221	88.11	-1.17	0.07



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.99% of your market impact savings.

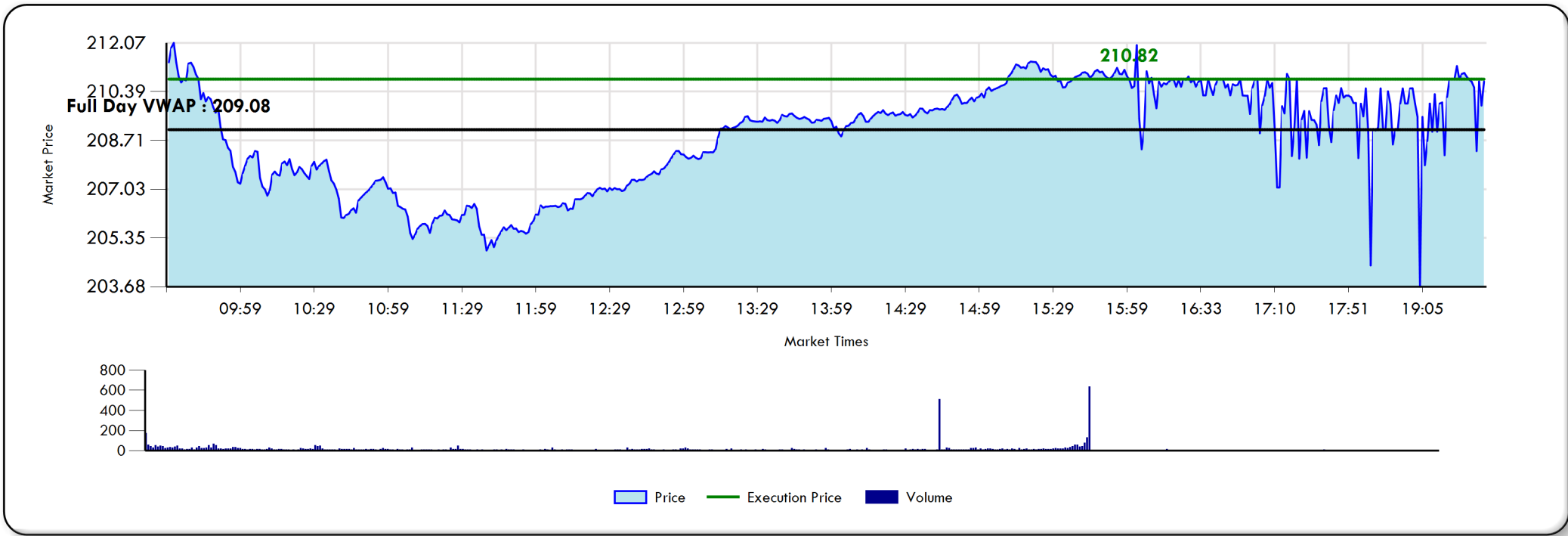


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PYPL - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	5,300	210.8200	209.0819	9,212	173.81	-0.86	0.07



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.89% of your market impact savings.

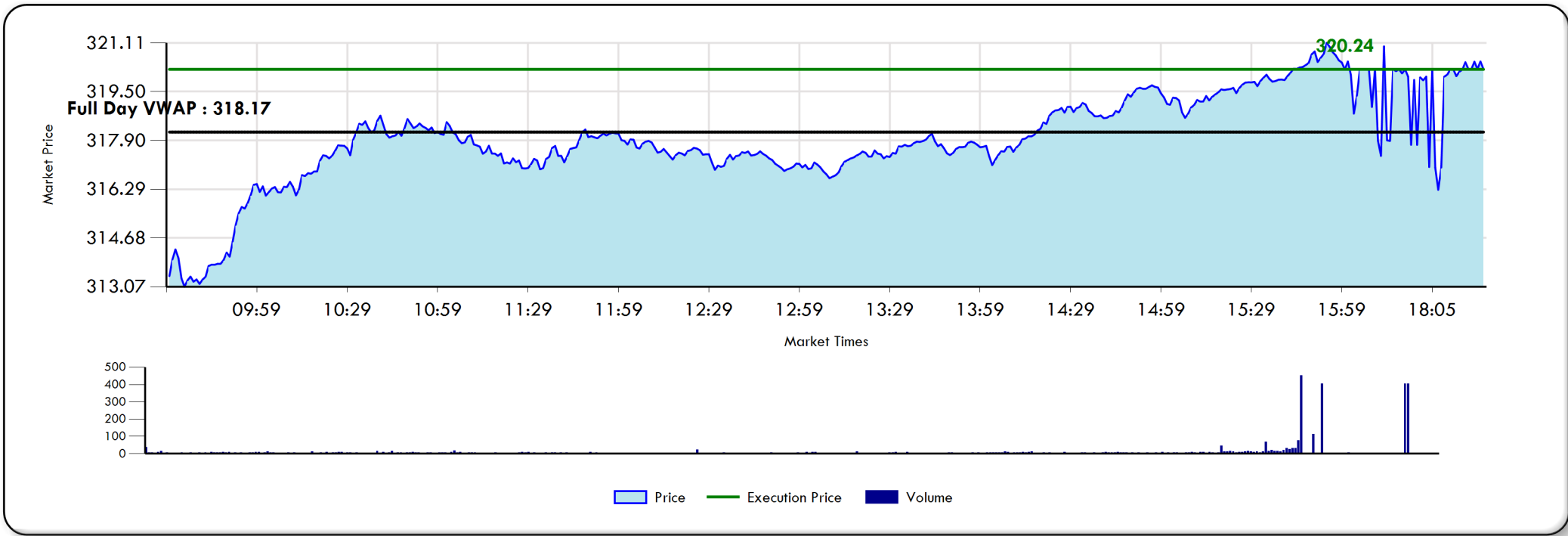


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

UNH - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	4,400	320.2400	318.1716	9,101	206.84	-1.17	0.11



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.88% of your market impact savings.

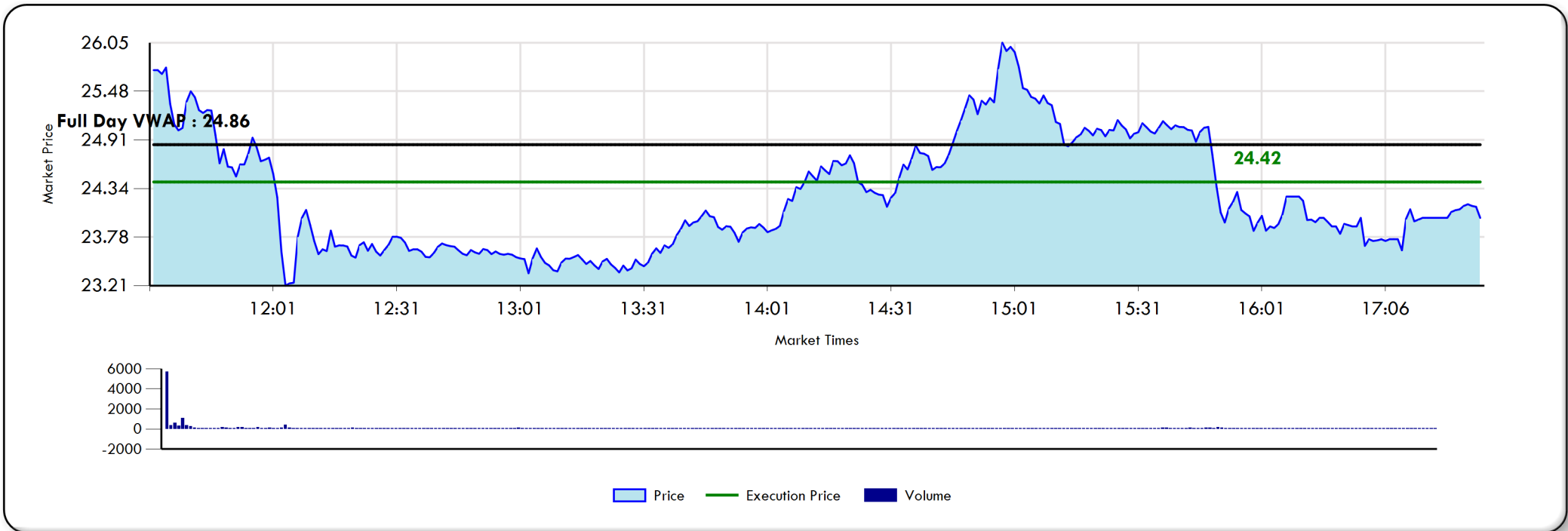


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

VERX - 2020/07/29

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	GOLDMAN SACHS	07/29/2020 09:30:00	07/29/2020 16:00:00	20,389	24.4209	24.8574	8,899	43.65	0.00	0.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.86% of your market impact savings.

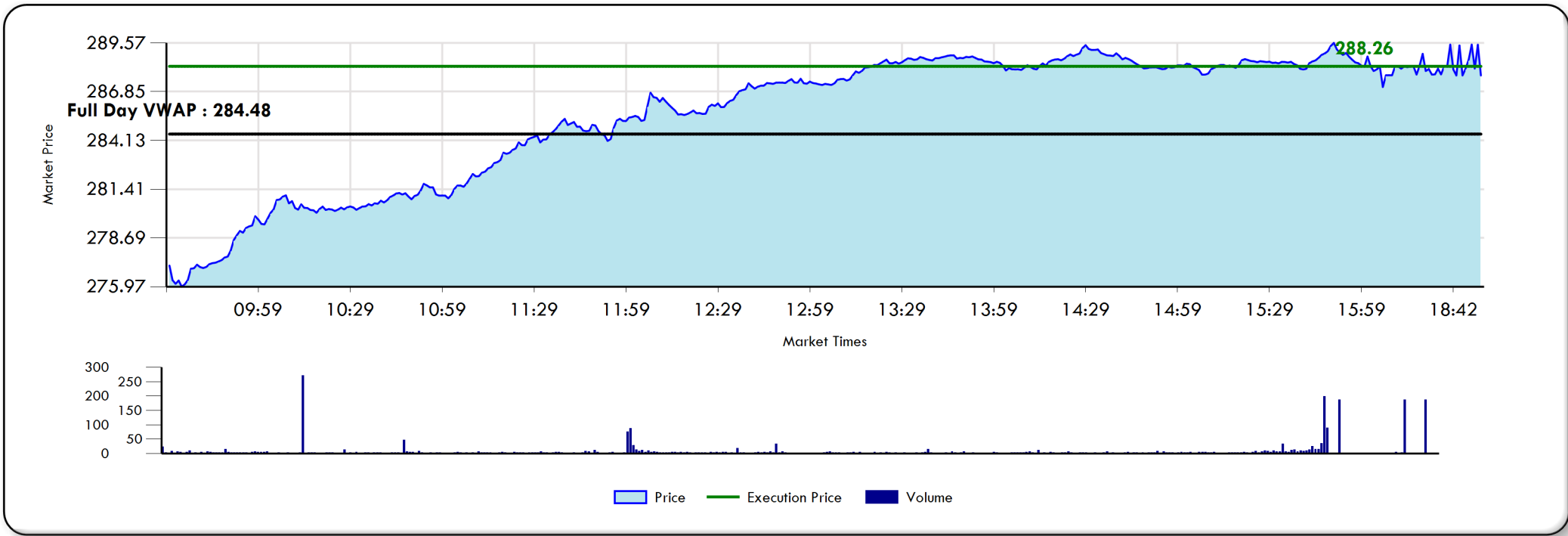


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NEE - 2020/09/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	09/02/2020 09:30:00	09/02/2020 16:00:00	2,200	288.2600	284.4814	8,313	377.86	-0.93	0.07



NOTES

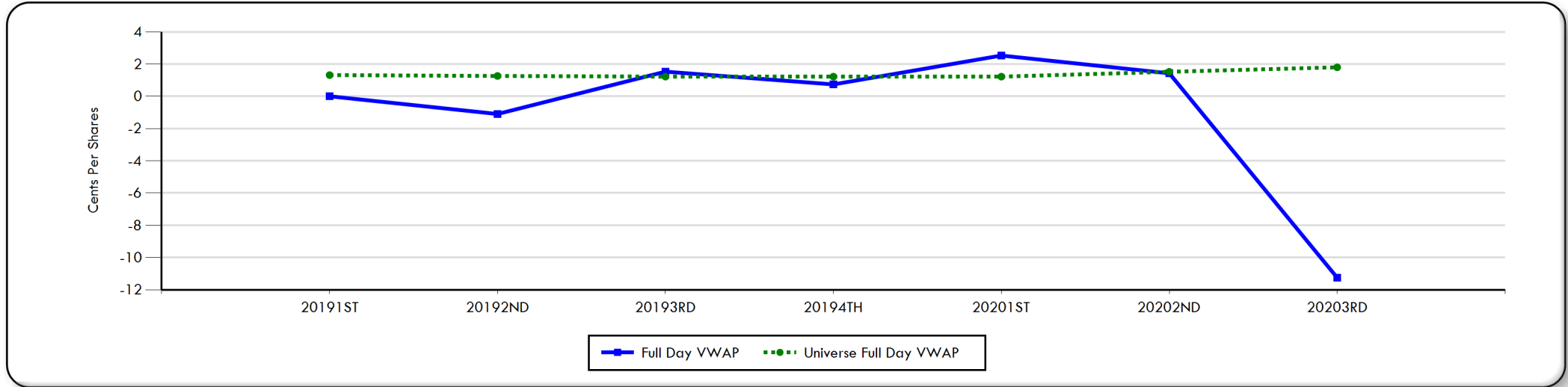
- Out of all your low cost trades that beat to Full Day VWAP, this order made up 0.81% of your market impact savings.



(+) = Cost

TRADE HISTORY

Trade History						
Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP	Full Day VWAP Universe Rank
			(cps)	(\$)	(cps)	(%)
20191ST	4,459,275	188,723,176	+2.03	90,386	+0.00	69
20192ND	3,647,786	171,841,719	+1.45	52,944	1.10	81
20193RD	4,500,167	228,793,910	+1.16	52,110	+1.53	46
20194TH	3,275,124	155,418,903	+1.49	48,930	+0.74	58
20201ST	4,059,692	198,207,205	+1.57	63,827	+2.53	33
20202ND	7,218,058	279,989,271	+1.08	77,872	+1.43	51
20203RD	6,287,580	365,734,518	+0.93	58,162	11.26	99



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, 2020





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- **Country Performance**
- **High / Low Cost Managers**
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(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates global equity executions from July 1, 2020 to September 30, 2020. The analysis included trading of 7,427,988 shares representing \$111.89 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 :

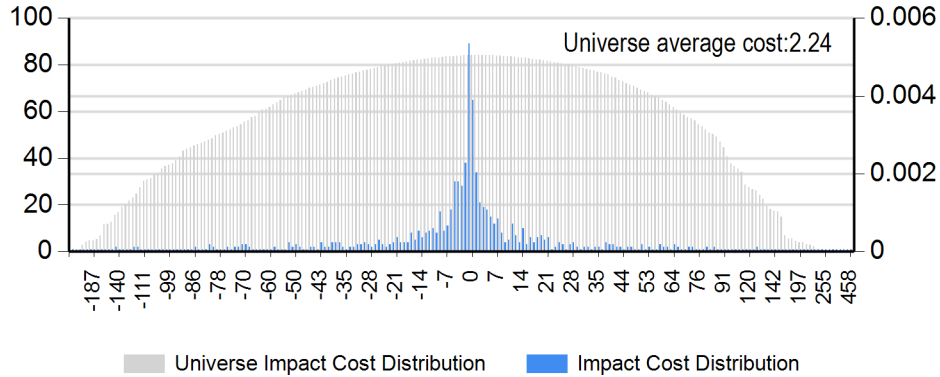
BENCHMARK PERFORMANCE			E - Score
Commission	Fees	Full Day VWAP	
<ul style="list-style-type: none"> Your commission cost was +5.88 bp or \$ +\$65,738 (8.05 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +5.08 bp or \$ +\$6,796 (+1.73 bp worse than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact cost was +0.87 bp or \$+9,770 (1.37 bp better than the Elkins/McSherry Universe) Your overall trading cost of +11.82 bp was 7.68 bp better than the Elkins/McSherry Universe. Sacramento County trading was higher than the Elkins/McSherry Universe in 9 countries and lower than the Elkins/McSherry Universe in 20 countries. 11 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 29 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : -0.05



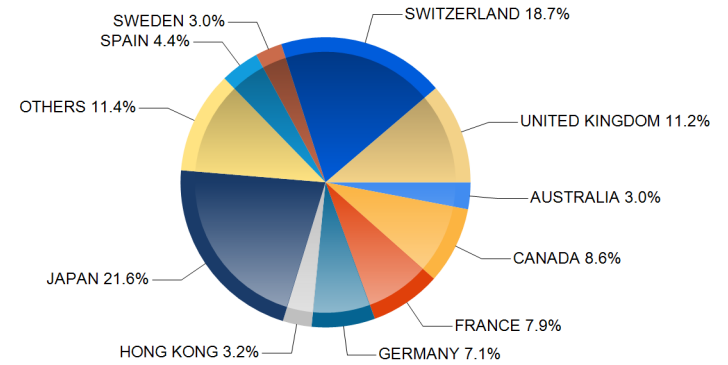
(+) = Cost

EXECUTIVE SUMMARY

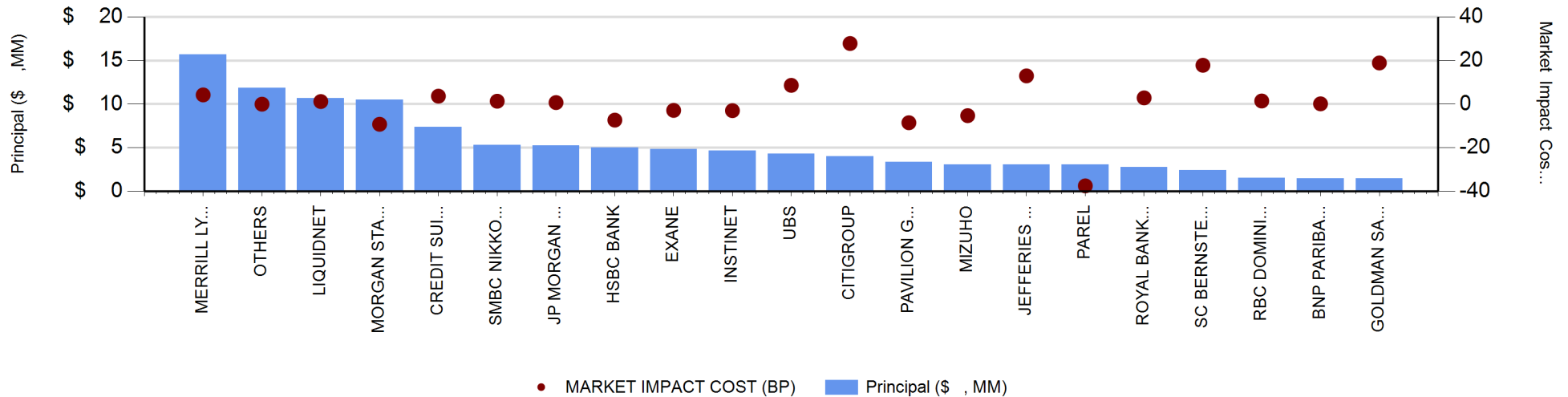
Cost Distribution



Principal Across Country



Top 20 Brokers in Principal Traded





(+) = Cost

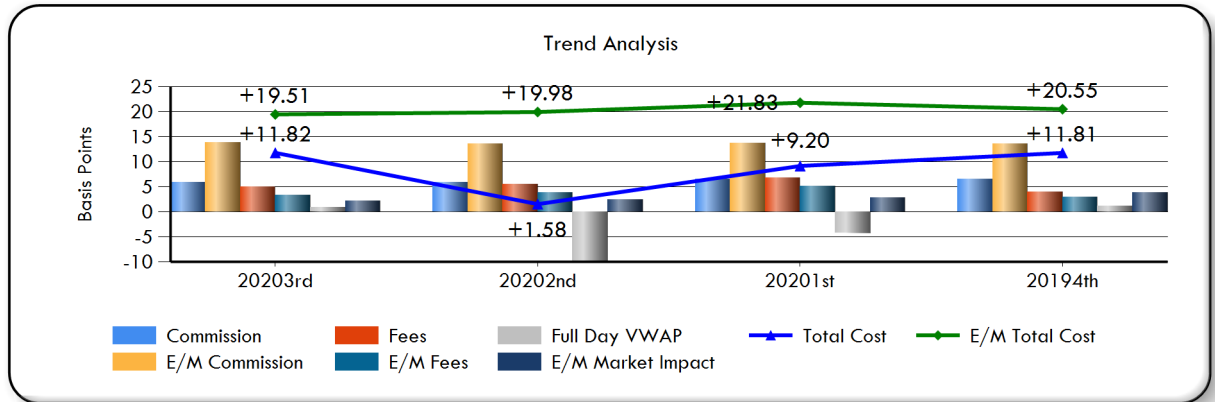
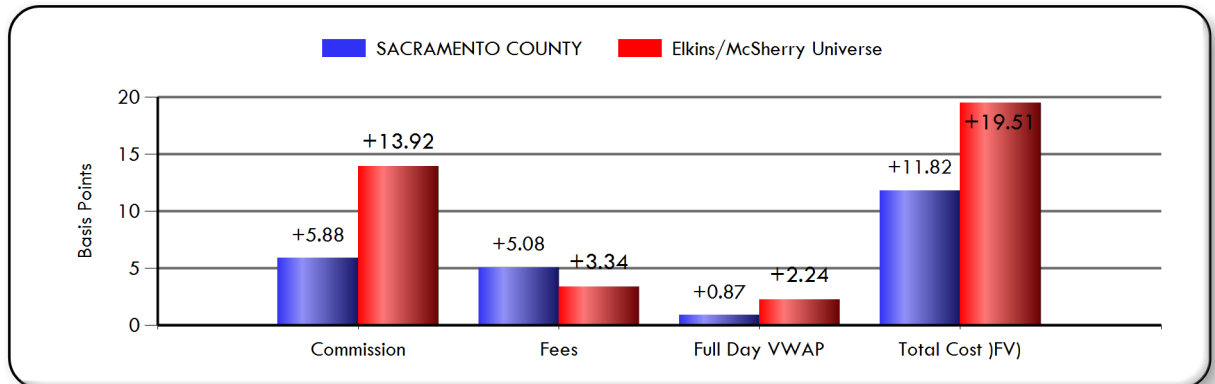
EXECUTIVE SUMMARY

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	+6.14	+13.03	+4.72	+0.49	+0.48	+2.51	+2.52	+9.13	6.89	0.02
Buy	+5.57	+14.95	+5.13	+10.32	+6.62	0.99	+1.92	+14.90	8.59	-0.12
Total	+5.88	+13.92	+4.91	+5.08	+3.34	+0.87	+2.24	+11.82	7.68	-0.05

TRADING COMPONENTS

	Buys	Sells
Trade Principal	52,213,201	59,672,581
Shares	4,206,674	3,221,314
Unique Names	74	74
Liquidity (% POV)	0.437	0.169
Avg. Order Size	7,499	8,899
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	561	362





(+) = Cost

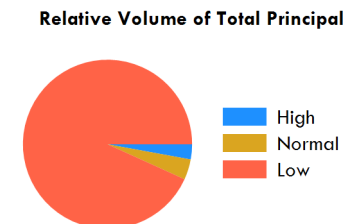
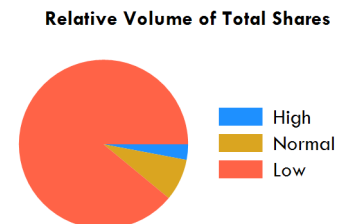
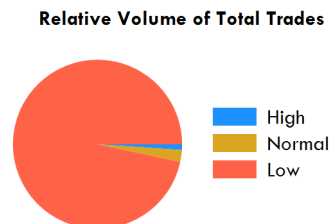
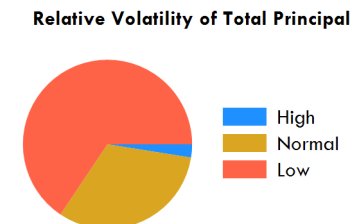
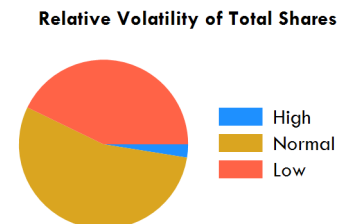
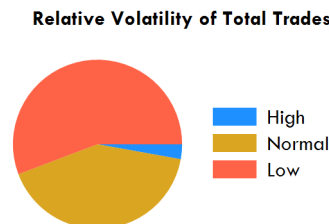
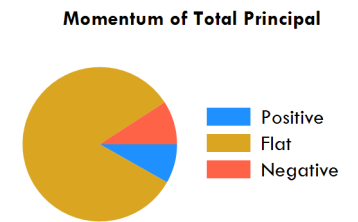
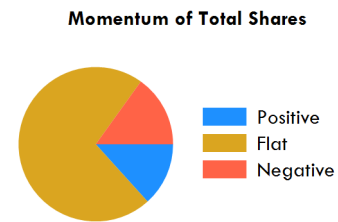
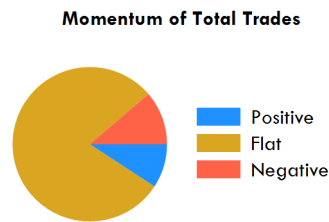
EXECUTIVE SUMMARY

Market Metrics Summary

Momentum	Positive			Flat			Negative		
% Of Total	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
Buys	7%	8%	5%	48%	38%	37%	6%	11%	5%
Sells	2%	5%	4%	32%	34%	46%	5%	4%	4%
Total	9%	13%	8%	80%	72%	83%	11%	15%	9%

Relative Volatility	High			Normal			Low		
% Of Total	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
Buys	2%	1%	1%	25%	35%	18%	34%	21%	29%
Sells	1%	1%	1%	16%	20%	14%	22%	22%	36%
Total	3%	3%	3%	41%	55%	32%	56%	43%	66%

Relative Volume	High			Normal			Low		
% Of Total	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
Buys	1%	2%	3%	1%	1%	1%	59%	53%	43%
Sells	0%	1%	0%	1%	7%	3%	38%	36%	50%
Total	1%	3%	3%	2%	8%	4%	97%	89%	93%



NOTES

MOMENTUM: One-day open to close pricing trend of a security

Positive - Greater than +2%

Flat - Within a +2% and -2% range

Negative - Price decrease is more negative than -2%

RELATIVE VOLATILITY: The standard deviation of price relative to the one-day average price

High - Greater than 20%

Normal - Between 5% and 20%

Low - Less than 5%

RELATIVE VOLUME: Executed shares relative to the one-day total market volume

High - Greater than 10%

Normal - Between 5% and 10%

Low - Less than 5%



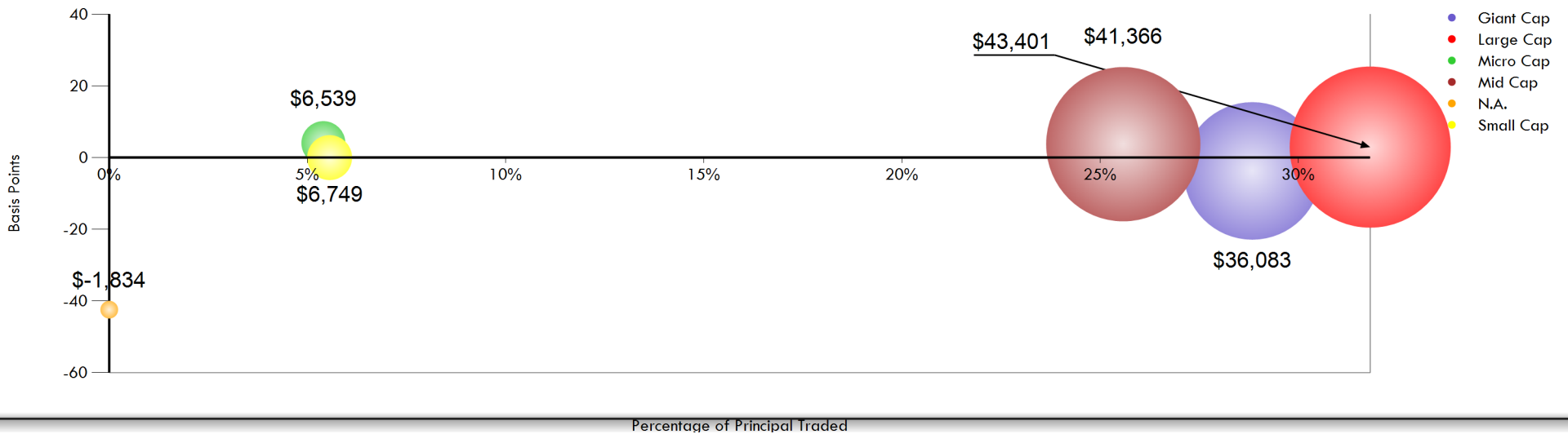
(+) = Cost

EXECUTIVE SUMMARY

MARKET CAPITALIZATION

Market Cap	% Traded	Avg. Principal Per Order	COMMISSION		MARKET IMPACT		Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	Bundled Universe	Full Day VWAP	Universe Full Day VWAP				
	(%)	(\$)	(bp)	(bp)	(bp)	(bp)	(bp)	(bp)		
Large Cap	32.28 %	147,430	+4.93	+13.36	+2.93	+2.20	+12.01	7.30	-0.01	\$5 Billion To \$25 Billion
Giant Cap	29.31 %	241,112	+6.42	+14.98	3.71	+2.15	+11.01	10.60	-0.23	Over \$25 Billion
Mid Cap	26.05 %	91,662	+6.40	+13.71	+3.74	+2.36	+14.19	4.16	0.05	\$1 Billion To \$5 Billion
Small Cap	6.02 %	74,076	+7.07	+13.71	+0.00	+2.40	+10.01	8.77	0.02	\$250 Million To \$1 Billion
Micro Cap	5.87 %	50,500	+4.74	+13.01	+4.05	+2.20	+9.96	6.38	0.15	Under \$250 Million
N.A.	0.46 %	173,254	+6.97	+12.89	42.43	+1.97	35.46	50.34	-0.54	

Total Cost by Market Cap





(+) = 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	11	1,671,778	N/A	+8.32	+12.85	7.49	+1.99	+3.84	12.31	-0.25	1M or Greater
Medium Orders	25	649,181	N/A	+6.13	+15.44	+3.20	+2.03	+10.43	8.01	0.02	Between 500k - 1M
Small Orders	887	87,110	N/A	+5.24	+13.86	+2.38	+2.34	+14.00	6.53	-0.02	500K or Less

Total Cost By Order Size





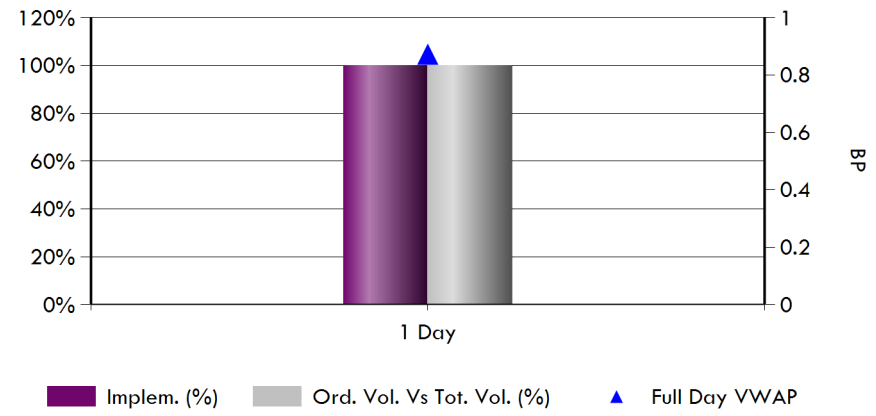
(+) = Cost

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%	+0.87	-0.04

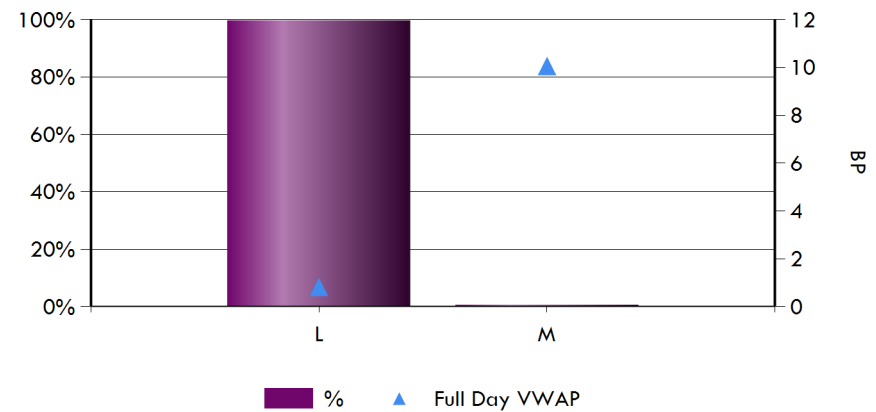
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
0%~20% of daily vol.	L	100%	+0.83	-0.04
20%~50% of daily vol.	M	0%	+10.07	0.51

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										
GREECE	<1	0.77%	+9.51	+13.64	+0.77	+2.54	+55.54	+6.88	+42.76	0.96
ISRAEL	<1	0.63%	+9.91	+13.34	+0.00	+0.03	+32.70	+1.96	+27.28	0.40
BRAZIL	2	1.43%	+10.89	+14.99	+3.06	+2.52	+33.80	+3.53	+26.70	0.54
NORWAY	<1	0.24%	+6.60	+12.86	+0.00	+0.00	+29.13	+3.13	+19.74	0.70
AUSTRALIA	3	2.99%	+5.29	+12.82	+0.00	+0.72	+24.63	+1.83	+14.55	0.44
HONG KONG	4	3.21%	+6.76	+12.77	+10.77	+9.51	+19.90	+0.73	+14.42	0.29
NETHERLANDS	1	0.95%	+5.14	+12.83	+0.00	+0.03	+21.19	+1.89	+11.58	0.07
U.K. - BUYS	7	6.22%	+5.02	+12.85	+49.30	+21.63	8.67	+1.04	+10.13	-0.23
KOREA - SELLS	<1	0.27%	+5.00	+16.35	+25.00	+21.26	+10.02	+1.53	+0.88	0.27

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										
SINGAPORE	<1	0.46%	+4.00	+13.87	+4.00	+3.57	55.69	+1.04	66.17	-0.64
ITALY - BUYS	<1	0.65%	+5.25	+12.91	+10.00	+12.00	52.17	+1.30	63.14	-0.59
BELGIUM	<1	0.00%	+3.98	+12.76	+0.00	+0.02	35.71	+1.98	46.49	-0.54
FRANCE - BUYS	5	4.46%	+4.60	+13.00	+30.00	+30.00	15.98	+1.57	25.95	-0.30
CANADA	10	8.57%	+4.40	+23.71	+0.00	+0.02	+0.07	+2.00	21.26	-0.09
U.S.	2	1.76%	+0.97	+13.69	+0.22	+0.11	6.24	+1.16	20.01	-0.09
PORTUGAL	<1	0.69%	+8.07	+12.86	+0.00	+0.01	10.83	+3.40	19.03	-0.38
FRANCE - SELLS	4	3.46%	+3.48	+13.83	+0.00	+0.00	2.11	+1.61	14.07	-0.11
KOREA - BUYS	<1	0.13%	+6.27	+16.54	+0.00	+0.00	+0.37	+2.72	12.63	0.06
U.K. - SELLS	6	5.02%	+5.05	+13.69	+0.09	+0.00	+2.87	+6.70	12.37	0.04
SPAIN	5	4.35%	+5.85	+12.89	+0.00	+0.02	2.03	+1.84	10.93	-0.09
GERMANY	8	7.07%	+4.25	+12.89	+0.00	+0.02	+0.87	+1.98	9.77	-0.01
SOUTH AFRICA - SELLS	<1	0.01%	+4.00	+14.96	+0.00	+0.08	+3.45	+1.84	9.43	0.07
JAPAN	24	21.57%	+6.50	+12.60	+0.00	+0.02	0.32	+2.71	9.15	0.00
SWITZERLAND	21	18.70%	+7.18	+12.94	+0.00	+0.01	1.15	+1.80	8.72	-0.24
DENMARK	<1	0.34%	+4.28	+12.67	+0.00	+0.01	+4.29	+2.92	7.03	-0.05
NEW ZEALAND	<1	0.47%	+4.00	+13.42	+0.00	+0.05	+5.87	+3.09	6.69	0.39
ITALY - SELLS	2	1.55%	+4.29	+12.56	+0.00	+0.00	+9.04	+3.75	2.98	0.10
SWEDEN	3	3.00%	+6.92	+12.86	+0.00	+0.01	+4.07	+0.68	2.56	-0.08
INDIA	1	1.06%	+11.67	+15.33	+11.02	+10.87	+4.21	+1.30	0.60	-0.04



(+) = 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)	20202nd	20201st	20194th
WILLIAM BLAIR & COMP	27	220	23.74%	120,747	0.12	+6.48	+13.31	+9.81	+2.21	+3.03	5.01	24.86	0.64

NOTES

- Managers above made up 23.74 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

3 LOWEST COST MANAGER (Full Day VWAP)



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20202nd (bp)	20201st (bp)	20194th (bp)
LAZARD ASSET MANAGEM	32	166	28.59%	192,702	-0.04	+6.40	+13.70	+0.33	+1.83	6.83	37.35	2.99	7.52
LSV ASSET MANAGEMENT	29	499	26.00%	58,289	-0.07	+4.07	+13.32	1.22	+2.53	10.56	10.18	17.73	3.69
WALTER SCOTT INTL EA	24	38	21.67%	638,078	-0.22	+6.69	+15.63	5.67	+2.47	17.09	-	29.89	20.89

NOTES

- Manager above made up 76.26 % of principal traded.



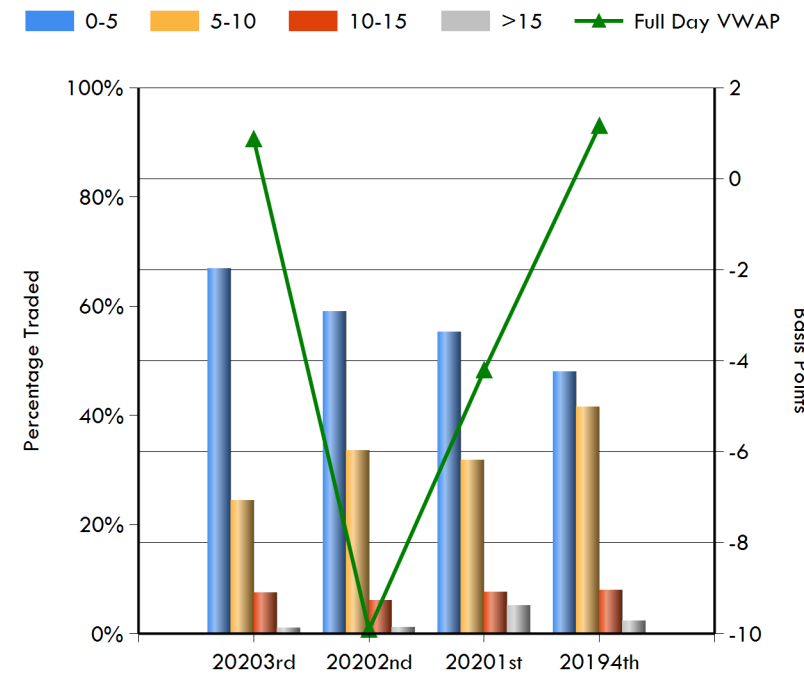
(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20202nd (bp)	20201st (bp)	20194th (bp)
MERRILL LY	12,479	+7.96	+12.90	+4.93	+5.36	+6.47	+7.04
MORGAN STA	5,472	+5.20	+12.99	+4.88	+6.98	+8.24	+8.80
SMBC NIKKO	5,344	+10.00	+12.60	+4.34	-	-	+10.00
LIQUIDNET	4,833	+4.52	+13.70	+4.89	+4.72	+4.94	+4.22
CREDIT SUI	4,226	+5.73	+13.14	+5.00	+6.58	+8.05	+8.19
JP MORGAN	3,394	+6.44	+13.20	+5.09	+7.11	+8.44	+7.30
INSTINET	2,900	+6.22	+12.75	+4.40	+7.13	+4.01	+4.72
UBS	2,706	+6.31	+12.96	+5.03	+5.67	+7.72	+6.99
CITIGROUP	2,242	+5.59	+12.82	+4.88	+4.85	+4.35	+6.01
PAVILION G	2,022	+5.97	+23.71	+6.37	+3.00	+3.00	+3.00
ROYAL BANK	1,685	+6.00	+23.71	+6.37	+12.00	+12.00	+12.00
EXANE	1,629	+3.35	+13.65	+4.41	+3.04	+3.44	+3.96
HSBC BANK	1,574	+3.15	+13.23	+4.31	+3.00	+3.00	+3.00
MIZUHO	1,548	+5.00	+12.60	+4.34	+5.00	+4.87	+9.10
PAREL	1,230	+4.00	+12.94	+5.07	-	-	+4.34
GOLDMAN SA	1,185	+8.12	+13.18	+5.57	+7.82	+8.93	+9.67
JEFFERIES	1,089	+3.53	+13.14	+3.93	+4.74	+5.31	+9.63
BNP PARIBA	1,045	+7.11	+12.68	+4.61	+7.35	+7.00	+6.82
BARCLAYS	1,037	+12.00	+12.85	+4.04	+9.62	+9.14	+10.67
SC BERNSTE	976	+4.00	+12.65	+4.48	+4.00	+4.00	+3.68

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)	20202nd (bp)	20201st (bp)	20194th (bp)
LAZARD ASSET MANAGEM	32	166	28.59%	192,702	-0.04	+6.40	+13.70	+0.33	+1.83	6.83	37.35	2.99	7.52
LSV ASSET MANAGEMENT	29	499	26.00%	58,289	-0.07	+4.07	+13.32	1.22	+2.53	10.56	10.18	17.73	3.69
WILLIAM BLAIR & COMP	27	220	23.74%	120,747	0.12	+6.48	+13.31	+9.81	+2.21	+3.03	5.01	24.86	0.64
WALTER SCOTT INTL EA	24	38	21.67%	638,078	-0.22	+6.69	+15.63	5.67	+2.47	17.09	-	29.89	20.89

NOTES

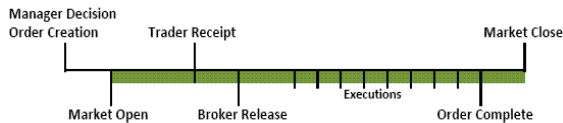
- Manager above made up 100.00 % of principal traded.



(+) = 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)	20202nd (bp)	20201st (bp)	20194th (bp)
MERRILL LYNCH	16	103	14.02%	152,250	0.00	12,479	+7.96	+12.90	+4.25	+2.01	0.66	12.53	6.06	+1.85
LIQUIDNET	11	39	9.56%	274,152	0.00	4,833	+4.52	+13.70	+1.21	+2.43	9.90	+8.84	26.81	53.25
MORGAN STANLEY	11	153	9.41%	68,818	-0.20	5,472	+5.20	+12.99	9.20	+2.04	15.77	109.43	38.33	+1.88
CREDIT SUISSE	7	76	6.59%	97,051	-0.03	4,226	+5.73	+13.14	+3.67	+2.37	6.17	16.65	2.34	10.69
SMBC NIKKO CAP MKT	5	4	4.78%	1,336,048	0.07	5,344	+10.00	+12.60	+1.36	+2.71	3.97	-	-	+10.68
JP MORGAN CHASE	5	34	4.71%	154,883	0.14	3,394	+6.44	+13.20	+0.74	+2.34	4.71	13.35	+40.95	+26.76
HSBC BANK	5	82	4.47%	61,031	-0.25	1,574	+3.15	+13.23	7.29	+3.64	6.40	39.21	70.08	15.17
EXANE	5	23	4.34%	211,287	-0.11	1,629	+3.35	+13.65	2.84	+1.61	14.75	13.34	13.38	44.41
INSTINET	5	50	4.17%	93,307	0.02	2,900	+6.22	+12.75	2.96	+2.48	11.99	+3.18	+36.30	+15.02
UBS	4	37	3.83%	115,882	0.11	2,706	+6.31	+12.96	+8.63	+2.05	0.18	+12.28	32.32	12.26

NOTES

- Brokers above made up 65.88 % of principal traded.



(+) = Cost

TRADE CYCLE DETAIL

BROKER PERFORMANCE (FULL DAY VWAP)



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20202nd (bp)	20201st (bp)	20194th (bp)
CITIGROUP	4	39	3.58%	102,794	0.03	2,242	+5.59	+12.82	+27.86	+1.54	+18.47	+15.28	15.33	6.35
PAVILION GLOBAL MKT	3	10	3.03%	338,551	-0.53	2,022	+5.97	+23.71	8.49	+2.00	28.25	120.97	47.54	19.57
MIZUHO	3	91	2.77%	34,036	-0.14	1,548	+5.00	+12.60	5.26	+2.71	15.59	59.33	13.23	10.12
JEFFERIES & CO	3	21	2.76%	146,804	0.25	1,089	+3.53	+13.14	+13.01	+1.63	+1.99	9.81	5.99	+0.25
PAREL	3	1	2.75%	3,076,079	-1.22	1,230	+4.00	+12.94	37.29	+1.80	48.04	-	-	+32.52
ROYAL BANK OF CANADA	3	5	2.51%	561,529	0.15	1,685	+6.00	+23.71	+2.90	+2.00	16.83	13.34	+0.38	+11.75
SC BERNSTEIN	2	20	2.18%	121,996	0.18	976	+4.00	+12.65	+17.80	+2.35	+6.89	+16.18	+57.99	+12.83
RBC DOMINION SECS	2	6	1.36%	253,506	0.10	137	+0.90	+23.71	+1.48	+2.00	23.35	-	38.41	18.76
BNP PARIBAS	1	14	1.31%	105,069	-0.17	1,045	+7.11	+12.68	+0.18	+1.80	6.63	6.36	24.36	21.11
GOLDMAN SACHS	1	8	1.30%	182,451	0.32	1,185	+8.12	+13.18	+18.84	+4.54	+8.05	21.77	25.88	46.74

NOTES

- Brokers above made up 23.55 % 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)	20202nd (bp)	20201st (bp)	20194th (bp)
CREDIT AGRICOLE	1	9	1.15%	142,635	0.00	799	+6.22	+13.60	1.47	+2.21	10.06	24.68	+37.24	4.99
PERSHING	1	14	1.06%	84,750	0.20	650	+5.48	+13.04	3.20	+2.31	12.96	42.78	29.37	-
MACQUARIE	1	9	1.04%	129,847	0.60	916	+7.83	+12.74	+27.06	+1.06	+22.15	5.46	48.92	+26.20
BARCLAYS	<1	3	0.77%	287,931	0.45	1,037	+12.00	+12.85	+26.30	+1.04	+52.82	29.24	26.87	6.96
DAIWA SECURITIES	<1	2	0.76%	426,620	-0.02	598	+7.01	+12.60	0.53	+2.71	8.85	24.45	17.08	8.09
ITG	<1	12	0.74%	69,289	-0.09	416	+5.00	+12.90	16.84	+1.67	19.96	45.44	+18.39	21.05
SCOTIA CAPITAL	<1	7	0.64%	101,741	-0.16	45	+0.63	+23.71	8.71	+2.00	33.81	73.89	51.79	20.02
SVENSKA HANDELSBANKE	<1	3	0.60%	224,971	-0.19	472	+7.00	+12.86	8.57	+0.68	15.12	10.55	17.15	+22.36
SMBC SECURITIES INC	<1	11	0.59%	59,673	-0.14	376	+5.72	+12.60	7.34	+2.71	16.95	8.87	17.95	12.59
JOH BERENBERG GOSSLE	<1	3	0.56%	209,426	0.05	474	+7.54	+13.32	+1.46	+4.53	8.82	6.89	+2.75	12.50

NOTES

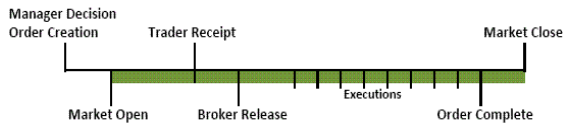
- Brokers above made up 7.92 % of principal traded.



(+) = 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)	20202nd (bp)	20201st (bp)	20194th (bp)
JM FINN & COMPANY	<1	8	0.50%	69,933	0.11	671	+12.00	+15.33	+19.60	+1.30	+16.26	-	-	-
D CARNEGIE AG	<1	3	0.50%	185,924	0.13	390	+7.00	+12.86	+5.00	+0.68	1.55	138.91	106.88	35.01
BOFA SECS	<1	11	0.48%	48,987	-0.27	216	+4.00	+23.71	6.38	+2.00	28.11	-	-	-
NUMIS SECURITIES	<1	1	0.37%	416,388	0.00	291	+7.00	+13.69	23.10	+6.70	36.46	16.99	+20.74	-
FOKUS BANK	<1	2	0.21%	117,121	0.80	164	+7.00	+12.86	+33.55	+3.13	+24.56	-	-	-
ENSKILDA SECURITIES	<1	2	0.18%	101,372	0.37	142	+7.00	+12.86	+16.71	+0.68	+10.16	+12.31	+12.54	-
ODDO SECS	<1	1	0.16%	179,724	0.26	126	+7.00	+12.56	+18.44	+3.75	+9.13	-	6.10	242.13
SOCIETE GENERALE	<1	2	0.12%	64,819	-0.73	65	+5.00	+12.89	36.72	+1.84	46.47	37.60	7.21	17.26
BANCO PACTUAL	<1	3	0.09%	33,302	0.56	115	+11.55	+14.99	+23.35	+3.53	+16.92	-	-	-
BRDESCO	<1	1	0.05%	52,028	-0.06	60	+11.55	+14.99	4.97	+3.53	11.40	-	56.61	12.77

NOTES

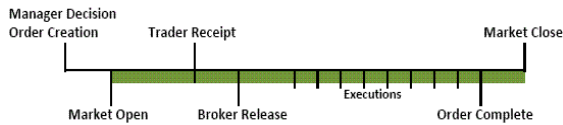
- Brokers above made up 2.66 % of principal traded.



(+) = 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)	20202nd (bp)	20201st (bp)	20194th (bp)
GRAND TOTAL	32	166	28.59%	192,702	-0.04	20,461	+6.40	+13.70	+0.33	+1.83	6.83	37.35	2.99	7.52
MERRILL LYNCH	11	39	9.69%	277,959	-0.11	9,943	+9.17	+12.90	2.01	+1.82	4.57	16.20	+4.27	+4.00
EXANE	4	20	3.93%	220,129	-0.13	1,321	+3.00	+13.63	3.83	+1.61	16.08	13.63	16.04	47.91
JP MORGAN CHASE	2	11	2.10%	213,700	0.18	1,273	+5.41	+12.81	+10.49	+2.17	+0.90	6.57	+66.84	+19.05
UBS	2	8	2.05%	286,262	-0.12	1,327	+5.80	+12.93	+11.72	+1.98	+2.60	+12.50	33.82	10.56
LIQUIDNET	2	14	2.04%	162,901	0.12	988	+4.33	+15.79	+2.37	+1.80	10.66	+13.68	+3.58	91.60
MORGAN STANLEY	2	15	1.86%	138,815	-0.16	1,458	+7.00	+12.89	12.85	+1.78	20.76	270.58	31.83	3.73
RBC DOMINION SECS	2	6	1.36%	253,506	0.10	137	+0.90	+23.71	+1.48	+2.00	23.35	-	40.33	18.76
CREDIT SUISSE	1	9	1.10%	136,543	-0.16	706	+5.75	+12.84	1.86	+1.88	10.86	5.49	+13.00	15.87
CITIGROUP	1	5	1.05%	234,230	0.15	724	+6.19	+12.86	+15.62	+1.07	+8.62	23.70	14.93	3.91
BARCLAYS	<1	3	0.77%	287,931	0.45	1,037	+12.00	+12.85	+26.30	+1.04	+52.82	57.65	31.87	7.39



(+) = 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)	2020 2nd	2020 1st	2019 4th
GRAND TOTAL	29	499	26.00%	58,289	-0.07	11,840	+4.07	+13.32	1.22	+2.53	10.56	10.18	17.73	3.69
MORGAN STANLEY	6	90	5.23%	65,044	-0.23	2,381	+4.07	+12.82	7.23	+2.25	18.31	53.36	70.73	+53.05
HSBC BANK	5	81	4.34%	59,979	-0.25	1,457	+3.00	+13.25	7.37	+3.73	6.32	39.21	70.08	15.17
CREDIT SUISSE	5	54	4.09%	84,841	0.10	2,291	+5.00	+12.76	+8.34	+2.22	1.73	16.04	+1.11	11.17
MERRILL LYNCH	3	57	2.82%	55,427	-0.02	1,272	+4.03	+12.73	0.50	+2.40	11.66	10.99	21.52	7.42
MIZUHO	3	91	2.77%	34,036	-0.14	1,548	+5.00	+12.60	5.26	+2.71	15.59	25.21	6.76	8.92
CITIGROUP	2	30	1.87%	69,860	0.11	838	+4.00	+12.78	+10.04	+1.95	1.14	+16.85	10.94	10.68
INSTINET	2	38	1.83%	53,989	0.39	820	+4.00	+12.60	+18.00	+2.71	+6.67	+16.88	+42.24	+31.19
UBS	1	21	1.02%	54,424	0.06	571	+5.00	+12.97	7.75	+1.70	17.42	+3.02	26.40	16.08
SCOTIA CAPITAL	<1	7	0.64%	101,741	-0.16	45	+0.63	+23.71	8.71	+2.00	33.81	73.89	51.79	20.02
JP MORGAN CHASE	<1	11	0.58%	58,945	-0.34	195	+3.00	+12.85	21.25	+2.05	33.22	72.05	77.97	+27.29



(+) = Cost

TRADE CYCLE DETAIL

WALTER SCOTT INTL EAFE INCOME 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)	20202nd (bp)	20201st (bp)	20194th (bp)
GRAND TOTAL	24	38	21.67%	638,078	-0.22	16,232	+6.69	+15.63	5.67	+2.47	17.09	-	29.89	20.89
LIQUIDNET	7	11	6.41%	652,063	-0.03	3,586	+5.00	+13.06	0.46	+2.56	11.08	-	33.25	16.76
SMBC NIKKO CAP MKT	5	4	4.78%	1,336,048	0.07	5,344	+10.00	+12.60	+1.36	+2.71	3.97	-	-	+10.68
PAVILION GLOBAL MKT	3	9	3.00%	372,649	-0.53	2,012	+6.00	+23.71	8.47	+2.00	28.20	-	-	-
PAREL	3	1	2.75%	3,076,079	-1.22	1,230	+4.00	+12.94	37.29	+1.80	48.04	-	-	-
ROYAL BANK OF CANADA	3	5	2.51%	561,529	0.15	1,685	+6.00	+23.71	+2.90	+2.00	16.83	-	-	-
INSTINET	2	4	1.39%	389,739	-0.19	1,559	+10.00	+12.60	8.78	+2.71	14.11	-	-	7.36
DAIWA SECURITIES	<1	1	0.31%	342,880	N/A	343	+10.00	+12.60	+0.13	+2.71	5.20	-	-	7.21
JOH BERENBERG GOSSLE	<1	2	0.30%	169,684	0.07	271	+8.00	+13.69	+1.88	+6.70	10.44	-	-	-
MERRILL LYNCH	<1	1	0.22%	251,292	0.61	201	+8.00	+13.69	+27.06	+6.70	+14.72	-	-	-



(+) = 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)	2020 2nd	2020 1st	2019 4th
GRAND TOTAL	27	220	23.74%	120,747	0.12	17,205	+6.48	+13.31	+9.81	+2.21	+3.03	5.01	24.86	0.64
JEFFERIES & CO	3	15	2.45%	182,810	0.28	931	+3.40	+13.20	+14.57	+1.49	+3.51	21.19	4.09	11.38
MORGAN STANLEY	3	48	2.32%	54,021	-0.16	1,634	+6.30	+13.45	10.71	+1.78	6.03	26.34	29.98	+38.11
SC BERNSTEIN	2	20	2.18%	121,996	0.18	976	+4.00	+12.65	+17.80	+2.35	+6.89	+16.18	+57.99	+29.33
JP MORGAN CHASE	2	12	2.03%	188,911	0.24	1,926	+8.50	+13.69	3.10	+2.61	2.41	0.37	+55.75	+80.01
CREDIT SUISSE	2	13	1.40%	120,430	-0.30	1,229	+7.85	+14.49	5.68	+3.22	15.48	79.97	152.97	9.54
MERRILL LYNCH	1	6	1.28%	238,445	0.60	1,063	+7.43	+13.18	+57.93	+1.82	+50.32	1.85	39.50	+6.64
BNP PARIBAS	1	11	1.19%	120,850	-0.26	932	+7.01	+12.69	+0.30	+1.71	6.45	80.46	+21.37	+99.31
GOLDMAN SACHS	1	6	1.12%	208,932	0.36	1,082	+8.63	+13.27	+21.29	+4.85	+10.42	22.24	26.77	0.19
LIQUIDNET	1	13	1.10%	95,060	-0.02	256	+2.07	+13.58	+9.05	+2.83	1.35	+10.98	0.75	+12.92
CREDIT AGRICOLE	1	7	1.01%	162,208	0.03	695	+6.12	+13.73	+1.07	+2.15	7.55	24.68	+52.72	0.86



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
NOVARTIS AG REG COMMON STOCK C	10	131,299	5,024,595	11,176,753	0.29%	-0.42	13.85
CANADIAN NATL RAILWAY CO COMMO	14	59,400	-6,161,491	6,161,491	0.39%	-0.22	3.29
SHIMANO INC COMMON STOCK	7	30,200	6,129,802	6,129,802	1.13%	0.05	+0.72
GIVAUDAN REG COMMON STOCK CHF1	7	1,404	6,055,037	6,055,037	1.05%	0.00	+2.02
ATOS SE COMMON STOCK EUR1.0	11	40,824	3,458,716	3,458,716	1.31%	-0.14	2.66
BRITISH AMERICAN TOBACCO PLC C	17	62,700	-2,187,676	2,187,676	0.11%	-0.51	20.52
BP PLC COMMON STOCK USD.25	25	639,500	2,169,338	2,169,338	0.08%	0.10	+18.64
ALCON INC COMMON STOCK CHF.04	7	37,648	2,145,837	2,145,837	0.49%	0.08	+17.76
COGECO COMMUNICATIONS INC COMM	9	25,107	-2,117,787	2,117,787	2.43%	0.36	+14.59
BANKINTER SA COMMON STOCK EUR.	22	417,625	-2,112,899	2,112,899	0.76%	-0.18	11.32

Names Most Traded - Total Orders (\$)

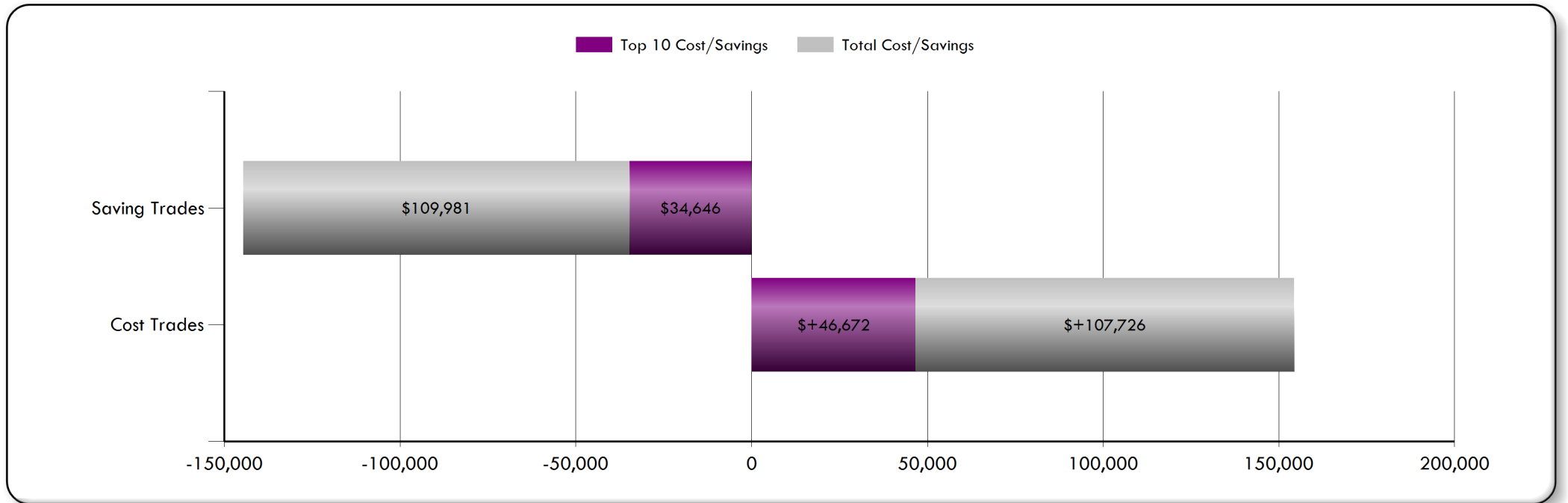
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
DTS CORP COMMON STOCK	43	27,300	-571,449	+4.68	0.45%	-0.12	8.35
BP PLC COMMON STOCK USD.25	25	639,500	2,169,338	+3.00	0.08%	0.10	+18.64
ENEL SPA COMMON STOCK EUR1.	24	173,300	1,540,351	+3.97	0.06%	0.08	+8.01
KAMIGUMI CO LTD COMMON STOCK	24	45,600	-929,782	+5.10	0.46%	0.23	+2.94
SHIN ETSU POLYMER CO LTD COMMO	24	54,000	-462,173	+4.48	1.22%	-0.08	4.65
METRO AG COMMON STOCK	23	40,200	407,246	+4.02	0.24%	0.22	+7.74
NICHIHA CORP COMMON STOCK	23	22,800	-629,332	+4.65	1.31%	0.03	2.86
AEON FINANCIAL SERVICE CO LT C	23	155,600	1,347,204	+5.97	0.27%	-0.18	15.09
BANKINTER SA COMMON STOCK EUR.	22	417,625	-2,112,899	+5.70	0.76%	-0.18	11.32
GS YUASA CORP COMMON STOCK	21	26,500	-454,378	+4.66	0.39%	0.06	+2.32



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal (\$)	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	4,000,133	10	+157.19	30.23%
Cost Trades	47,041,461	414	+34.56	100.00%
Saving Trades	64,844,321	509	32.45	100.00%
10 Low Cost Trades	9,215,121	10	74.32	23.96%





(+) = Cost

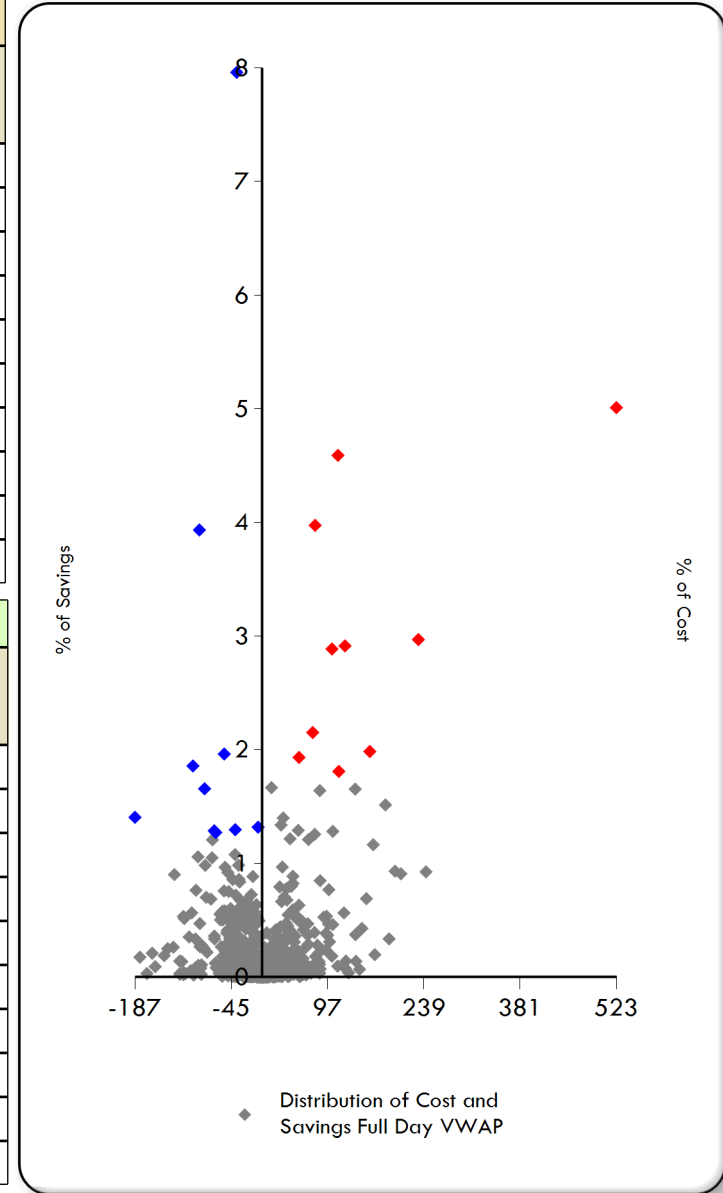
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	SWI	SIG COMBIB	20200804	155,698	5.01%	N/A	+522.92	WILLI	CITIG
Buy	SWI	ZUR ROSE G	20200810	639,073	4.59%	1.72	+112.17	WILLI	JEFFE
Buy	BRZ	TOTVS SA C	20200803	788,392	3.98%	1.39	+78.46	WILLI	JP MO
Sell	AST	FORTESCUE	20200827	194,119	2.97%	2.35	+230.77	LSV A	CREDI
Sell	SWI	ALCON INC	20200715	363,020	2.91%	0.87	+122.43	LAZAR	UBS
Buy	SPA	INDUSTRIA	20200916	436,098	2.89%	1.18	+103.25	LAZAR	MERRI
Buy	CAN	COGECO COM	20200910	447,011	2.15%	1.50	+74.87	LAZAR	LIQUI
Sell	JAP	NIHON M+A	20200923	189,644	1.99%	1.31	+159.07	WILLI	SC BE
Sell	HKG	COUNTRY GA	20200810	543,244	1.93%	1.18	+54.63	WILLI	MACQU
Sell	AST	FORTESCUE	20200901	243,833	1.81%	1.31	+113.31	LSV A	CITIG

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	SWI	NOVARTIS A	20200930	3,076,079	7.96%	-1.22	37.29	WALTE	PAREL
Sell	SWI	TECAN GROU	20200720	621,572	3.93%	-0.98	92.39	WILLI	JP MO
Sell	SGP	MAPLETREE	20200803	512,753	1.96%	-0.64	55.69	WILLI	INSTI
Sell	JAP	TIS INC CO	20200731	266,438	1.86%	-2.30	101.89	WILLI	BNP P
Sell	UK	BP PLC COM	20200824	285,335	1.66%	-1.74	84.72	LSV A	HSBC
Sell	UK	AVEVA GROU	20200904	110,523	1.41%	-0.01	187.39	WILLI	LIQUI
Sell	JAP	SHIMANO IN	20200928	3,335,024	1.32%	-0.16	5.73	WALTE	SMBC
Sell	JAP	MARUBENI C	20200817	477,195	1.30%	-1.01	39.47	LSV A	MIZUH
Buy	UK	BRITISH AM	20200717	262,295	1.29%	-2.10	70.46	LSV A	HSBC
Buy	FRA	ORANGE COM	20200825	267,908	1.27%	-1.36	68.22	LSV A	MORGA



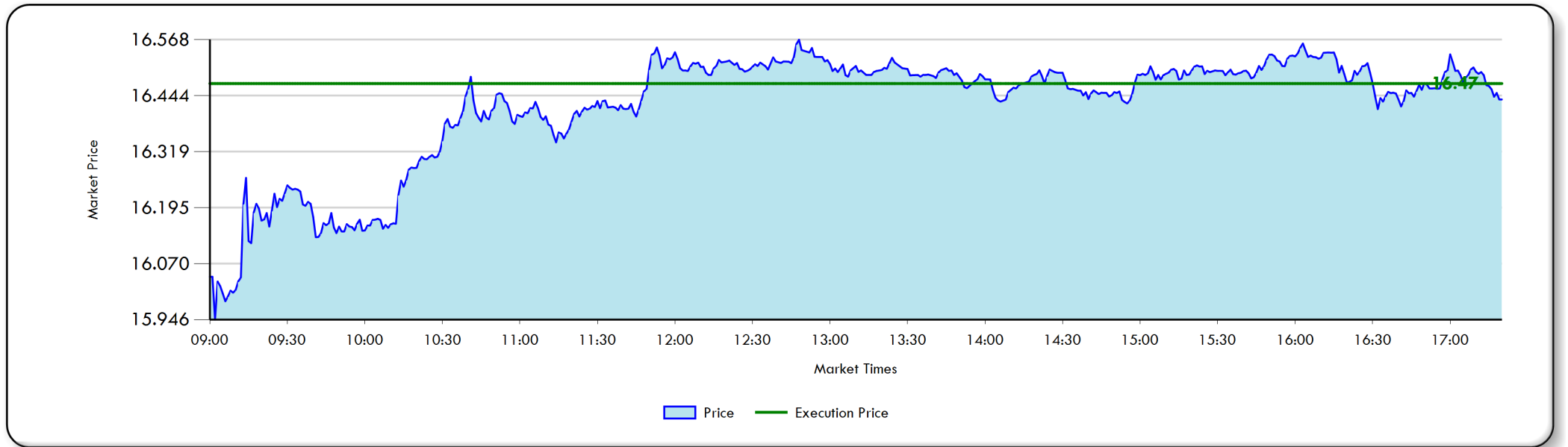


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SIG COMBIBLOC GROUP AG COMMON - 20200804

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	CITIGROUP	SWI	CHF	BD5GN60	08/04/2020 09:00:00	08/04/2020 17:20:00	155,698	16.47	15.65	+7,737	+522.91	N/A	0.02



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 5.01% of your market impact cost.

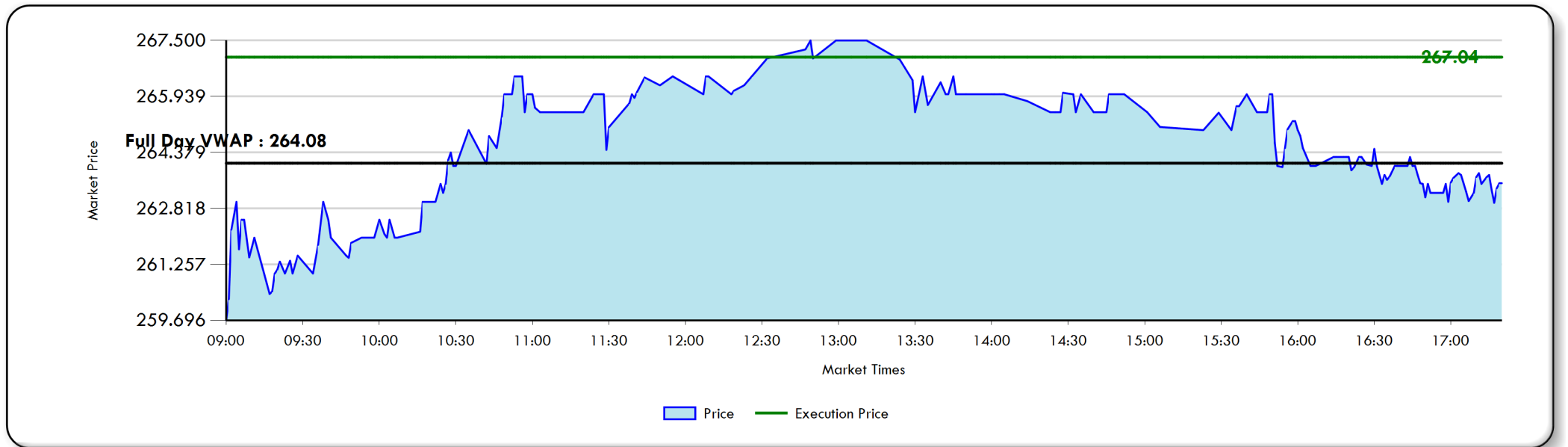


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ZUR ROSE GROUP AG COMMON STOCK - 20200810

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	JEFFERIES & CO	SWI	CHF	B92M6T7	08/10/2020 09:00:00	08/10/2020 17:20:00	639,073	267.04	264.08	+7,089	+112.17	1.72	3.72



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 4.59% of your market impact cost.

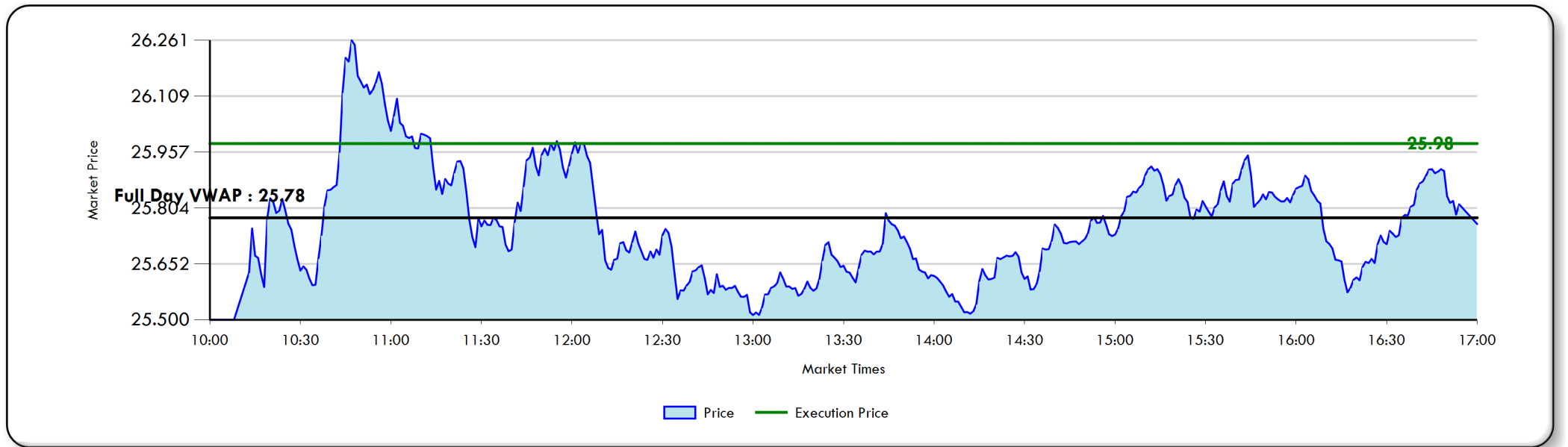


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TOTVS SA COMMON STOCK - 20200803

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	BRZ	BRL	B10LQP6	08/03/2020 10:00:00	08/03/2020 17:00:00	788,392	25.98	25.78	+6,138	+78.46	1.39	2.54



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.98% of your market impact cost.

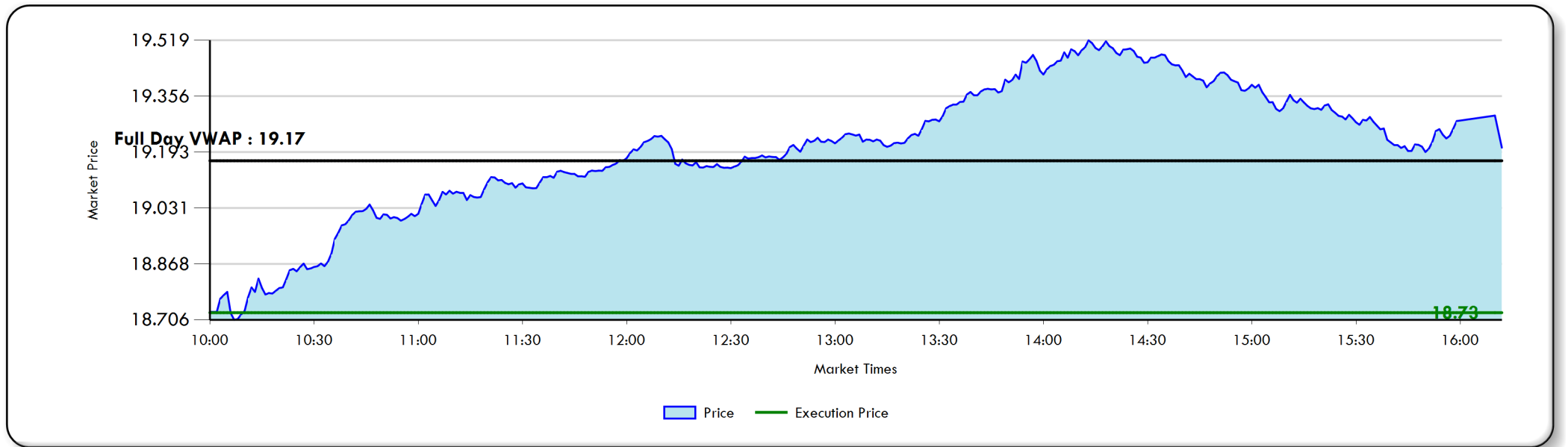


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

FORTESCUE METALS GROUP LTD COM - 20200827

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	CREDIT SUISSE	AST	AUD	6086253	08/27/2020 10:00:00	08/27/2020 16:12:00	194,119	18.73	19.17	+4,586	+230.77	2.35	0.11



NOTES

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

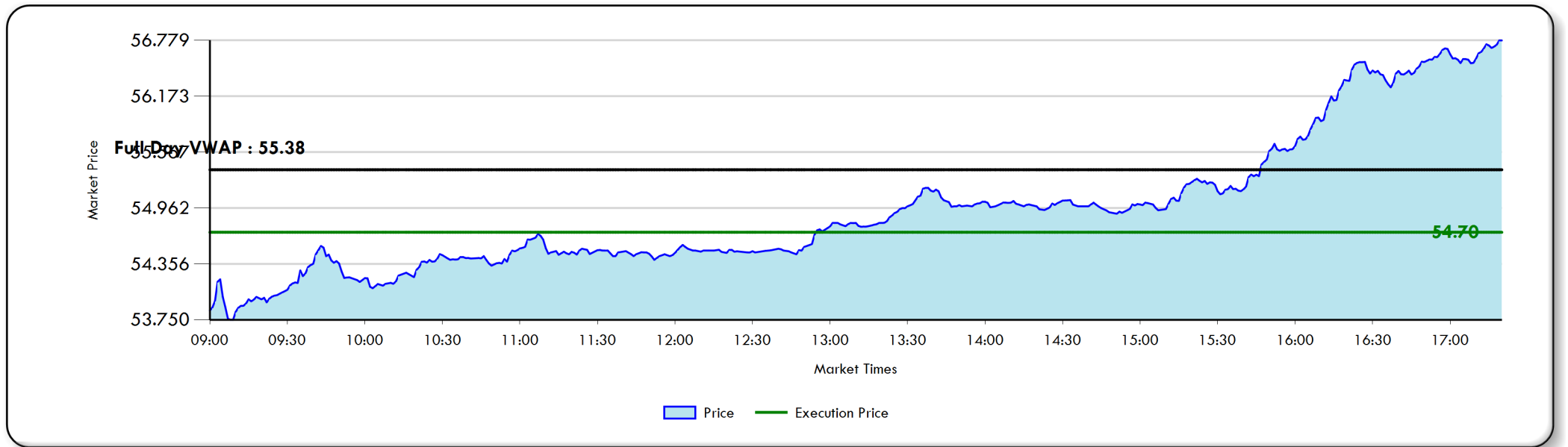


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ALCON INC COMMON STOCK CHF.04 - 20200715

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	UBS	SWI	CHF	BJT1GR5	07/15/2020 09:00:00	07/15/2020 17:20:00	363,020	54.70	55.38	+4,500	+122.43	0.87	0.28



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.91% of your market impact cost.

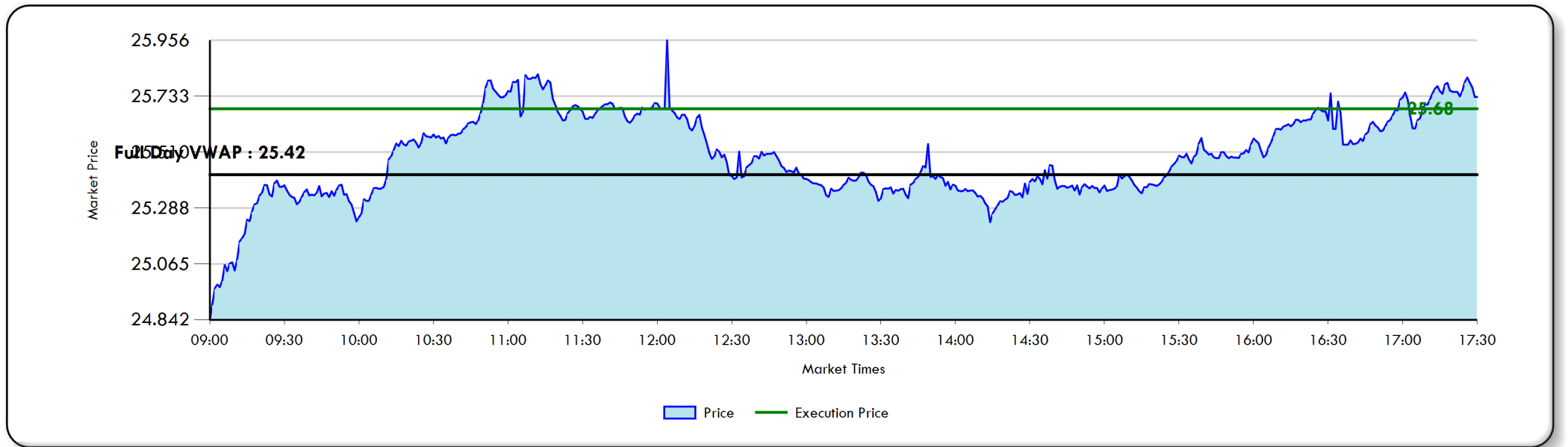


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

INDUSTRIA DE DISEÑO TEXTIL COM - 20200916

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	SPA	EUR	BP9DL90	09/16/2020 09:00:00	09/16/2020 17:30:00	436,098	25.68	25.42	+4,457	+103.25	1.18	0.32



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.89% of your market impact cost.

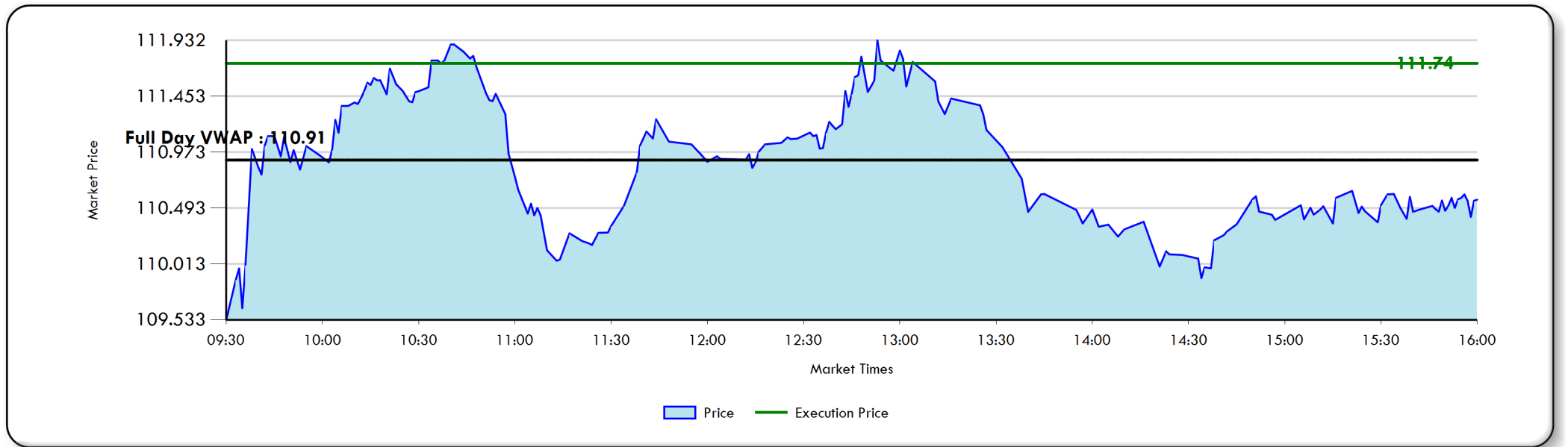


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

COGECO COMMUNICATIONS INC COMM - 20200910

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	LIQUIDNET	CAN	CAD	BZCDFX9	09/10/2020 09:30:00	09/10/2020 16:00:00	447,011	111.74	110.91	+3,322	+74.87	1.50	4.34



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.15% of your market impact cost.

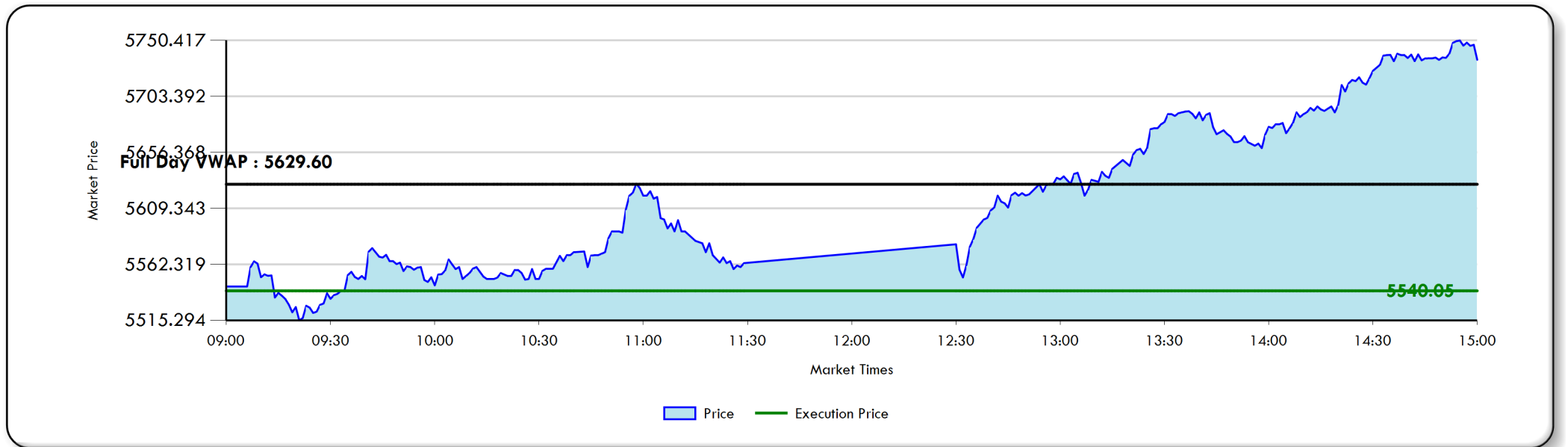


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NIHON M+A CENTER INC COMMON ST - 20200923

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	SC BERNSTEIN	JAP	JPY	B1DN466	09/23/2020 09:00:00	09/23/2020 15:00:00	189,644	5540.05	5629.60	+3,065	+159.06	1.31	0.27



NOTES

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

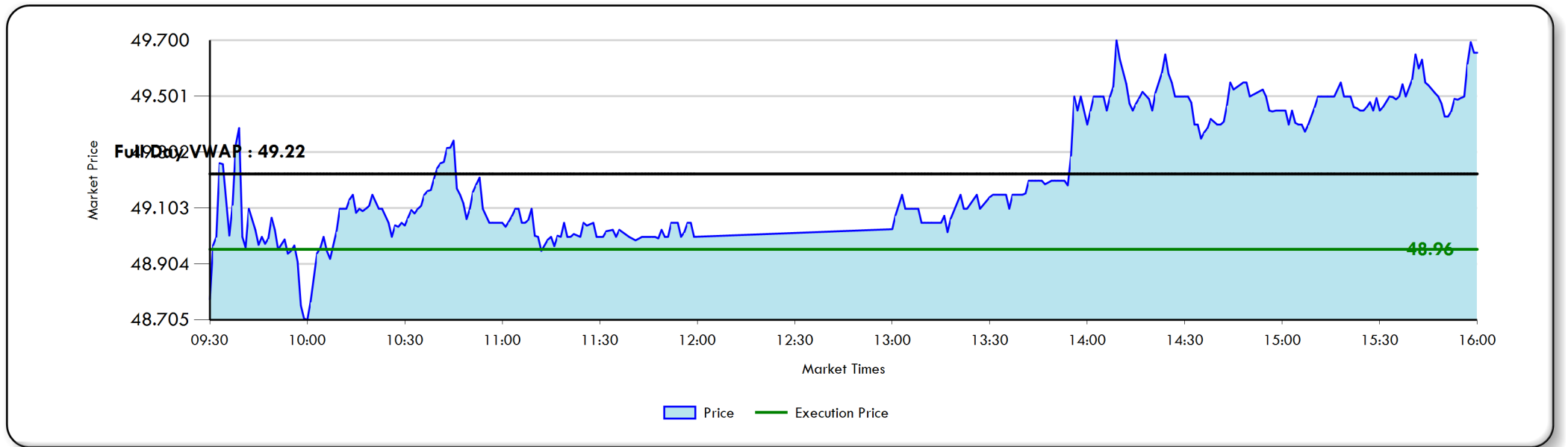


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

COUNTRY GARDEN SERVICES HOLD C - 20200810

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	MACQUARIE	HKG	HKD	BDQZP48	08/10/2020 09:30:00	08/10/2020 16:00:00	543,244	48.96	49.22	+2,984	+54.63	1.18	2.72



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.93% of your market impact cost.

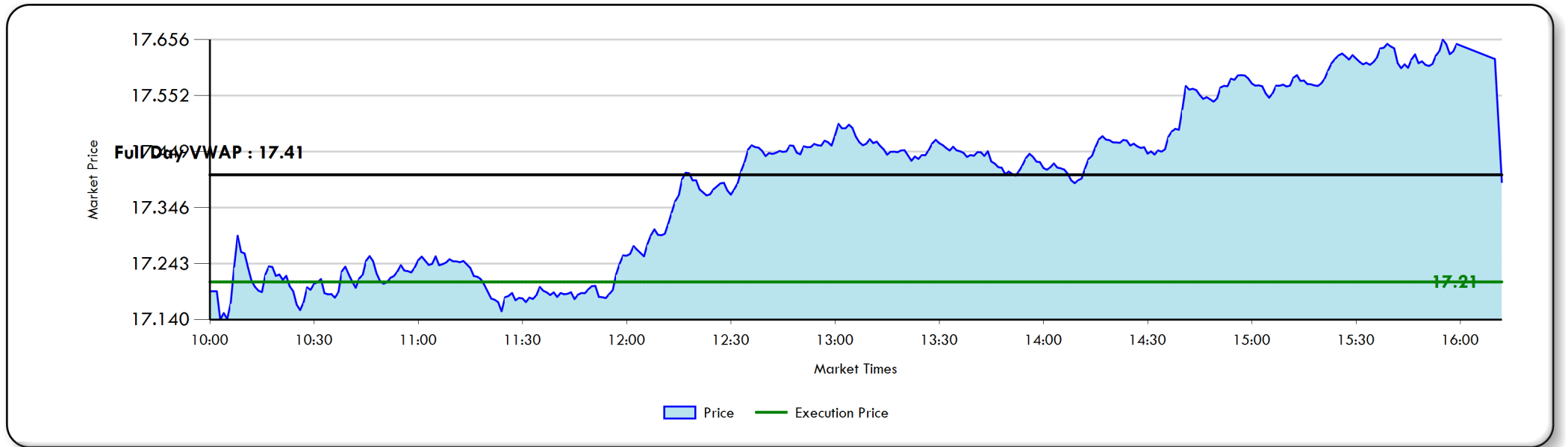


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

FORTESCUE METALS GROUP LTD COM - 20200901

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	CITIGROUP	AST	AUD	6086253	09/01/2020 10:00:00	09/01/2020 16:12:00	243,833	17.21	17.41	+2,795	+113.31	1.31	0.24



NOTES

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

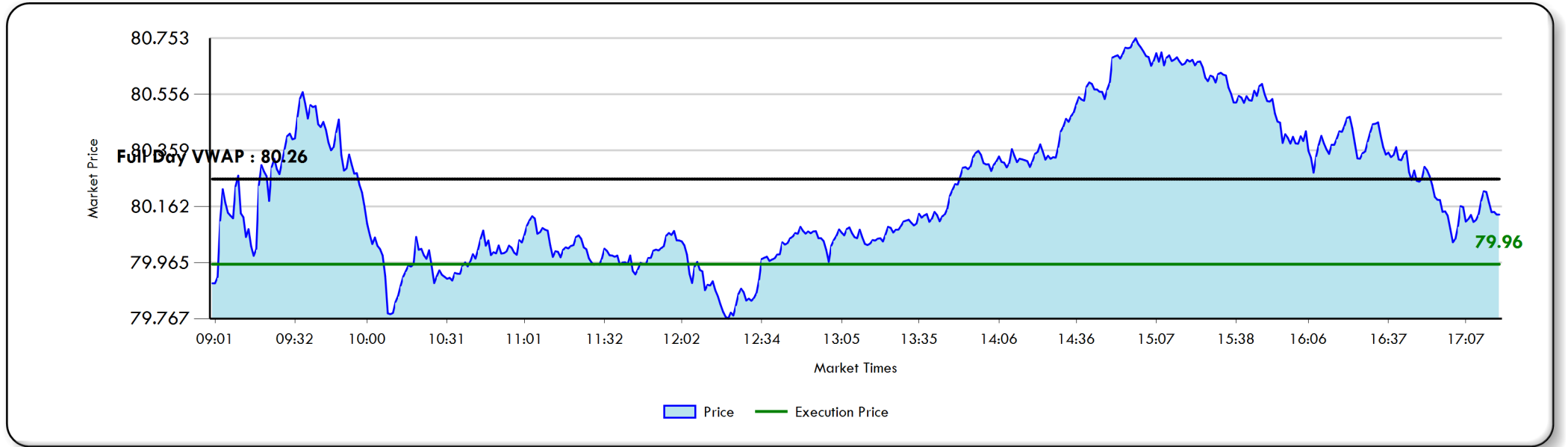


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NOVARTIS AG REG COMMON STOCK C - 20200930

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	WALTER SCOTT INTL EAFE INCOME	PAREL	SWI	CHF	7103065	09/30/2020 09:00:00	09/30/2020 17:20:00	3,076,079	79.96	80.26	11,513	37.28	-1.22	0.89



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 7.96% of your market impact cost.

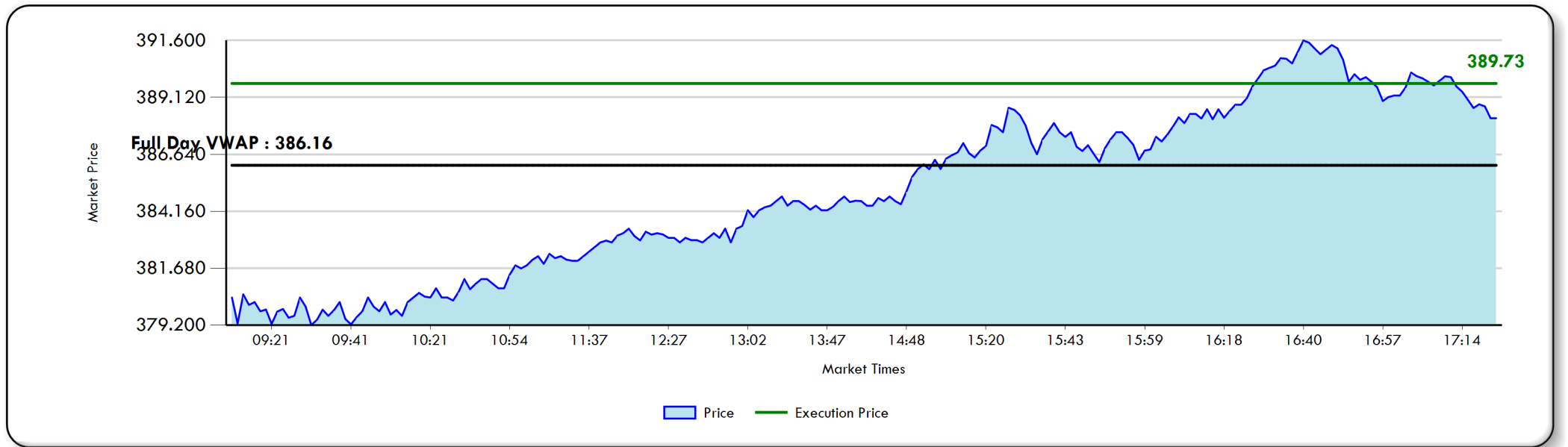


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TECAN GROUP AG REG COMMON STOC - 20200720

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	JP MORGAN CHASE	SWI	CHF	7110902	07/20/2020 09:00:00	07/20/2020 17:20:00	621,572	389.73	386.16	5,690	92.39	-0.98	8.60



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.93% of your market impact cost.

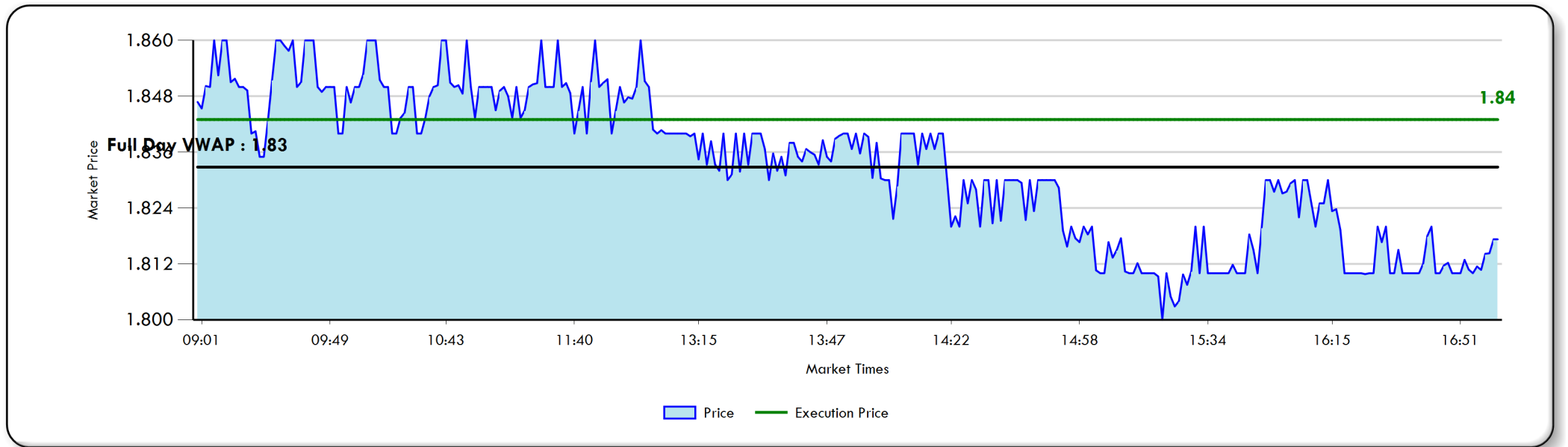


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MAPLETREE COMMERCIAL TRUST REI - 20200803

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	INSTINET	SGP	SGD	B5143W8	08/03/2020 09:00:00	08/03/2020 17:00:00	512,753	1.84	1.83	2,840	55.68	-0.64	5.13



NOTES

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

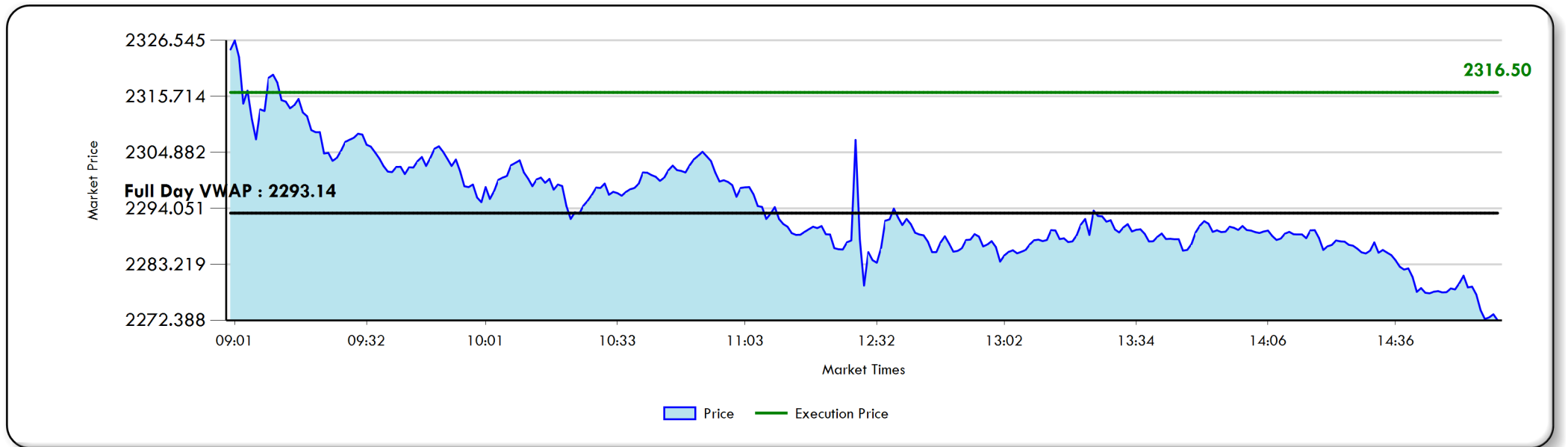


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TIS INC COMMON STOCK - 20200731

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	JAP	JPY	B2Q4CR0	07/31/2020 09:00:00	07/31/2020 15:00:00	266,438	2316.50	2293.14	2,687	101.88	-2.30	0.84



NOTES

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

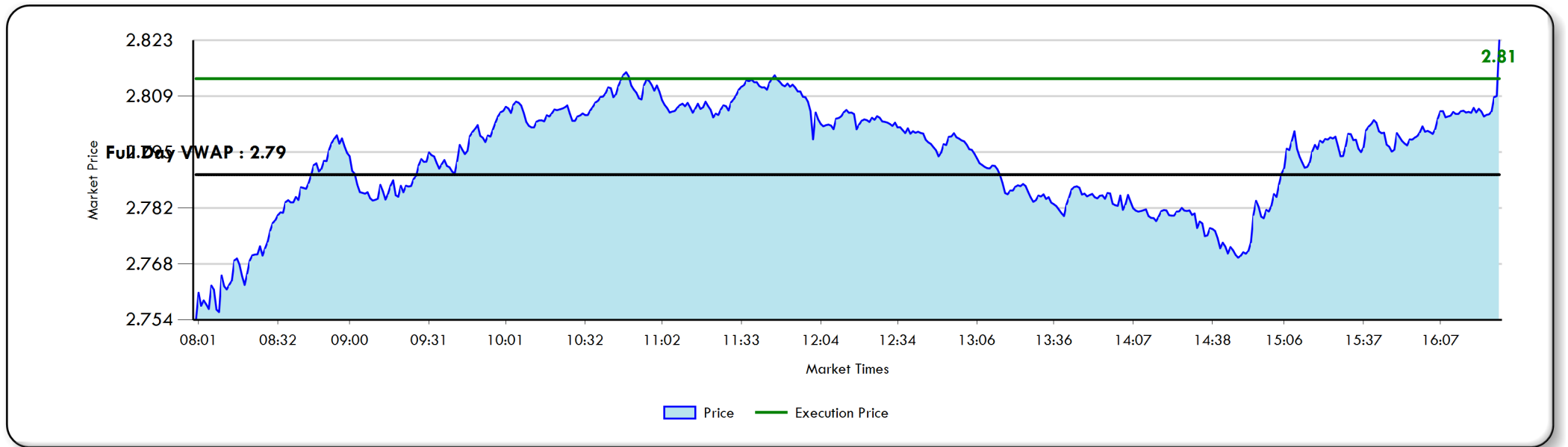


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BP PLC COMMON STOCK USD.25 - 20200824

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	HSBC BANK	UK	GBP	0798059	08/24/2020 08:00:00	08/24/2020 16:30:00	285,335	2.81	2.79	2,397	84.72	-1.74	0.27



NOTES

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

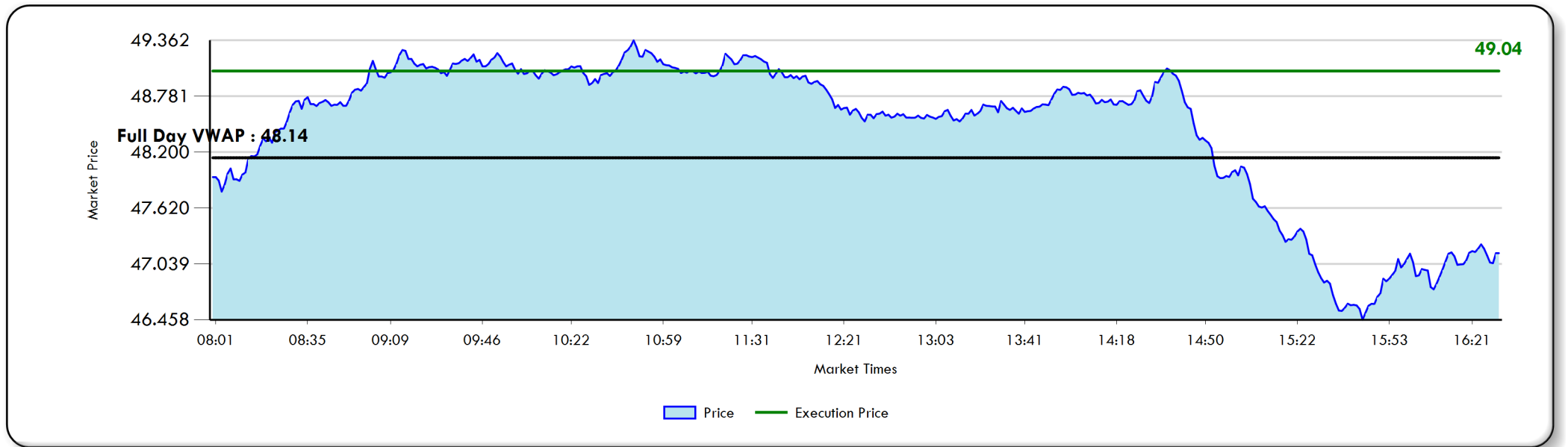


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

AVEVA GROUP PLC COMMON STOCK G - 20200904

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	LIQUIDNET	UK	GBP	BBG9VN7	09/04/2020 08:00:00	09/04/2020 16:30:00	110,523	49.04	48.14	2,033	187.38	-0.01	0.69



NOTES

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

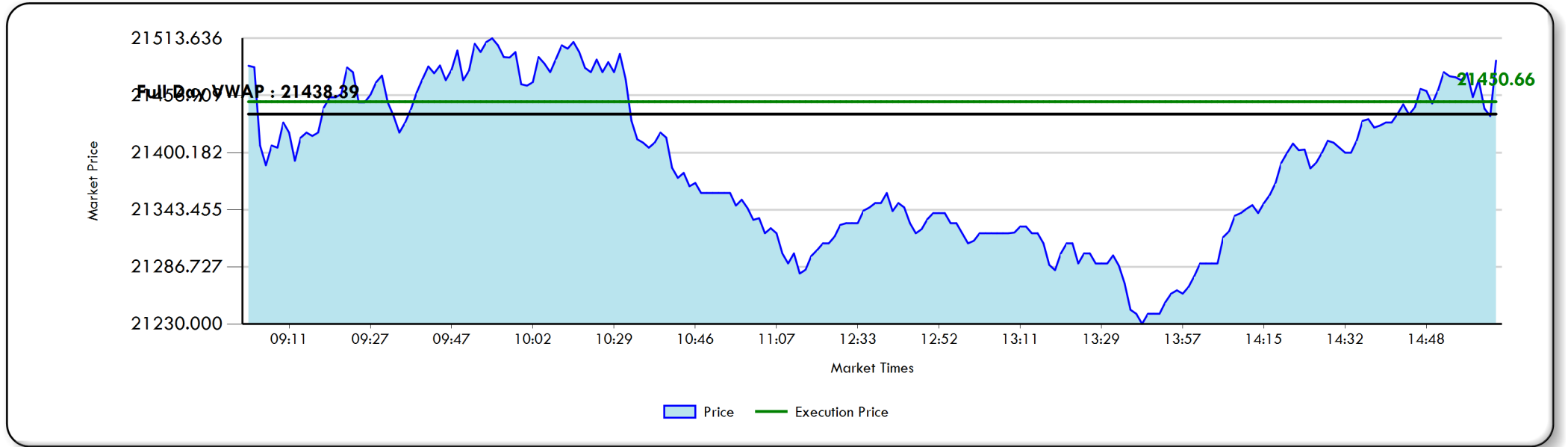


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SHIMANO INC COMMON STOCK - 20200928

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	WALTER SCOTT INTL EAFE INCOME	SMBC NIKKO CAP MKT	JAP	JPY	6804820	09/28/2020 09:00:00	09/28/2020 15:00:00	3,335,024	21450.66	21438.39	1,908	5.72	-0.16	4.74



NOTES

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

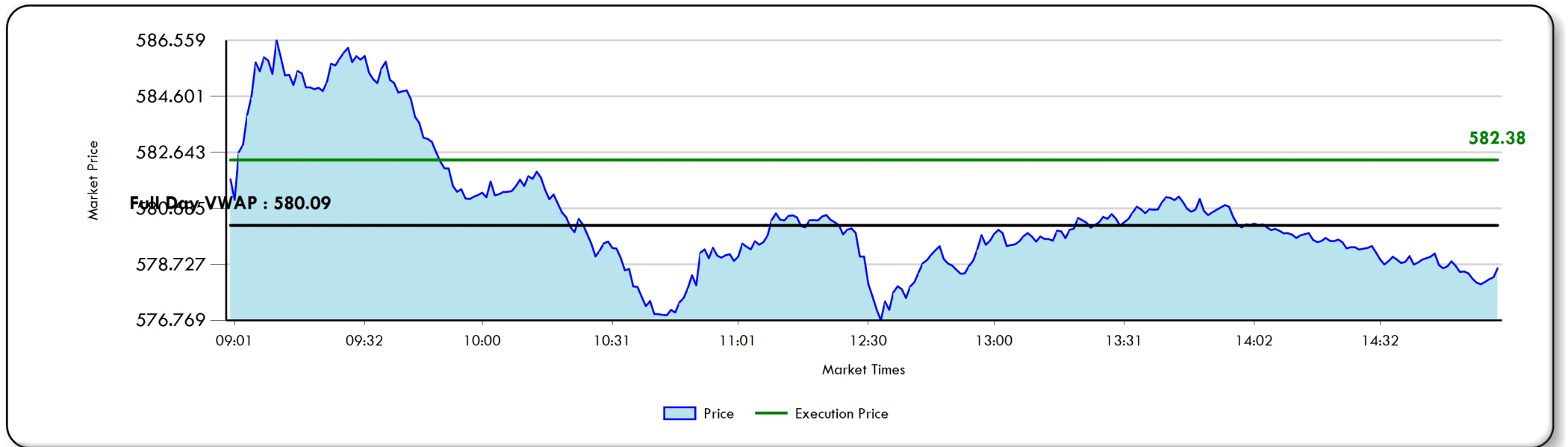


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MARUBENI CORP COMMON STOCK - 20200817

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	MIZUHO	JAP	JPY	6569464	08/17/2020 09:00:00	08/17/2020 15:00:00	477,195	582.38	580.09	1,876	39.47	-1.01	2.12



NOTES

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

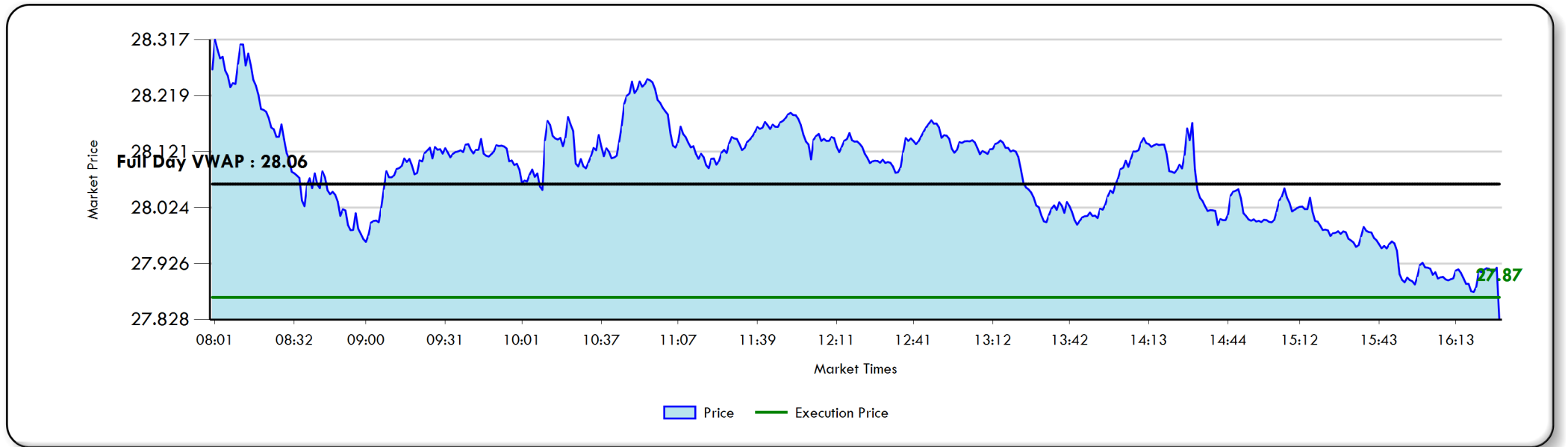


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BRITISH AMERICAN TOBACCO PLC C - 20200717

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	HSBC BANK	UK	GBP	0287580	07/17/2020 08:00:00	07/17/2020 16:30:00	262,295	27.87	28.06	1,861	70.46	-2.10	0.14



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.29% of your market impact cost.

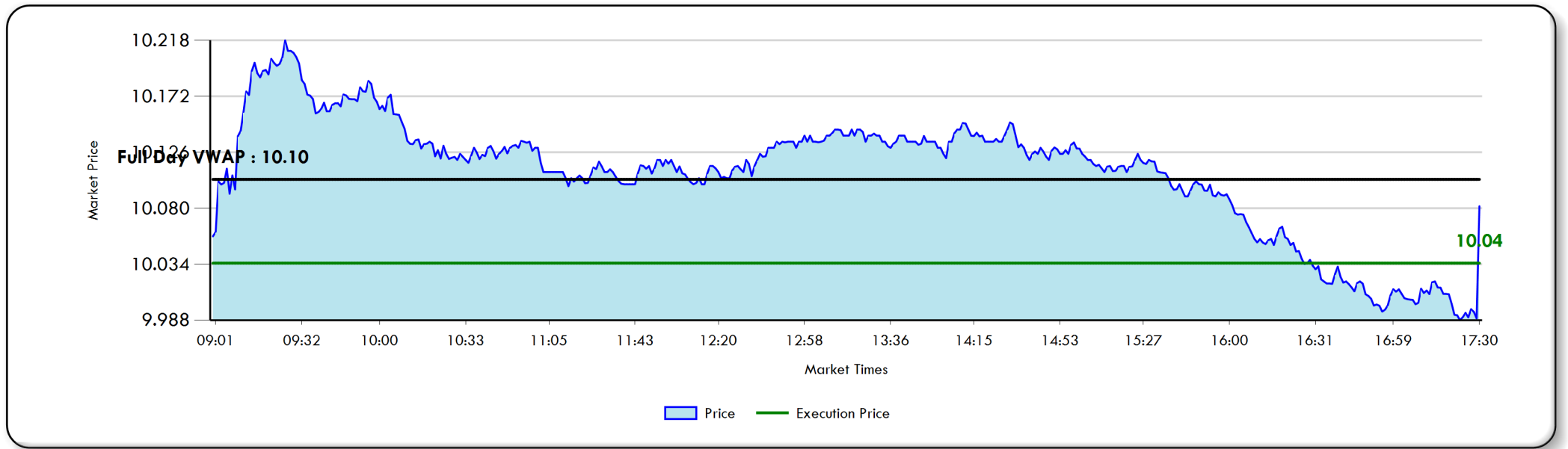


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ORANGE COMMON STOCK EUR4.0 - 20200825

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	MORGAN STANLEY	FRA	EUR	5176177	08/25/2020 09:00:00	08/25/2020 17:30:00	267,908	10.04	10.10	1,840	68.22	-1.36	0.91



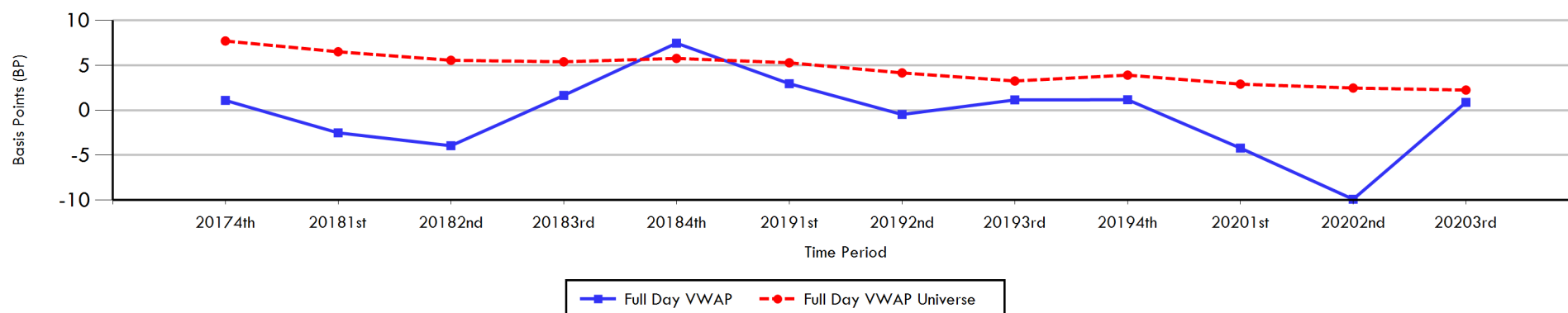
NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.27% 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)
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
20184th	132,282,303	+7.47	+14.63	+4.94	+3.67	+7.46	+5.76	4.18
20191st	75,137,208	+7.16	+13.73	+6.74	+5.73	+2.95	+5.28	7.88
20192nd	70,813,093	+5.93	+14.19	+8.58	+8.20	0.48	+4.15	12.50
20193rd	79,515,054	+5.84	+14.32	+3.19	+3.04	+1.14	+3.25	10.44
20194th	151,282,246	+6.63	+13.69	+4.01	+2.96	+1.16	+3.90	8.74
20201st	150,544,093	+6.57	+13.82	+6.85	+5.12	4.22	+2.90	12.63
20202nd	87,805,344	+5.99	+13.63	+5.49	+3.89	9.91	+2.47	18.40
20203rd	111,885,782	+5.88	+13.92	+5.08	+3.34	+0.87	+2.24	7.68

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	6.06 BP	12.82 BP	0.72 BP	1.83 BP	15.37 BP
AUSTRIA	26.58 BP	12.96 BP	0.04 BP	3.37 BP	16.37 BP
BELGIUM	50.88 BP	12.76 BP	0.02 BP	1.98 BP	14.76 BP
BRAZIL	4.89 BP	14.99 BP	2.52 BP	3.53 BP	21.04 BP
CANADA	20.15 BP	23.71 BP	0.02 BP	2.00 BP	25.73 BP
CHILE	0.29 BP	15.47 BP	0.74 BP	1.99 BP	18.20 BP
CHINA	2.75 BP	13.93 BP	4.91 BP	0.96 BP	19.80 BP
COLOMBIA	1.16 BP	28.29 BP	0.58 BP	5.42 BP	34.29 BP
CZECH REPUBLIC	9.27 BP	20.58 BP	0.22 BP	1.64 BP	22.44 BP
DENMARK	68.53 BP	12.67 BP	0.01 BP	2.92 BP	15.60 BP
EGYPT	1.97 BP	23.78 BP	16.15 BP	3.93 BP	43.86 BP
FINLAND	24.00 BP	12.92 BP	0.01 BP	3.24 BP	16.17 BP
FRANCE - BUYS	67.83 BP	13.00 BP	30.00 BP	1.57 BP	44.57 BP
FRANCE - SELLS	47.72 BP	13.83 BP	0.00 BP	1.61 BP	15.44 BP
GERMANY	45.72 BP	12.89 BP	0.02 BP	1.98 BP	14.89 BP
GREECE	2.72 BP	13.64 BP	2.54 BP	6.88 BP	23.06 BP
HONG KONG	2.88 BP	12.77 BP	9.51 BP	0.73 BP	23.01 BP
HUNGARY	19.36 BP	17.43 BP	0.00 BP	1.39 BP	18.82 BP
INDONESIA	0.25 BP	16.85 BP	7.79 BP	1.77 BP	26.41 BP

Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDIA	6.97 BP	15.33 BP	10.87 BP	1.30 BP	27.50 BP
IRELAND - BUYS	3.25 BP	9.97 BP	100.00 BP	1.41 BP	111.38 BP
IRELAND - SELLS	9.97 BP	14.82 BP	0.00 BP	8.49 BP	23.31 BP
ISRAEL	3.84 BP	13.34 BP	0.03 BP	1.96 BP	15.33 BP
ITALY - BUYS	14.70 BP	12.91 BP	12.00 BP	1.30 BP	26.21 BP
ITALY - SELLS	7.80 BP	12.56 BP	0.00 BP	3.75 BP	16.31 BP
JAPAN	24.30 BP	12.60 BP	0.02 BP	2.71 BP	15.33 BP
KOREA - BUYS	46.04 BP	16.54 BP	0.00 BP	2.72 BP	19.26 BP
KOREA - SELLS	50.87 BP	16.35 BP	21.26 BP	1.53 BP	39.14 BP
LUXEMBOURG	4.31 BP	10.46 BP	0.00 BP	18.12 BP	28.58 BP
MALAYSIA	1.18 BP	17.01 BP	3.81 BP	0.79 BP	21.61 BP
MEXICO	1.70 BP	14.81 BP	0.00 BP	0.71 BP	15.52 BP
NORWAY	9.84 BP	12.86 BP	0.00 BP	3.13 BP	15.99 BP
NETHERLANDS	50.40 BP	12.83 BP	0.03 BP	1.89 BP	14.75 BP
NEW ZEALAND	4.78 BP	13.42 BP	0.05 BP	3.09 BP	16.56 BP
PERU	0.92 BP	18.24 BP	2.44 BP	2.86 BP	23.54 BP
PHILIPPINES - BUYS	0.73 BP	18.59 BP	3.84 BP	1.08 BP	23.51 BP
PHILIPPINES - SELLS	0.44 BP	22.13 BP	57.36 BP	0.59 BP	80.08 BP
POLAND	10.86 BP	14.81 BP	0.00 BP	2.23 BP	17.04 BP
PORTUGAL	7.41 BP	12.86 BP	0.01 BP	3.40 BP	16.27 BP



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.31 BP	14.64 BP	0.00 BP	8.40 BP	23.04 BP
SOUTH AFRICA - BUYS	13.06 BP	15.26 BP	22.27 BP	2.46 BP	39.99 BP
SOUTH AFRICA - SELLS	10.94 BP	14.96 BP	0.08 BP	1.84 BP	16.88 BP
SINGAPORE	3.14 BP	13.87 BP	3.57 BP	1.04 BP	18.48 BP
SPAIN	8.33 BP	12.89 BP	0.02 BP	1.84 BP	14.75 BP
SWEDEN	13.27 BP	12.86 BP	0.01 BP	0.68 BP	13.55 BP
SWITZERLAND	71.85 BP	12.94 BP	0.01 BP	1.80 BP	14.75 BP
TAIWAN - BUYS	4.18 BP	18.98 BP	0.00 BP	0.87 BP	19.85 BP
TAIWAN - SELLS	3.13 BP	15.55 BP	26.33 BP	1.66 BP	43.54 BP
THAILAND	2.03 BP	18.64 BP	0.51 BP	1.43 BP	20.58 BP
TURKEY	1.63 BP	14.99 BP	0.01 BP	2.14 BP	17.14 BP
U.K. - BUYS	7.09 BP	12.85 BP	21.63 BP	1.04 BP	35.52 BP
U.K. - SELLS	5.80 BP	13.69 BP	0.00 BP	6.70 BP	20.39 BP
U.S.	56.90 BP	13.69 BP	0.11 BP	1.16 BP	14.96 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	15.97 BP	16.16 BP	6.75 BP	3.65 BP	26.56 BP



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SACRAMENTO COUNTY

US Fixed Income Analysis

Period End September 30, 2020



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 01,2020 to September 30,2020. The analysis included trading of 532 trades in 159 different issues representing \$914,835,080 in principal across mortgages, governments And corporates.

Methodology:

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

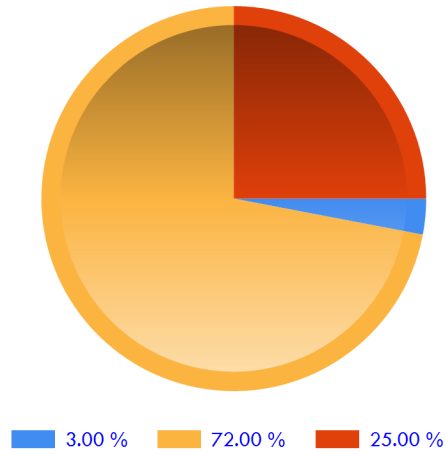
Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
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 2020	Q1 2020	Q4 2019	Q3 2019
BUYS	532	270	85	+87.02	+1.63	+11.29	514.11	9.66	+1.31	+3.35	+0.75	+10.49
SELLS	383	262	112	+10.09	+0.26	+11.42	426.68	11.16	+0.29	+0.32	1.10	10.32
GRAND TOTAL	915	532	159	+97.11	+1.06	+11.35	940.79	10.29	+0.78	+1.89	0.23	+0.54

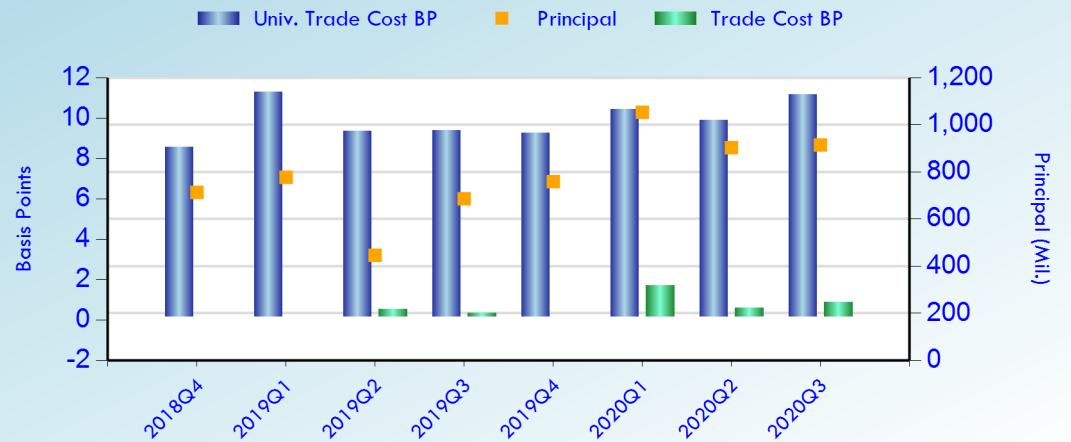
EXECUTIVE SUMMARY

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 2020	Q1 2020	Q4 2019	Q3 2019
Governments	658	347	59	9.66	0.15	+10.23	682.76 10.38	0.30	+1.45	0.45	+0.28
Mortgages	228	109	40	+87.09	+3.82	+12.90	207.07 9.08	+1.78	+4.23	-	+0.45
Corporates	29	76	60	+19.68	+6.88	+24.69	50.96 17.81	+3.48	15.65	+5.42	+6.98

Bonds by Principal Traded



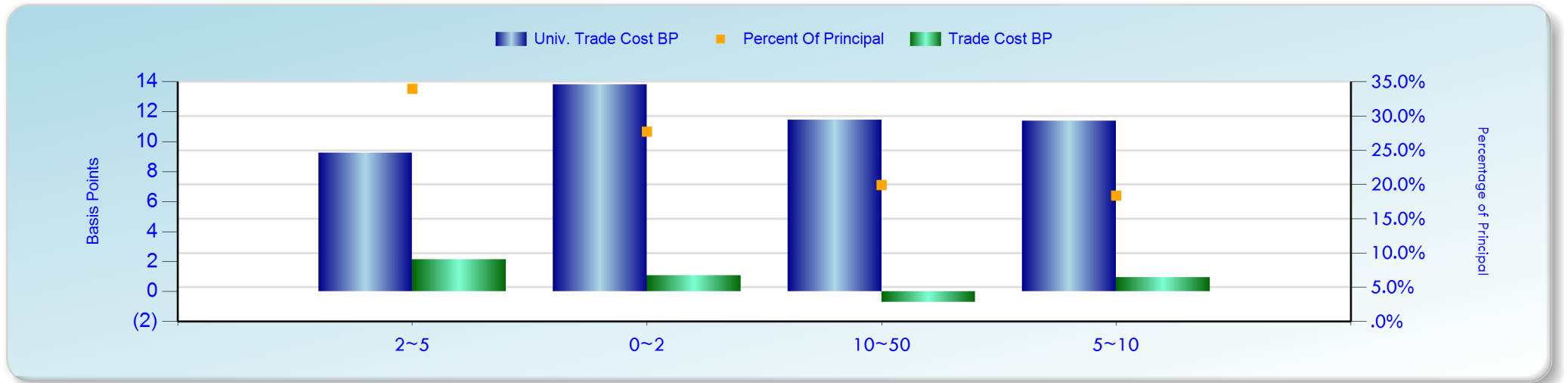
Historical Trade Cost Trend



EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

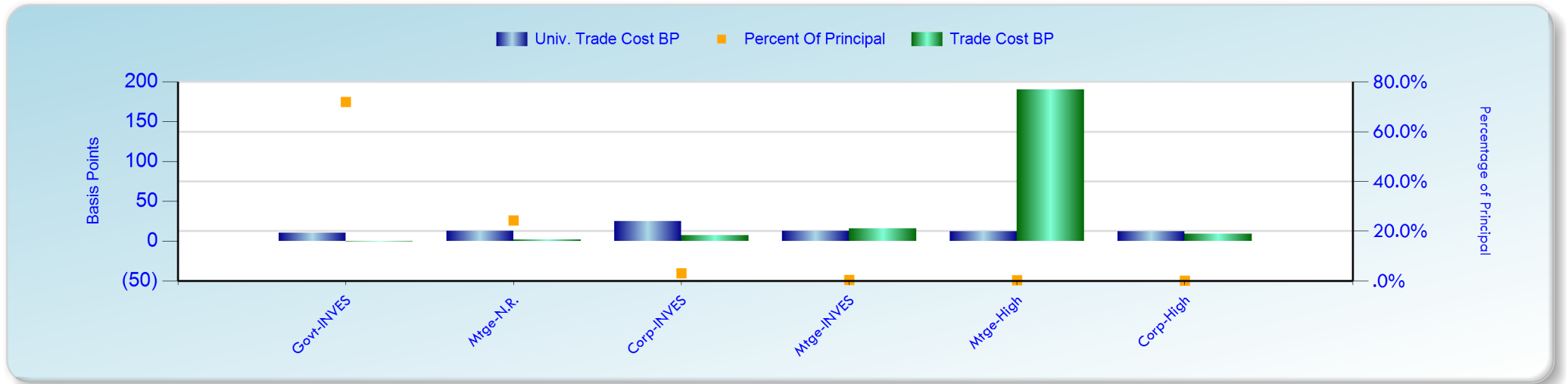
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
2~5	311	102	46	+66.57	+2.14	+9.25	221.12	7.11
0~2	254	392	136	+27.40	+1.08	+13.81	322.79	12.73
10~50	182	12	9	12.72	0.70	+11.44	221.32	12.14
5~10	168	26	17	+15.86	+0.94	+11.38	175.57	10.44



EXECUTIVE SUMMARY

GRADING SUMMARY

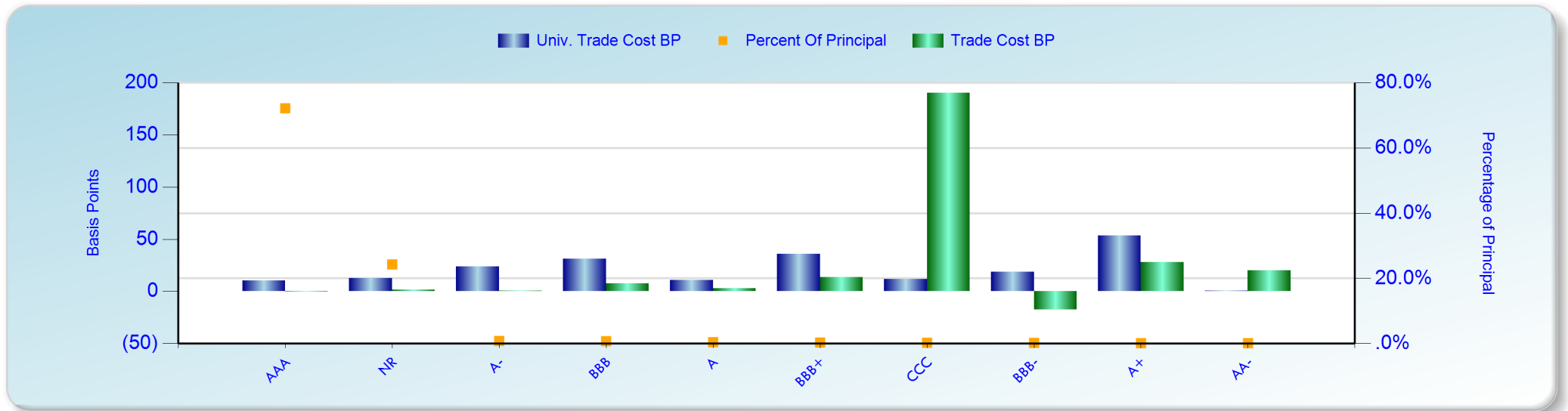
Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	658	347	59	9.66	0.15	+10.23	682.76	10.38
Mtge-N.R.	222	102	34	+36.03	+1.62	+12.91	251.02	11.29
Corp-INVESTMENT GRADE	28	71	56	+19.44	+6.97	+25.03	50.40	18.06
Mtge-INVESTMENT GRADE	3	6	5	+5.27	+15.93	+12.79	+1.04	+3.14
Mtge-High Yield	2	1	1	+45.78	+190.16	+11.95	+42.90	+178.21
Corp-High Yield	<1	4	3	+0.56	+8.99	+12.34	0.21	3.35



EXECUTIVE SUMMARY

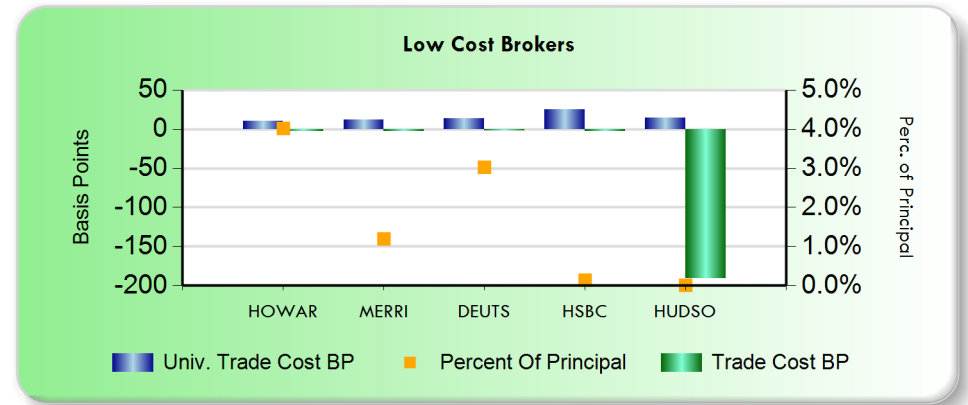
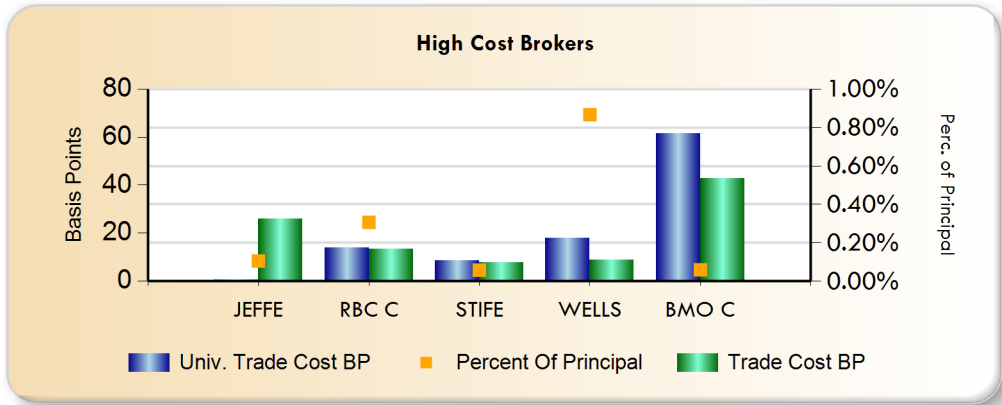
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
AAA	660.60	352	63	5.08	0.08	+10.24	681.42	10.32
NR	222.38	102	34	+36.03	+1.62	+12.91	251.02	11.29
A-	7.62	20	12	+0.28	+0.37	+23.82	17.87	23.45
BBB	6.65	15	13	+4.91	+7.38	+31.43	16.00	24.05
A	3.91	6	6	+1.20	+3.08	+10.89	3.05	7.81
BBB+	2.99	11	9	+4.09	+13.69	+36.01	6.67	22.32
CCC	2.41	1	1	+45.78	+190.16	+11.95	+42.90	+178.21
BBB-	1.93	6	6	3.35	17.38	+18.93	6.99	36.31
A+	1.51	4	4	+4.20	+27.90	+53.72	3.89	25.82
AA-	1.46	3	2	+2.92	+19.95	+0.53	+2.84	+19.42



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	2	1	+2.50	+25.84	+0.68	+2.43	+25.16
RBC CAPITAL MARKETS	3	7	7	+3.75	+13.37	+13.86	0.14	0.49
STIFEL NICOLAUS & CO	<1	1	1	+0.42	+7.92	+8.49	0.03	0.57
WELLS FARGO	8	16	13	+6.95	+8.76	+17.85	7.21	9.09
BMO CAPITAL MARKETS	<1	3	3	+2.34	+42.93	+61.39	1.00	18.46
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
HOWARD TAYLOR & COMP	37	23	9	11.09	3.02	+10.25	48.78	13.27
MERRILL LYNCH	11	3	2	2.99	2.72	+11.96	16.12	14.68
DEUTSCHE BANK	28	30	11	4.65	1.68	+13.75	42.73	15.43
HSBC BANK	1	2	2	0.41	3.04	+25.02	3.75	28.06
HUDSON VALLEY PLANNI	<1	2	2	2.22	190.66	+14.69	2.40	205.35





COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country									
		Principal	No. of	No. of	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	Side	(Mil. \$)	Trades	Issues	(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	SELLS	383	262	112	+10.09	+0.26	+11.42	426.68	11.16
	BUYS	532	270	85	+87.02	+1.63	+11.29	514.11	9.66

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. \$)		Q2 2020	Q1 2020	Q4 2019	Q3 2019
METROPOLITAN WEST MG	790	474	123	+77.32	+0.98	+11.65	843.33	10.67	+0.00	0.64	0.57	0.56
NEUBERGER BERMAN	82	22	16	+13.33	+1.62	+10.19	70.27	8.57	+3.06	+2.66	+0.29	+7.00
BARCLAYS 1-10 YR TIP	42	36	25	+6.46	+1.53	+7.95	27.18	6.42	+0.00	+70.62	2.19	2.84

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 2020	Q1 2020	Q4 2019	Q3 2019
CITIGROUP	253	91	45	+72.64	+2.88	+9.85	176.30	6.97	+1.40	+1.64	3.79	0.49
GOLDMAN SACHS	116	65	28	1.46	0.13	+11.11	130.90	11.24	+0.32	+1.72	0.75	+0.00
CREDIT SUISSE	102	40	22	+6.45	+0.63	+16.08	158.39	15.45	+2.01	+2.73	+5.55	+3.82
JP MORGAN CHASE	89	56	32	12.05	1.35	+9.78	99.57	11.13	+0.49	+10.80	+4.69	+11.72
NOMURA	73	22	19	1.22	0.17	+11.81	87.77	11.98	3.84	0.03	0.55	1.96
HOWARD TAYLOR & COMP	37	23	9	11.09	3.02	+10.25	48.78	13.27	5.11	0.54	3.10	1.44
BANK OF AMERICA	36	39	15	+2.31	+0.64	+11.30	38.53	10.66	0.65	18.07	+0.65	+2.21
MORGAN STANLEY	33	36	24	+14.26	+4.32	+12.49	27.00	8.17	4.00	+3.32	+4.24	4.60
CITADEL SECURITIES	31	25	12	+3.93	+1.26	+8.29	21.91	7.03	+3.47	0.51	+0.01	0.07
DEUTSCHE BANK	28	30	11	4.65	1.68	+13.75	42.73	15.43	4.77	+19.97	0.53	2.41
WACHOVIA BANK	24	14	14	+2.42	+0.99	+4.23	7.91	3.24	-	+20.21	2.86	3.34
BARCLAYS	22	22	15	+7.70	+3.45	+15.40	26.71	11.95	+4.31	+6.47	+4.53	12.55
UBS	17	17	14	+1.87	+1.08	+7.18	10.59	6.10	5.19	+84.60	1.86	5.87
BNY MELLON	15	7	5	+3.00	+1.97	+12.59	16.14	10.62	+1.57	12.59	8.65	0.28
MERRILL LYNCH	11	3	2	2.99	2.72	+11.96	16.12	14.68	18.63	2.66	-	-
PERSHING	10	7	6	+2.47	+2.44	+20.57	18.39	18.13	+4.98	-	+0.30	+0.48
WELLS FARGO	8	16	13	+6.95	+8.76	+17.85	7.21	9.09	+2.44	57.07	+0.24	1.05
RBC CAPITAL MARKETS	3	7	7	+3.75	+13.37	+13.86	0.14	0.49	+26.43	16.59	+12.73	+7.56
HSBC BANK	1	2	2	0.41	3.04	+25.02	3.75	28.06	-	+9.28	5.01	+0.77
JEFFERIES & CO	<1	2	1	+2.50	+25.84	+0.68	+2.43	+25.16	+24.13	+14.90	+0.81	6.99

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	542514RH LONG BEACH MORTGAGE LOAN TRU	Mtge	08/03/2020 02/25/2036	METROPOLITAN WE CITIGROUP	US	USD	2,407,470	97.219	95.370	+190.16	+45,781
B	912810SN US TREASURY N/B 05/50 1.25	Govt	08/31/2020 05/15/2050	NEUBERGER BERMA GOLDMAN SACHS	US	USD	2,413,307	95.012	94.036	+102.74	+24,795
B	912810SN US TREASURY N/B 05/50 1.25	Govt	07/09/2020 05/15/2050	METROPOLITAN WE HOWARD TAYLOR &	US	USD	2,477,041	97.301	97.177	+98.12	+24,306
B	21H03068 GNMA II TBA 30 YR 3 JUMBOS	Mtge	07/13/2020 01/01/1900	METROPOLITAN WE CITIGROUP	US	USD	2,116,406	105.820	105.100	+68.07	+14,406
B	21H03069 G2SF 3 9/12	Mtge	08/03/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	1,583,027	105.535	104.850	+64.92	+10,277
S	912828ZT US TREASURY N/B 05/25 0.25	Govt	07/21/2020 05/31/2025	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,658,387	99.684	99.947	+26.39	+9,653
S	91282CAJ US TREASURY N/B 08/25 0.25	Govt	09/23/2020 08/31/2025	METROPOLITAN WE NOMURA	US	USD	7,560,796	99.813	99.914	+10.18	+7,693
B	91282CAE US TREASURY N/B 08/30 0.625	Govt	08/31/2020 08/15/2030	METROPOLITAN WE CITADEL SECURIT	US	USD	2,999,709	99.328	99.077	+25.33	+7,597
S	98162JAA WORLDWIDE PLAZA TRUST WPT 20	Mtge	09/09/2020 11/10/2036	METROPOLITAN WE PERSHING	US	USD	869,034	109.313	110.210	+82.10	+7,135
S	912810SN US TREASURY N/B 05/50 1.25	Govt	09/21/2020 05/15/2050	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,563,979	95.656	96.064	+42.67	+6,674
B	21H02268 GNMA II TBA 30 YR 2.5 JUMBOS	Mtge	07/10/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	1,634,886	105.477	105.070	+38.55	+6,302
S	912828ZW US TREASURY N/B 06/25 0.25	Govt	09/02/2020 06/30/2025	METROPOLITAN WE JP MORGAN CHASE	US	USD	6,264,211	99.914	100.006	+9.87	+6,181
B	912810SN US TREASURY N/B 05/50 1.25	Govt	07/17/2020 05/15/2050	NEUBERGER BERMA PERSHING	US	USD	3,836,437	98.750	98.596	+15.63	+5,995
B	01F0226A FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	09/04/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	4,097,132	105.055	104.920	+12.82	+5,253



S	912810SN US TREASURY N/B 05/50 1.25	Govt	09/30/2020 05/15/2050	METROPOLITAN WE BANK OF AMERICA	US	USD	977,212	94.875	95.375	+52.70	+5,150
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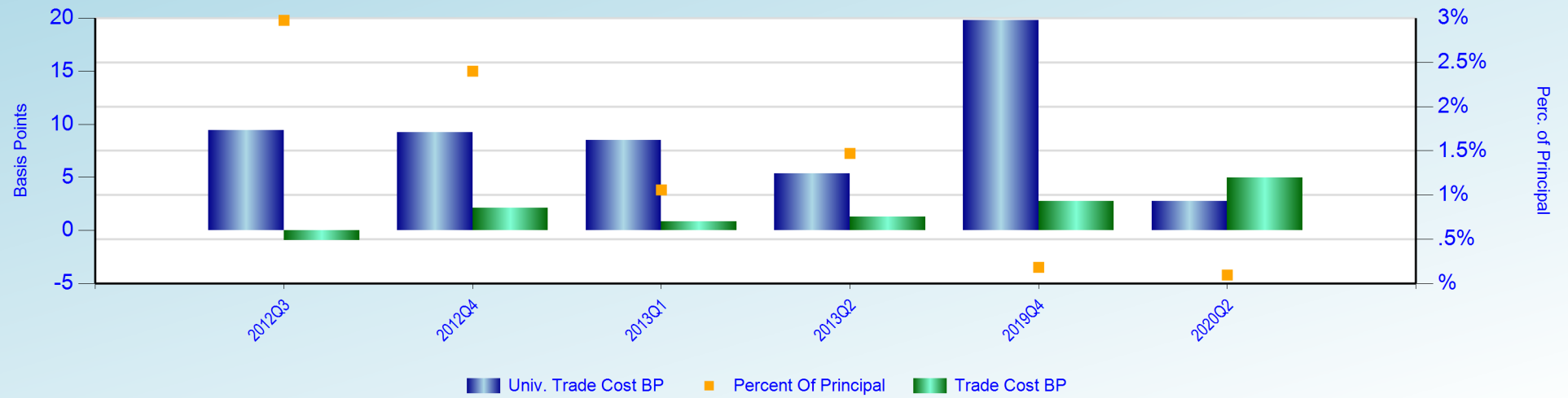


TRADE DETAILS

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	912810SL US TREASURY N/B 02/50 2	Govt	07/09/2020 02/15/2050	METROPOLITAN WE HOWARD TAYLOR &	US	USD	2,605,954	116.859	115.766	93.56	24,381
S	21H03069 G2SF 3 9/12	Mtge	08/26/2020 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,235,585	105.156	104.230	88.08	10,883
B	01F02268 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	07/07/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	10,939,687	104.188	104.290	9.84	10,763
S	21H03068 GNMA II TBA 30 YR 3 JUMBOS	Mtge	08/03/2020 01/01/1900	METROPOLITAN WE CITIGROUP	US	USD	1,586,308	105.754	105.040	67.51	10,709
S	912810SM TSY INFL IX N/B 02/50 0.25	Govt	08/19/2020 02/15/2050	METROPOLITAN WE JP MORGAN CHASE	US	USD	673,333	120.164	118.459	141.83	9,550
B	912810SR US TREASURY N/B 05/40 1.125	Govt	07/31/2020 05/15/2040	NEUBERGER BERMA JP MORGAN CHASE	US	USD	2,194,276	102.297	102.742	43.49	9,543
B	912828ZW US TREASURY N/B 06/25 0.25	Govt	07/21/2020 06/30/2025	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,596,462	99.625	99.879	25.49	9,166
B	912810SP US TREASURY N/B 08/50 1.375	Govt	09/30/2020 08/15/2050	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,542,023	97.906	98.483	58.89	9,081
B	91282CAM US TREASURY N/B 09/25 0.25	Govt	09/23/2020 09/30/2025	METROPOLITAN WE NOMURA	US	USD	7,463,009	99.773	99.867	9.46	7,057
B	912810SP US TREASURY N/B 08/50 1.375	Govt	09/21/2020 08/15/2050	METROPOLITAN WE GOLDMAN SACHS	US	USD	1,575,062	98.750	99.168	42.33	6,667
S	21H03069 G2SF 3 9/12	Mtge	08/13/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	737,023	105.289	104.350	89.19	6,573
B	912810SP US TREASURY N/B 08/50 1.375	Govt	08/27/2020 08/15/2050	METROPOLITAN WE GOLDMAN SACHS	US	USD	730,473	97.396	98.242	86.84	6,343
S	01F02269 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	09/04/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	4,105,054	105.258	105.100	14.99	6,155
B	912810SP US TREASURY N/B 08/50 1.375	Govt	09/30/2020 08/15/2050	METROPOLITAN WE NOMURA	US	USD	604,500	97.500	98.483	100.80	6,093
B	91282CAJ US TREASURY N/B 08/25 0.25	Govt	09/02/2020 08/31/2025	METROPOLITAN WE JP MORGAN CHASE	US	USD	3,298,803	99.813	99.975	16.28	5,371



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	29	76	60	+19.68	+6.88	+24.69	50.96	17.81

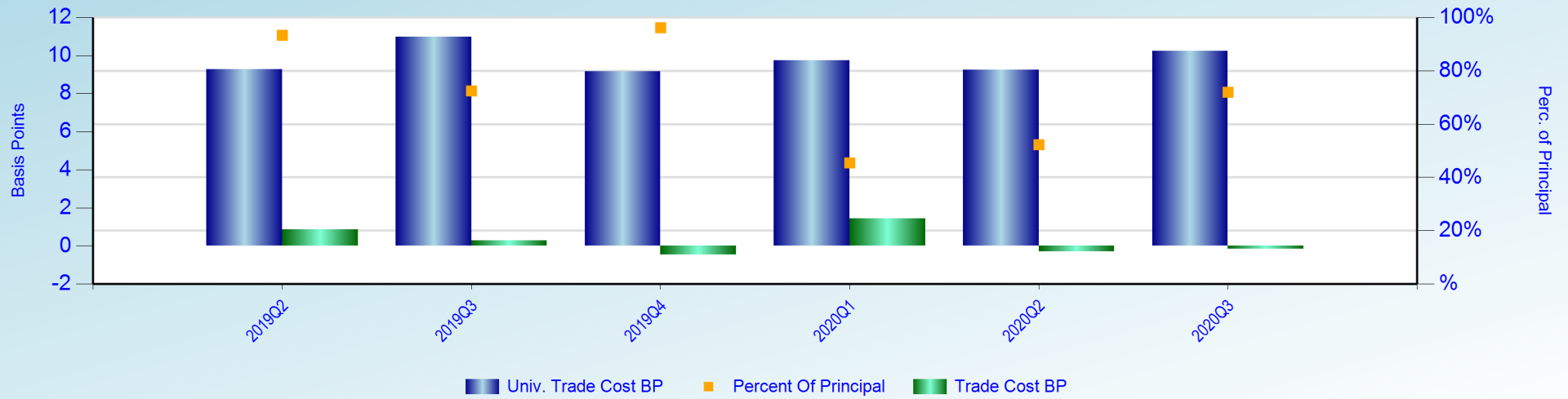
CORPORATES



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	658	347	59	9.66	0.15	+10.23	682.76	10.38

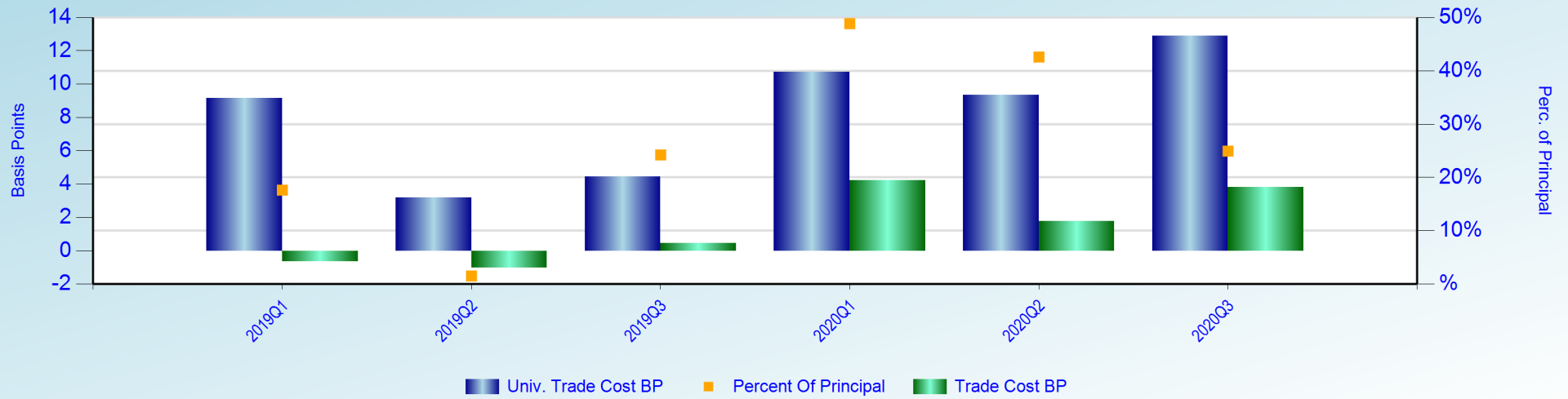
GOVERNMENTS



BOND TYPE PERFORMANCE

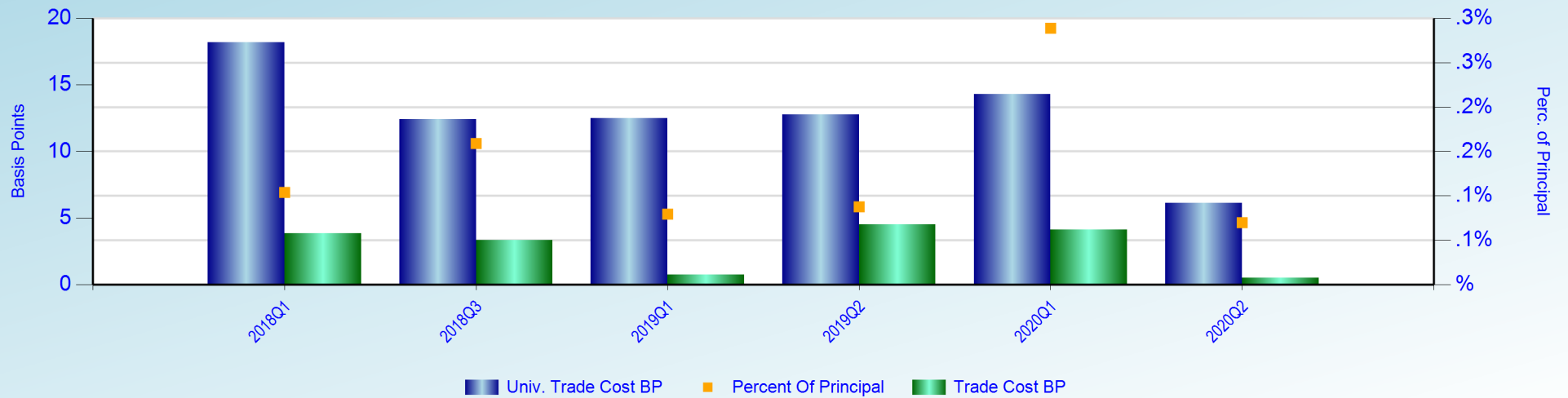
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MORTGAGES	228	109	40	+87.09	+3.82	+12.90	207.07	9.08

MORTGAGES





MUNICIPALS





RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	658	347	59	9.66	0.15	+10.23	682.76	10.37

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
NR	222	102	34	+36.03	+1.62	+12.91	251.02	11.29
AAA	2	5	4	+4.58	+18.56	+13.12	+1.34	+5.44
CCC	2	1	1	+45.78	+190.16	+11.95	+42.90	+178.21
AA+	<1	1	1	+0.69	+8.22	+11.83	0.30	3.61

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
A-	8	20	12	+0.28	+0.37	+23.82	17.87	23.45
BBB	7	15	13	+4.91	+7.38	+31.43	16.00	24.05
A	4	6	6	+1.20	+3.08	+10.89	3.05	7.81
BBB+	3	11	9	+4.09	+13.69	+36.01	6.67	22.32
BBB-	2	6	6	3.35	17.38	+18.93	6.99	36.31
A+	2	4	4	+4.20	+27.90	+53.72	3.89	25.83
AA-	1	3	2	+2.92	+19.95	+0.53	+2.84	+19.42
AA	1	5	3	+2.27	+17.28	+24.40	0.94	7.12
BB-	<1	2	1	+0.63	+11.08	+11.04	+0.00	+0.04
AA+	<1	1	1	+2.91	+54.85	+14.07	+2.16	+40.78
A- *-	<1	1	1	0.31	37.10	+4.90	0.35	42.00
BB+	<1	2	2	0.08	16.22	+28.06	0.21	44.28

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
07/01/2020-09/30/2020	914,835	532	159	+97.11	+1.06	+11.35	940.79	10.29
04/01/2020-06/30/2020	903,498	445	148	+70.23	+0.78	+10.08	840.37	9.30
01/02/2020-03/31/2020	1,053,957	691	217	+198.86	+1.89	+10.64	922.37	8.75
Year-Ending 2020	2,872,291	1668		+366.21	+1.27	+10.69	2,703.53	9.41
10/01/2019-12/31/2019	759,298	479	127	17.36	0.23	+9.45	734.68	9.68
07/01/2019-09/30/2019	686,683	408	111	+37.19	+0.54	+9.59	621.19	9.05
04/01/2019-06/30/2019	446,471	355	107	+32.98	+0.74	+9.54	392.87	8.80
01/01/2019-03/31/2019	777,794	441	181	19.31	0.25	+11.49	913.04	11.74
Year-Ending 2019	2,670,246	1683		+33.50	+0.13	+10.09	2,661.79	9.97
10/01/2018-12/31/2018	713,870	364	137	+23.27	+0.33	+8.75	601.62	8.42
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	3,738,566	2665		+342.70	+0.92	+8.76	2,932.39	7.84
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

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
10/01/2015-12/31/2015	820,526	980	212	138.86	1.69	+8.52	837.57	10.21
07/01/2015-09/30/2015	992,841	1625	204	225.86	2.27	+3.74	596.77	6.01
04/01/2015-06/30/2015	1,141,971	1504	246	310.14	2.72	+7.36	1,150.64	10.08
01/01/2015-03/31/2015	944,141	1100	191	8.38	0.09	+6.57	628.26	6.66
Year-Ending 2015	3,899,478	5209		683.23	1.75	+6.49	3,213.25	8.24
10/01/2014-12/31/2014	676,216	885	213	+41.55	+0.61	+5.86	354.40	5.25
07/01/2014-09/30/2014	905,295	785	133	+534.89	+5.91	+6.85	85.46	0.94
04/01/2014-06/30/2014	727,152	957	240	48.64	0.67	+7.04	560.46	7.71
01/02/2014-03/31/2014	920,513	1033	210	131.04	1.42	+6.54	733.34	7.96
Year-Ending 2014	3,229,176	3660		+396.76	+1.23	+6.60	1,733.66	5.37
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07
07/01/2013-09/30/2013	778,379	825	214	+21.56	+0.28	+6.25	465.02	5.97
04/01/2013-06/30/2013	937,180	803	217	51.74	0.55	+7.82	784.80	8.37
01/02/2013-03/31/2013	635,964	613	190	+89.06	+1.40	+8.12	427.14	6.72
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86
10/01/2012-12/31/2012	528,034	613	192	215.02	4.07	+7.49	610.46	11.56
07/01/2012-09/30/2012	567,084	722	230	+18.83	+0.33	+8.56	466.39	8.23
04/01/2012-06/30/2012	520,106	739	204	+102.98	+1.98	+8.39	333.44	6.41
01/02/2012-03/31/2012	136,055	131	54	+29.91	+2.20	+7.08	66.46	4.88
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

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
10/01/2010-12/31/2010	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	65	51	MARKETAXESS-TRADES	83.90 %
	10	8	BVAL	14.35 %
	1	1	ISSUE PRICE	1.75 %
GOVERNMENTS	330	52	TULLET PREBON	81.07 %
	14	6	BVAL	18.13 %
	3	3	ISSUE PRICE	0.80 %
MORTGAGES	109	40	BLOOMBERGTERMINAL	100.00 %

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SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End September 30, 2020



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 01,2020 to September 30,2020. The analysis included trading of 61 trades in 47 different issues representing \$46,839,879 in principal across mortgages, governments And corporates.

Methodology:

The cost of each trade will be determined by comparing your executed price to the average or benchmark price of the issue on the day of the trade and to the Elkins/McSherry Fixed Income Trading Cost Universe. For comparison purposes, Elkins/McSherry establishes average institutional trading costs quarterly for governments, corporates and agency issues. The Universe is the average trading cost incurred by pension funds, investment managers, banks and brokers.

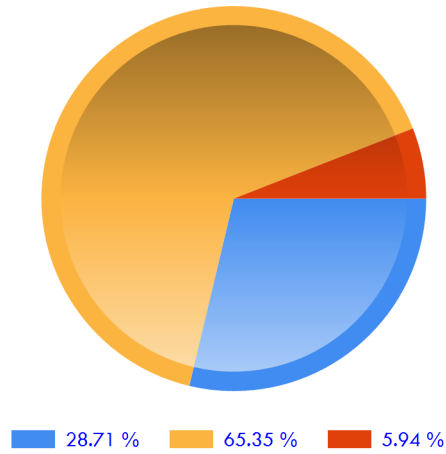
Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q2 2020	Q1 2020	Q4 2019	Q3 2019
BUYS	28	39	34	64.46	22.89	+6.30	82.20	29.19	36.44	+0.64	5.06	4.26
SELLS	19	22	14	+50.34	+26.95	+6.30	+38.57	+20.65	+7.87	1.14	+0.47	0.99
GRAND TOTAL	47	61	47	14.12	3.02	+6.30	43.63	9.32	21.32	0.14	2.22	3.26

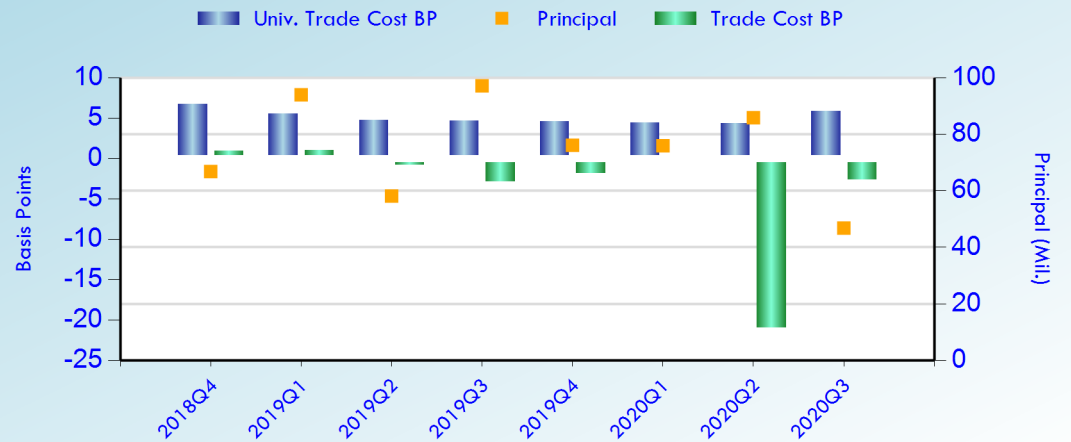
EXECUTIVE SUMMARY

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 2020	Q1 2020	Q4 2019	Q3 2019
Governments	31	13	8	+48.22	+15.68	+6.30	+28.85 +9.38	0.04	+7.72	6.76	1.15
Corporates	13	40	34	12.04	8.93	+6.30	20.53 15.23	38.87	8.37	+8.24	6.57
Mortgages	3	8	5	50.30	192.36	+6.30	51.95 198.66	15.84	2.04	-	16.02

Bonds by Principal Traded



Historical Trade Cost Trend

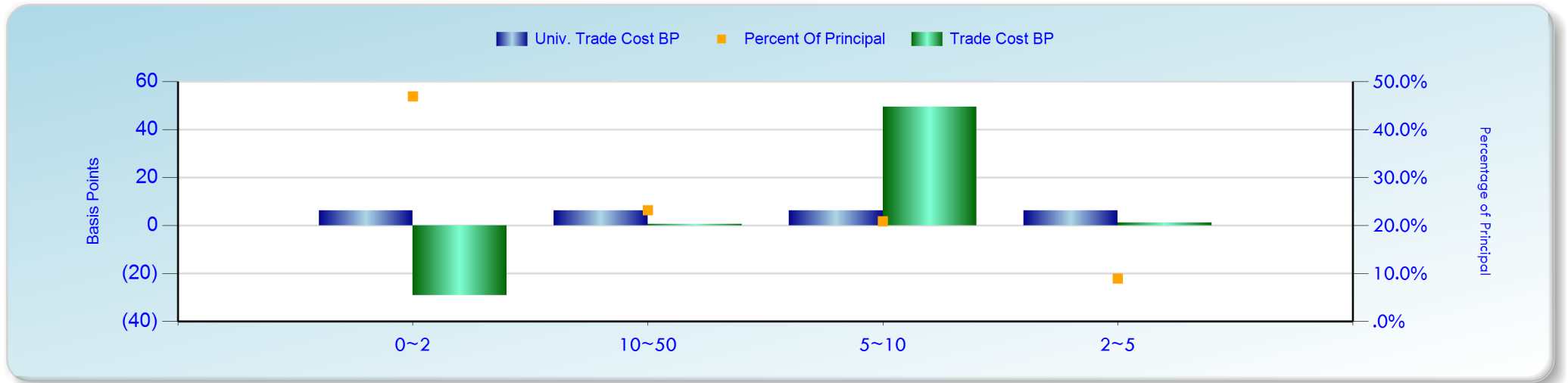




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

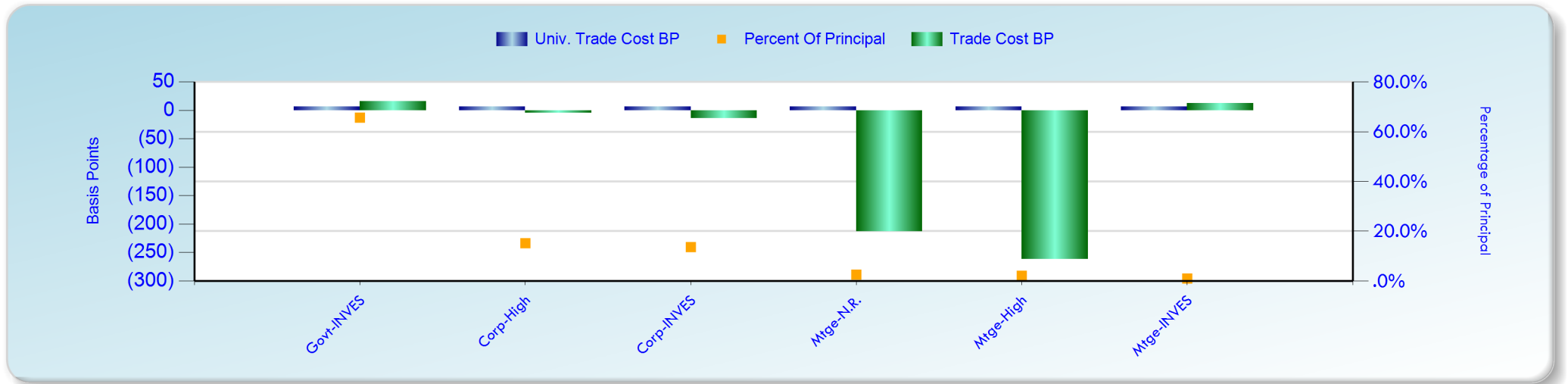
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	22	57	45	63.98	29.10	+6.30	77.83	35.40
10~50	11	1	1	+0.78	+0.72	+6.30	6.06	5.58
5~10	10	1	1	+48.54	+49.57	+6.30	+42.37	+43.27
2~5	4	2	2	+0.53	+1.26	+6.30	2.11	5.04



EXECUTIVE SUMMARY

GRADING SUMMARY

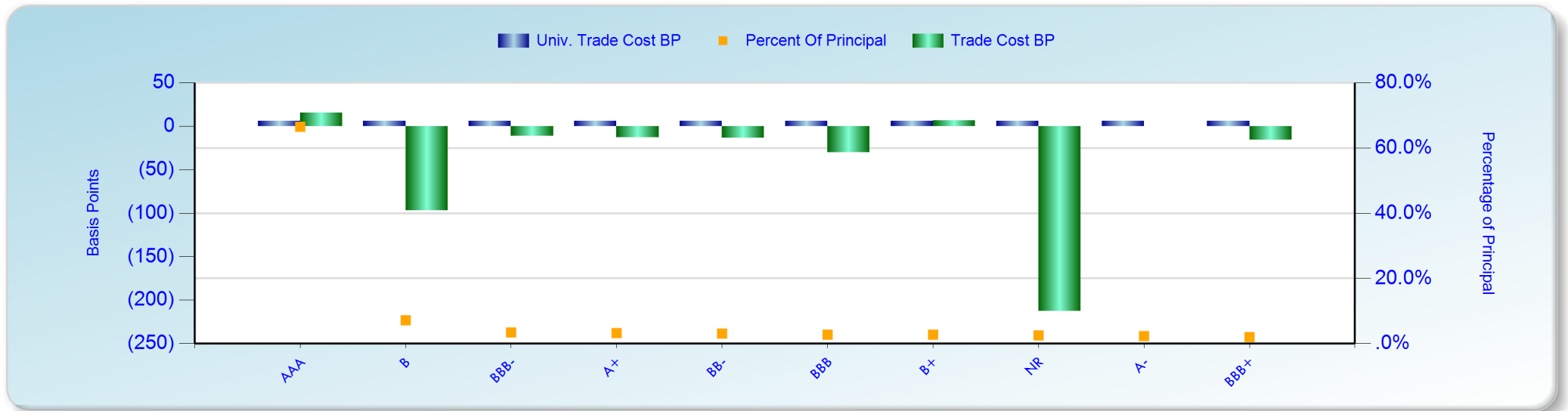
Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	31	13	8	+48.22	+15.68	+6.30	+28.85	+9.38
Corp-High Yield	7	26	20	3.00	4.22	+6.30	7.47	10.52
Corp-INVESTMENT GRADE	6	14	14	9.05	14.18	+6.30	13.06	20.48
Mtge-N.R.	1	4	1	25.06	212.71	+6.30	25.81	219.01
Mtge-High Yield	<1	2	2	25.78	261.74	+6.30	26.40	268.04
Mtge-INVESTMENT GRADE	<1	2	2	+0.55	+12.08	+6.30	+0.26	+5.78



EXECUTIVE SUMMARY

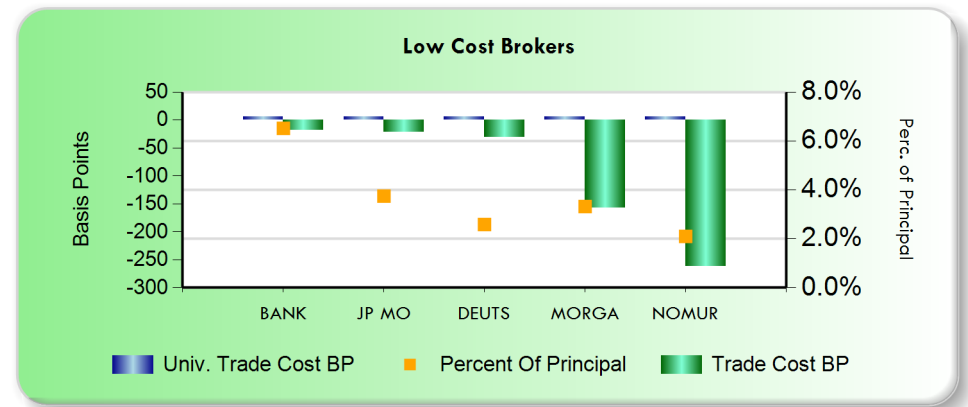
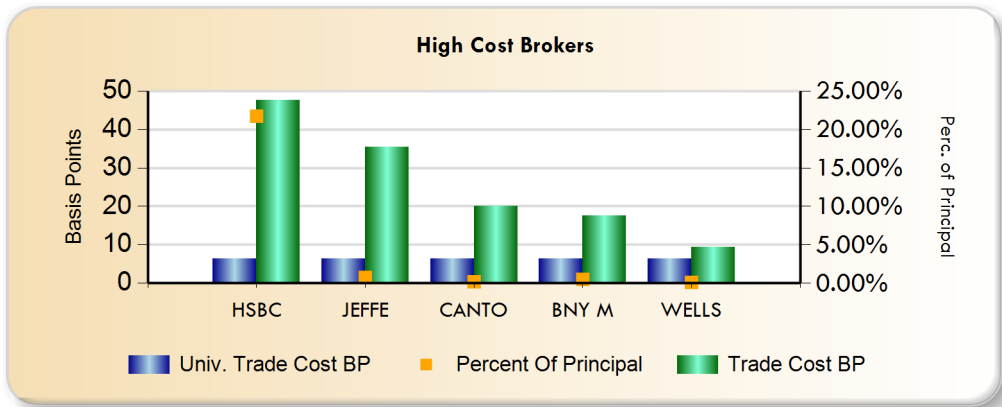
RATING SUMMARY

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	31.17	14	9	+48.78	+15.65	+6.30	+29.15	+9.35
B	3.35	11	6	32.51	96.98	+6.30	34.62	103.28
BBB-	1.60	3	3	1.79	11.20	+6.30	2.79	17.50
A+	1.50	2	2	1.93	12.87	+6.30	2.88	19.17
BB-	1.45	3	3	1.96	13.56	+6.30	2.88	19.86
BBB	1.29	3	3	3.87	30.06	+6.30	4.68	36.36
B+	1.28	4	4	+0.89	+6.94	+6.30	+0.08	+0.64
NR	1.18	4	1	25.06	212.71	+6.30	25.81	219.01
A-	1.09	1	1	+0.00	+0.00	+6.30	0.68	6.30
BBB+	<1	6	6	1.47	15.73	+6.30	2.06	22.03



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)								
HSBC BANK	10	2	2	+48.54	+47.70	+6.30	+42.13	+41.40
JEFFERIES & CO	<1	1	1	+1.24	+35.45	+6.30	+1.02	+29.15
CANTOR FITZGERALD	<1	3	1	+0.18	+20.02	+6.30	+0.13	+13.72
BNY MELLON	<1	1	1	+0.41	+17.57	+6.30	+0.26	+11.27
WELLS FARGO	<1	1	1	+0.05	+9.32	+6.30	+0.02	+3.02
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
BANK OF AMERICA	3	8	8	5.74	18.80	+6.30	7.66	25.10
JP MORGAN CHASE	2	8	6	3.74	21.30	+6.30	4.84	27.60
DEUTSCHE BANK	1	2	2	3.73	30.77	+6.30	4.50	37.07
MORGAN STANLEY	2	8	5	24.39	156.64	+6.30	25.37	162.94
NOMURA	<1	2	2	25.78	261.74	+6.30	26.40	268.04



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 2020	Q1 2020	Q4 2019	Q3 2019
UNITED STATES	47	61	47	14.12	3.02	+6.30	43.63	9.32	21.59	0.36	2.31	3.36



COUNTRY PERFORMANCE BASED ON BUYS AND SELLS

Country	Side	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
								UNITED STATES	SELLS
	BUYS	28	39	34	64.46	22.89	+6.30	82.20	29.19

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 2020	Q1 2020	Q4 2019	Q3 2019
PRUDENTIAL INVESTMEN	47	61	47	14.12	3.02	+6.30	43.63 9.32	21.32	0.14	2.22	3.26

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 2020	Q1 2020	Q4 2019	Q3 2019
GOLDMAN SACHS	11	1	1	+0.78	+0.72	+6.30	6.06	5.58	+14.12	+4.99	+2.46	+10.71
HSBC BANK	10	2	2	+48.54	+47.70	+6.30	+42.13	+41.40	4.68	22.27	0.38	+24.98
CITADEL SECURITIES	6	4	3	+0.14	+0.23	+6.30	3.61	6.07	+21.29	0.20	+0.21	+0.17
BANK OF AMERICA	3	8	8	5.74	18.80	+6.30	7.66	25.10	40.52	3.85	3.57	10.71
CITIGROUP	3	4	4	+0.05	+0.18	+6.30	1.57	6.12	+1.81	+0.60	11.29	6.46
BARCLAYS	2	7	7	+0.15	+0.60	+6.30	1.40	5.70	+1.34	6.85	+2.41	16.43
CREDIT SUISSE	2	4	4	+0.31	+1.28	+6.30	1.21	5.02	1.05	+35.90	+1.60	0.75
RBC CAPITAL MARKETS	2	3	3	2.24	12.43	+6.30	3.38	18.73	13.14	11.90	+19.75	0.04
JP MORGAN CHASE	2	8	6	3.74	21.30	+6.30	4.84	27.60	20.52	+15.76	5.79	0.53
MORGAN STANLEY	2	8	5	24.39	156.64	+6.30	25.37	162.94	77.89	+22.14	2.06	+2.77
DEUTSCHE BANK	1	2	2	3.73	30.77	+6.30	4.50	37.07	40.02	18.67	0.25	+12.42
BNP PARIBAS	1	1	1	+0.00	+0.00	+6.30	0.68	6.30	-	-	+2.77	1.55
NOMURA	<1	2	2	25.78	261.74	+6.30	26.40	268.04	-	0.60	15.68	+2.03
JEFFERIES & CO	<1	1	1	+1.24	+35.45	+6.30	+1.02	+29.15	106.54	-	+12.08	+24.10
BNY MELLON	<1	1	1	+0.41	+17.57	+6.30	+0.26	+11.27	107.09	+19.30	+1.20	+16.83
UBS	<1	1	1	0.36	15.63	+6.30	0.50	21.93	-	-	-	+0.00
CANTOR FITZGERALD	<1	3	1	+0.18	+20.02	+6.30	+0.13	+13.72	+14.58	+14.97	+6.69	+1.80
WELLS FARGO	<1	1	1	+0.05	+9.32	+6.30	+0.02	+3.02	44.25	16.44	7.08	+1.88

TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Highest Cost Trades											
S	912803EQ STRIP PRINC 11/45 0.00000	Govt	07/28/2020 11/15/2045	PRUDENTIAL INVE HSBC BANK	US	USD	9,791,955	72.533	72.893	+49.57	+48,543
B	35565XAH FREDDIE MAC STACR STACR 20	Mtge	08/18/2020 08/25/2050	PRUDENTIAL INVE NOMURA	US	USD	335,000	100.000	98.460	+154.00	+5,159
S	912810SL US TREASURY N/B 02/50 2	Govt	08/13/2020 02/15/2050	PRUDENTIAL INVE CITADEL SECURIT	US	USD	2,177,091	115.496	115.722	+19.59	+4,266
B	912810RM US TREASURY N/B 05/45 3	Govt	09/04/2020 05/15/2045	PRUDENTIAL INVE CITADEL SECURIT	US	USD	998,061	134.873	134.362	+37.88	+3,781
S	912810SL US TREASURY N/B 02/50 2	Govt	08/14/2020 02/15/2050	PRUDENTIAL INVE CITIGROUP	US	USD	965,082	114.211	114.404	+16.93	+1,634
B	87264AAY T MOBILE USA INC SR SECURED	Corp	08/11/2020 04/15/2050	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	821,528	126.389	126.174	+17.05	+1,400
B	44267DAB HOWARD HUGHES CORP COMPANY G	Corp	09/29/2020 03/15/2025	PRUDENTIAL INVE JEFFERIES & CO	US	USD	350,875	100.250	99.895	+35.45	+1,244
S	594087AU MICHAELS STORES INC COMPANY	Corp	07/07/2020 07/15/2027	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	180,000	90.000	90.530	+58.89	+1,060
B	912828D5 US TREASURY N/B 08/24 2.375	Govt	07/28/2020 08/15/2024	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	10,867,188	108.672	108.664	+0.72	+782
B	68269LAA ONEMAIN FINANCIAL ISSUANCE T	Mtge	08/25/2020 05/14/2032	PRUDENTIAL INVE BARCLAYS	US	USD	421,484	105.371	105.230	+13.39	+564
B	79546VAL SALLY HOLDINGS/SALLY CAP COM	Corp	09/29/2020 12/01/2025	PRUDENTIAL INVE BANK OF AMERICA	US	USD	456,187	101.375	101.268	+10.60	+484
S	29646AAC ESKOM HOLDINGS SOC LTD GOVT	Corp	09/16/2020 08/10/2028	PRUDENTIAL INVE BNY MELLON	US	USD	233,718	103.875	104.058	+17.57	+411
S	BD3RMZ7 PETROLEOS MEXICANOS COMPANY	Corp	09/08/2020 02/26/2029	PRUDENTIAL INVE MORGAN STANLEY	US	EUR	108,058	91.600	91.926	+35.55	+384
B	912810RJ US TREASURY N/B 11/44 3	Govt	09/22/2020 11/15/2044	PRUDENTIAL INVE BARCLAYS	US	USD	551,705	134.562	134.480	+6.08	+336



S	131347CF CALPINE CORP SR UNSECURED 01	Corp	07/27/2020 01/15/2025	PRUDENTIAL INVE CREDIT SUISSE	US	USD	1,208,781	102.875	102.896	+2.08	+252
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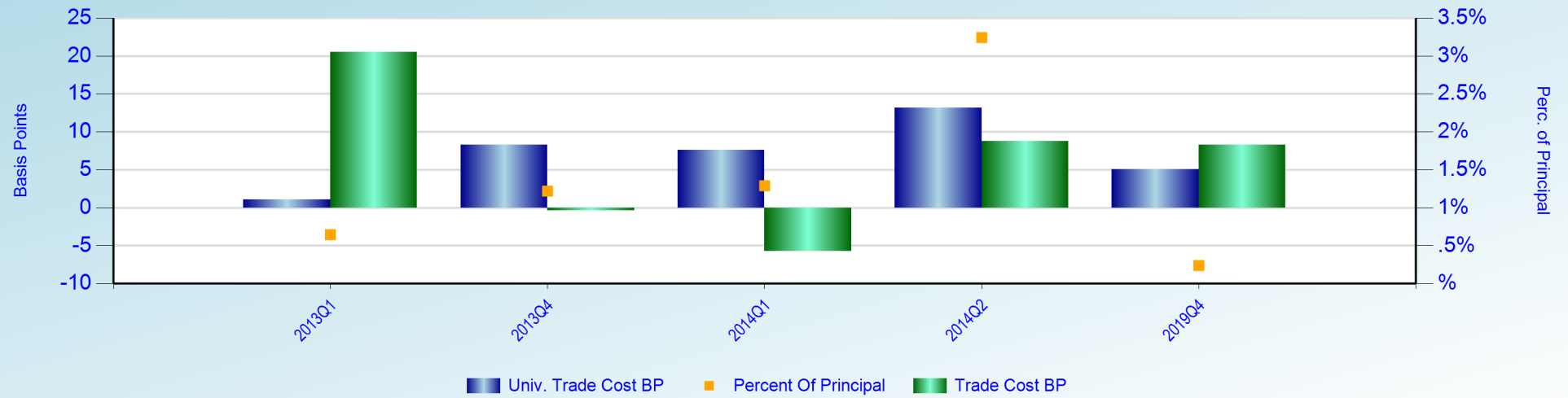


TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
15 Lowest Cost Trades											
B	35565XBD FREDDIE MAC STACR STACR 20	Mtge	08/18/2020 08/25/2050	PRUDENTIAL INVE NOMURA	US	USD	650,000	100.000	104.760	476.00	30,940
B	30301NAA FREM F MORTGAGE TRUST FREMF 2	Mtge	07/16/2020 10/25/2031	PRUDENTIAL INVE MORGAN STANLEY	US	USD	1,178,306	0.734	0.750	212.71	25,063
S	912810SN US TREASURY N/B 05/50 1.25	Govt	09/04/2020 05/15/2050	PRUDENTIAL INVE CITADEL SECURIT	US	USD	754,029	96.055	95.523	55.31	4,170
B	912810SN US TREASURY N/B 05/50 1.25	Govt	08/13/2020 05/15/2050	PRUDENTIAL INVE CITADEL SECURIT	US	USD	2,018,087	97.023	97.203	18.52	3,738
B	55336VBQ MPLX LP SR UNSECURED 08/30 2	Corp	08/11/2020 08/15/2030	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	904,212	99.913	100.285	37.19	3,363
B	126307BD CSC HOLDINGS LLC SR UNSECURE	Corp	08/03/2020 12/01/2030	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	283,937	103.250	104.465	117.65	3,340
B	571903BF MARRIOTT INTERNATIONAL SR UN	Corp	08/12/2020 10/15/2032	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	744,585	99.278	99.701	42.56	3,169
S	68389XBY ORACLE CORP SR UNSECURED 04/	Corp	07/01/2020 04/01/2060	PRUDENTIAL INVE BANK OF AMERICA	US	USD	763,327	117.435	117.108	27.87	2,128
B	911363AM UNITED RENTALS NORTH AM COMP	Corp	07/31/2020 02/15/2031	PRUDENTIAL INVE BANK OF AMERICA	US	USD	150,000	100.000	101.309	130.94	1,964
B	912810SN US TREASURY N/B 05/50 1.25	Govt	08/14/2020 05/15/2050	PRUDENTIAL INVE CITIGROUP	US	USD	891,429	95.853	96.023	17.82	1,589
B	817565CF SERVICE CORP INTL SR UNSECUR	Corp	08/03/2020 08/15/2030	PRUDENTIAL INVE BANK OF AMERICA	US	USD	175,000	100.000	100.865	86.46	1,513
B	912810RG US TREASURY N/B 05/44 3.375	Govt	07/08/2020 05/15/2044	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	467,723	141.734	142.014	19.73	923
B	615369AU MOODY S CORPORATION SR UNSEC	Corp	08/04/2020 08/18/2060	PRUDENTIAL INVE BANK OF AMERICA	US	USD	89,239	99.155	100.037	88.99	794
B	912810RG US TREASURY N/B 05/44 3.375	Govt	07/08/2020 05/15/2044	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	468,084	141.844	142.014	12.01	562
B	29379VCA ENTERPRISE PRODUCTS OPER COM	Corp	07/30/2020 02/15/2052	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	198,466	99.233	99.453	22.19	440



AGENCIES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous.\$)	BP
CORPORATES	13	40	34	12.04	8.93	+6.30	20.53	15.23

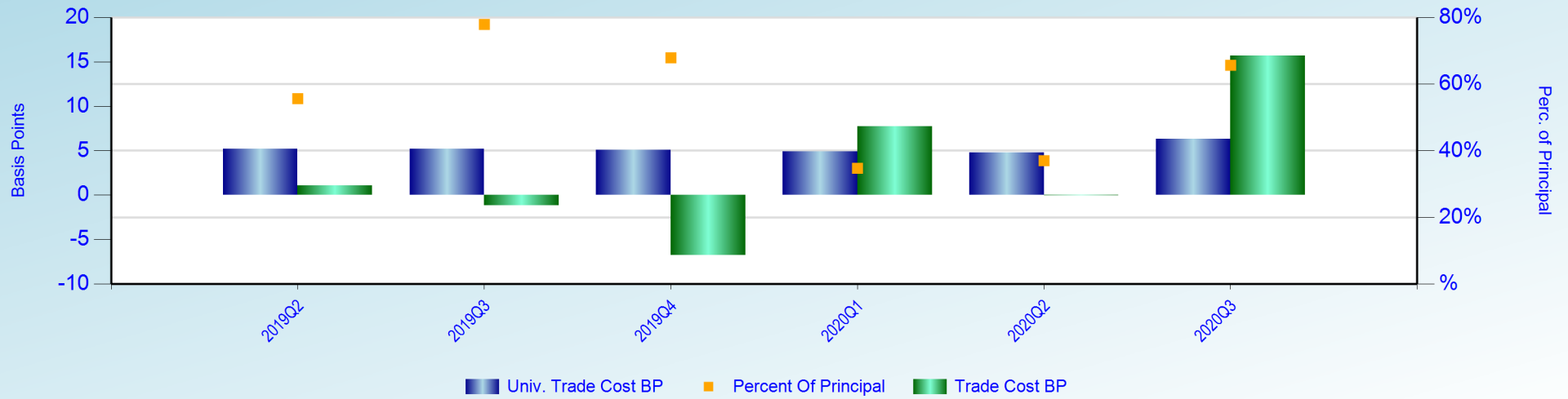
CORPORATES



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	31	13	8	+48.22	+15.68	+6.30	+28.85	+9.38

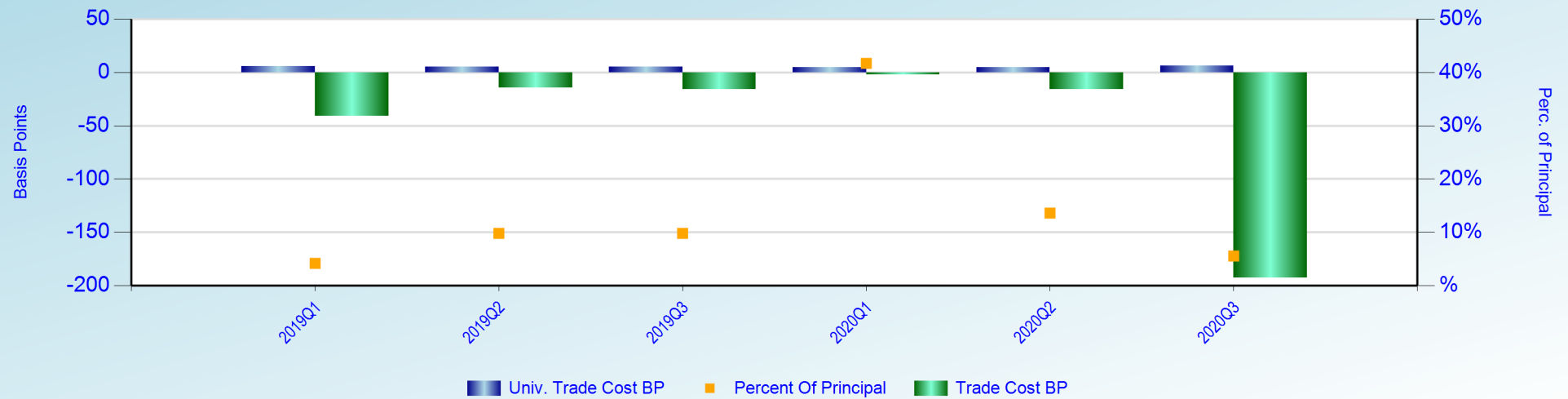
GOVERNMENTS



BOND TYPE PERFORMANCE

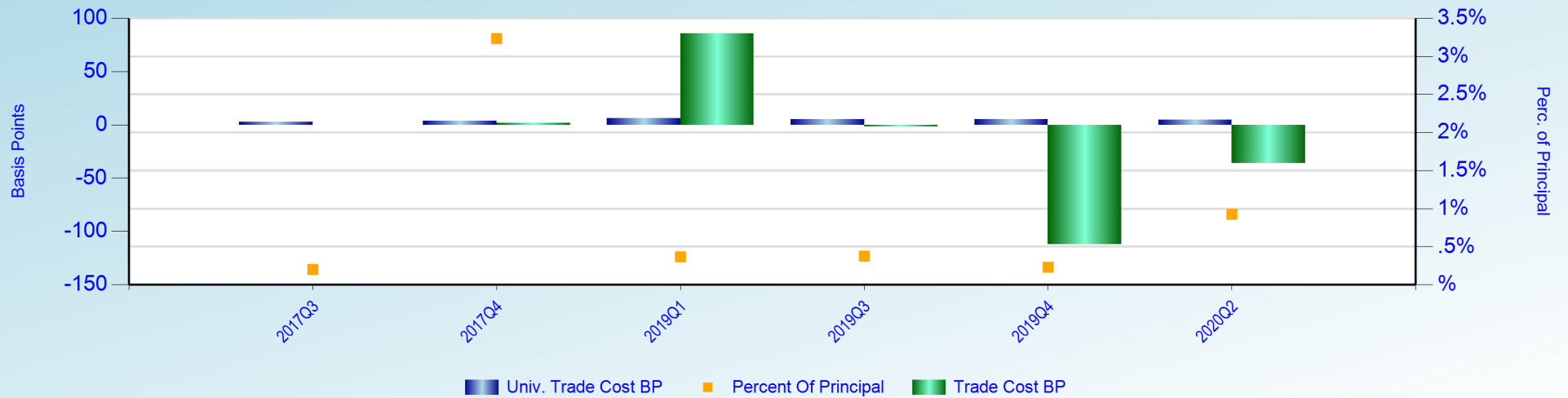
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	Cost Diff. from Universe BP
MORTGAGES	3	8	5	50.30	192.36	+6.30	51.95	198.66

MORTGAGES



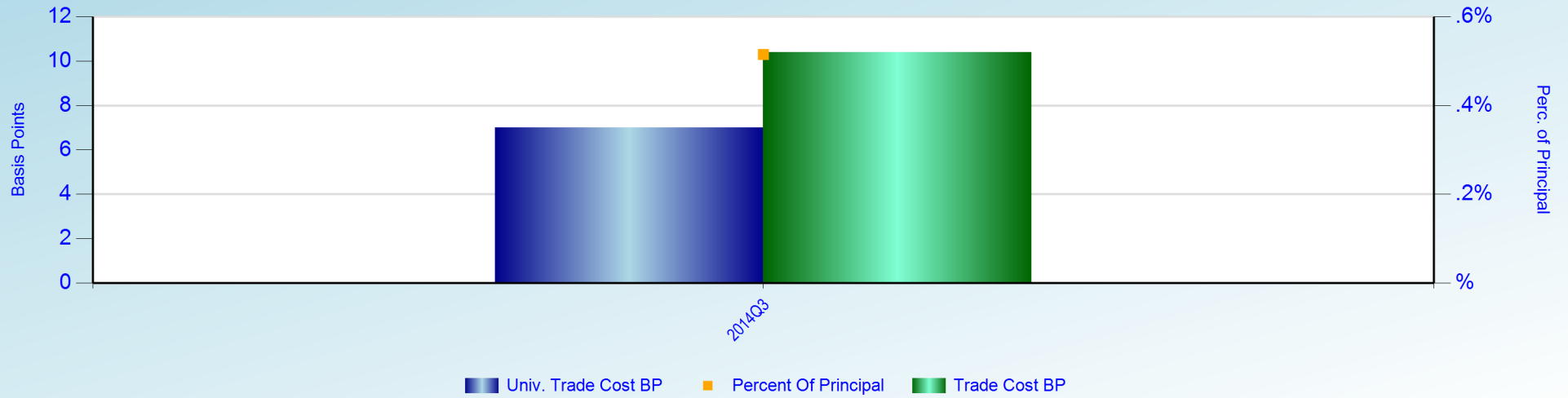


MUNICIPALS





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	31	13	8	+48.22	+15.68	+6.30	+28.85	+9.38

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
B	3	10	5	1.57	5.80	+6.30	3.27	12.10
BBB-	2	2	2	1.77	11.29	+6.30	2.76	17.59
A+	2	2	2	1.93	12.87	+6.30	2.88	19.17
BB-	1	3	3	1.96	13.56	+6.30	2.88	19.86
BBB	1	3	3	3.87	30.06	+6.30	4.68	36.36
B+	1	4	4	+0.89	+6.94	+6.30	+0.08	+0.64
A-	1	1	1	+0.00	+0.00	+6.30	0.68	6.30
BBB+	<1	6	6	1.47	15.73	+6.30	2.06	22.03
BB	<1	4	4	1.10	14.43	+6.30	1.58	20.73
BB+	<1	1	1	+0.48	+10.60	+6.30	+0.20	+4.30
B-	<1	3	2	+0.27	+11.69	+6.30	+0.12	+5.39
CCC+	<1	1	1	+0.00	+0.00	+6.30	0.14	6.30

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
NR	1	4	1	25.06	212.71	+6.30	25.81	219.01
B	<1	1	1	30.94	476.00	+6.30	31.35	482.30
AAA	<1	1	1	+0.56	+13.39	+6.30	+0.30	+7.09
BB+	<1	1	1	+5.16	+154.00	+6.30	+4.95	+147.70
BBB-	<1	1	1	0.02	6.24	+6.30	0.04	12.54



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	31	13	8	+48.22	+15.68	+6.30	+28.85	+9.38



COUNTRIES BY EACH BOND TYPE

CORPORATES

Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	13	40	34	12.04	8.93	+6.30	20.53	15.23



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	3	8	5	50.30	192.36	+6.30	51.95	198.66

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
07/01/2020-09/30/2020	46,840	61	47	14.12	3.02	+6.30	43.63	9.32
04/01/2020-06/30/2020	85,881	143	98	183.09	21.32	+4.82	224.49	26.14
01/02/2020-03/31/2020	75,943	157	84	1.05	0.14	+4.93	38.49	5.07
Year-Ending 2020	208,664	361		198.26	9.50	+5.19	306.62	14.69
10/01/2019-12/31/2019	76,119	174	90	16.90	2.22	+5.07	55.50	7.29
07/01/2019-09/30/2019	97,170	144	79	31.64	3.26	+5.17	81.92	8.43
04/01/2019-06/30/2019	58,138	153	87	6.84	1.18	+5.19	37.02	6.37
01/01/2019-03/31/2019	93,964	228	119	+14.36	+1.53	+6.02	42.17	4.49
Year-Ending 2019	325,391	699		41.02	1.26	+5.40	216.61	6.66
10/01/2018-12/31/2018	66,814	146	75	+9.69	+1.45	+7.24	38.71	5.79
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	233,248	592		+21.40	+0.92	+6.97	141.19	6.05
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

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
10/01/2015-12/31/2015	43,193	60	34	29.83	6.91	+7.18	60.85	14.09
07/01/2015-09/30/2015	20,663	41	24	68.34	33.07	+4.30	77.22	37.37
04/01/2015-06/30/2015	143,060	122	71	98.11	6.86	+5.55	177.48	12.41
01/01/2015-03/31/2015	116,093	109	56	60.79	5.24	+5.51	124.75	10.75
Year-Ending 2015	323,008	332		257.06	7.96	+5.67	440.30	13.63
10/01/2014-12/31/2014	48,315	72	50	+9.25	+1.91	+5.72	18.39	3.81
07/01/2014-09/30/2014	266,740	204	99	216.37	8.11	+7.08	405.13	15.19
04/01/2014-06/30/2014	244,265	204	138	+42.48	+1.74	+8.55	166.48	6.81
01/02/2014-03/31/2014	187,634	187	128	+186.20	+9.92	+8.13	+33.59	+1.79
Year-Ending 2014	746,953	667		+21.55	+0.29	+7.74	556.41	7.45
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43
07/01/2013-09/30/2013	187,166	136	90	+47.79	+2.55	+6.68	77.19	4.13
04/01/2013-06/30/2013	157,154	129	98	+104.81	+6.67	+1.44	+82.21	+5.23
01/02/2013-03/31/2013	281,064	206	156	+366.87	+13.05	+1.56	+323.04	+11.49
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44
10/01/2012-12/31/2012	132,722	116	90	+470.95	+35.48	+2.11	+442.94	+33.37
07/01/2012-09/30/2012	120,859	101	77	+125.20	+10.36	+2.09	+99.92	+8.27
04/01/2012-06/30/2012	85,150	85	60	+71.84	+8.44	+2.27	+52.54	+6.17
01/02/2012-03/31/2012	31,666	13	9	0.75	0.24	+7.38	24.12	7.62
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



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
10/01/2010-12/31/2010	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	17	17	MARKETAXESS-TRADES	55.71 %
	8	8	ISSUE PRICE	25.04 %
	14	8	BVAL	17.52 %
	1	1	MARKETAXESS-EMQUOTES	1.73 %
GOVERNMENTS	11	6	TULLET PREBON	66.90 %
	1	1	BVAL	31.85 %
	1	1	ISSUE PRICE	1.25 %
MORTGAGES	8	5	BLOOMBERGTERMINAL	100.00 %

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