



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 7

MEETING DATE: May 20, 2020

SUBJECT: Trading Cost Analysis and Commission Recapture
First 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 March 31, 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 (E/M), 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 first quarter of 2020 include:

- Trading volumes across equity and fixed income markets were higher during the first quarter as markets experienced considerably higher volatility compared to the prior year, as the impact from the Covid-19 pandemic spread across the globe.
- Trading costs in U.S. equity markets was significantly higher than prior quarters, mostly due to market impact costs relative to the full-day volume-weighted average price (VWAP), especially compared to the E/M universe benchmark.
- International equity trading costs continue to be significantly higher than in U.S. equity markets, though SCERS' international equity managers continue to generate consistently lower trading costs compared to peer group averages.
- Total principal traded in SCERS' U.S. fixed income portfolio was at the highest level in several years, driven higher by trading in mortgages and corporate bonds. Total trading costs, which are measured in basis points and based on a markup or discount (spread) to face value, were marginally higher but still significantly below peer universe benchmarks as measured by Elkins/McSherry.
- SCERS received a rebate of approximately 49% of the commissions generated by the commission recapture program during the first quarter. While the percentage rebate is

consistent with prior quarters, the total dollar amount of commission rebates received continues to decline.

DISCUSSION

SCERS engages Elkins / McSherry 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 is the average security price weighted by the share volume trade that day.
3. Total trading costs.

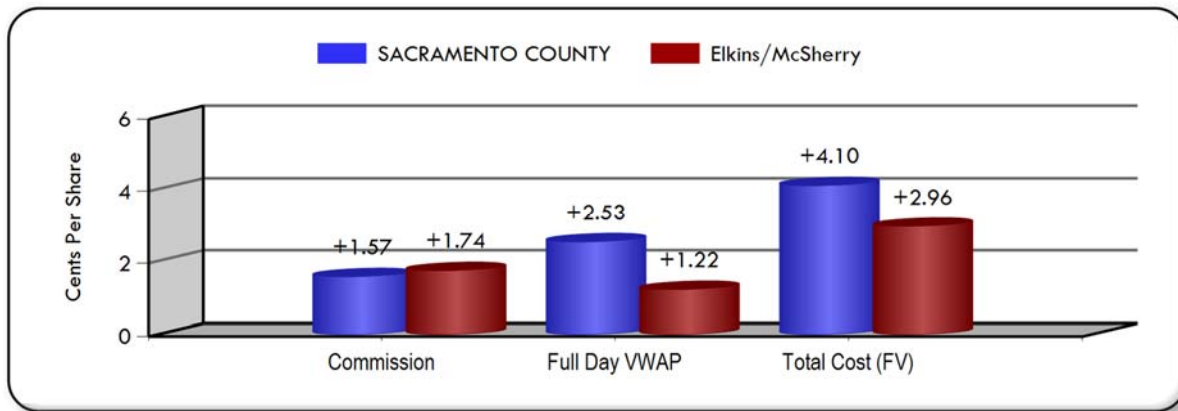
Industry metrics used to measure trade performance include "cps" (cents per share) and "bps" (basis points = 1/100th of one percent).

SCERS TRADE COST SUMMARY

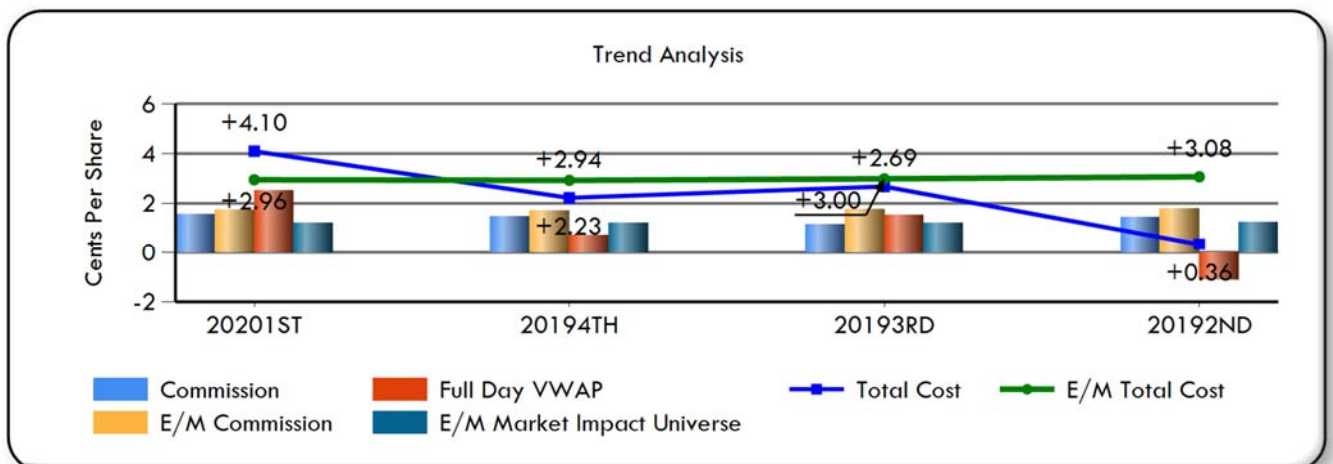
U.S. EQUITY

- SCERS' U.S. equity managers traded 4.1 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$198.2 million in principal. SCERS' equity managers generated an E/M E-Score¹ of 0.03 during the quarter, which signifies that costs were slightly higher than the VWAP when considering the volatility of stocks traded.
- SCERS' total trading costs equaled +4.10 cps, which is 1.14 cps higher than the peer group at +2.96 cps, as follows:
 - Commission cost of +1.57 cps versus peer group cost of +1.74 cps
 - Market impact costs of +2.53 cps versus peer group cost of +1.22 cps
- SCERS' total trading costs during the first quarter were higher than the prior quarter due to greater market impact costs, with market impact cost of +2.53 cps compared to +0.71 cps in the prior quarter. During the quarter, the market experienced heightened volatility as markets declined due to the Covid-19 pandemic. Market impact costs were greater than the market average for most of SCERS' active managers, with the exception of DGHM, which generated significant market savings during the quarter and ranked in the top 98% of the E/M universe.

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.



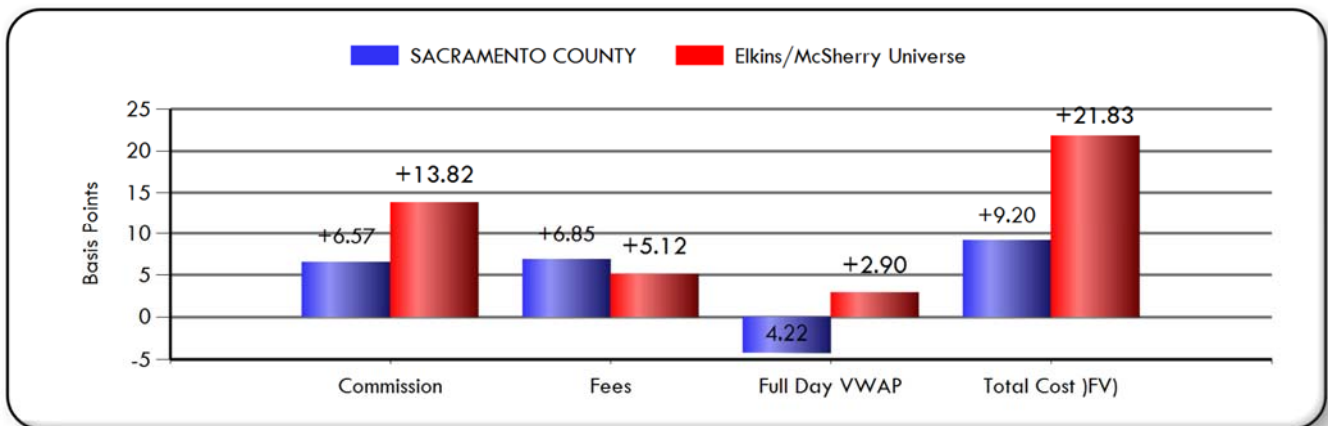
- SCERS’ total trading costs were worse than 65% of the peer group.
- SCERS’ U.S. Equity managers that experienced unfavorable commission costs compared to the U.S. Equity peer group average cost of +1.74 cps include:
 - Weatherbie at +3.50 cps
 - DGHM at +3.06 cps
 - Eagle Capital at +2.70 cps
- As illustrated below, over the past four quarters SCERS’ managers have generated slightly lower commission costs than the peer group.
- The U.S. small cap managers (Weatherbie and DGHM) will typically incur additional commission costs in the form of a soft dollar relationship where, in return for conducting trades through a brokerage firm, the manager receives the brokerage firm’s research, generally an additional +2.0 cps.
- According to Elkins / McSherry, the average commission for the Bundled (Research Dollars) commission universe is +3.75 cps, which is higher than both of SCERS’ U.S. Small Cap managers during the third quarter.



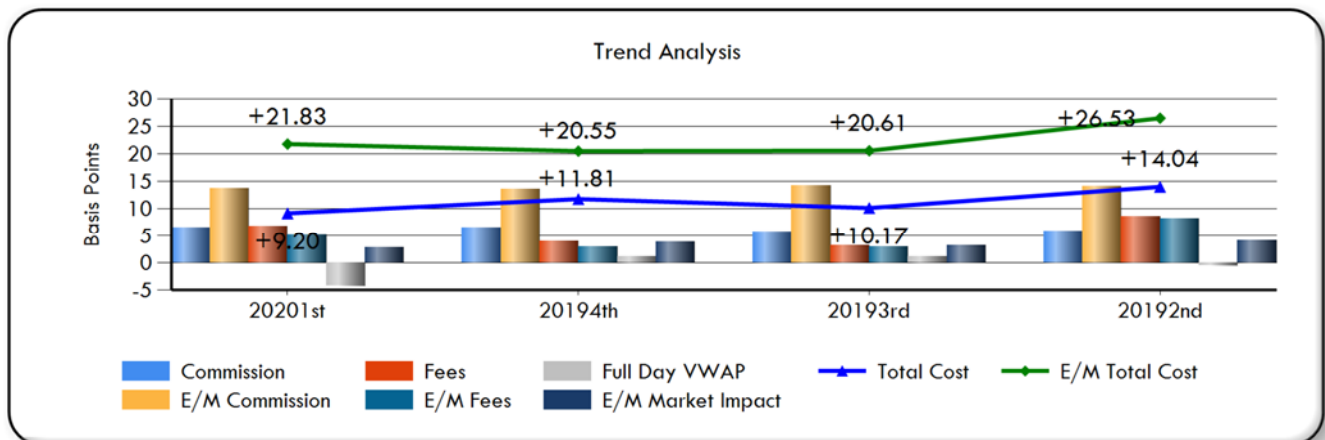
- In the first quarter, SCERS’ total trading costs (including market impact) were higher than the E/M universe. This differs from prior quarters, when SCERS’ total trading costs have been consistently below the total trading costs of the E/M universe. Over the past four quarters, SCERS’ total trading costs have averaged 0.65 cps below the E/M universe.

INTERNATIONAL EQUITY

- SCERS’ International Equity managers traded 18.3 million shares totaling \$150.5 million in principal across 28 countries.
- Total trading cost equaled +9.20 bps, which is 12.63 bps lower than the peer group at +21.83 bps, as follows:
 - Commission cost of +6.57 bps versus +13.82 bps
 - Fees (country taxes, tariffs) of +6.85 bps versus +5.12 bps
 - Market impact savings 4.22 bps versus market impact costs of +2.90 bps



- All of SCERS’ International Equity managers analyzed generated commission costs (ranging from +4.57 bps to +7.51 bps), significantly less than the E/M peer group (ranging from +13.09 bps to +14.09 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:
 - Lazard Asset Management at +3.68 bps versus +2.93 bps for their benchmark



- SCERS’ total international trading costs have been consistently below the total trading costs of the E/M universe, with the difference averaging 11.08 bps over the past four quarters.

U.S. FIXED INCOME

- SCERS’ U.S. Fixed Income managers conducted 691 trades totaling \$1.1 billion in principal, as follows:
 - Governments: 396 trades totaling \$479 million
 - Mortgages: 132 trades totaling \$515 million
 - Corporates: 158 trades totaling \$57 million
 - Municipals: 3 trades totaling \$5 million
- Total trading cost equaled 1.89 bps, which is 8.75 bps lower than the E/M peer group cost of +10.64 bps, as follows:
 - Governments at +1.45 bps versus +9.73 bps
 - Mortgages at +4.23 bps versus +10.73 bps
 - Corporates at -15.65 bps versus +17.24 bps
 - Municipals at +4.13 bps versus +14.29 bps
- SCERS’ Fixed Income managers generated significant cost savings across bond types compared with the benchmark universe trading costs, with the greatest difference in Corporates where SCERS’ experienced a cost savings (versus expense) on trading activity.
- As illustrated below, the total trade cost (in basis points) was slightly higher in the first quarter compared to prior quarters’ trade costs. SCERS’ overall trading volume (in Principal) was also higher than previous quarters as the market experienced higher volatility during the first quarter.

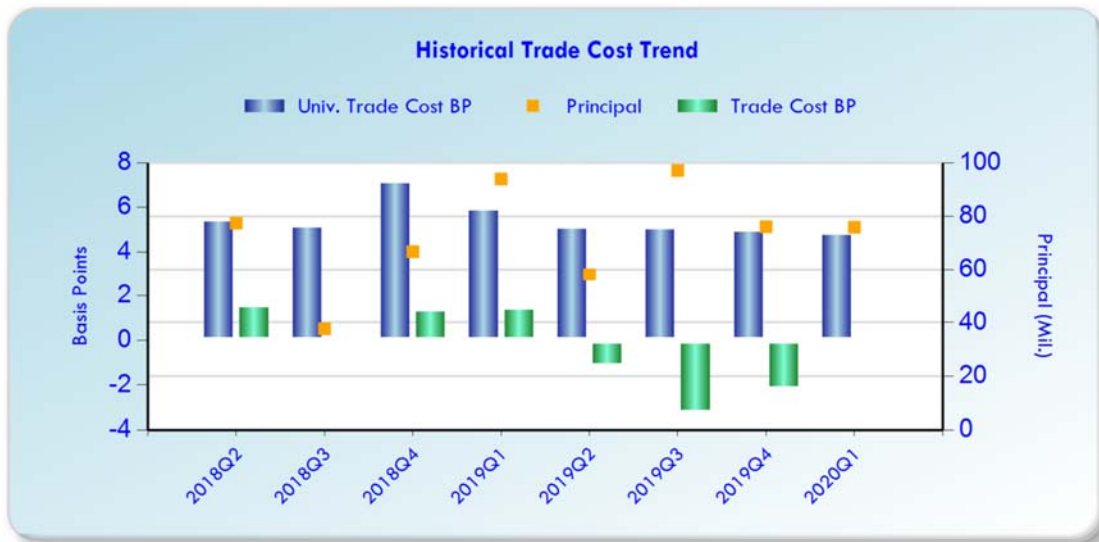


- Comparing SCERS’ U.S. Fixed Income Core Plus and Treasury managers trade costs versus their peer group is as follows:

- TCW (Core Plus) at -0.64 bps versus +10.90 bps
- NeubergerBerman (Treasury) at +2.66 bps versus +10.32 bps

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 157 international trades totaling \$75.9 million in principal as follows:
 - Mortgages: 39 trades totaling \$32 million
 - Governments: 35 trades totaling \$26 million
 - Corporates: 83 trades totaling \$18 million
 - Total trading cost was -0.14 bps, which was 5.07 bps lower than the E/M peer group cost of +4.93 bps, as follows:
 - Mortgages at -2.04 bps versus +4.94 bps
 - Governments at +7.72 bps versus +4.91 bps
 - Corporates at -8.37 bps versus +4.94 bps
 - Trading costs were in line with the previous quarters’ results, as illustrated below, as trading costs have been trending lower over the past year.



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 first quarter of 2020, SCERS' brokerage partners provided a rebate back to SCERS for approximately 49% of the commissions paid.
 - For the quarter ending March 31, 2020, the commission rebate totaled \$6,924. For comparison, the commission rebate for the quarter ending March 31, 2019 totaled \$17,665.

ATTACHMENTS

- Elkins / McSherry Trading Cost Summary report for the quarter ending March 31, 2020 for U.S. equity, international equity, U.S. fixed income, and global fixed income.

Prepared by:

/S/

Brian Miller
Investment Officer

Reviewed by:

/S/

Steve Davis
Chief Investment Officer

/S/

Eric Stern
Chief Executive Officer



SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End March 31, 2020





REPORT CONTENTS

Tab 1 : Executive Summary

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

Tab 2 : Trade Detail

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

Tab 3 : High / Low Cost Trades

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



(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates U.S. equity executions from January 1, 2020 to March 31, 2020. The analysis included trading of 4,059,692 shares representing \$198.21 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 +1.57 cps (+3.22 bp) or +\$63,827 (0.17 cps (0.34 bp) better than the Elkins/McSherry All Trading Universe) 	<ul style="list-style-type: none"> Your market impact cost was +2.53 cps (+5.18 bp) or +1.31 cps (+2.68 bp) worse than the Elkins/McSherry Universe Your overall trading cost of +4.10 cps (+8.40 bp) was +1.14 cps (+2.34 bp) worse than the Elkins/McSherry Universe Full Day VWAP Universe Rank: 33% Total Cost Universe Rank: 35% 	<ul style="list-style-type: none"> E-Score : 0.03

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	75 %	+1.22
				25 %	0.50
					+3.31



(+) = Cost

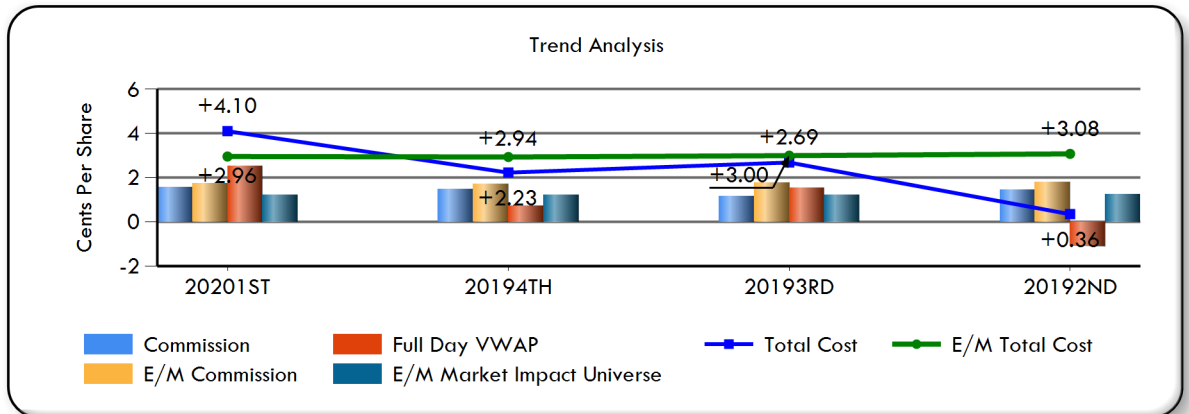
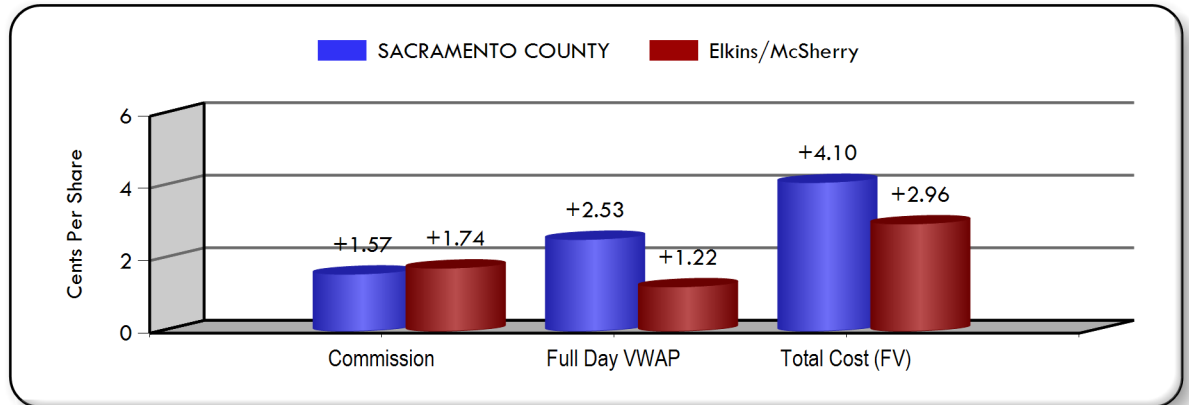
EXECUTIVE SUMMARY

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	+1.55	+1.74	+3.75	+1.86	+1.22	+3.41	+0.45	0.01
Buys	+1.60	+1.74	+3.75	+3.15	+1.22	+4.74	+1.78	0.04
Total	+1.57	+1.74	+3.75	+2.53	+1.22	+4.10	+1.14	0.03

TRADING COMPONENTS

	Buys	Sells
Trade Principal	102,836,708	95,370,498
Shares	2,116,821	1,942,871
Unique Names	591	361
Liquidity (% ADV)	0.031	0.034
Avg. Execution Size	1,738	2,651
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,218	733





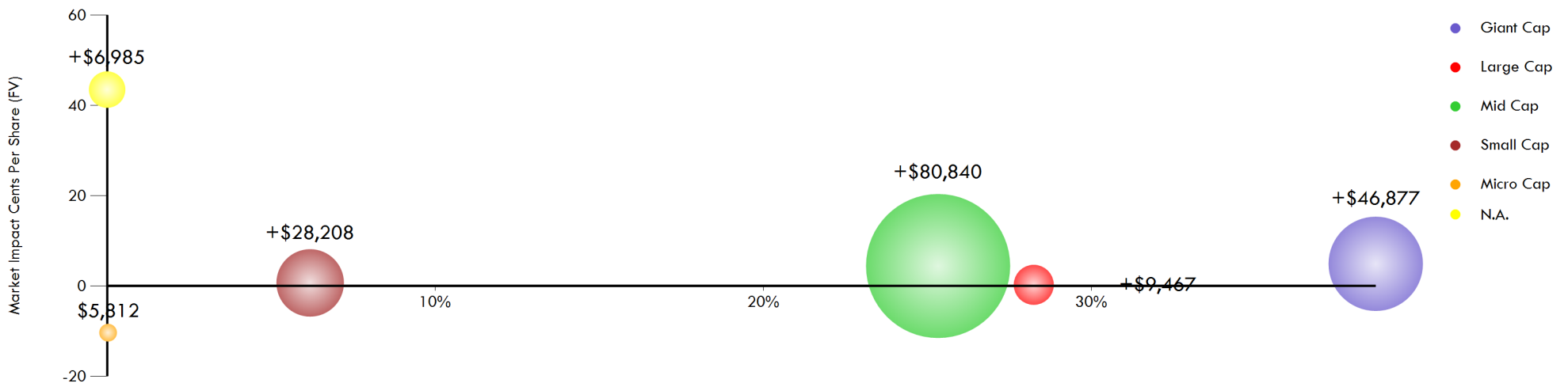
(+) = Cost

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)			
Giant Cap	38.92 %	2,166	+1.02	+1.74	+4.90	+1.72	29 %	+5.91	+2.46	0.00	Over \$25 B
Large Cap	28.50 %	1,906	+0.64	+1.74	+0.25	+1.63	66 %	+0.89	2.48	-0.02	\$5 B To \$25 B
Mid Cap	25.58 %	1,712	+1.79	+1.74	+4.41	+1.05	16 %	+6.20	+3.40	0.08	\$1 B To \$5 B
Small Cap	6.45 %	3,322	+2.86	+1.74	+0.67	+0.72	52 %	+3.52	+1.07	0.16	\$250 M To \$1 B
Micro Cap	0.29 %	4,399	+3.03	+1.74	10.37	+0.44	97 %	7.34	9.52	-0.03	Under \$250 M
N.A.	0.26 %	3,802	+2.40	+1.74	+43.53	+1.22	1 %	+45.93	+42.97	0.34	

Total Cost by Market Cap: (USD)



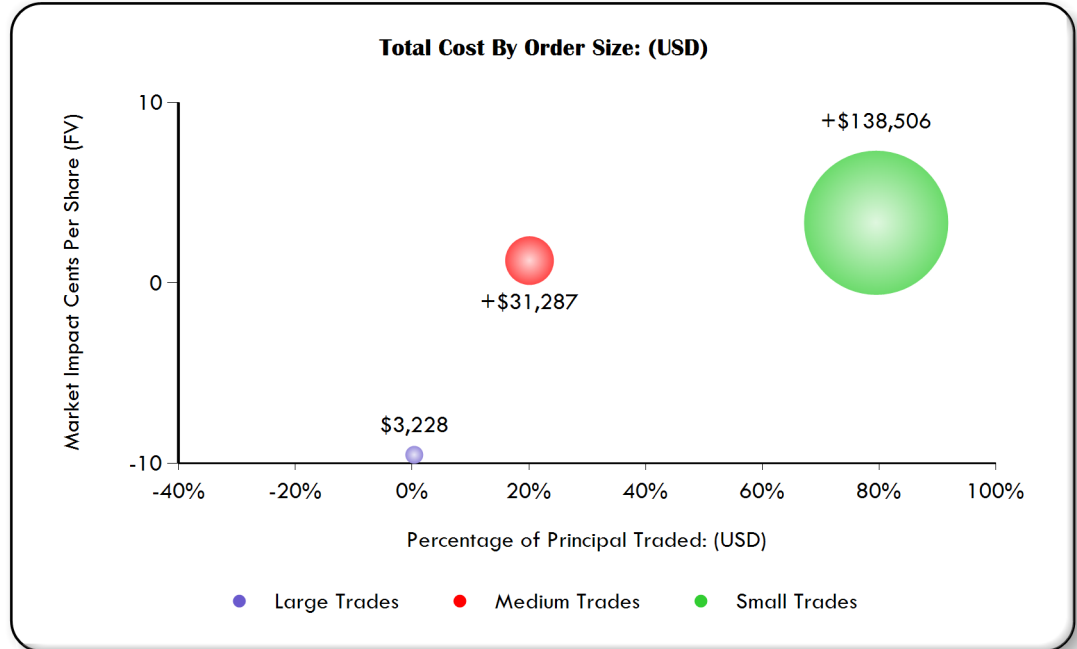
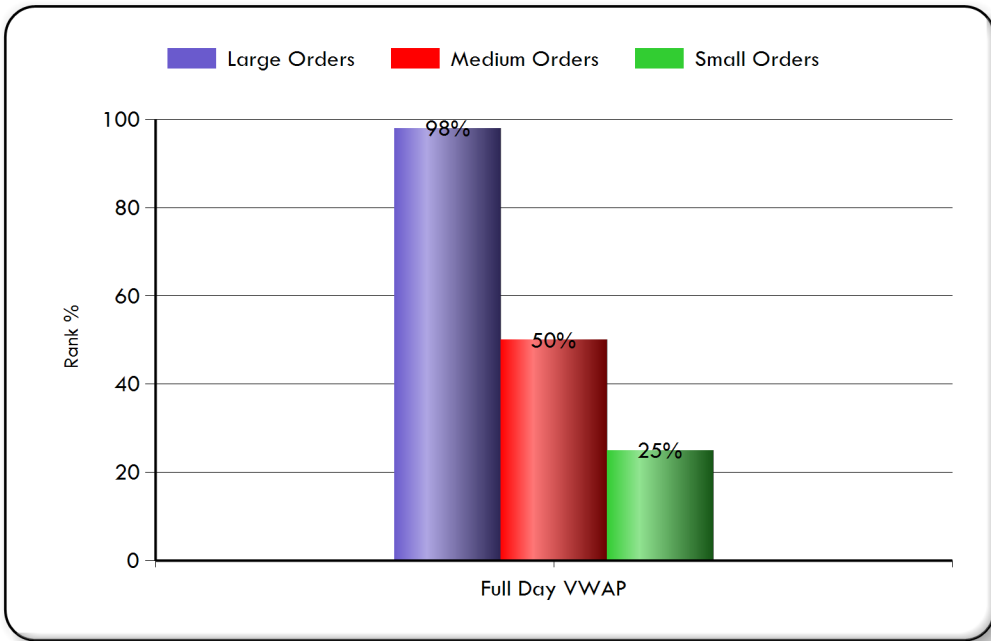


(+) = Cost

EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Shares Per Order	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score	Absolute Size (Shares)
				Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP	(cps)	Commission+Full Day VWAP Vs. Universe (cps)		
Large Orders	1	53,442	N/A	+3.50	+1.74	9.54	+1.22	98 %	6.04	9.00	-0.17	50K Or More
Med. Orders	68	17,834	N/A	+1.35	+1.74	+1.23	+1.22	50 %	+2.58	0.38	-0.05	10K-50K
Small Orders	1,882	1,484	N/A	+1.63	+1.74	+3.33	+1.22	25 %	+4.96	+2.00	0.05	10K Or Less





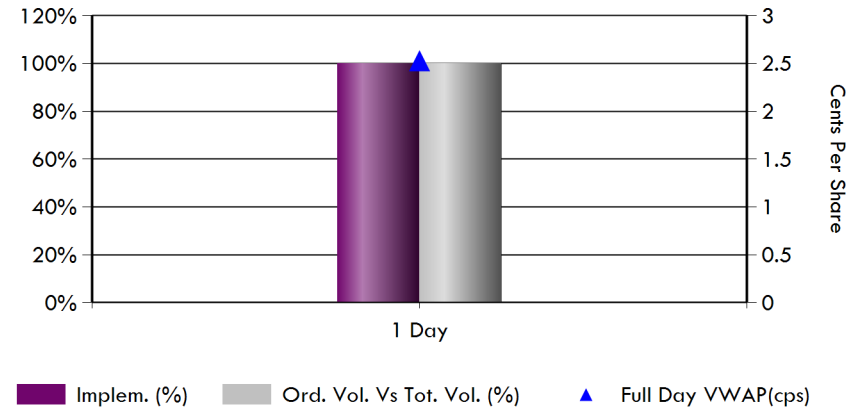
(+) = Cost

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%	+2.53	0.03

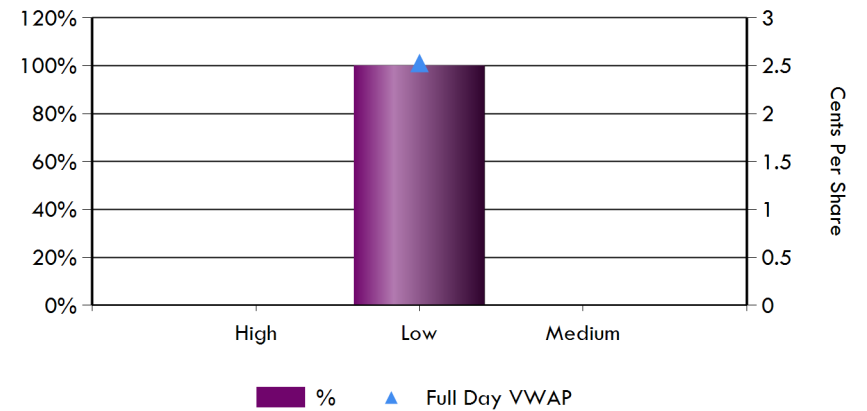
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score
0%~20% of daily vol.	L	100%	+2.53	0.03

Avg. % of Daily Volume





(+) = Cost

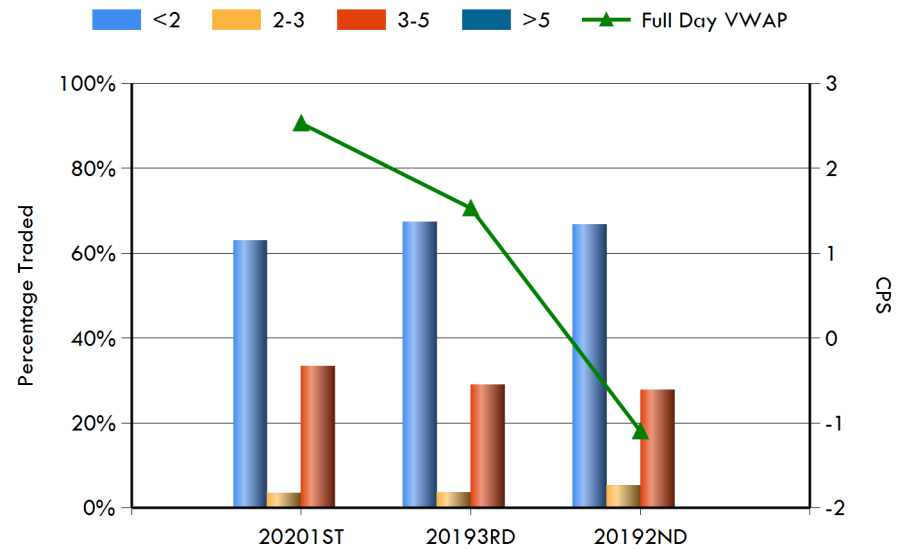
EXECUTIVE SUMMARY

COMMISSION REVIEW

Top 10 Broker

Broker	Total Commission (\$)	Commission Trends					
		Commission 20201st (cps)	All Trading Universe (cps)	Bundled Universe (cps)	20194TH (cps)	20193RD (cps)	20192ND (cps)
COWEN & CO	8,305	+3.06	+1.74	+3.75	+4.05	+3.99	+4.25
NEEDHAM &	2,344	+3.60	+1.74	+3.75	+3.60	+3.20	+3.68
GOLDMAN SA	3,980	+0.73	+1.74	+3.75	+0.34	+0.20	+0.38
STRATEGASS	2,923	+4.00	+1.74	+3.75	N.A	N.A	N.A
LIQUIDNET	6,507	+3.45	+1.74	+3.75	+3.58	+2.21	+3.13
ITG	7,748	+3.52	+1.74	+3.75	+2.78	+3.58	+3.40
JP MORGAN	2,098	+0.39	+1.74	+3.75	+0.15	+0.05	+0.26
WILLIAM BL	2,850	+3.44	+1.74	+3.75	+3.31	+3.77	+3.86
THEMIS TRA	6,436	+3.53	+1.74	+3.75	+3.42	+3.56	+3.41
CAPITAL IN	6,125	+3.15	+1.74	+3.75	+3.15	+3.82	+3.28

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	20194TH (%)	20193RD (%)	20192ND (%)
AQR	111	3,374	1,879,052	0.00	+0.06	+1.74	+1.88	40 %	1.01	57	44	59
WEATHERBIE	35	1,620	1,013,951	0.22	+3.50	+1.74	+7.06	7 %	+7.59	10	70	57
EAGLE CAPITAL MANAGE	32	12,786	460,281	-0.04	+2.70	+1.74	+6.93	8 %	+6.67	96	29	98
ALLIANCE R 3000 CAPI	13	425	278,360	0.00	+0.60	+1.74	+0.21	67 %	2.15	4	1	86
DALTON, GREINER, HAR	7	5,559	428,048	-0.13	+3.06	+1.74	8.57	98 %	8.47	92	83	96

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	+1.22

NOTES

--



(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)

					COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20194TH (%)	20193RD (%)	20192ND (%)
GOLDMAN SACHS	31	4,209	543,005	0.01	3,980	+0.73	+1.74	+3.11	28 %	+0.88	39	55	34
MERRILL LYNCH	31	3,429	476,562	0.04	721	+0.15	+1.74	+6.07	9 %	+3.26	50	59	82
JP MORGAN CHASE	26	741	533,547	-0.03	2,098	+0.39	+1.74	2.44	88 %	5.01	36	38	91
CREDIT SUISSE	22	2,999	386,888	0.05	348	+0.09	+1.74	+10.31	3 %	+7.44	61	39	40
MORGAN STANLEY	17	3,858	281,615	-0.08	217	+0.08	+1.74	4.87	96 %	7.76	56	21	99
CAPITAL INSTL SVCS	11	11,451	194,665	-0.28	6,125	+3.15	+1.74	23.48	99 %	23.29	92	66	63
ITG	10	804	220,202	0.34	7,748	+3.52	+1.74	+20.82	1 %	+21.38	11	86	99
THEMIS TRADING LLC	9	1,641	182,150	0.19	6,436	+3.53	+1.74	+8.62	5 %	+9.19	3	90	12
CITIGROUP	8	3,335	156,750	0.07	392	+0.25	+1.74	+1.98	39 %	0.73	58	69	35
COWEN & CO	6	5,430	271,510	0.12	8,305	+3.06	+1.74	+2.78	31 %	+2.88	94	83	98

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	+1.22

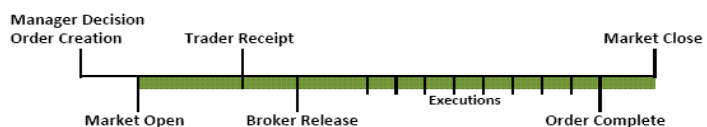
NOTES

--

(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
LIQUIDNET	5	2,093	188,360	0.01	6,507	+3.45	+1.74	6.10	96 %	5.60	63	41	99
SC BERNSTEIN	3	6,703	20,110	-0.25	302	+1.50	+1.74	127.58	99 %	129.04	-	-	-
STRATEGASSECURITIES	3	7,307	73,067	0.48	2,923	+4.00	+1.74	+71.38	1 %	+72.42	-	-	-
SOUTHWEST SECURITIES	2	5,992	11,984	-0.46	479	+4.00	+1.74	121.91	99 %	120.87	-	97	-
WILLIAM BLAIR	2	3,598	82,760	0.36	2,850	+3.44	+1.74	+12.46	2 %	+12.95	11	19	1
OPPENHEIMER & CO INC	1	2,232	37,939	0.22	1,256	+3.31	+1.74	+32.02	1 %	+32.37	2	1	-
STEPHENS & CO INC	1	1,852	25,928	0.05	889	+3.43	+1.74	1.81	85 %	1.34	11	1	18
NEEDHAM & CO INC	1	4,652	65,124	0.47	2,344	+3.60	+1.74	+7.94	7 %	+8.58	99	56	99
NATL FINANCIAL SERVS	1	7,371	29,482	-0.74	1,160	+3.94	+1.74	4.09	93 %	3.12	1	3	-
STIFEL NICOLAUS & CO	<1	2,470	49,394	-0.31	1,340	+2.71	+1.74	13.48	99 %	13.73	99	97	99

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	+1.22

NOTES

--



(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)

					COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20194TH (%)	20193RD (%)	20192ND (%)
JEFFERIES & CO	<1	1,399	18,183	0.27	641	+3.52	+1.74	+32.83	1 %	+33.40	46	93	24
CORNERSTONE MACRO LL	<1	6,876	41,256	0.18	1,485	+3.60	+1.74	+0.95	55 %	+1.59	1	7	3
RAYMOND JAMES	<1	2,532	27,857	-0.09	956	+3.43	+1.74	3.40	92 %	2.92	1	44	94
INSTINET	<1	3,731	22,386	0.13	672	+3.00	+1.74	+1.35	49 %	+1.39	97	98	96
HIBERNIA SOUTHCOAST	<1	14,550	14,550	0.53	655	+4.50	+1.74	+8.12	6 %	+9.66	-	-	-
ISI GROUP INC	<1	11,190	11,190	-0.49	504	+4.50	+1.74	15.28	99 %	13.74	72	78	45
PIPER JAFFRAY	<1	1,049	10,492	-0.58	376	+3.59	+1.74	36.67	99 %	36.04	59	4	99
JANNEY MONTGOMERY	<1	3,097	12,386	0.71	446	+3.60	+1.74	+5.85	11 %	+6.49	84	-	99
WELLS FARGO	<1	5,176	15,529	0.70	511	+3.29	+1.74	+2.36	34 %	+2.69	5	23	-
CANACCORD GENUITY	<1	1,835	7,339	0.14	264	+3.60	+1.74	+2.93	29 %	+3.57	1	27	16

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	+1.22

NOTES

--



(+) = 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	20194TH (%)	20193RD (%)
RBC CAPITAL MARKETS	<1	756	756	0.58	21	+2.80	+1.74	+97.58	1 %	+97.42	85	99	98
KEYBANC	<1	5,935	11,870	-0.01	356	+3.00	+1.74	+25.06	1 %	+25.10	98	-	-
DEUTSCHE BANK	<1	66	66	-0.05	0	+0.02	+1.74	39.61	99 %	42.56	57	69	73
LUMINEX TRADING	<1	10,780	10,780	-1.45	280	+2.60	+1.74	74.77	99 %	75.12	-	21	-
KEEFE BRUYETTE WOODS	<1	24,010	24,010	-0.85	240	+1.00	+1.74	2.52	88 %	4.48	93	-	82

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.75	+1.74	+1.20	+1.46	+1.22

NOTES

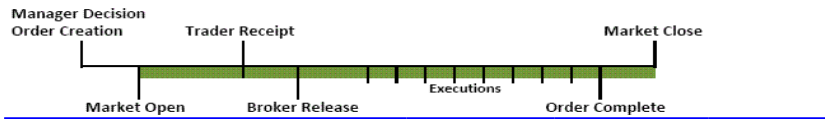
--



(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
Grand Total	13	425	278,360	0.00	1,670	+0.60	+1.74	+0.21	67 %	2.15	4	1	86
JP MORGAN CHASE	13	425	278,360	0.00	1,670	+0.60	+1.74	+0.21	67 %	2.15	5	1	-



(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
MERRILL LYNCH	29	3,224	444,973	0.00	89	+0.02	+1.74	+1.66	44 %	1.28	50	49	62
GOLDMAN SACHS	25	3,413	375,464	-0.01	488	+0.13	+1.74	+0.17	67 %	2.66	55	54	31
CREDIT SUISSE	22	2,999	386,888	0.05	348	+0.09	+1.74	+10.31	3 %	+7.44	61	39	40
MORGAN STANLEY	15	3,990	275,311	-0.05	55	+0.02	+1.74	1.51	82 %	4.45	57	18	83
JP MORGAN CHASE	12	3,869	247,592	-0.05	124	+0.05	+1.74	4.56	94 %	7.47	65	61	82
CITIGROUP	8	3,234	148,758	0.06	104	+0.07	+1.74	+2.00	39 %	0.88	58	69	43
DEUTSCHE BANK	<1	66	66	-0.05	0	+0.02	+1.74	39.61	99 %	42.56	57	69	73
Grand Total	111	3,374	1,879,052	0.00	1,208	+0.06	+1.74	+1.88	40 %	1.01	57	44	59



(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
Grand Total	7	5,559	428,048	-0.13	13,078	+3.06	+1.74	8.57	98 %	8.47	92	83	96
COWEN & CO	4	5,418	216,709	-0.09	6,724	+3.10	+1.74	3.41	92 %	3.27	94	85	98
LIQUIDNET	1	2,473	34,619	-0.05	1,212	+3.50	+1.74	7.17	97 %	6.63	87	97	94
CAPITAL INSTL SVCS	<1	7,996	63,968	-0.78	2,205	+3.45	+1.74	35.07	99 %	34.59	92	66	74
INSTINET	<1	3,731	22,386	0.13	672	+3.00	+1.74	+1.35	49 %	+1.39	97	98	96
HIBERNIA SOUTHCOAST	<1	14,550	14,550	0.53	655	+4.50	+1.74	+8.12	6 %	+9.66	-	-	-
ISI GROUP INC	<1	11,190	11,190	-0.49	504	+4.50	+1.74	15.28	99 %	13.74	72	78	45
RBC CAPITAL MARKETS	<1	756	756	0.58	21	+2.80	+1.74	+97.58	1 %	+97.42	85	99	98
KEYBANC	<1	5,935	11,870	-0.01	356	+3.00	+1.74	+25.06	1 %	+25.10	98	-	-
LUMINEX TRADING	<1	10,780	10,780	-1.45	280	+2.60	+1.74	74.77	99 %	75.12	-	21	-
KEEFE BRUYETTE WOODS	<1	24,010	24,010	-0.85	240	+1.00	+1.74	2.52	88 %	4.48	93	-	82
PIPER JAFFRAY	<1	1,490	1,490	0.37	52	+3.50	+1.74	+46.79	1 %	+47.33	64	85	99
STIFEL NICOLAUS & CO	<1	15,720	15,720	0.23	157	+1.00	+1.74	+0.71	60 %	1.25	98	77	97



(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
Grand Total	32	12,786	460,281	-0.04	12,420	+2.70	+1.74	+6.93	8 %	+6.67	96	29	98
CAPITAL INSTL SVCS	10	14,522	130,697	-0.24	3,921	+3.00	+1.74	17.80	99 %	17.76	92	-	59
GOLDMAN SACHS	6	28,370	141,849	0.10	2,591	+1.83	+1.74	+15.77	1 %	+14.64	-	-	-
SC BERNSTEIN	3	6,703	20,110	-0.25	302	+1.50	+1.74	127.58	99 %	129.04	-	-	-
STRATEGASSECURITIES	3	7,307	73,067	0.48	2,923	+4.00	+1.74	+71.38	1 %	+72.42	-	-	-
COWEN & CO	2	8,091	16,181	0.43	243	+1.50	+1.74	+79.79	1 %	+78.33	-	-	-
SOUTHWEST SECURITIES	2	5,992	11,984	-0.46	479	+4.00	+1.74	121.91	99 %	120.87	-	-	-
MORGAN STANLEY	2	1,253	2,505	-0.33	38	+1.50	+1.74	385.35	99 %	386.80	-	99	99
MERRILL LYNCH	1	31,589	31,589	0.89	632	+2.00	+1.74	+68.17	1 %	+67.21	-	87	1
JP MORGAN CHASE	1	7,595	7,595	-0.08	304	+4.00	+1.74	30.60	99 %	29.56	-	-	-
NATL FINANCIAL SERVS	<1	24,704	24,704	-0.94	988	+4.00	+1.74	6.33	96 %	5.29	-	-	-



(+) = 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	20194TH (%)	20193RD (%)	20192ND (%)
Grand Total	35	1,620	1,013,951	0.22	35,451	+3.50	+1.74	+7.06	7 %	+7.59	10	70	57
ITG	10	804	220,202	0.34	7,748	+3.52	+1.74	+20.82	1 %	+21.38	9	86	99
THEMIS TRADING LLC	9	1,641	182,150	0.19	6,436	+3.53	+1.74	+8.62	5 %	+9.19	3	90	12
LIQUIDNET	4	2,023	153,741	0.02	5,295	+3.44	+1.74	5.85	96 %	5.37	56	57	69
WILLIAM BLAIR	2	3,598	82,760	0.36	2,850	+3.44	+1.74	+12.46	2 %	+12.95	11	22	1
OPPENHEIMER & CO INC	1	2,232	37,939	0.22	1,256	+3.31	+1.74	+32.02	1 %	+32.37	2	1	-
STEPHENS & CO INC	1	1,852	25,928	0.05	889	+3.43	+1.74	1.81	85 %	1.34	1	1	1
NEEDHAM & CO INC	1	4,652	65,124	0.47	2,344	+3.60	+1.74	+7.94	7 %	+8.58	99	89	99
STIFEL NICOLAUS & CO	<1	1,772	33,674	-0.32	1,183	+3.51	+1.74	20.11	99 %	19.55	99	99	99
JEFFERIES & CO	<1	1,399	18,183	0.27	641	+3.52	+1.74	+32.83	1 %	+33.40	64	91	1
CORNERSTONE MACRO LL	<1	6,876	41,256	0.18	1,485	+3.60	+1.74	+0.95	55 %	+1.59	1	7	3
GOLDMAN SACHS	<1	1,835	25,692	0.19	901	+3.51	+1.74	23.91	99 %	23.36	4	95	41
COWEN & CO	<1	4,828	38,620	0.27	1,338	+3.46	+1.74	+5.23	14 %	+5.73	80	35	82
RAYMOND JAMES	<1	2,532	27,857	-0.09	956	+3.43	+1.74	3.40	92 %	2.92	1	18	99
JANNEY MONTGOMERY	<1	3,097	12,386	0.71	446	+3.60	+1.74	+5.85	11 %	+6.49	84	-	99
PIPER JAFFRAY	<1	1,000	9,002	-0.66	324	+3.60	+1.74	50.49	99 %	49.84	29	1	78
WELLS FARGO	<1	5,176	15,529	0.70	511	+3.29	+1.74	+2.36	34 %	+2.69	5	23	-
NATL FINANCIAL SERVS	<1	1,593	4,778	0.36	172	+3.60	+1.74	+7.47	7 %	+8.11	1	3	-
CANACCORD GENUITY	<1	1,835	7,339	0.14	264	+3.60	+1.74	+2.93	29 %	+3.57	1	27	16
CITIGROUP	<1	7,992	7,992	0.68	288	+3.60	+1.74	+1.45	48 %	+2.09	-	-	1
MORGAN STANLEY	<1	1,900	3,799	0.09	125	+3.28	+1.74	+2.45	34 %	+2.77	10	99	-



(+) = 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)
DERM	38	183,113	3,473,072	+3.60	0.05%	0.40	+2.60
PTLA	51	152,122	1,311,807	+3.17	0.15%	0.18	+3.93
DAL	8	121,892	4,897,110	+1.88	0.04%	-0.24	9.90
CMCSA	7	103,884	4,284,887	+1.87	0.04%	0.65	+41.95
NEX	4	102,690	113,304	+1.00	0.54%	-0.11	0.21
PGNY	57	85,065	1,740,075	+3.60	0.19%	0.02	+3.36
PI	24	70,496	1,819,416	+3.60	0.56%	0.27	+6.90
ORCL	5	67,561	3,250,397	+2.81	0.06%	0.42	+22.09
NVST	8	65,353	1,669,075	+4.26	0.15%	0.00	1.59
NLOK	5	57,803	1,147,264	+0.05	0.11%	-0.03	0.71

Names Most Traded - Total Orders

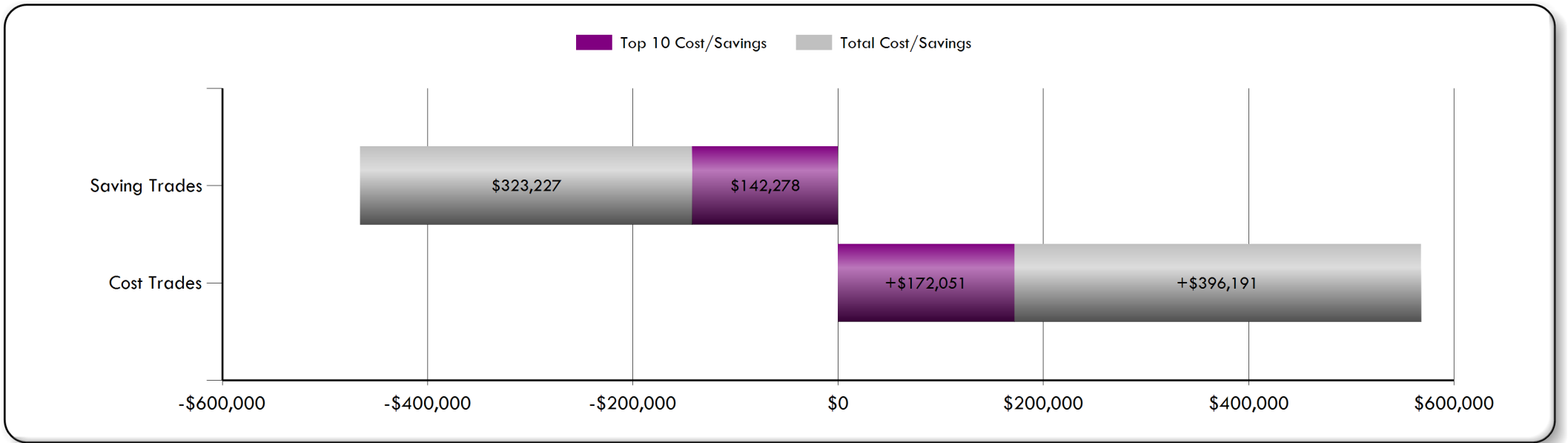
							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
DERM	38	183,113	3,473,072	+3.60	0.05%	0.40	+2.60
PODD	25	19,638	3,604,276	+3.60	0.08%	0.14	2.23
MSFT	8	41,593	6,493,271	+3.25	0.01%	-0.26	67.45
DAL	8	121,892	4,897,110	+1.88	0.04%	-0.24	9.90
CMCSA	7	103,884	4,284,887	+1.87	0.04%	0.65	+41.95
MCK	6	13,953	2,136,999	+0.09	0.03%	-0.17	26.26
ORCL	5	67,561	3,250,397	+2.81	0.06%	0.42	+22.09
BMJ	5	53,734	3,443,939	+0.05	0.05%	-0.09	1.99
ANTM	5	12,008	3,223,153	+1.56	0.09%	0.30	+98.64
ECL	2	15,335	3,179,469	+2.98	0.36%	-0.83	28.89



(+) = Cost

TRADE CONTRIBUTIONS

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost/Savings
10 High Cost Trades	6,111,125	10	+204.13	30.28%
Cost Trades	93,947,643	1,020	+55.76	100.00%
Saving Trades	104,042,518	930	49.43	100.00%
10 Low Cost Trades	6,100,650	10	243.14	30.56%





(+) = Cost

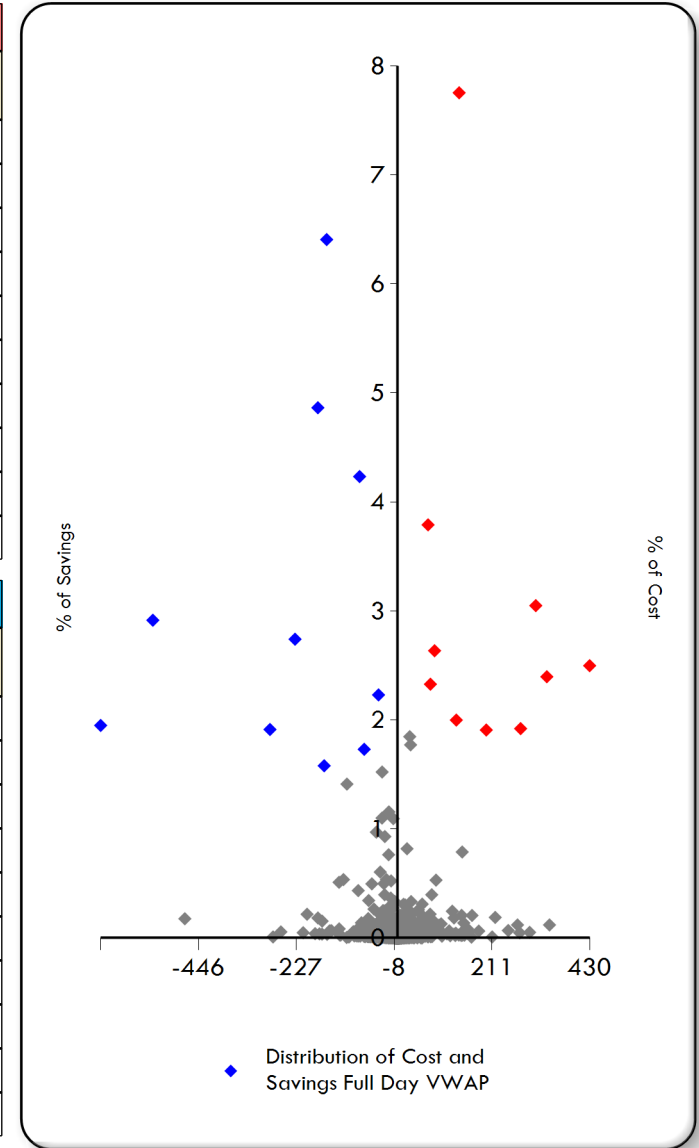
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	DAL	2020/03/17	31,962	7.75	0.69	+137.84	EAGLE CAPI	GOLDMAN SA
Buy	CMCSA	2020/03/02	31,589	3.79	0.89	+68.17	EAGLE CAPI	MERRILL LY
Buy	CLH	2020/03/18	5,600	3.05	0.80	+309.42	AQR	CREDIT SUI
Buy	WAL	2020/03/18	18,076	2.64	0.57	+82.84	AQR	CREDIT SUI
Buy	ANTM	2020/02/25	3,302	2.50	1.24	+429.92	EAGLE CAPI	COWEN & CO
Sell	EVBG	2020/03/18	4,077	2.40	0.87	+334.06	WEATHERBIE	OPPENHEIME
Sell	CMCSA	2020/03/19	18,000	2.33	0.68	+73.50	EAGLE CAPI	STRATEGASS
Buy	PGNY	2020/03/18	8,633	2.00	0.83	+131.56	WEATHERBIE	ITG
Buy	ADSK	2020/03/18	3,963	1.92	0.37	+275.39	AQR	CREDIT SUI
Buy	MAR	2020/03/19	5,459	1.91	0.39	+198.58	EAGLE CAPI	STRATEGASS

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	DAL	2020/03/25	18,784	6.41	-1.31	158.77	EAGLE CAPI	CAPITAL IN
Buy	DIS	2020/03/12	12,697	4.86	-0.47	178.33	EAGLE CAPI	SC BERNSTE
Buy	DAL	2020/02/25	23,163	4.23	-0.70	85.07	EAGLE CAPI	GOLDMAN SA
Sell	EVBG	2020/03/18	2,477	2.92	-1.43	547.90	WEATHERBIE	STIFEL NIC
Sell	MSFT	2020/03/19	5,560	2.74	-0.84	229.52	EAGLE CAPI	SOUTHWEST
Buy	CAL	2020/03/13	24,383	2.23	-0.84	42.57	DALTON, GR	CAPITAL IN
Sell	GOOG	2020/03/12	1,366	1.95	-0.33	664.63	EAGLE CAPI	MORGAN STA
Sell	PLNT	2020/03/16	3,118	1.91	-0.98	285.55	WEATHERBIE	ITG
Buy	BLMN	2020/03/17	10,780	1.73	-1.45	74.77	DALTON, GR	LUMINEX TR
Buy	PGNY	2020/03/18	4,476	1.58	-1.03	164.29	WEATHERBIE	GOLDMAN SA



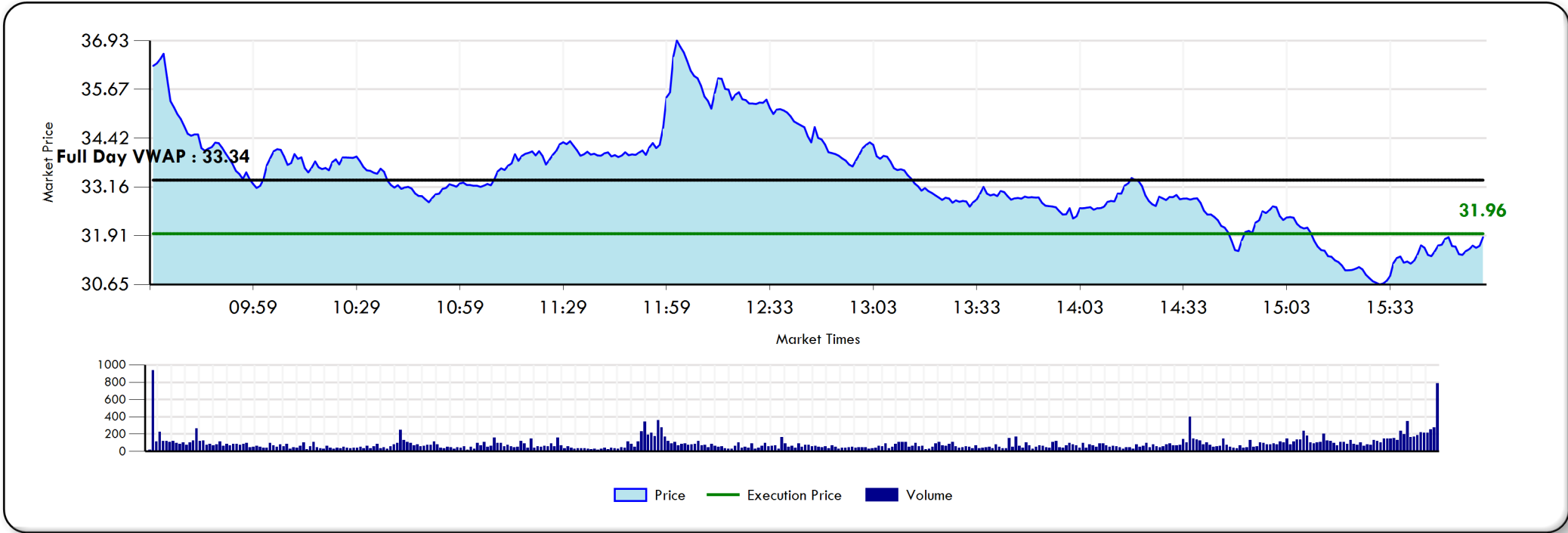


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

DAL - 2020/03/17

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	GOLDMAN SACHS	03/17/2020 09:30:00	03/17/2020 16:00:00	31,962	31.9580	33.3364	+44,057	+137.84	0.69	0.09



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.75% of your market impact cost.

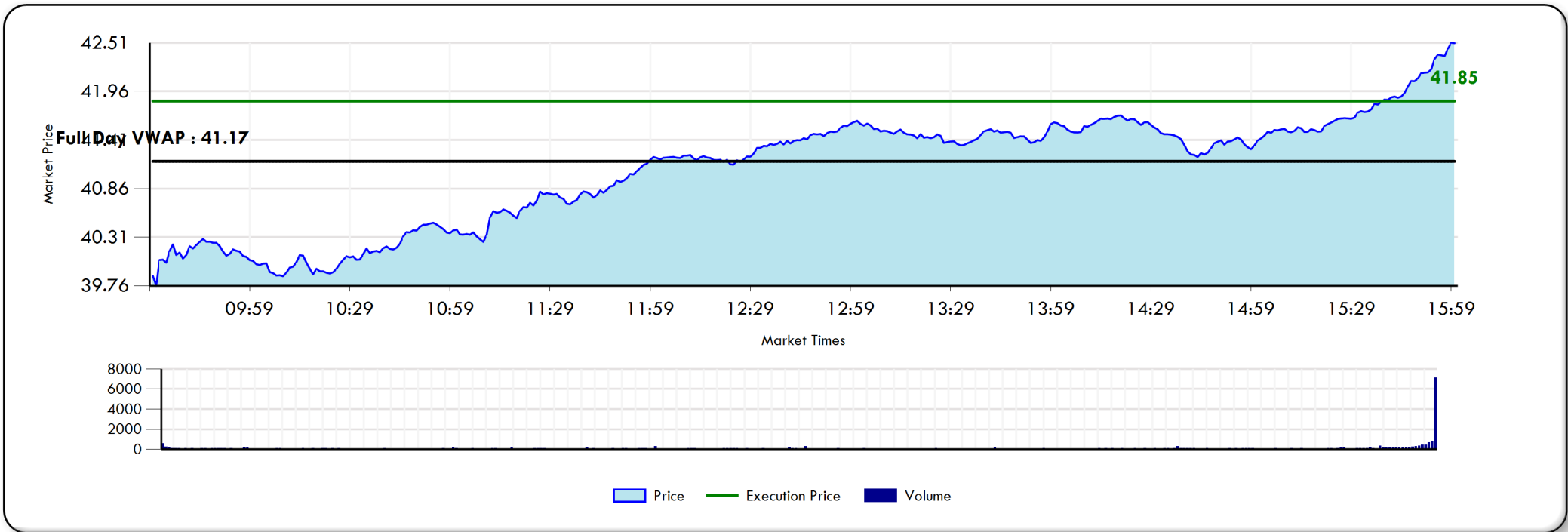


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CMCSA - 2020/03/02

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 (%)
Buy	EAGLE CAPITAL MANAGEMENT	MERRILL LYNCH	03/02/2020 09:30:00	03/02/2020 16:00:00	31,589	41.8499	41.1682	+21,535	+68.17	0.89	0.08



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.79% of your market impact cost.



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CLH - 2020/03/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	AQR	CREDIT SUISSE	03/18/2020 09:30:00	03/18/2020 16:00:00	5,600	38.4997	35.4056	+17,327	+309.42	0.80	0.55



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.05% of your market impact cost.

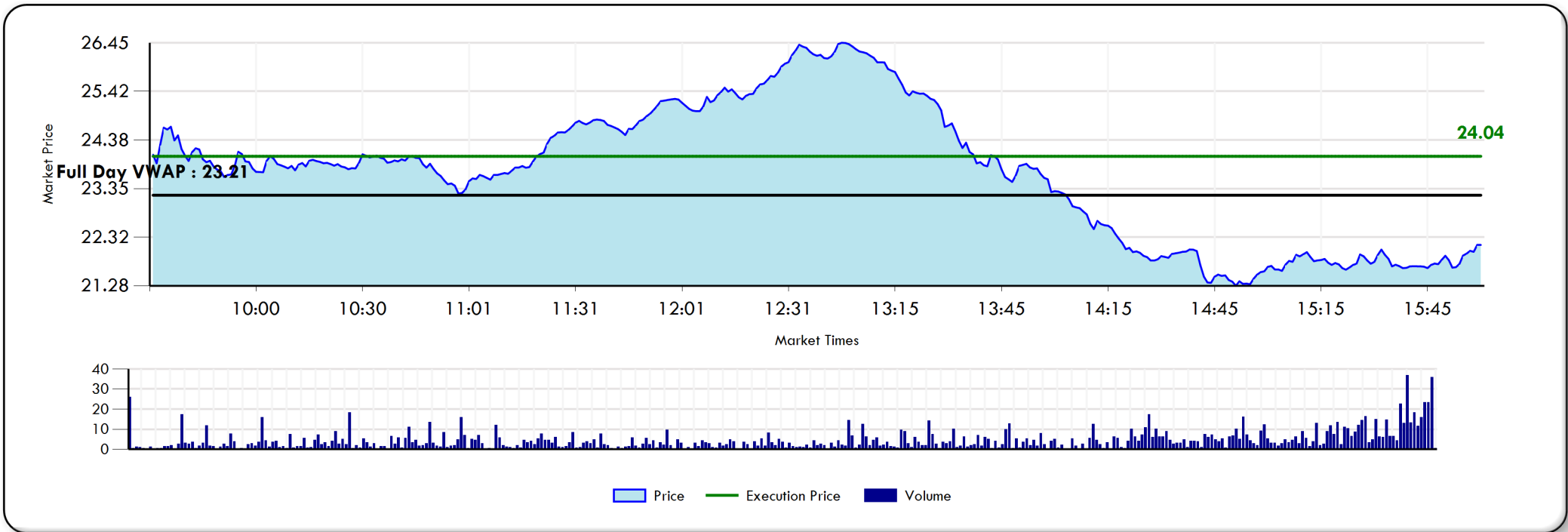


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

WAL - 2020/03/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	AQR	CREDIT SUISSE	03/18/2020 09:30:00	03/18/2020 16:00:00	18,076	24.0367	23.2083	+14,974	+82.84	0.57	0.81



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.64% of your market impact cost.

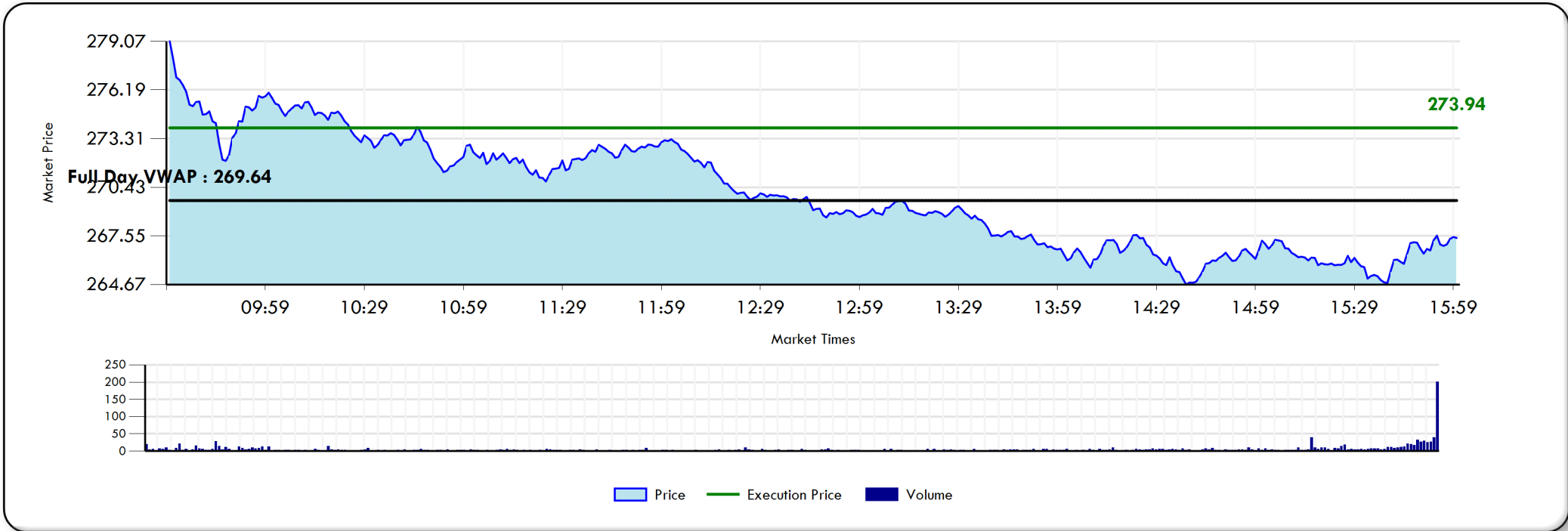


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ANTM - 2020/02/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	COWEN & CO	02/25/2020 09:30:00	02/25/2020 16:00:00	3,302	273.9400	269.6408	+14,196	+429.92	1.24	0.14



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

EVBG - 2020/03/18

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	WEATHERBIE	OPPENHEIMER & CO INC	03/18/2020 09:30:00	03/18/2020 16:00:00	4,077	114.1804	117.5210	+13,620	+334.06	0.87	0.33



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.40% of your market impact cost.

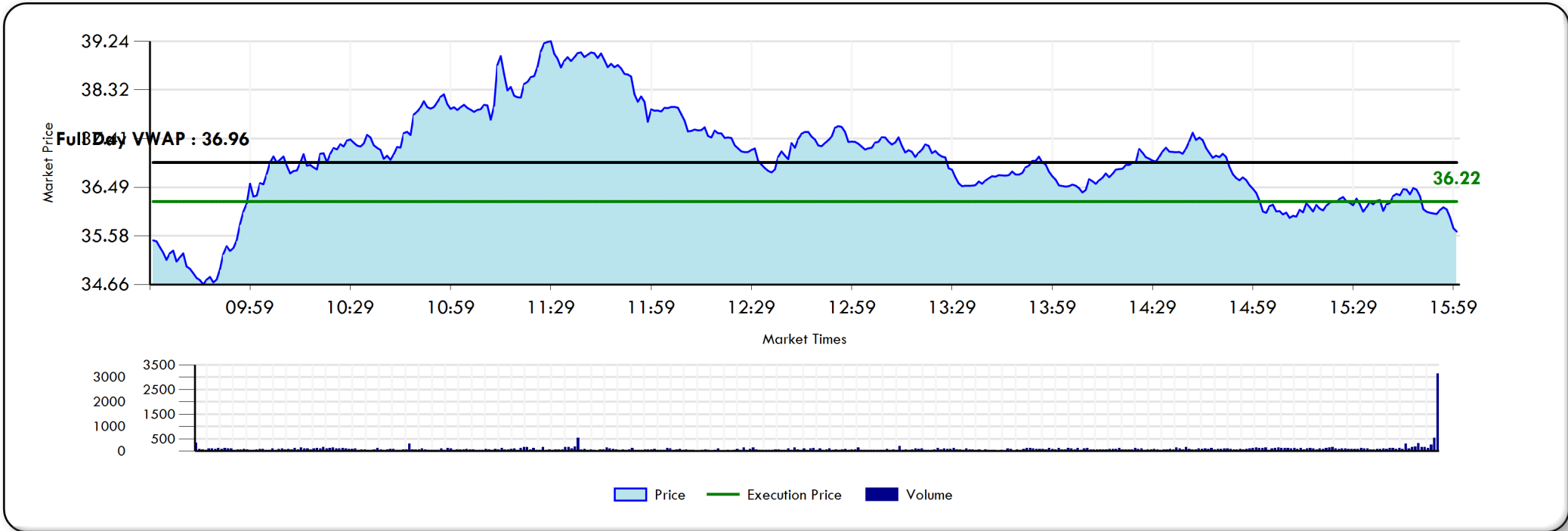


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

CMCSA - 2020/03/19

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	STRATEGASSECUR ITIES	03/19/2020 09:30:00	03/19/2020 16:00:00	18,000	36.2224	36.9574	+13,230	+73.50	0.68	0.05



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.33% of your market impact cost.

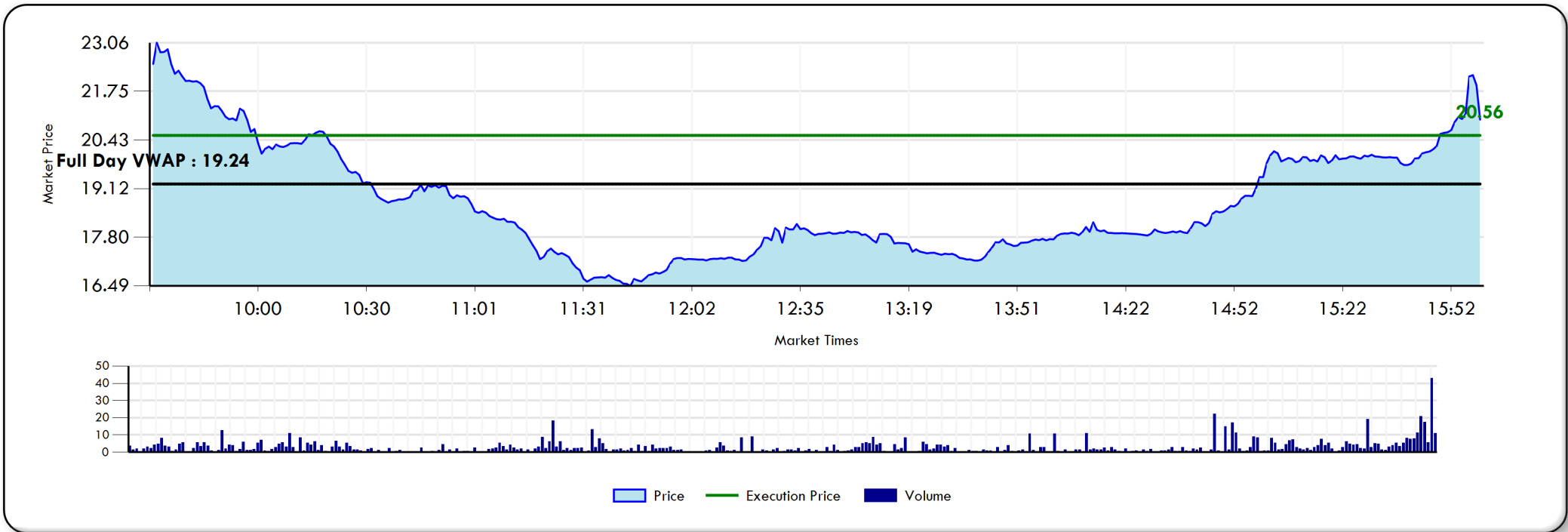


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

PGNY - 2020/03/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	ITG	03/18/2020 09:30:00	03/18/2020 16:00:00	8,633	20.5557	19.2401	+11,357	+131.56	0.83	0.82



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.00% of your market impact cost.

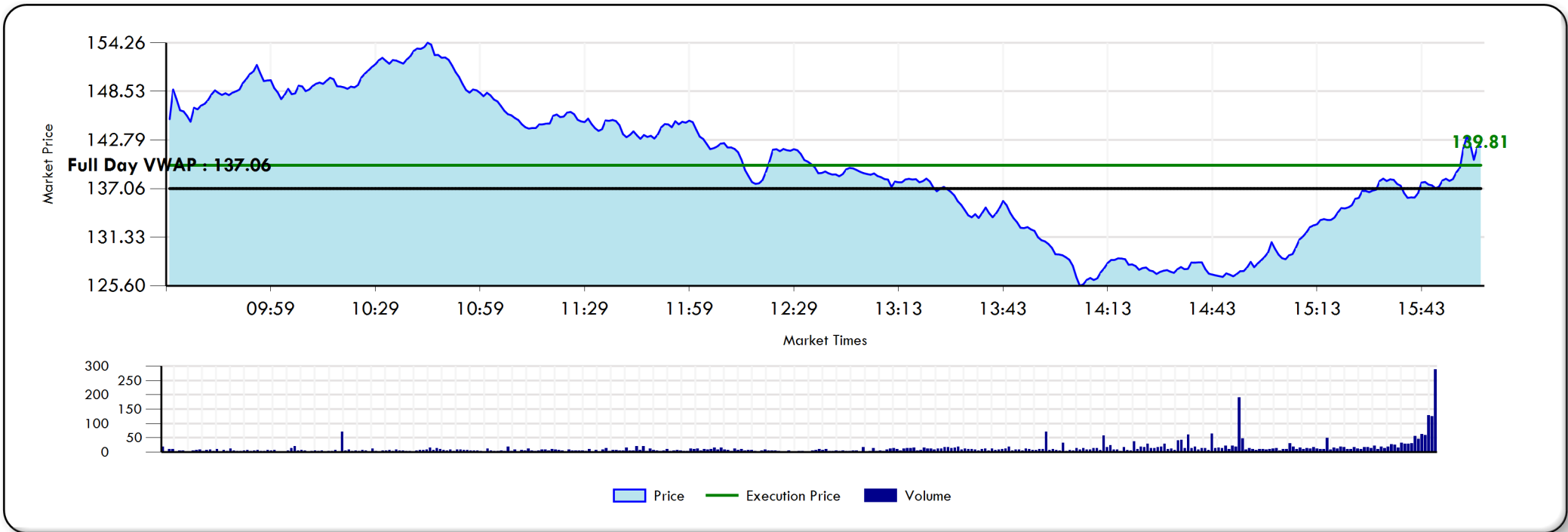


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ADSK - 2020/03/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	AQR	CREDIT SUISSE	03/18/2020 09:30:00	03/18/2020 16:00:00	3,963	139.8149	137.0610	+10,914	+275.39	0.37	0.08



NOTES

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

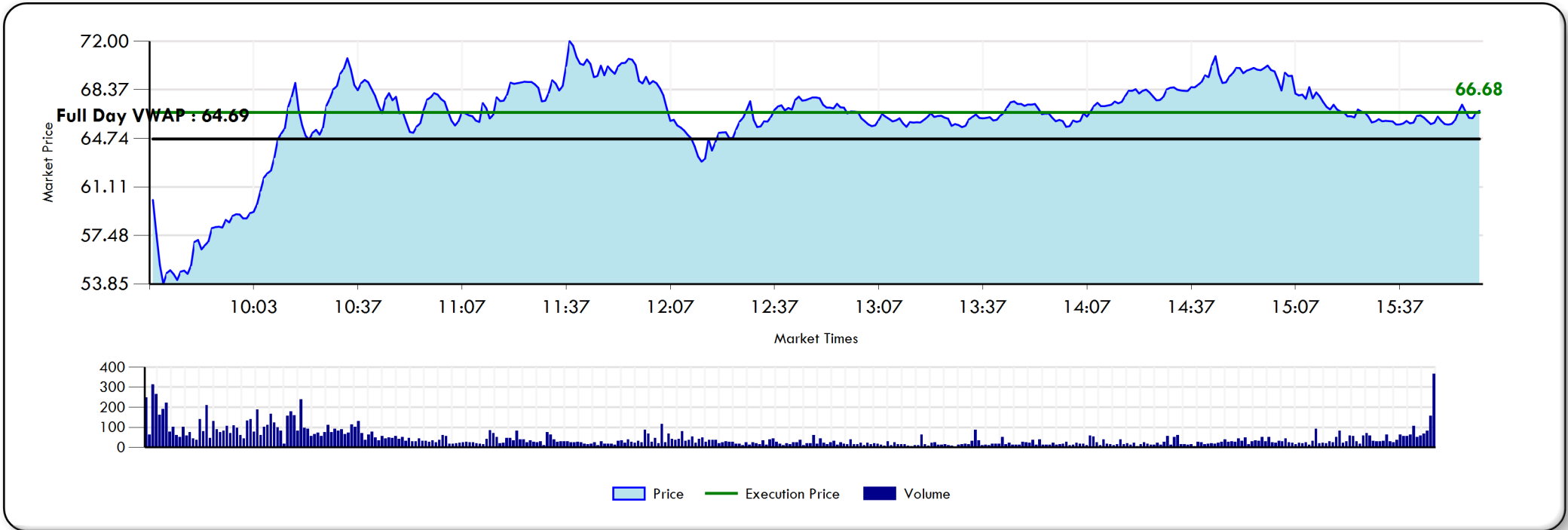


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MAR - 2020/03/19

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	STRATEGASSECUR ITIES	03/19/2020 09:30:00	03/19/2020 16:00:00	5,459	66.6771	64.6913	+10,840	+198.58	0.39	0.03



NOTES

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

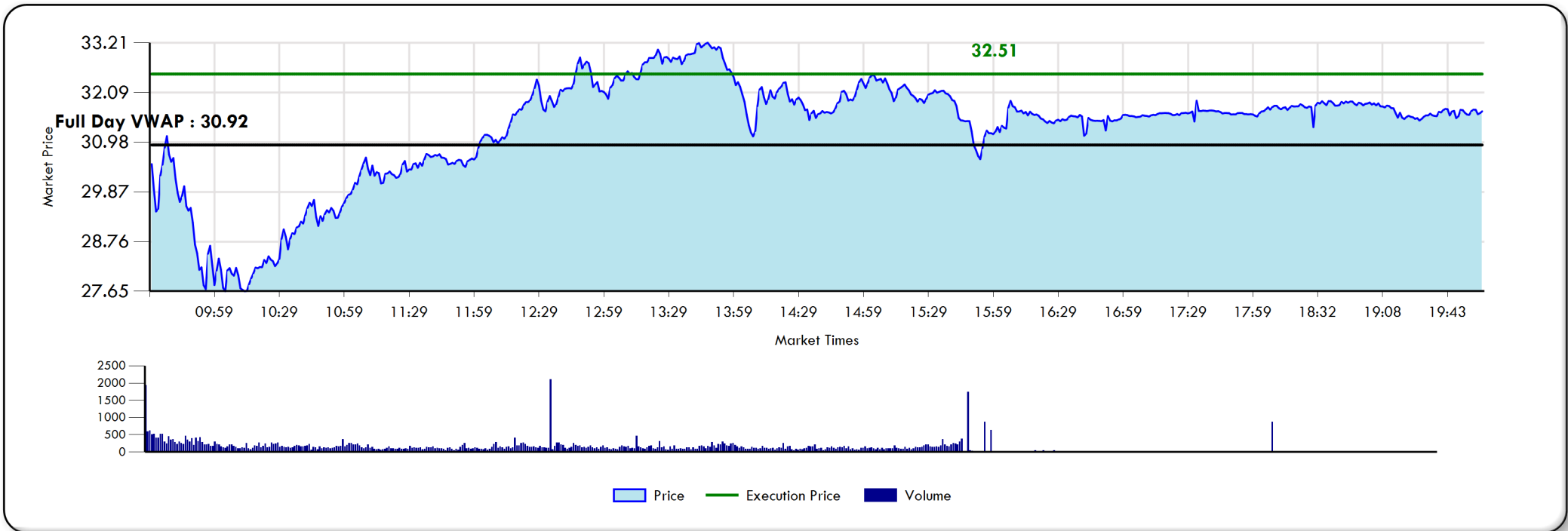


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DAL - 2020/03/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	CAPITAL INSTL SVCS	03/25/2020 09:30:00	03/25/2020 16:00:00	18,784	32.5070	30.9193	29,824	158.77	-1.31	0.03



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 6.41% of your market impact savings.

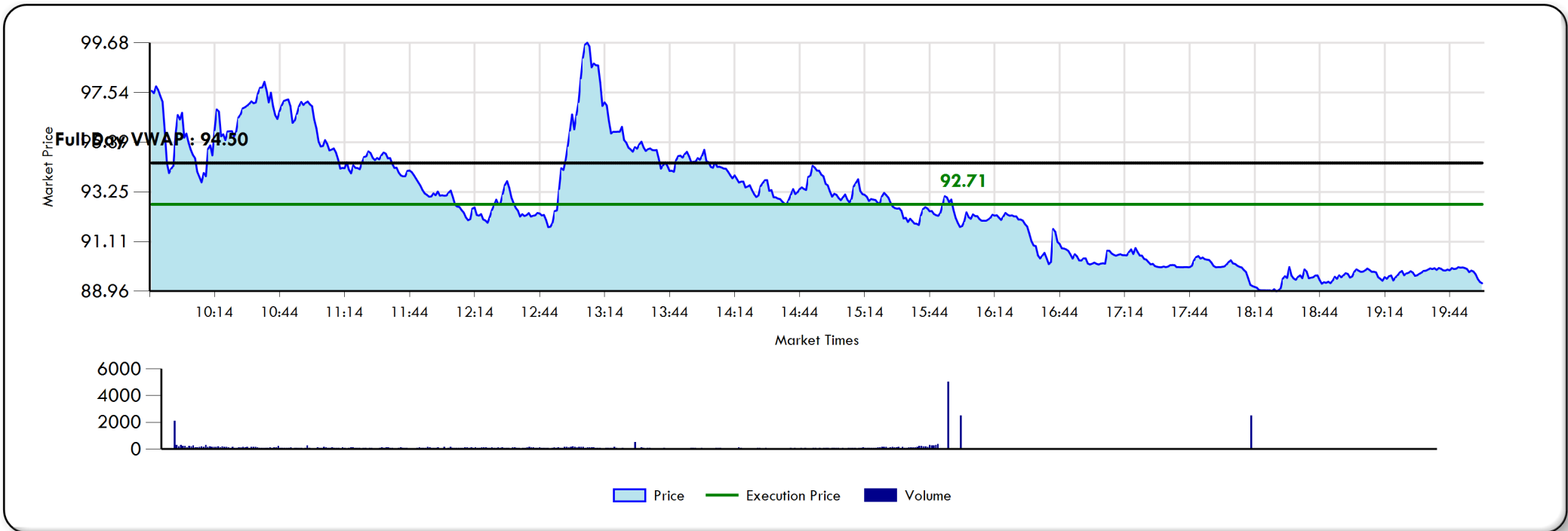


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DIS - 2020/03/12

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	SC BERNSTEIN	03/12/2020 09:30:00	03/12/2020 16:00:00	12,697	92.7122	94.4955	22,642	178.33	-0.47	0.03



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.86% of your market impact savings.

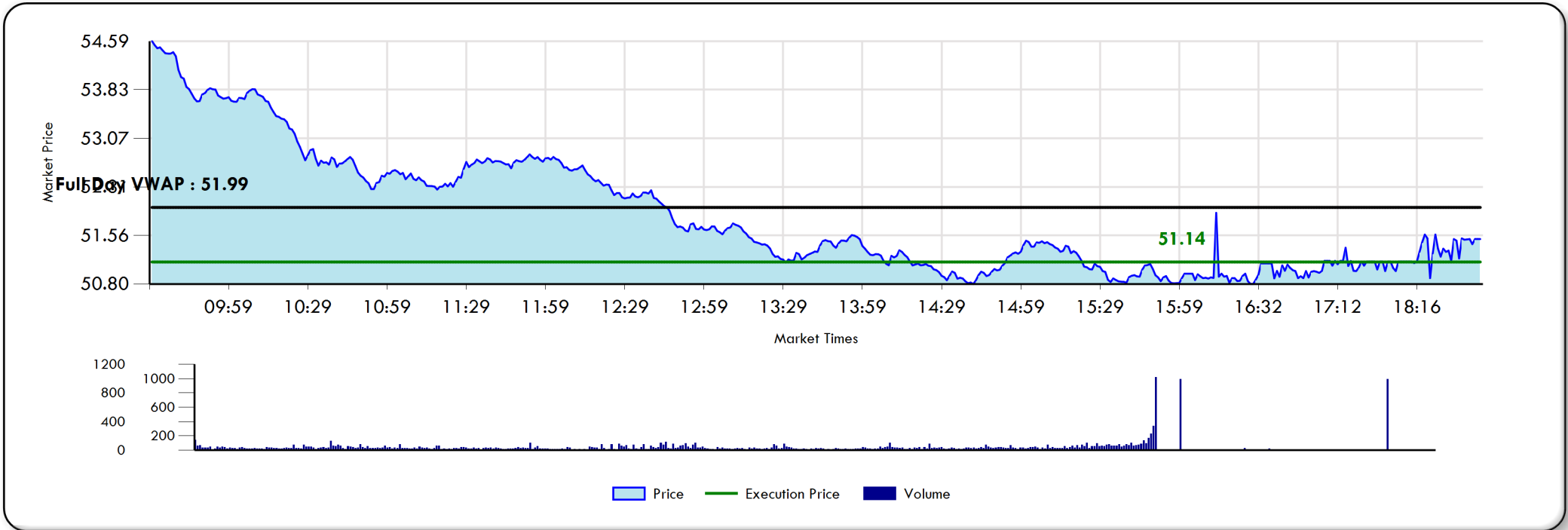


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DAL - 2020/02/25

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	GOLDMAN SACHS	02/25/2020 09:30:00	02/25/2020 16:00:00	23,163	51.1428	51.9935	19,704	85.07	-0.70	0.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.23% of your market impact savings.

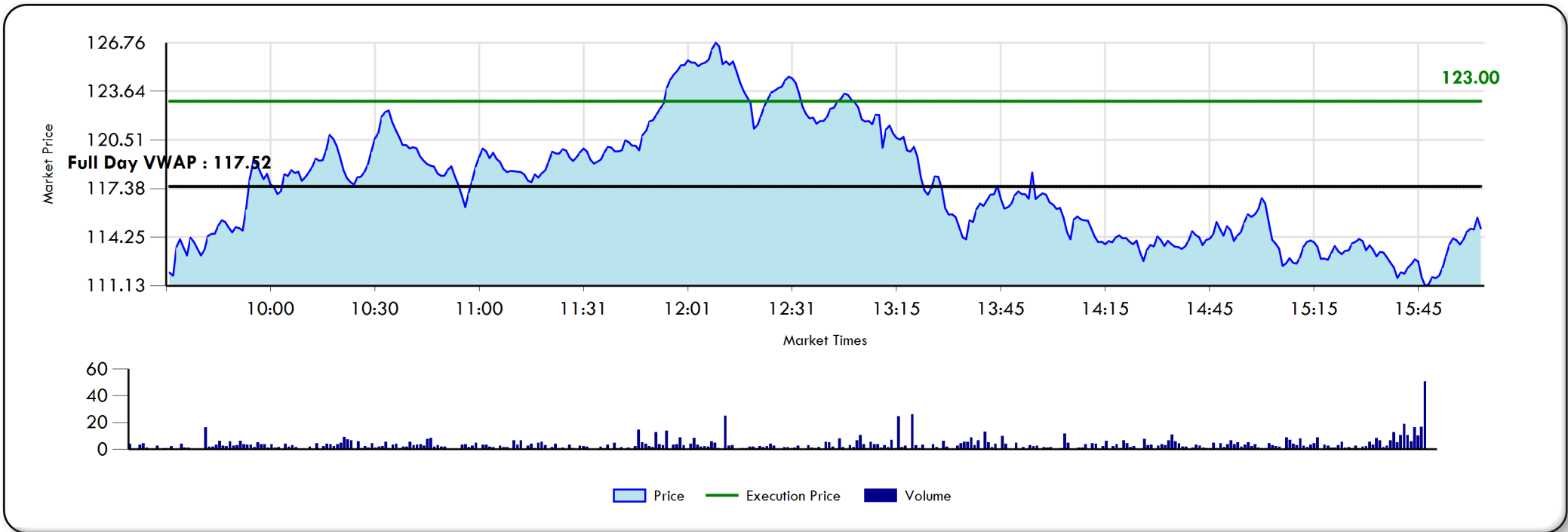


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

EVBG - 2020/03/18

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	WEATHERBIE	STIFEL NICOLAUS & CO	03/18/2020 09:30:00	03/18/2020 16:00:00	2,477	123.0000	117.5210	13,571	547.90	-1.43	0.20



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.92% of your market impact savings.

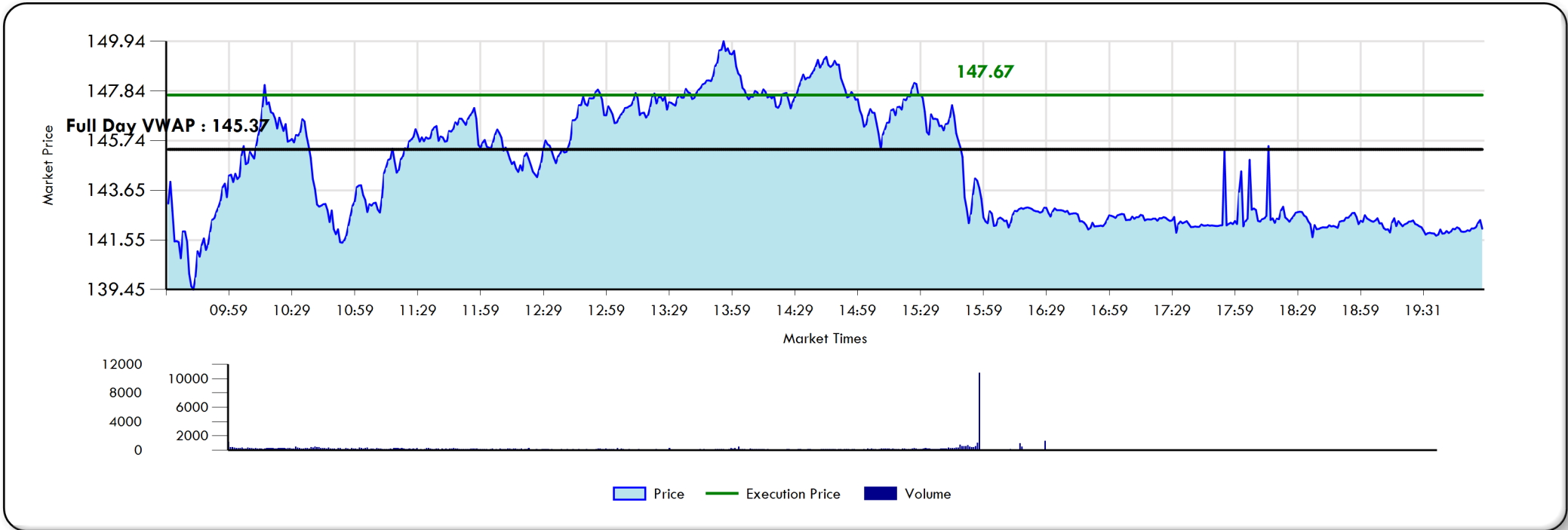


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MSFT - 2020/03/19

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	SOUTHWEST SECURITIES	03/19/2020 09:30:00	03/19/2020 16:00:00	5,560	147.6658	145.3706	12,762	229.52	-0.84	0.01



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.74% of your market impact savings.

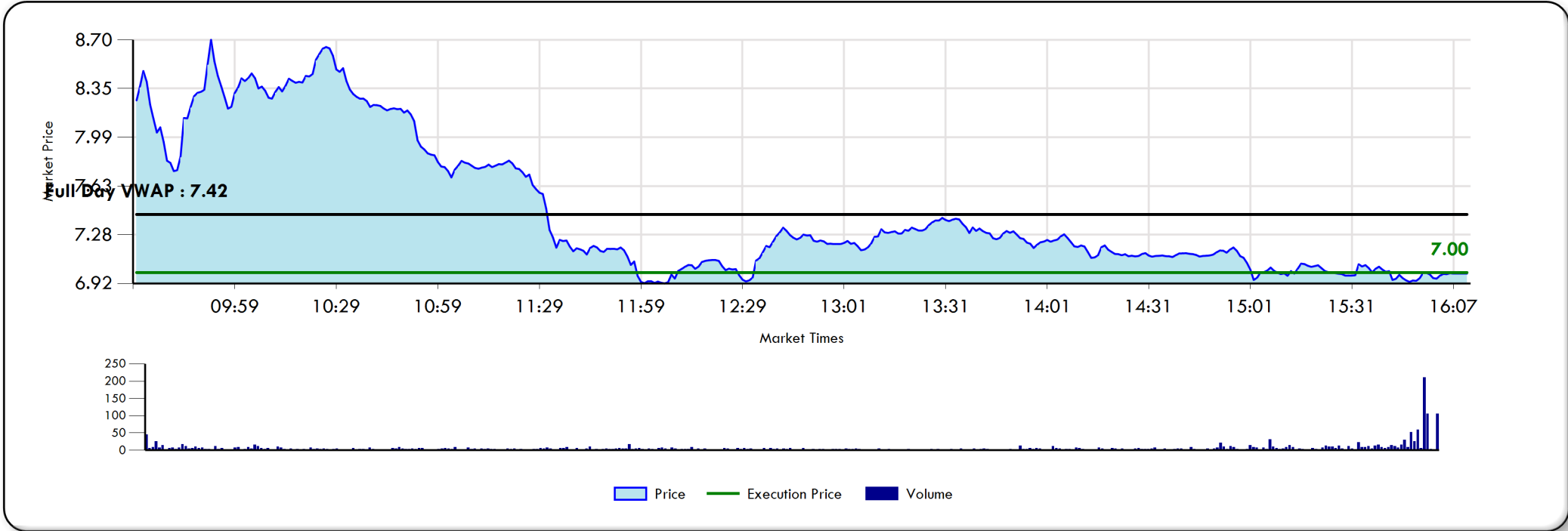


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

CAL - 2020/03/13

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	DALTON, GREINER, HARTMAN, MAHER	CAPITAL INSTL SVCS	03/13/2020 09:30:00	03/13/2020 16:00:00	24,383	6.9979	7.4236	10,379	42.57	-0.84	1.13



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.23% of your market impact savings.

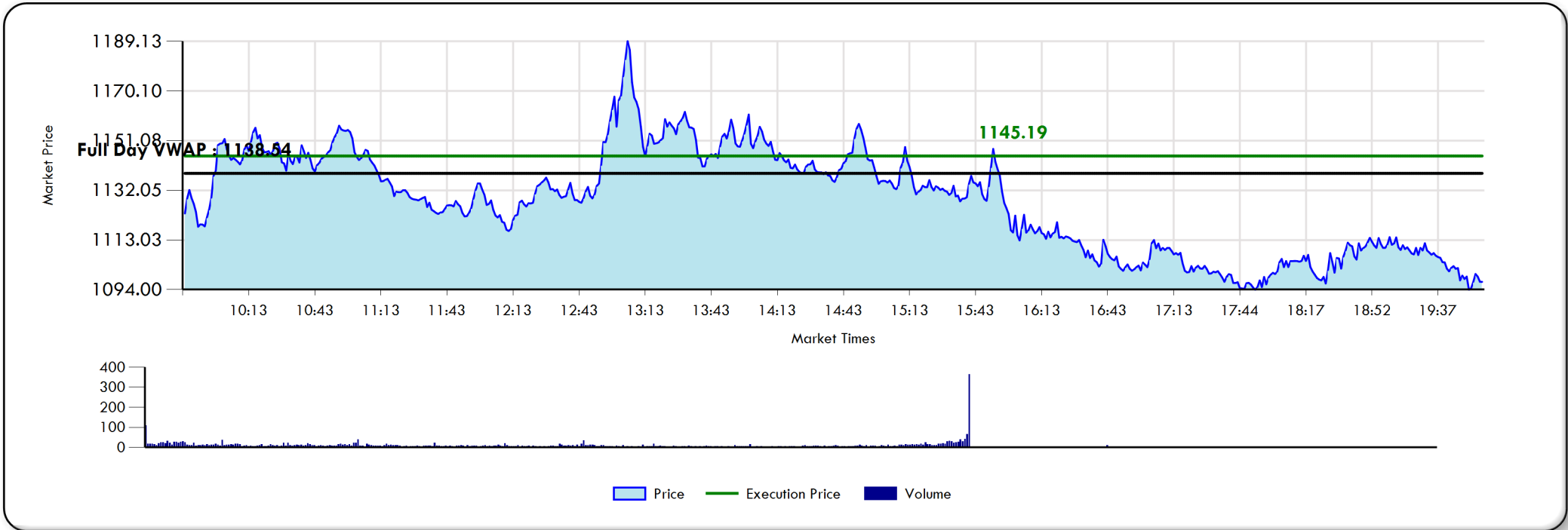


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GOOG - 2020/03/12

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	MORGAN STANLEY	03/12/2020 09:30:00	03/12/2020 16:00:00	1,366	1145.1909	1138.5446	9,079	664.63	-0.33	0.03



NOTES

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

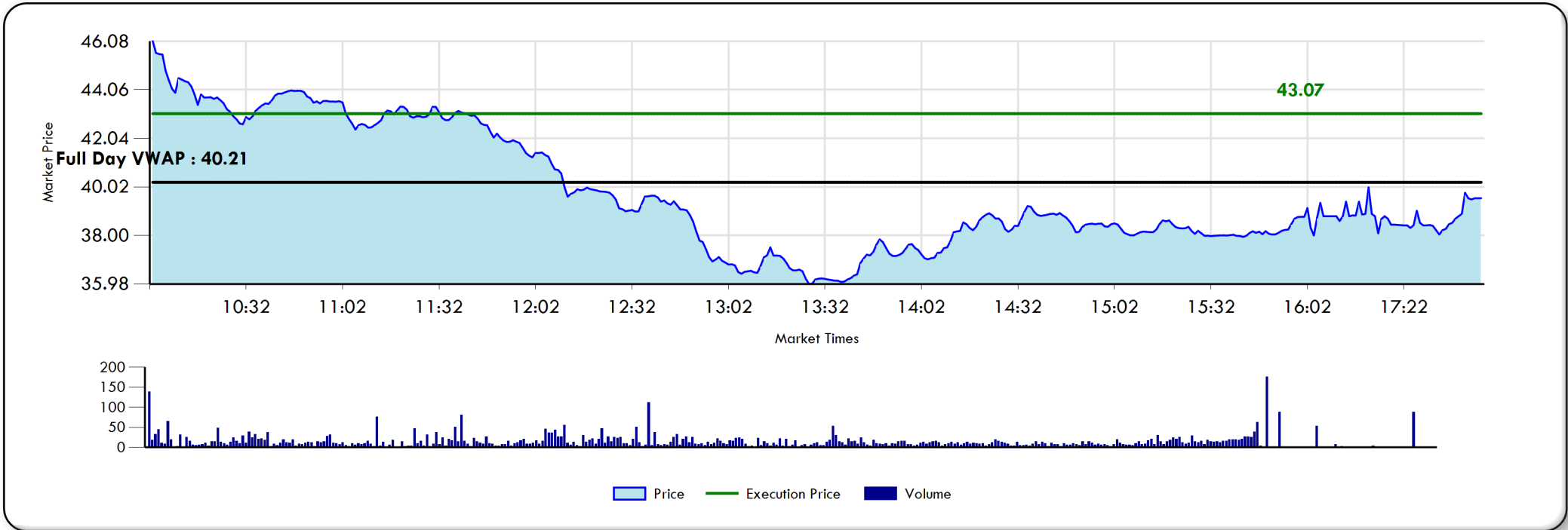


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PLNT - 2020/03/16

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	ITG	03/16/2020 09:30:00	03/16/2020 16:00:00	3,118	43.0697	40.2142	8,903	285.55	-0.98	0.06



NOTES

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

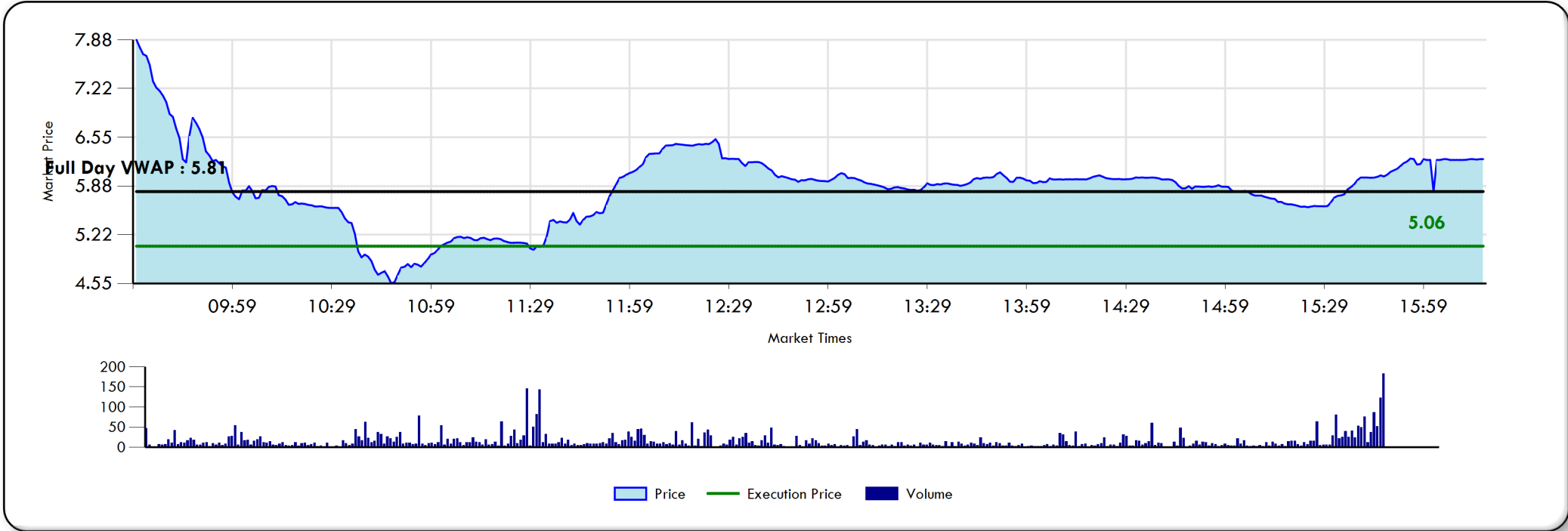


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

BLMN - 2020/03/17

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	DALTON, GREINER, HARTMAN, MAHER	LUMINEX TRADING	03/17/2020 09:30:00	03/17/2020 16:00:00	10,780	5.0595	5.8072	8,060	74.77	-1.45	0.18



NOTES

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

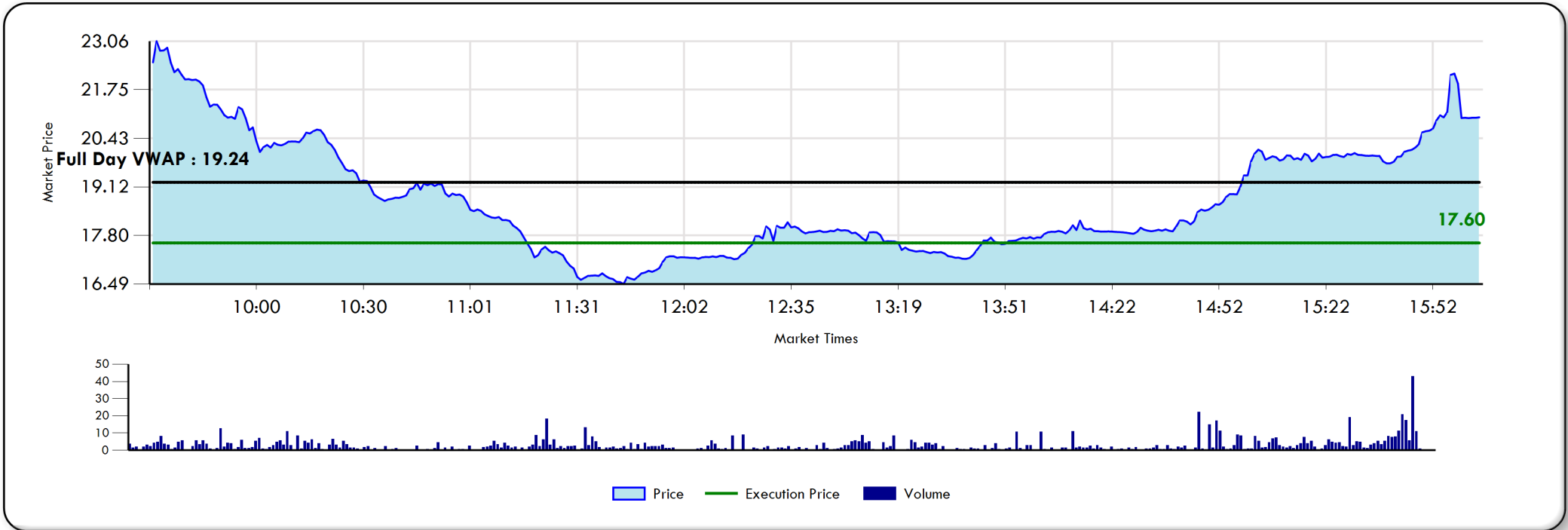


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PGNY - 2020/03/18

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	GOLDMAN SACHS	03/18/2020 09:30:00	03/18/2020 16:00:00	4,476	17.5972	19.2401	7,354	164.29	-1.03	0.43



NOTES

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

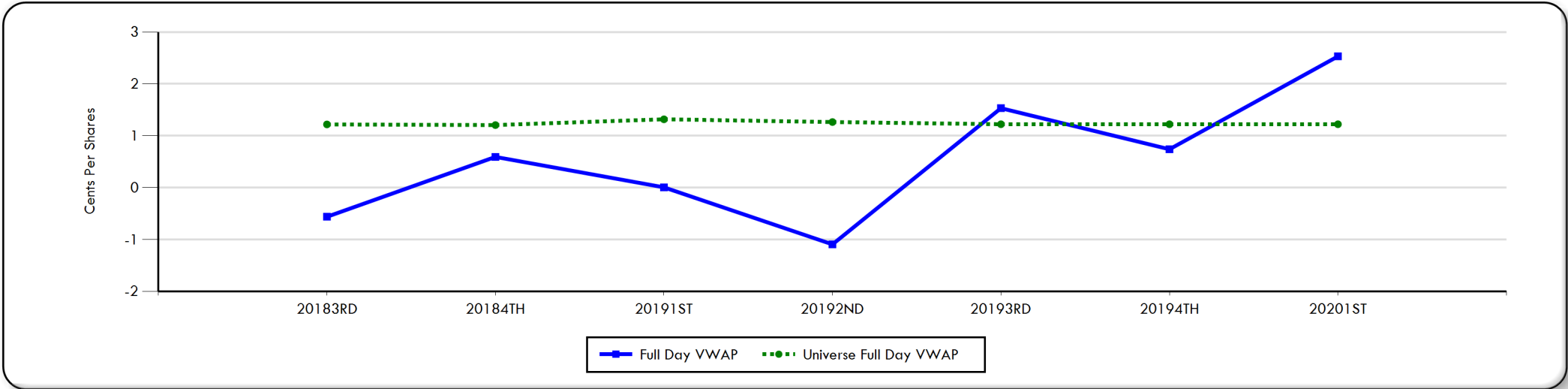


(+) = Cost

TRADE HISTORY

Trade History

Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP (cps)	Full Day VWAP Universe Rank (%)
			(cps)	(\$)		
20183RD	1,200,559	52,564,669	+3.35	40,162	0.56	80
20184TH	3,436,466	183,217,997	+1.71	58,637	+0.59	61
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



Note on Universes:

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

DISCLAIMER

State Street Corporation and its subsidiaries and affiliates, including Elkins/McSherry, LLC (“State Street”), provide products and services to professional and institutional clients and this report and information (“Report”) is provided solely for general, marketing and/or informational purposes and is subject to these terms and conditions, including that the Report does not constitute investment research or investment, legal, regulatory, or tax advice. Nothing herein is an offer or solicitation to buy or sell any product, service or securities or any financial instrument and this does not create or constitute any binding contractual commitment or obligations for State Street of any kind. Not all products and features a may be available in all jurisdictions. Any opinions expressed or other information in the Report are subject to change without notice. The Report has been prepared and obtained from sources believed to be reliable at the time of preparation, however, it is provided “as-is” and State Street makes no guarantee, representation, or warranty of any kind including but not limited to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, etc. This Report is not intended to be relied upon by any person or entity. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs arising, either direct or consequential, from or in connection with the use of the Report. No permission is granted to reprint, sell, copy, distribute, or modify any of the Report, in any form or by any means without the prior written consent of State Street. The Report may contain certain statements that may be deemed forward-looking statements. Please note that any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Investing involves risk, including the risk of loss of principal. Diversification does not ensure a profit or guarantee against loss. The Report does not take into account any client’s particular investment objectives, strategies, or tax and legal status, relevant regulations, nor does it purport to be comprehensive or intended to replace the exercise of a client’s or investor’s own careful independent review regarding any corresponding investment decision or related analysis.

Copyright © 2020 State Street Corporation, All rights reserved.



SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End March 31, 2020





REPORT CONTENTS

Tab 1 : Executive Summary

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

Tab 2 : Trade Detail

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

Tab 3 : High / Low Cost Trades

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



(+) = Cost

EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the world's largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an unmatched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates global equity executions from January 1, 2020 to March 31, 2020. The analysis included trading of 18,281,333 shares representing \$150.54 million in principal across 28 countries.

Methodology :

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

Results :

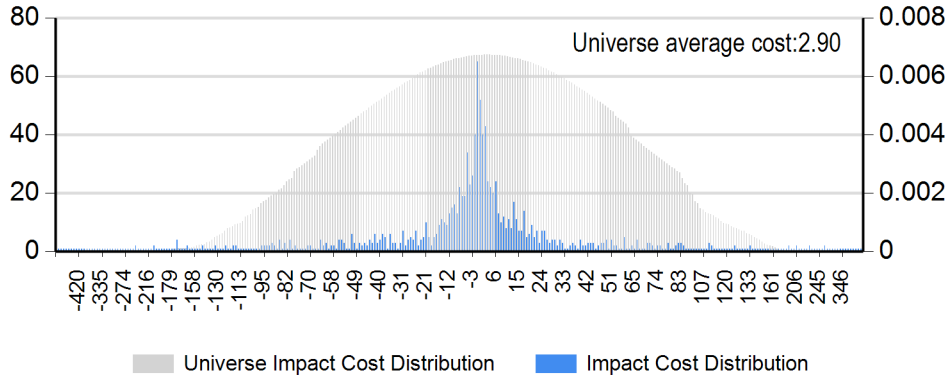
BENCHMARK PERFORMANCE			E - Score
Commission	Fees	Full Day VWAP	
<ul style="list-style-type: none"> Your commission cost was +6.57 bp or \$ +\$98,839 (7.26 bp better than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your fee cost was +6.85 bp or \$ +103,158 (+1.74 bp worse than the Elkins/McSherry Universe) 	<ul style="list-style-type: none"> Your market impact savings was 4.22 bp or \$63,433 (7.11 bp better than the Elkins/McSherry Universe) Your overall trading cost of +9.20 bp was 12.63 bp better than the Elkins/McSherry Universe. Sacramento County trading was higher than the Elkins/McSherry Universe in 8 countries and lower than the Elkins/McSherry Universe in 23 countries. 11 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 33 of your brokers had lower trading cost. 	<ul style="list-style-type: none"> E - Score : -0.05



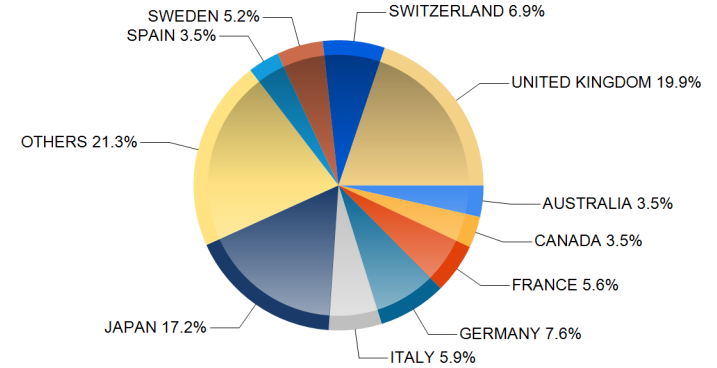
(+) = Cost

EXECUTIVE SUMMARY

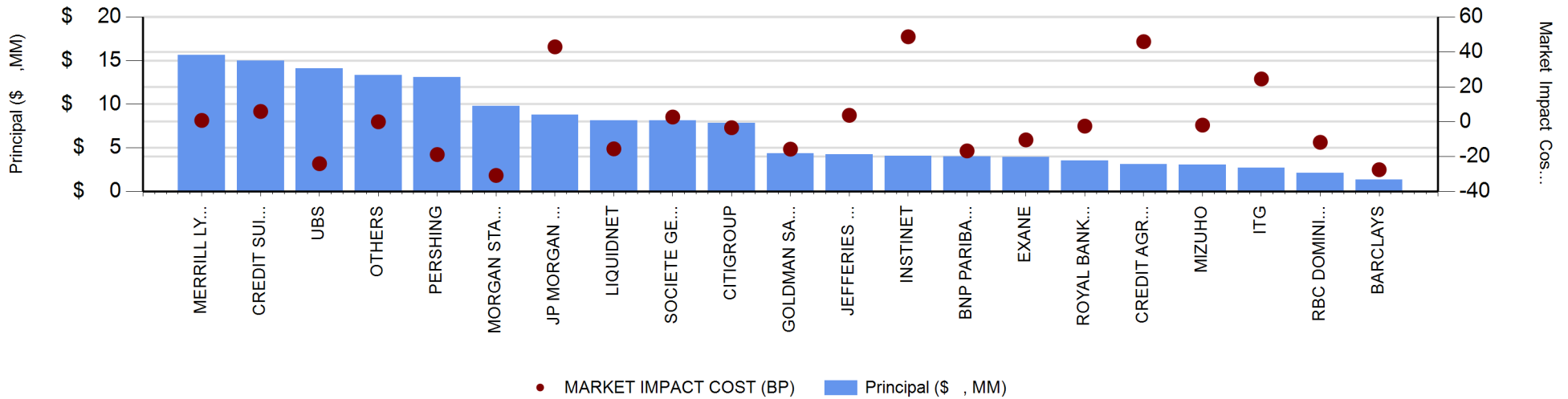
Cost Distribution



Principal Across Country



Top 20 Brokers in Principal Traded





(+) = Cost

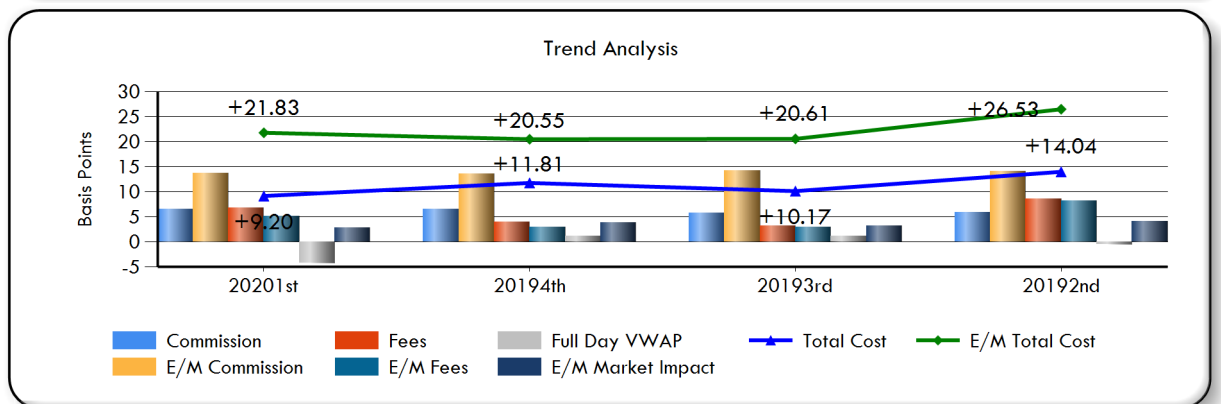
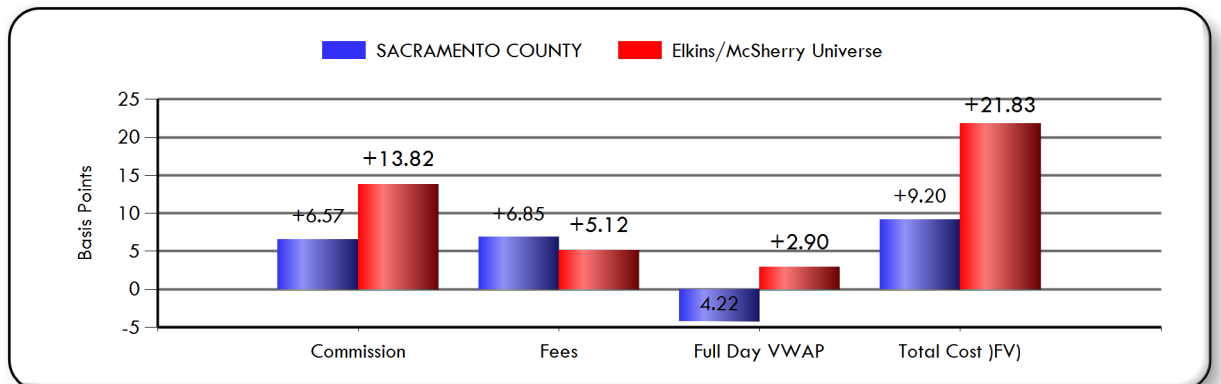
EXECUTIVE SUMMARY

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	+6.53	+13.94	+4.99	+0.55	+0.47	10.51	+3.57	3.43	21.41	-0.08
Buy	+6.60	+13.71	+5.07	+12.97	+9.62	+1.89	+2.24	+21.46	4.11	-0.03
Total	+6.57	+13.82	+5.03	+6.85	+5.12	4.22	+2.90	+9.20	12.63	-0.05

TRADING COMPONENTS

	Buys	Sells
Trade Principal	76,401,143	74,142,950
Shares	7,257,215	11,024,118
Unique Names	115	75
Liquidity (% POV)	0.185	0.282
Avg. Order Size	10,294	19,546
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	705	564





(+) = Cost

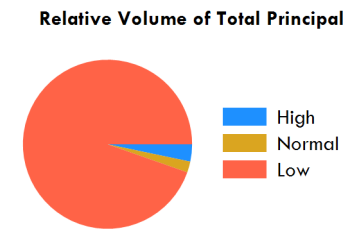
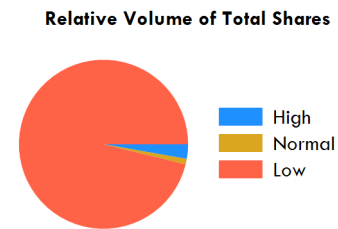
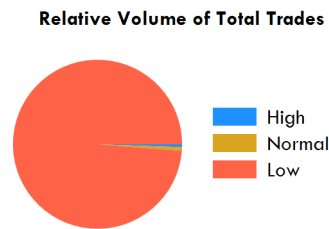
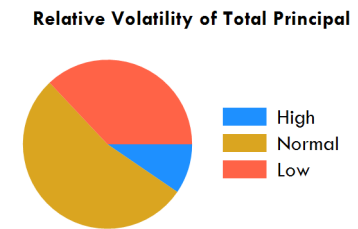
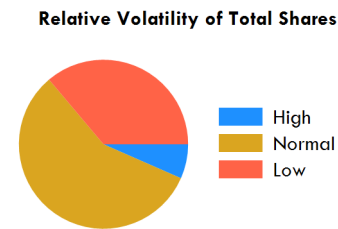
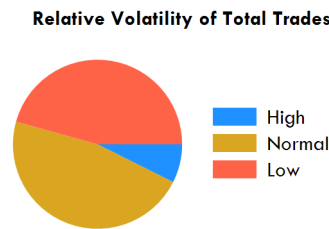
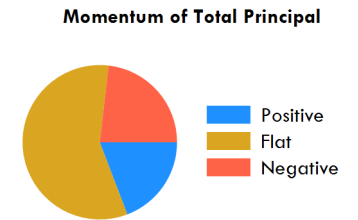
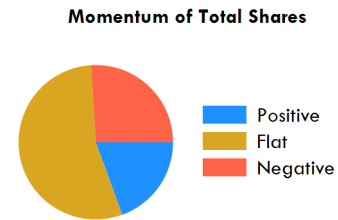
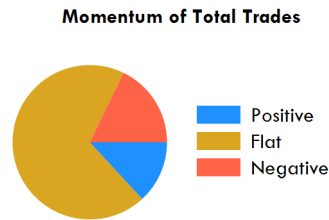
EXECUTIVE SUMMARY

Market Metrics Summary

Momentum	Positive			Flat			Negative		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
Buys	7%	7%	10%	40%	23%	29%	9%	9%	11%
Sells	6%	12%	9%	29%	31%	28%	9%	17%	12%
Total	13%	19%	19%	69%	55%	58%	18%	26%	23%

Relative Volatility	High			Normal			Low		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
Buys	3%	3%	5%	27%	21%	29%	26%	15%	16%
Sells	4%	3%	4%	20%	36%	24%	20%	22%	21%
Total	7%	7%	10%	47%	57%	53%	46%	36%	37%

Relative Volume	High			Normal			Low		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
Buys	0%	1%	1%	0%	1%	1%	55%	38%	49%
Sells	0%	2%	3%	0%	0%	1%	44%	58%	46%
Total	1%	3%	3%	1%	1%	2%	99%	96%	95%



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%



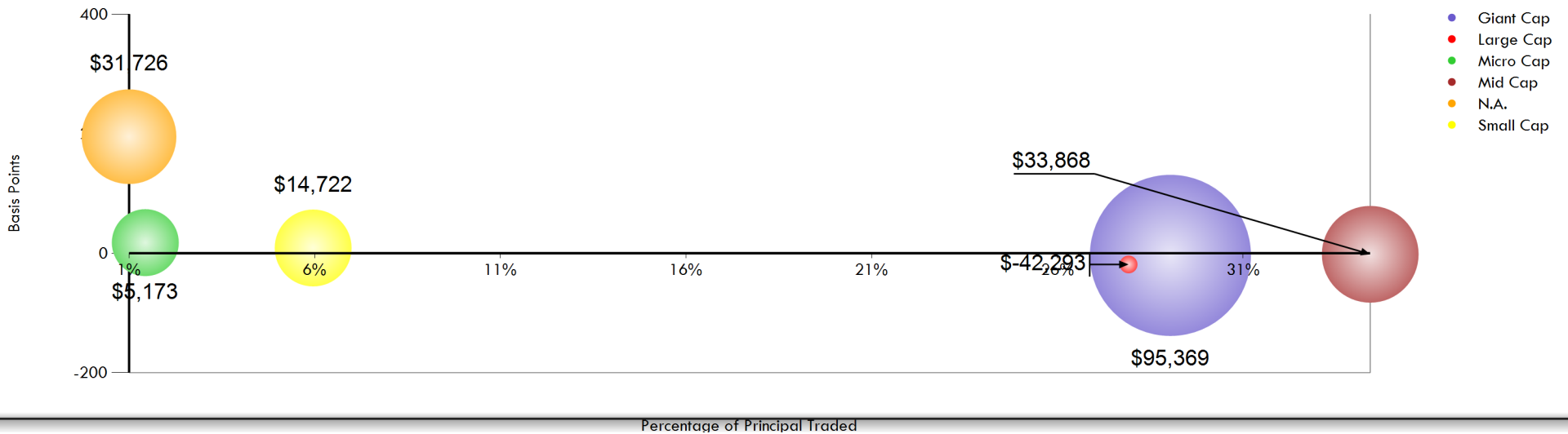
(+) = Cost

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)		
Mid Cap	34.46 %	90,694	+6.09	+14.86	1.82	+2.59	+6.53	13.78	0.03	\$1 Billion To \$5 Billion
Giant Cap	29.08 %	237,919	+7.28	+13.25	3.72	+2.49	+21.78	5.70	-0.10	Over \$25 Billion
Large Cap	27.95 %	132,750	+6.33	+13.16	18.86	+3.69	10.05	29.16	-0.18	\$5 Billion To \$25 Billion
Small Cap	6.00 %	52,472	+6.22	+13.94	+8.72	+2.98	+16.31	2.01	0.06	\$250 Million To \$1 Billion
Micro Cap	1.48 %	105,794	+5.69	+13.29	+17.62	+3.07	+23.32	+6.59	0.09	Under \$250 Million
N.A.	1.04 %	520,460	+11.87	+13.12	+195.05	+2.44	+206.92	+191.34	1.14	

Total Cost by Market Cap





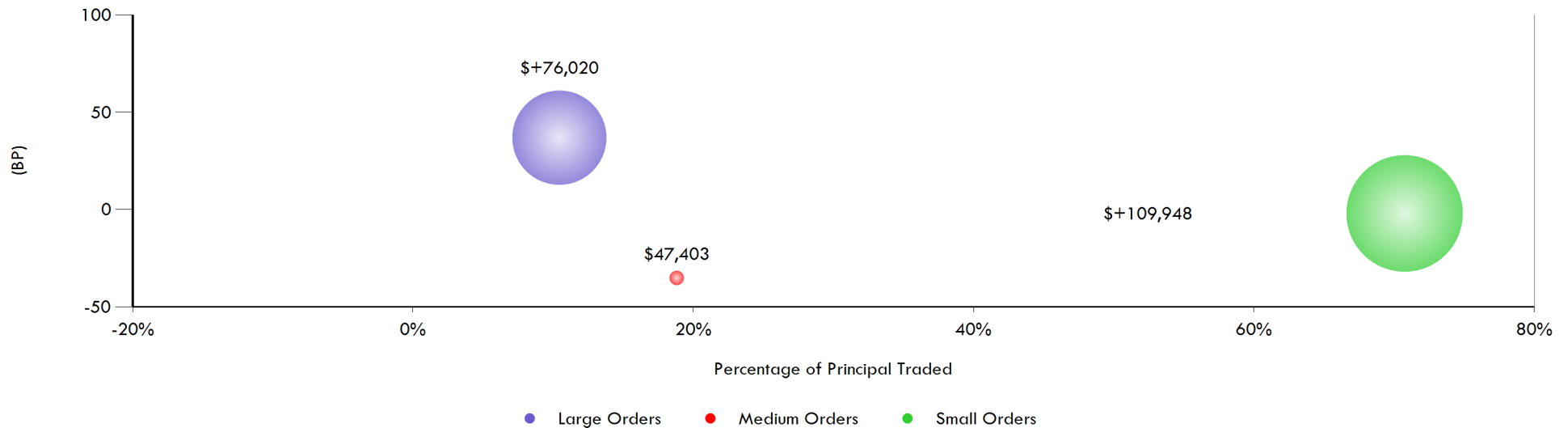
(+) = Cost

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	13	1,209,073	N/A	+7.85	+13.14	+36.90	+3.24	+48.42	+29.80	0.23	1M or Greater
Medium Orders	44	643,639	N/A	+7.91	+13.25	35.19	+2.58	16.77	41.02	-0.23	Between 500k - 1M
Small Orders	1,212	87,876	N/A	+6.02	+14.07	2.04	+2.93	+10.31	11.35	-0.05	500K or Less

Total Cost By Order Size





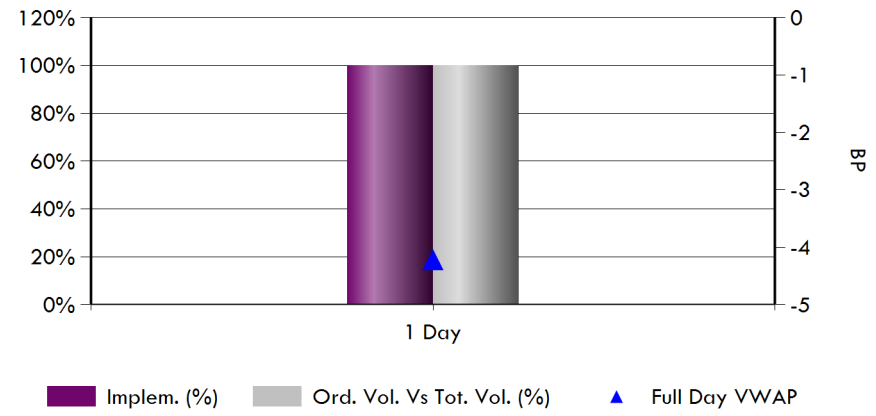
(+) = Cost

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%	4.22	-0.06

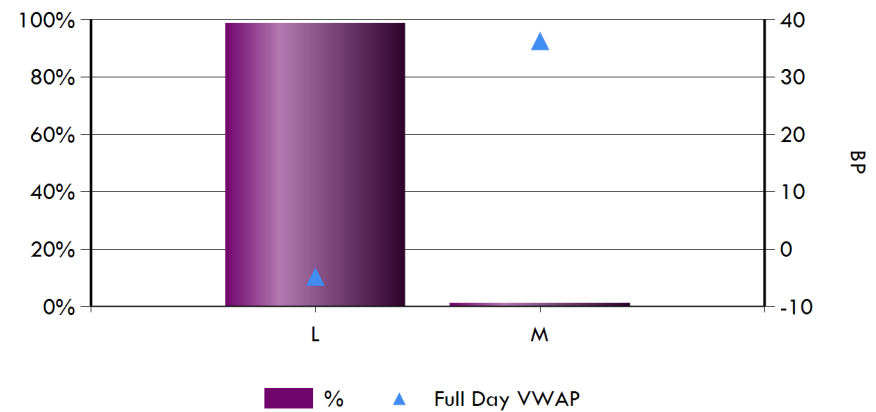
Implementation Days



TRADE DIFFICULTY

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
0%~20% of daily vol.	L	99%	4.75	-0.07
20%~50% of daily vol.	M	1%	+36.31	0.66

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										
INDIA	1	0.93%	+11.45	+18.49	+11.93	+10.97	+33.67	+1.60	+25.99	-0.12
GERMANY	11	7.62%	+6.79	+13.12	+0.00	+0.02	+31.58	+2.44	+22.79	0.11
U.K. - BUYS	18	11.89%	+6.31	+13.22	+43.93	+29.34	+9.06	+1.29	+15.46	-0.03
NETHERLANDS	2	1.58%	+8.96	+13.49	+0.00	+0.06	+19.53	+2.33	+12.61	0.00
AUSTRALIA	5	3.51%	+5.23	+12.97	+0.00	+1.40	+22.46	+2.25	+11.06	0.34
FRANCE - BUYS	4	2.53%	+5.52	+13.07	+30.00	+30.00	+11.62	+1.94	+2.14	-0.11
GREECE	<1	0.48%	+9.72	+14.49	+3.10	+2.49	+13.64	+8.50	+0.98	0.35
ISRAEL	<1	0.34%	+12.60	+13.12	+0.00	+0.03	+3.85	+2.42	+0.88	-0.04

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										
IRELAND - BUYS	<1	0.04%	+3.00	+14.00	+100.24	+100.00	461.37	+1.74	473.87	-1.03
PORTUGAL	<1	0.28%	+4.92	+13.40	+0.00	+0.01	147.52	+4.20	160.21	-1.16
BRAZIL	2	1.02%	+11.66	+14.82	+3.11	+2.21	86.80	+4.36	93.42	-0.11
ITALY - BUYS	4	2.69%	+8.28	+13.29	+10.00	+12.00	56.29	+1.61	64.91	-0.10
AUSTRIA	<1	0.56%	+6.15	+13.11	+0.00	+0.05	44.87	+4.16	56.04	-0.25
SWEDEN	8	5.17%	+6.11	+13.25	+0.00	+0.01	35.02	+0.84	43.01	-0.28
U.K. - SELLS	12	7.96%	+8.57	+13.57	+0.06	+0.00	23.43	+8.27	36.64	-0.16
FINLAND	2	1.63%	+5.39	+13.03	+0.00	+0.01	21.99	+4.00	33.64	-0.18
SPAIN	5	3.51%	+4.22	+13.46	+0.00	+0.01	21.17	+2.27	32.69	-0.44
CANADA	5	3.49%	+3.22	+27.44	+0.00	+0.02	5.58	+2.47	32.29	0.01
NORWAY	4	2.71%	+7.04	+12.83	+0.00	+0.01	19.32	+3.87	28.98	-0.32
SWITZERLAND	10	6.89%	+5.85	+13.31	+0.00	+0.02	17.69	+2.22	27.39	-0.15
NEW ZEALAND	<1	0.49%	+8.00	+23.38	+0.00	+0.02	7.14	+3.81	26.35	0.03
KOREA - BUYS	<1	0.11%	+10.00	+18.25	+0.00	+0.00	14.23	+3.36	25.84	-0.05
U.S.	3	2.32%	+1.70	+13.85	+0.18	+0.07	7.61	+1.43	21.08	0.01
HONG KONG	4	2.95%	+6.81	+13.03	+10.77	+7.94	12.95	+0.90	17.24	-0.03
FRANCE - SELLS	5	3.04%	+5.95	+13.96	+0.00	+0.00	2.24	+1.99	12.24	-0.13
DENMARK	4	2.44%	+5.00	+12.62	+0.00	+0.01	+0.80	+3.60	10.43	0.05
ITALY - SELLS	5	3.22%	+8.30	+12.35	+0.00	+0.00	+0.65	+4.63	8.03	-0.10
JAPAN	26	17.16%	+6.10	+12.86	+0.00	+0.02	+5.89	+3.34	4.23	0.07
POLAND	1	0.98%	+18.85	+14.36	+0.00	+0.00	4.61	+2.75	2.87	0.04
SINGAPORE	3	2.18%	+9.33	+13.68	+3.70	+3.54	+4.52	+1.28	0.95	0.01
SOUTH AFRICA - SELLS	<1	0.30%	+4.00	+17.59	+0.02	+0.06	+15.22	+2.27	0.68	-0.13



(+) = Cost

TRADE CYCLE DETAIL

4 LOWEST COST MANAGER (Full Day VWAP)



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20194th (bp)	20193rd (bp)	20192nd (bp)
LAZARD ASSET MANAGEM	74	428	49.33%	173,496	0.03	+7.51	+13.81	+3.68	+2.93	2.99	7.52	19.80	10.97
LSV ASSET MANAGEMENT	37	516	24.30%	70,902	-0.18	+4.57	+13.79	6.77	+3.12	17.73	3.69	2.04	16.69
WILLIAM BLAIR & COMP	31	290	20.65%	107,190	-0.11	+7.08	+14.09	15.92	+2.63	24.86	0.64	9.17	11.86
WALTER SCOTT INTL EA	9	35	5.72%	246,214	-0.10	+5.05	+13.09	19.18	+2.65	29.89	20.89	-	-

NOTES

- Manager above made up 100.00 % of principal traded.



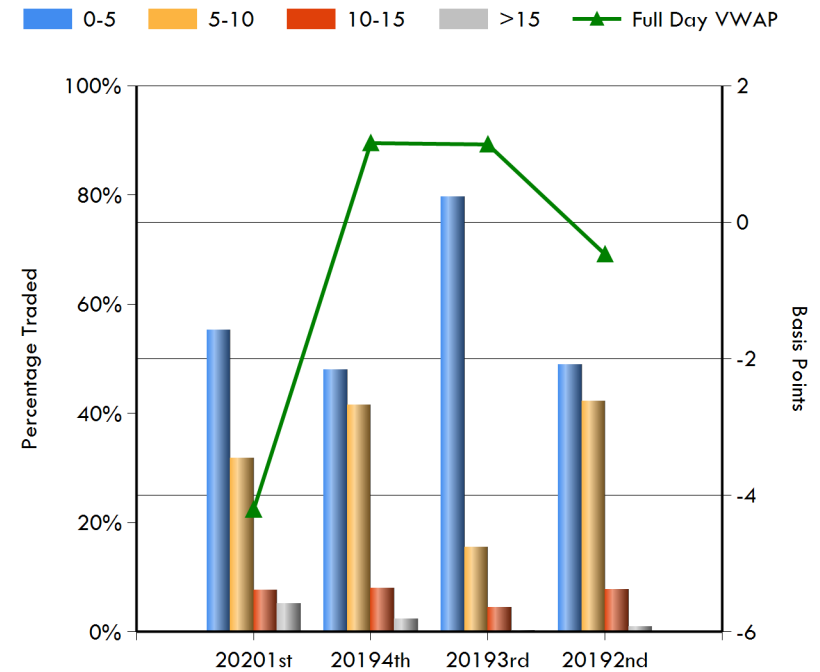
(+) = Cost

COMMISSION REVIEW

COMMISSION REVIEW - Top 20 Brokers (Commission \$)

Broker	Total Commission	Commission Trends					
		Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	20194th (bp)	20193rd (bp)	20192nd (bp)
CREDIT SUI	12,062	+8.05	+13.34	+4.92	+8.19	+6.47	+6.17
UBS	10,903	+7.72	+13.81	+5.18	+6.99	+7.60	+6.73
MERRILL LY	10,107	+6.47	+13.08	+4.84	+7.04	+5.06	+6.81
MORGAN STA	8,088	+8.24	+13.33	+5.00	+8.80	+6.40	+7.77
JP MORGAN	7,417	+8.44	+13.34	+4.71	+7.30	+7.70	+3.09
PERSHING	6,907	+5.28	+13.23	+5.24	-	-	-
SOCIETE GE	4,715	+5.81	+13.47	+4.71	+5.13	+4.78	+4.98
ROYAL BANK	4,263	+12.00	+13.41	+4.73	+12.00	-	-
LIQUIDNET	4,033	+4.94	+15.89	+5.19	+4.22	+4.19	+5.68
GOLDMAN SA	3,892	+8.93	+13.84	+5.67	+9.67	+5.09	+8.64
CITIGROUP	3,415	+4.35	+13.04	+5.21	+6.01	+4.34	+4.52
BNP PARIBA	2,830	+7.00	+13.05	+4.76	+6.82	+7.52	+7.99
JEFFERIES	2,254	+5.31	+13.07	+4.72	+9.63	+6.08	+5.94
CREDIT AGR	2,244	+7.18	+13.58	+5.33	+7.56	+6.63	+15.00
INSTINET	1,624	+4.01	+13.15	+4.68	+4.72	+3.98	+3.77
ITG	1,527	+5.58	+13.18	+4.80	+4.99	+4.69	+5.04
MIZUHO	1,494	+4.87	+12.90	+4.64	+9.10	+5.03	+4.99
EXANE	1,363	+3.44	+13.24	+4.65	+3.96	+4.69	+3.00
BARCLAYS	1,258	+9.14	+13.15	+4.81	+10.67	+8.42	+3.58
RBC DOMINI	710	+3.28	+27.44	+6.29	+2.32	+4.52	+4.65

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)	20194th (bp)	20193rd (bp)	20192nd (bp)
LAZARD ASSET MANAGEM	74	428	49.33%	173,496	0.03	+7.51	+13.81	+3.68	+2.93	2.99	7.52	19.80	10.97
LSV ASSET MANAGEMENT	37	516	24.30%	70,902	-0.18	+4.57	+13.79	6.77	+3.12	17.73	3.69	2.04	16.69
WILLIAM BLAIR & COMP	31	290	20.65%	107,190	-0.11	+7.08	+14.09	15.92	+2.63	24.86	0.64	9.17	11.86
WALTER SCOTT INTL EA	9	35	5.72%	246,214	-0.10	+5.05	+13.09	19.18	+2.65	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)	20194th (bp)	20193rd (bp)	20192nd (bp)
MERRILL LYNCH	16	85	10.37%	183,746	-0.02	10,107	+6.47	+13.08	+0.80	+2.62	6.06	+1.85	+2.30	4.72
CREDIT SUISSE	15	188	9.95%	79,676	0.14	12,062	+8.05	+13.34	+5.92	+3.82	2.34	10.69	0.01	14.25
UBS	14	87	9.38%	162,237	-0.20	10,903	+7.72	+13.81	23.97	+3.14	32.32	12.26	10.93	12.04
PERSHING	13	88	8.69%	148,607	-0.02	6,907	+5.28	+13.23	18.74	+3.31	29.37	-	-	-
MORGAN STANLEY	10	74	6.52%	132,652	-0.28	8,088	+8.24	+13.33	30.71	+2.83	38.33	+1.88	30.41	10.02
JP MORGAN CHASE	9	47	5.84%	186,975	0.20	7,417	+8.44	+13.34	+43.03	+2.21	+40.95	+26.76	46.68	19.56
LIQUIDNET	8	37	5.43%	220,834	0.00	4,033	+4.94	+15.89	15.46	+2.18	26.81	53.25	8.84	+37.87
SOCIETE GENERALE	8	82	5.39%	99,039	-0.21	4,715	+5.81	+13.47	+2.72	+3.20	7.21	17.26	17.93	20.98
CITIGROUP	8	104	5.21%	75,474	-0.16	3,415	+4.35	+13.04	3.41	+3.02	15.33	6.35	+8.79	+1.50
GOLDMAN SACHS	4	40	2.89%	108,949	-0.08	3,892	+8.93	+13.84	15.66	+3.46	25.88	46.74	+8.61	24.61

NOTES

- Brokers above made up 69.68 % 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
JEFFERIES & CO	4	44	2.82%	96,392	0.08	2,254	+5.31	+13.07	+3.72	+2.52	5.99	+0.25	7.70	15.15
INSTINET	4	59	2.69%	68,672	0.35	1,624	+4.01	+13.15	+48.49	+3.18	+36.30	+15.02	13.53	12.45
BNP PARIBAS	4	33	2.69%	122,506	-0.06	2,830	+7.00	+13.05	16.74	+2.20	24.36	21.11	14.18	95.73
EXANE	4	23	2.63%	172,151	-0.27	1,363	+3.44	+13.24	10.36	+1.68	13.38	44.41	4.04	14.08
ROYAL BANK OF CANADA	4	16	2.36%	222,011	-0.13	4,263	+12.00	+13.41	2.51	+5.11	+0.38	+11.75	-	-
CREDIT AGRICOLE	3	29	2.08%	107,746	0.26	2,244	+7.18	+13.58	+46.04	+2.60	+37.24	4.99	+33.32	21.38
MIZUHO	3	14	2.04%	219,091	-0.09	1,494	+4.87	+12.90	1.92	+3.27	13.23	10.12	10.29	8.69
ITG	3	40	1.82%	68,362	-0.03	1,527	+5.58	+13.18	+24.53	+3.28	+18.39	21.05	17.58	8.91
RBC DOMINION SECS	2	13	1.44%	166,222	-0.17	710	+3.28	+27.44	11.76	+2.47	38.41	18.76	10.95	17.59
BARCLAYS	1	5	0.91%	275,346	-0.55	1,258	+9.14	+13.15	27.35	+2.09	26.87	6.96	9.16	+7.46

NOTES

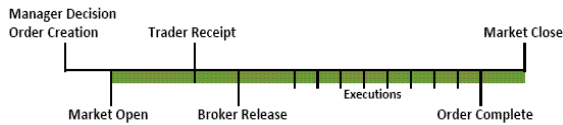
- Brokers above made up 21.46 % of principal traded.



(+) = 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
DAIWA SECURITIES	1	10	0.88%	132,391	-0.13	690	+5.21	+12.86	6.07	+3.34	17.08	8.09	12.80	-
ENSKILDA SECURITIES	1	8	0.83%	155,507	0.06	622	+5.00	+13.25	+21.64	+0.84	+12.54	-	9.49	22.72
BMO CAPITAL MARKETS	1	1	0.76%	1,150,096	0.13	276	+2.40	+13.85	+22.05	+1.43	+9.32	-	-	-
HSBC BANK	1	27	0.67%	37,599	-0.30	305	+3.00	+13.26	76.64	+1.99	70.08	15.17	36.27	25.76
SMBC SECURITIES INC	<1	10	0.57%	85,442	-0.06	511	+5.98	+12.86	7.71	+3.34	17.95	12.59	20.42	13.02
SVENSKA HANDELSBANKE	<1	2	0.56%	423,957	0.11	594	+7.00	+13.25	10.05	+0.84	17.15	+22.36	28.93	-
INVESTEC BANK	<1	10	0.49%	74,361	-0.12	422	+5.68	+13.22	13.48	+1.29	1.46	-	85.02	20.32
D CARNEGIE AG	<1	7	0.49%	104,861	-0.70	514	+7.00	+13.25	99.78	+0.84	106.88	35.01	+14.94	+92.18
SCOTIA CAPITAL	<1	14	0.40%	42,696	-0.35	73	+1.22	+27.44	23.08	+2.47	51.79	20.02	24.10	24.28
ODDO SECS	<1	10	0.40%	59,573	0.03	417	+7.00	+13.96	+2.85	+1.99	6.10	242.13	+6.23	-

NOTES

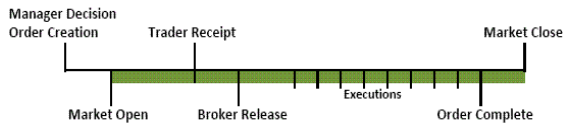
- Brokers above made up 6.05 % of principal traded.



(+) = 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
PAVILION GLOBAL MKT	<1	16	0.36%	34,137	-0.12	164	+3.00	+27.44	20.61	+2.47	47.54	19.57	-	-
LIBERUM CAPITAL LTD	<1	1	0.32%	480,807	-0.23	337	+7.00	+13.12	13.06	+2.44	21.64	+11.87	-	18.39
CARNEGIE	<1	7	0.32%	68,547	-0.81	336	+7.00	+12.83	36.52	+3.87	46.23	-	-	+23.39
BANCO ITAU SA	<1	2	0.32%	238,683	-0.20	551	+11.55	+14.82	143.64	+4.36	150.38	-	+16.00	-
JOH BERENBERG GOSSLE	<1	2	0.30%	223,187	0.30	312	+7.00	+13.83	+11.64	+2.06	+2.75	12.50	15.81	18.41
AMBIT CAPITAL PR LTD	<1	4	0.26%	98,889	-0.24	475	+12.00	+18.49	8.30	+1.60	15.38	-	-	-
MACQUARIE	<1	7	0.24%	52,446	-0.28	282	+7.67	+12.97	43.82	+1.70	48.92	+26.20	1.72	-
BANK OF AMERICA	<1	11	0.24%	32,606	-0.64	207	+5.76	+23.85	65.25	+3.00	86.06	20.33	15.57	-
NOMURA	<1	2	0.19%	141,091	-0.01	339	+12.00	+18.49	6.82	+1.60	13.90	+48.00	12.88	-
ABG SECURITIES	<1	2	0.10%	74,070	1.05	104	+7.00	+13.25	+112.83	+0.84	+105.73	-	-	-

NOTES

- Brokers above made up 2.65 % 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
SC BERNSTEIN	<1	2	0.06%	41,840	0.70	33	+4.00	+13.03	+65.08	+0.90	+57.99	+12.83	14.59	15.00
MOTILAL OSWAL SECURI	<1	2	0.05%	41,188	0.09	99	+12.00	+18.49	+3.71	+1.60	3.19	14.73	-	-
NUMIS SECURITIES	<1	3	0.04%	18,383	0.62	39	+7.00	+13.57	+35.35	+8.27	+20.74	-	-	51.09
BRDESCO	<1	1	0.02%	29,673	-1.03	34	+11.55	+14.82	49.88	+4.36	56.61	12.77	-	-

NOTES

- Brokers above made up 0.17 % 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)	2019 4th (bp)	2019 3rd (bp)	2019 2nd (bp)
GRAND TOTAL	74	428	49.33%	173,496	0.03	55,751	+7.51	+13.81	+3.68	+2.93	2.99	7.52	19.80	10.97
MERRILL LYNCH	10	36	6.82%	285,065	0.08	7,645	+7.45	+13.10	+8.77	+2.39	+4.27	+4.00	17.46	4.52
CREDIT SUISSE	8	76	5.30%	104,967	0.21	8,253	+10.35	+13.41	+18.86	+4.69	+13.00	15.87	+1.33	3.38
UBS	7	38	4.98%	197,283	-0.17	6,776	+9.04	+12.97	28.15	+3.35	33.82	10.56	16.91	11.81
JP MORGAN CHASE	7	16	4.44%	418,201	0.46	6,482	+9.69	+13.23	+66.06	+2.19	+66.84	+19.05	52.69	28.46
PERSHING	5	33	3.53%	161,110	0.18	2,791	+5.25	+13.27	15.14	+3.08	24.74	-	-	-
MORGAN STANLEY	5	29	3.47%	180,297	-0.16	4,258	+8.14	+13.11	23.48	+3.41	31.83	3.73	58.04	11.46
ROYAL BANK OF CANADA	4	16	2.36%	222,011	-0.13	4,263	+12.00	+13.41	2.51	+5.11	+0.38	+11.75	-	-
EXANE	3	18	2.32%	194,024	-0.31	1,048	+3.00	+13.14	13.85	+1.64	16.04	47.91	+21.31	14.08
SOCIETE GENERALE	3	31	2.21%	107,128	0.11	1,715	+5.16	+13.23	+32.33	+1.64	+20.98	10.40	9.51	26.99
ITG	3	39	1.76%	68,121	-0.01	1,464	+5.51	+13.18	+26.66	+3.35	+20.43	21.93	11.08	9.19



(+) = 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
GRAND TOTAL	37	516	24.30%	70,902	-0.18	16,717	+4.57	+13.79	6.77	+3.12	17.73	3.69	2.04	16.69
CITIGROUP	7	97	4.47%	69,304	-0.21	2,771	+4.12	+12.95	+1.40	+3.15	10.94	10.68	+10.13	+5.80
CREDIT SUISSE	6	104	4.01%	58,059	0.22	3,019	+5.00	+13.27	+12.70	+2.96	+1.11	11.17	+2.21	27.40
SOCIETE GENERALE	4	49	2.87%	88,247	-0.48	2,692	+6.23	+13.59	19.06	+4.53	27.95	17.61	36.50	4.66
MERRILL LYNCH	4	42	2.69%	96,579	-0.30	1,623	+4.00	+13.06	9.18	+3.26	21.52	7.42	+11.31	8.15
INSTINET	4	56	2.50%	67,310	0.42	1,500	+3.98	+13.16	+54.76	+3.32	+42.24	+31.19	13.65	11.27
UBS	4	25	2.44%	146,731	-0.15	1,834	+5.00	+13.21	15.08	+3.10	26.40	16.08	8.72	32.75
MORGAN STANLEY	2	23	1.17%	76,823	-0.76	707	+4.00	+13.46	58.98	+2.26	70.73	+53.05	10.84	-
JP MORGAN CHASE	1	16	0.88%	82,980	-1.13	398	+3.00	+13.46	65.21	+2.26	77.97	+27.29	-	-
HSBC BANK	1	27	0.67%	37,599	-0.30	305	+3.00	+13.26	76.64	+1.99	70.08	15.17	36.34	25.76
LIQUIDNET	<1	8	0.48%	89,418	-0.62	501	+7.00	+13.22	50.36	+1.35	37.37	-	-	-



(+) = 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)	20194th (bp)	20193rd (bp)	20192nd (bp)
GRAND TOTAL	9	35	5.72%	246,214	-0.10	4,351	+5.05	+13.09	19.18	+2.65	29.89	20.89	-	-
LIQUIDNET	6	24	3.93%	246,227	-0.10	2,955	+5.00	+13.31	22.70	+2.22	33.25	16.76	-	-
PERSHING	3	10	1.71%	256,799	0.00	1,284	+5.00	+12.62	5.99	+3.60	17.22	-	-	-
JP MORGAN CHASE	<1	1	0.09%	140,052	-2.03	112	+8.00	+12.62	111.09	+3.60	119.32	-	-	-



(+) = 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)	2019 4th (bp)	2019 3rd (bp)	2019 2nd (bp)
GRAND TOTAL	31	290	20.65%	107,190	-0.11	22,020	+7.08	+14.09	15.92	+2.63	24.86	0.64	9.17	11.86
PERSHING	5	44	3.22%	110,081	-0.18	2,587	+5.34	+13.51	22.98	+3.34	34.46	-	-	-
JEFFERIES & CO	3	36	1.98%	82,602	0.16	992	+3.34	+13.15	+7.06	+2.15	4.09	11.38	+19.52	15.15
UBS	3	24	1.96%	122,902	-0.32	2,292	+7.77	+16.69	24.32	+2.66	35.81	12.10	+1.42	+0.70
MORGAN STANLEY	3	22	1.87%	128,215	-0.20	3,123	+11.07	+13.66	26.30	+2.11	29.98	+38.11	9.09	3.20
GOLDMAN SACHS	3	27	1.86%	103,901	0.01	2,404	+8.57	+14.18	18.44	+4.83	26.77	0.19	11.08	37.84
CREDIT AGRICOLE	2	12	1.07%	134,138	0.15	984	+6.11	+14.20	+63.71	+2.57	+52.72	0.86	1.33	21.38
BNP PARIBAS	1	15	0.99%	99,054	0.16	1,154	+7.77	+13.21	+27.81	+1.60	+21.37	+99.31	35.12	30.74
MERRILL LYNCH	1	7	0.86%	185,678	-0.04	840	+6.47	+13.05	31.13	+2.39	39.50	+6.64	+17.86	-
CREDIT SUISSE	<1	8	0.64%	120,421	-0.94	790	+8.20	+13.25	145.85	+1.95	152.97	9.54	23.46	46.10
SVENSKA HANDELSBANKE	<1	2	0.56%	423,957	0.11	594	+7.00	+13.25	10.05	+0.84	17.15	+22.36	28.93	-



(+) = Cost

TRADE DETAIL ANALYSIS

Largest Principal Volume Traded

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
TESCO PLC COMMON STOCK GBP.05	55	2,331,536	-7,387,846	7,387,846	0.19%	-0.25	14.75
VAT GROUP AG COMMON STOCK CHF.	24	39,873	2,693,622	5,909,458	0.91%	-0.08	22.70
ENEL SPA COMMON STOCK EUR1.	14	675,708	-1,384,859	5,233,973	0.22%	-0.32	52.16
KOMATSU LTD COMMON STOCK	13	197,572	4,301,950	4,301,950	0.23%	-0.12	3.50
LLOYDS BANKING GROUP PLC COMMO	9	5,759,856	3,843,858	3,843,858	0.22%	0.01	1.65
NOVARTIS AG REG COMMON STOCK C	9	39,003	-3,078,245	3,078,245	0.04%	-0.20	+2.14
ASOS PLC COMMON STOCK GBP.035	23	108,855	-1,462,549	2,940,338	0.76%	0.14	+86.02
BANCA MEDIOLANUM SPA COMMON ST	12	288,688	2,854,817	2,854,817	2.81%	0.28	+19.61
CHR HANSEN HOLDING A/S COMMON	11	36,602	-2,708,043	2,708,043	1.04%	-0.10	11.48
TOKYO ELECTRON LTD COMMON STOC	2	12,781	2,707,814	2,707,814	0.40%	0.40	+19.31

Names Most Traded - Total Orders (\$)

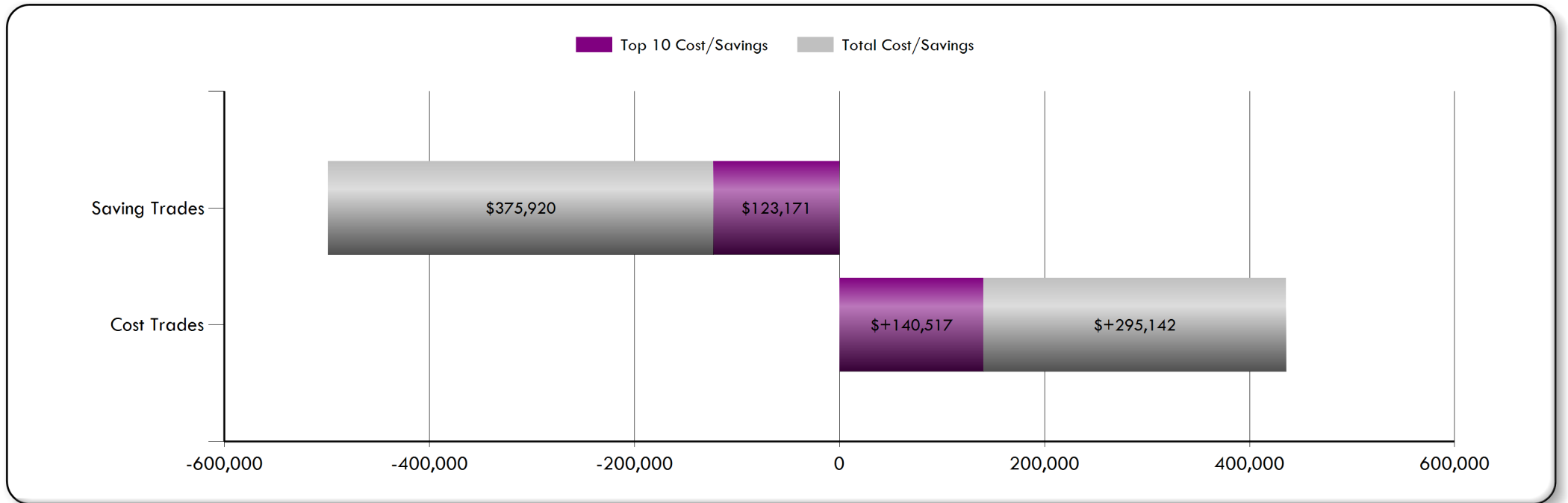
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
TESCO PLC COMMON STOCK GBP.05	55	2,331,536	-7,387,846	+6.41	0.19%	-0.25	14.75
KNORR BREMSE AG COMMON STOCK	45	3,941	-403,749	+8.51	0.07%	-0.22	5.77
VENTURE CORP LTD COMMON STOCK	44	90,000	-1,082,594	+5.61	0.20%	0.02	+6.09
ENAGAS SA COMMON STOCK EUR1.5	40	45,900	-1,049,066	+4.06	0.18%	-0.27	53.36
MOWI ASA COMMON STOCK NOK7.5	38	71,779	1,657,456	+6.31	0.19%	-0.05	2.54
MORINAGA MILK INDUSTRY CO COMM	24	41,700	1,574,031	+4.21	0.80%	0.31	+31.94
ATOS SE COMMON STOCK EUR1.0	24	16,107	1,250,847	+5.05	0.28%	-0.28	8.45
AUTONEUM HOLDING AG COMMON STO	24	2,340	274,068	+4.99	0.49%	0.13	+9.44
BEACH ENERGY LTD COMMON STOCK	24	518,900	-953,240	+5.23	0.40%	0.46	+33.34
VAT GROUP AG COMMON STOCK CHF.	24	39,873	2,693,622	+5.00	0.91%	-0.08	22.70



(+) = Cost

TRADE CONTRIBUTIONS

Cost/Savings Performance				
Category	Principal (\$)	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	6,716,579	10	+320.90	32.25%
Cost Trades	65,421,576	610	+62.86	100.00%
Saving Trades	85,122,517	659	65.11	100.00%
10 Low Cost Trades	5,421,263	10	282.18	24.68%





(+) = Cost

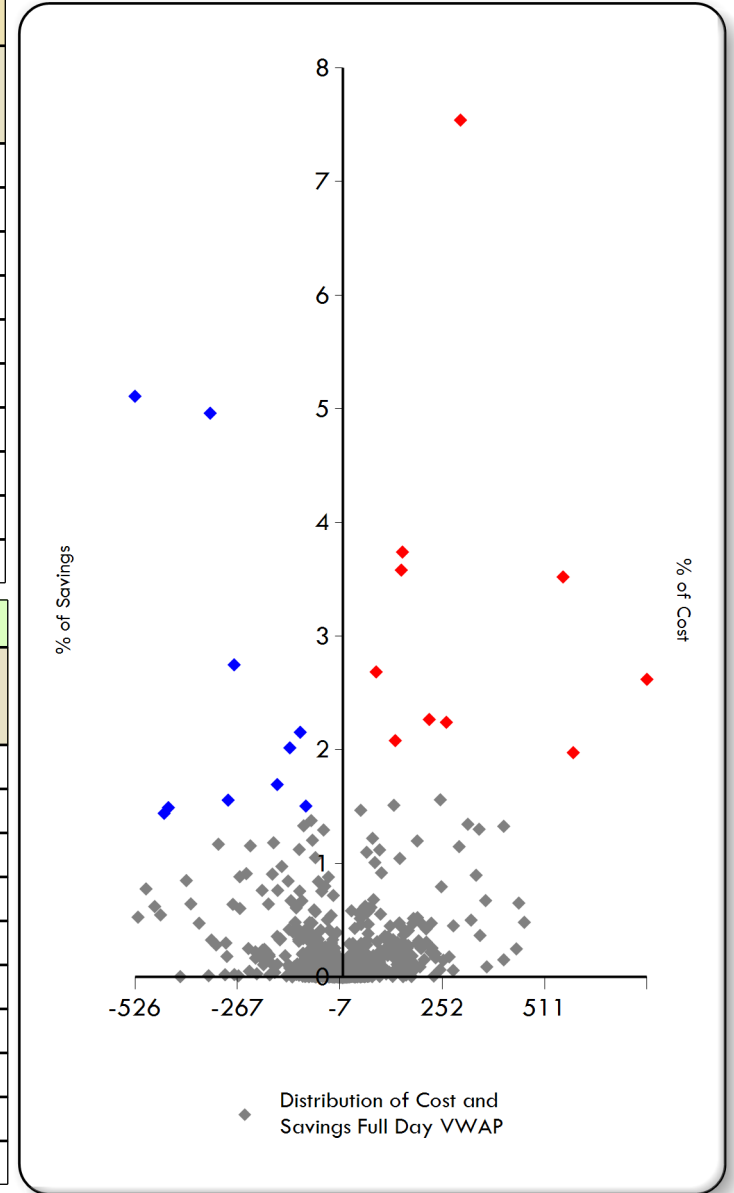
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	GER	LINDE PLC	20200324	1,135,018	7.54%	1.72	+298.08	LAZAR	JP MO
Sell	GER	TEAMVIEWER	20200303	1,061,446	3.74%	0.55	+151.18	LAZAR	PERSH
Buy	UK	RIO TINTO	20200302	1,067,288	3.58%	1.19	+148.32	LAZAR	JP MO
Buy	UK	COMPASS GR	20200319	290,267	3.52%	0.01	+558.03	LAZAR	MERRI
Sell	JAP	TOKYO ELEC	20200204	1,371,552	2.68%	1.18	+84.56	LAZAR	MERRI
Sell	UK	ASOS PLC C	20200317	136,742	2.62%	N/A	+770.43	LAZAR	ITG
Buy	FRA	VIVENDI CO	20200318	460,713	2.27%	0.94	+219.10	LAZAR	SOCIE
Buy	GER	SIEMENS AG	20200317	381,813	2.24%	N/A	+262.53	LSV A	MERRI
Sell	SGP	DBS GROUP	20200310	672,939	2.08%	1.14	+132.96	LAZAR	CREDI
Sell	JAP	JTEKT CORP	20200324	138,801	1.98%	1.79	+583.77	LSV A	INSTI

10 Low Cost Trades (Full Day VWAP)

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Sell	UK	INFORMA PL	20200313	510,325	5.11%	N/A	526.12	LAZAR	PERSH
Buy	ITA	ENEL SPA C	20200310	712,964	4.96%	-1.41	335.71	LAZAR	UBS
Sell	SWE	EVOLUTION	20200227	512,364	2.75%	-1.50	275.02	WILLI	CREDI
Sell	SGP	DBS GROUP	20200310	1,009,294	2.15%	-0.92	107.67	LAZAR	MORGA
Sell	US	ACCENTURE	20200311	761,787	2.02%	-0.78	133.92	LAZAR	UBS
Buy	GER	INFINEON T	20200310	500,852	1.69%	-1.08	165.97	LAZAR	MERRI
Buy	POR	EDP RENOVA	20200331	259,854	1.56%	-2.04	290.30	WILLI	PERSH
Sell	NOR	EQUINOR AS	20200331	811,578	1.50%	-0.76	93.39	LAZAR	MERRI
Sell	UK	INFORMA PL	20200313	176,013	1.49%	N/A	441.47	LAZAR	ITG
Sell	BRZ	SUL AMERIC	20200318	166,232	1.44%	-0.97	452.25	WILLI	BANCO



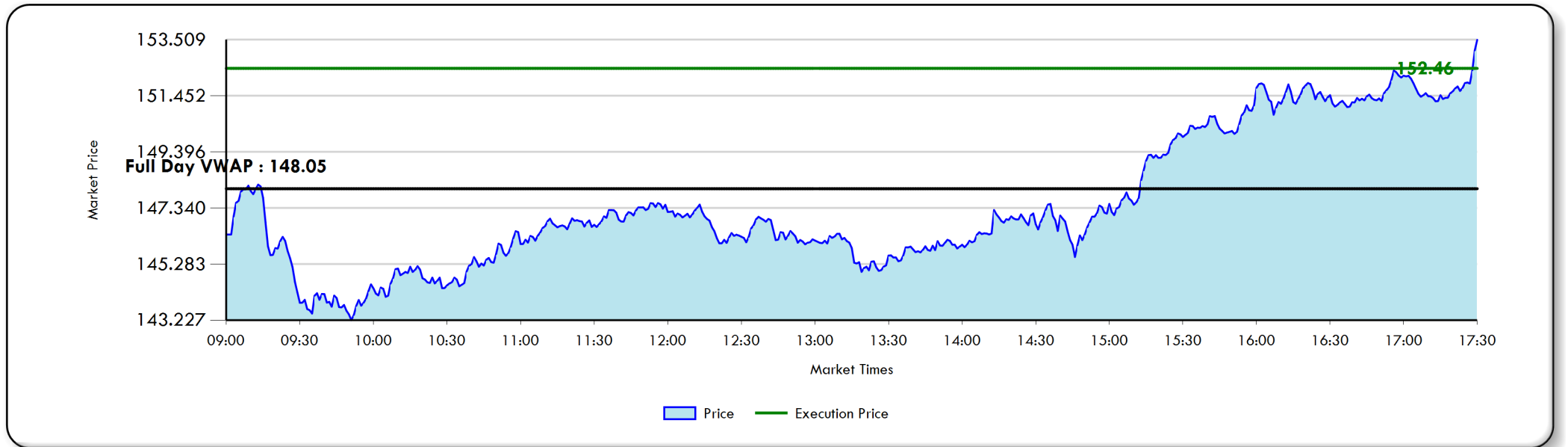


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

LINDE PLC COMMON STOCK EUR.001 - 20200324

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	JP MORGAN CHASE	GER	EUR	BYWD9S5	03/24/2020 09:00:00	03/24/2020 17:30:00	1,135,018	152.46	148.05	+32,853	+298.07	1.72	0.41



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 7.54% of your market impact cost.

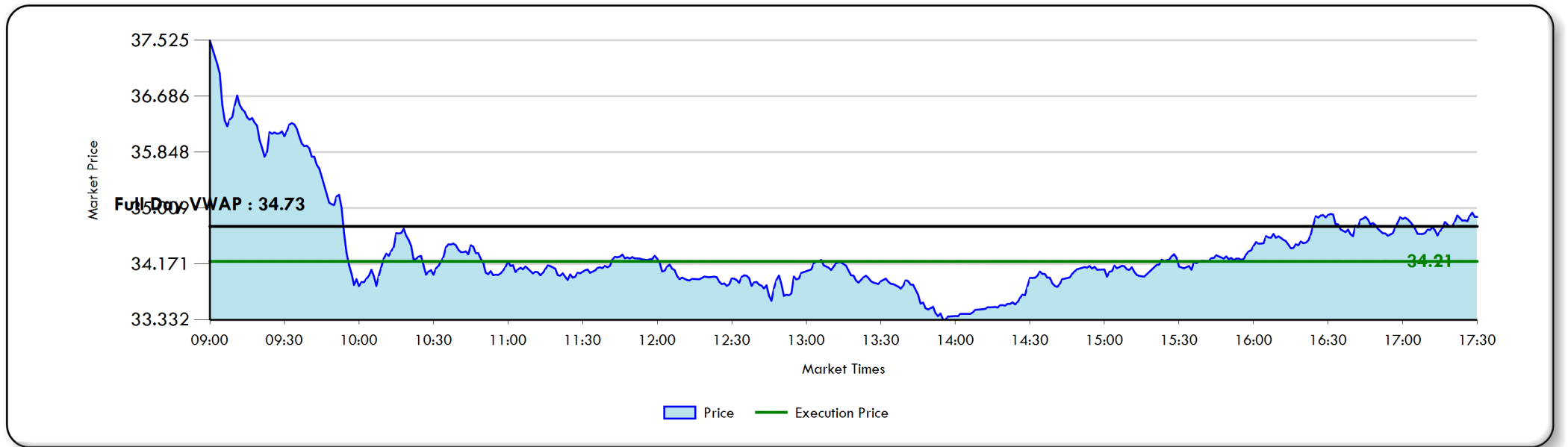


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TEAMVIEWER AG COMMON STOCK - 20200303

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	PERSHING	GER	EUR	BJ7WGS1	03/03/2020 09:00:00	03/03/2020 17:30:00	1,061,446	34.21	34.73	+16,293	+151.18	0.55	1.97



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.74% of your market impact cost.

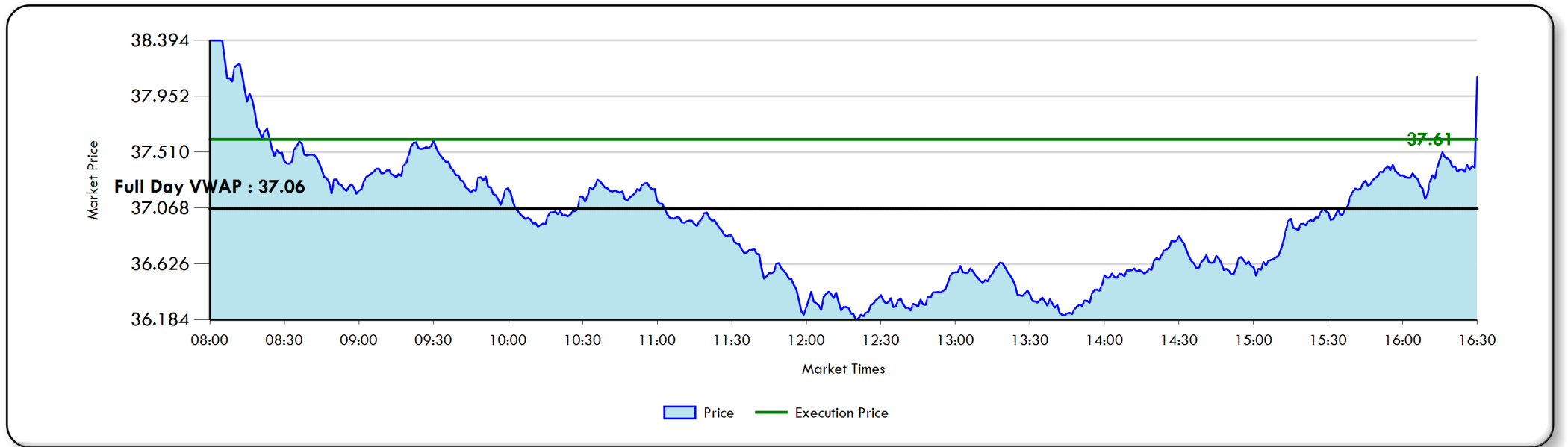


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

RIO TINTO PLC COMMON STOCK GBP - 20200302

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	JP MORGAN CHASE	UK	GBP	0718875	03/02/2020 08:00:00	03/02/2020 16:30:00	1,067,288	37.61	37.06	+15,599	+148.32	1.19	0.32



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.58% of your market impact cost.

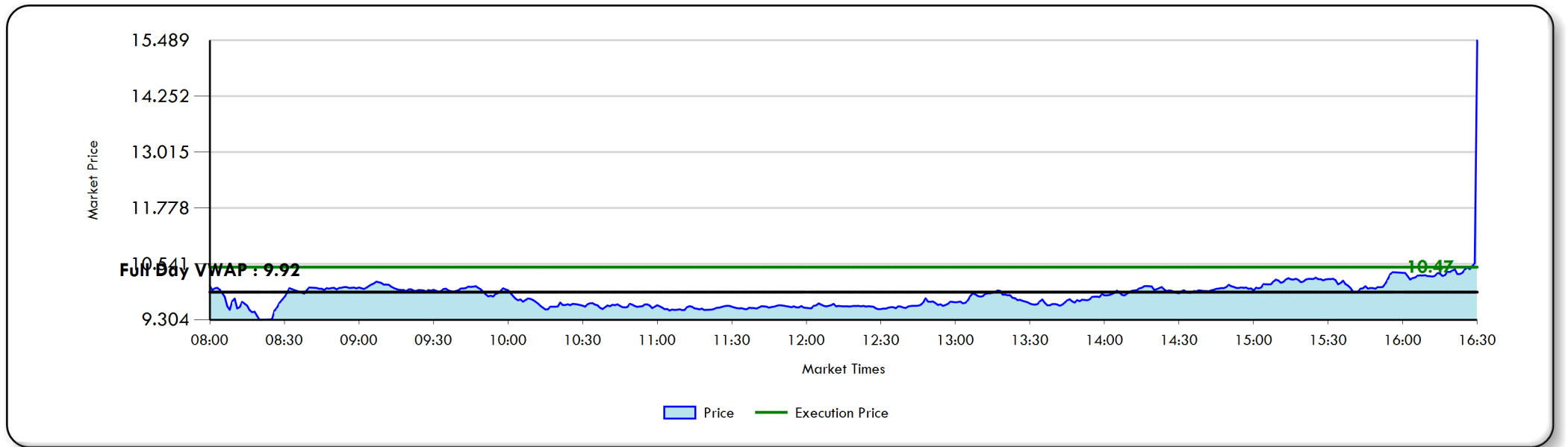


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

COMPASS GROUP PLC COMMON STOCK - 20200319

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	UK	GBP	BD6K457	03/19/2020 08:00:00	03/19/2020 16:30:00	290,267	10.47	9.92	+15,342	+558.03	0.01	0.19



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.52% of your market impact cost.

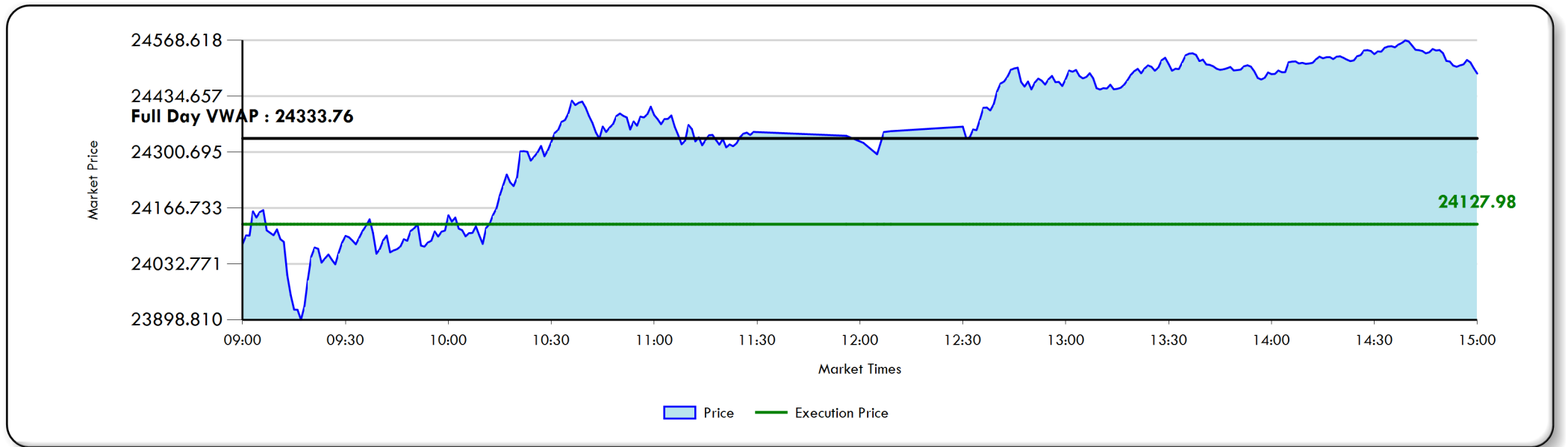


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TOKYO ELECTRON LTD COMMON STOC - 20200204

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	JAP	JPY	6895675	02/04/2020 09:00:00	02/04/2020 15:00:00	1,371,552	24127.98	24333.76	+11,697	+84.56	1.18	0.49



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.68% of your market impact cost.

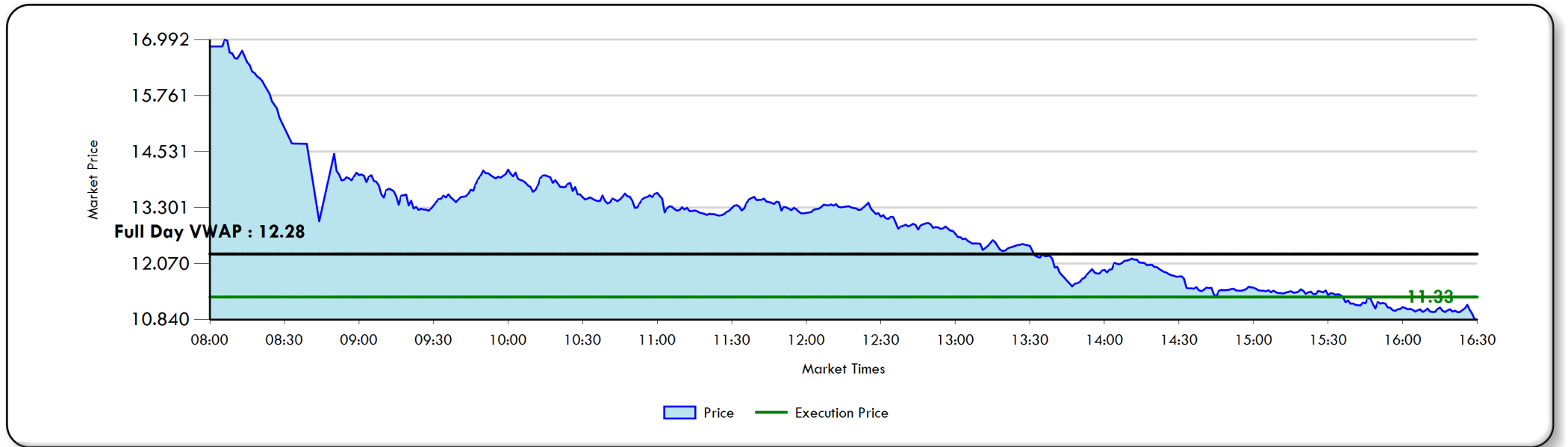


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ASOS PLC COMMON STOCK GBP.035 - 20200317

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	ITG	UK	GBP	3092725	03/17/2020 08:00:00	03/17/2020 16:30:00	136,742	11.33	12.28	+11,414	+770.43	N/A	0.53



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.62% of your market impact cost.

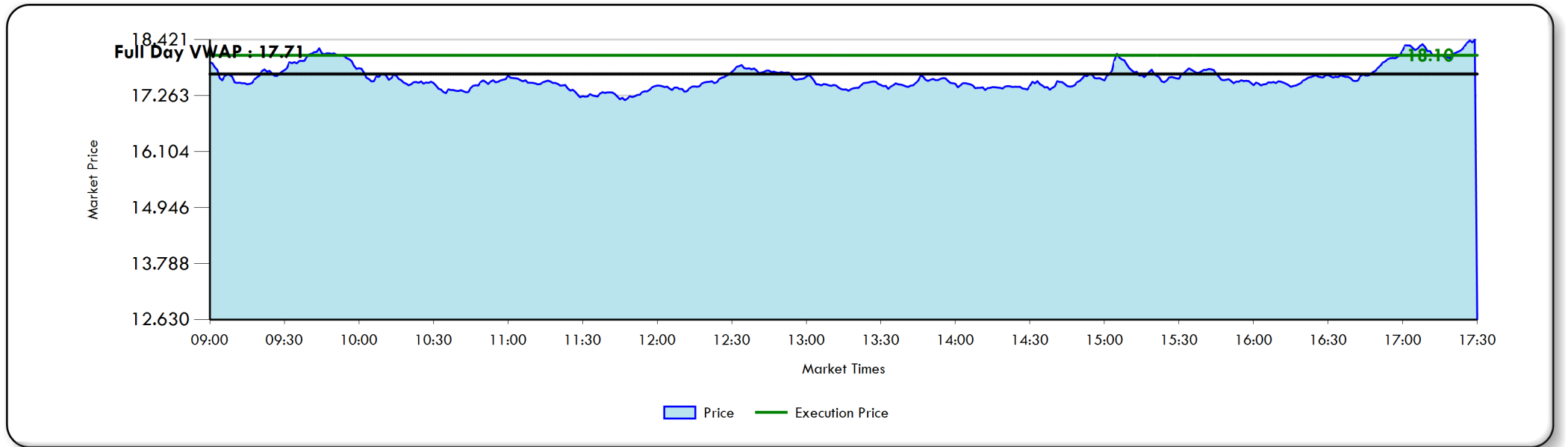


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

VIVENDI COMMON STOCK EUR5.5 - 20200318

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	SOCIETE GENERALE	FRA	EUR	4834777	03/18/2020 09:00:00	03/18/2020 17:30:00	460,713	18.10	17.71	+9,878	+219.09	0.94	0.74



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.27% of your market impact cost.

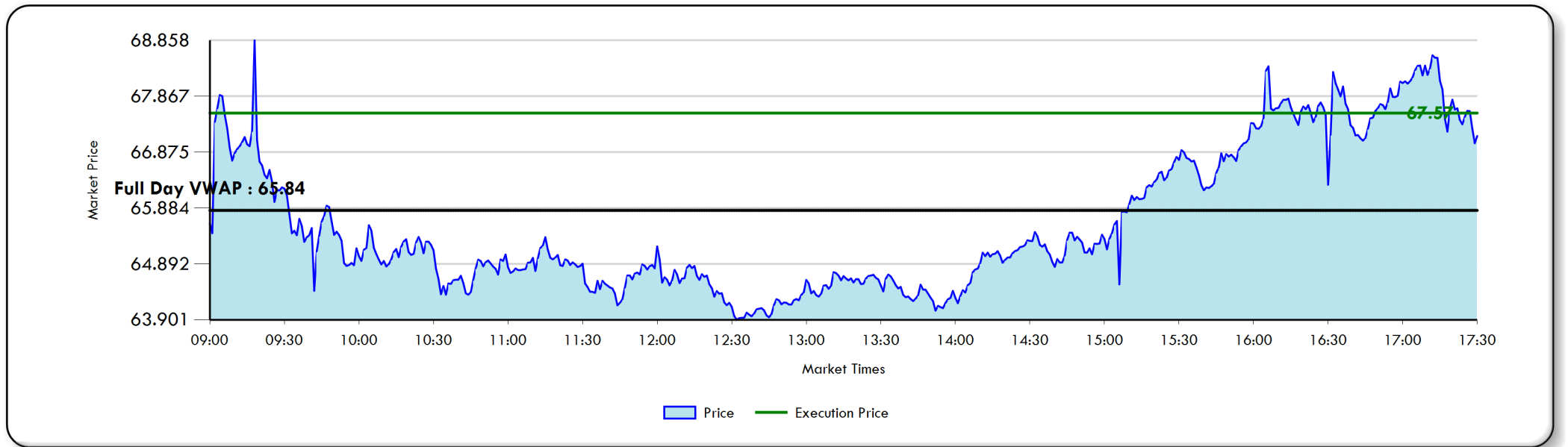


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SIEMENS AG REG COMMON STOCK NP - 20200317

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LSV ASSET MANAGEMENT	MERRILL LYNCH	GER	EUR	5727973	03/17/2020 09:00:00	03/17/2020 17:30:00	381,813	67.57	65.84	+9,767	+262.52	N/A	0.04



NOTES

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

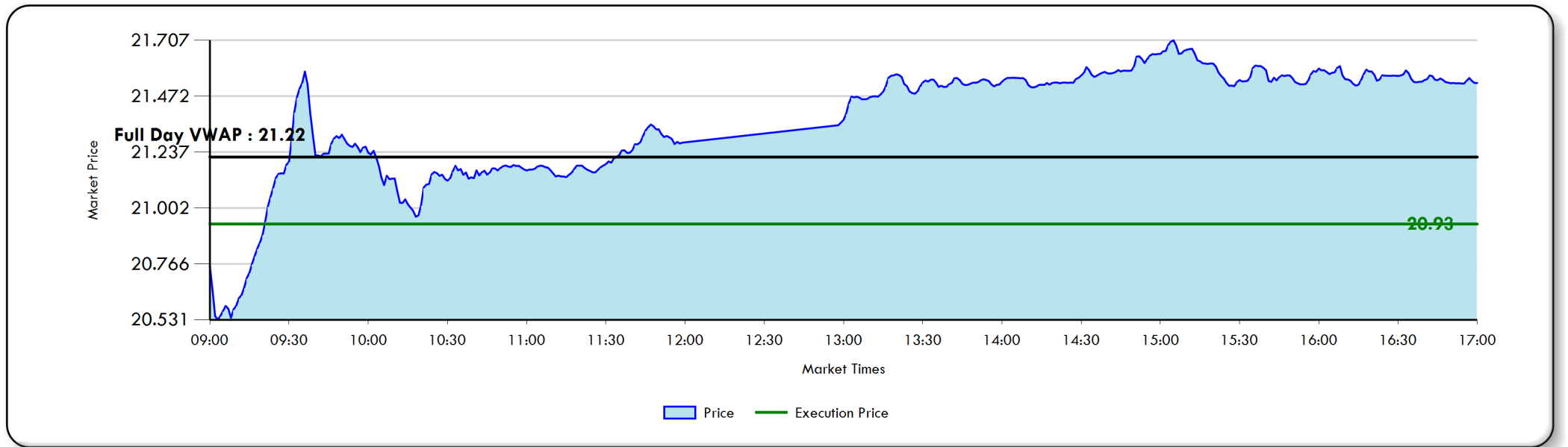


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

DBS GROUP HOLDINGS LTD COMMON - 20200310

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	CREDIT SUISSE	SGP	SGD	6175203	03/10/2020 09:00:00	03/10/2020 17:00:00	672,939	20.93	21.22	+9,068	+132.95	1.14	0.27



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.08% of your market impact cost.

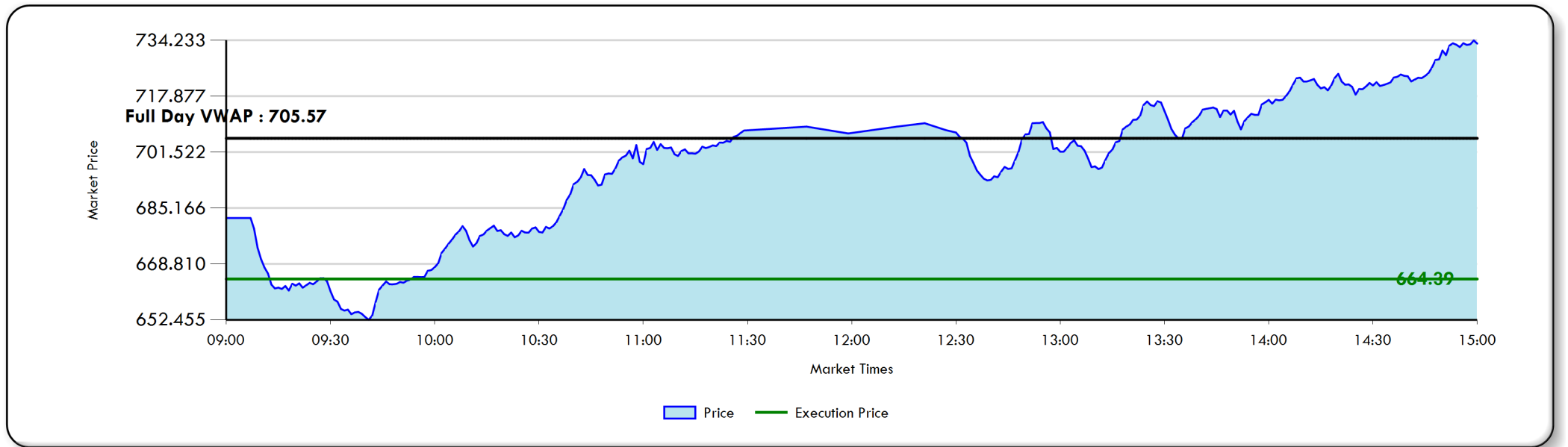


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

JTEKT CORP COMMON STOCK - 20200324

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	INSTINET	JAP	JPY	6497082	03/24/2020 09:00:00	03/24/2020 15:00:00	138,801	664.39	705.57	+8,605	+583.76	1.79	0.91



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.98% of your market impact cost.

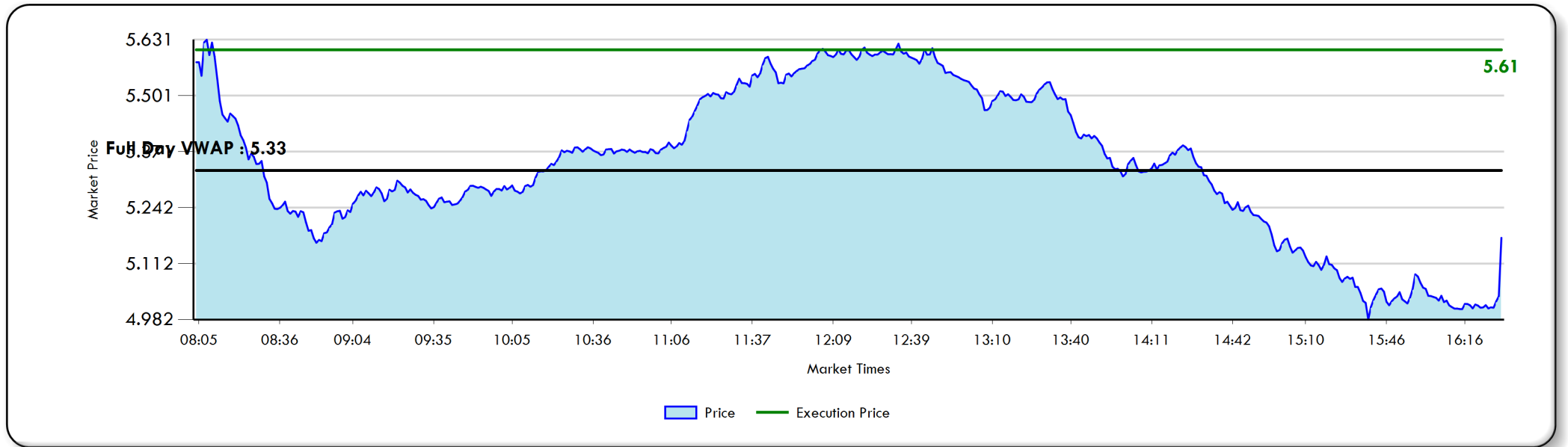


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INFORMA PLC COMMON STOCK GBP.0 - 20200313

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	PERSHING	UK	GBP	BMJ6DW5	03/13/2020 08:00:00	03/13/2020 16:30:00	510,325	5.61	5.33	25,507	526.12	N/A	1.02



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 5.11% of your market impact cost.

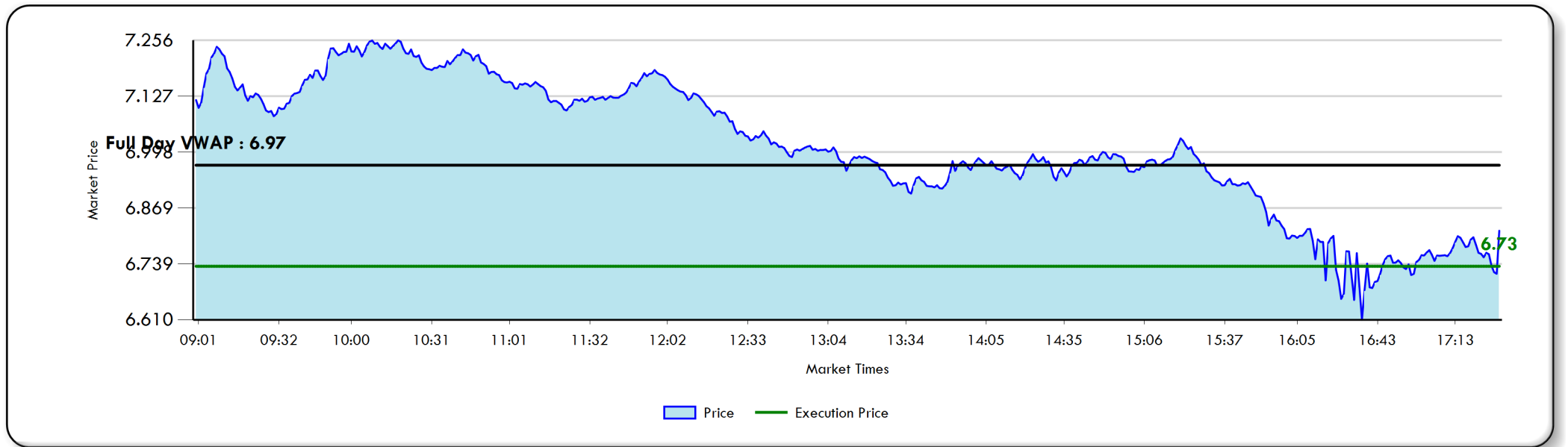


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ENEL SPA COMMON STOCK EUR1. - 20200310

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	UBS	ITA	EUR	7144569	03/10/2020 09:00:00	03/10/2020 17:30:00	712,964	6.73	6.97	24,766	335.71	-1.41	0.14



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.96% of your market impact cost.

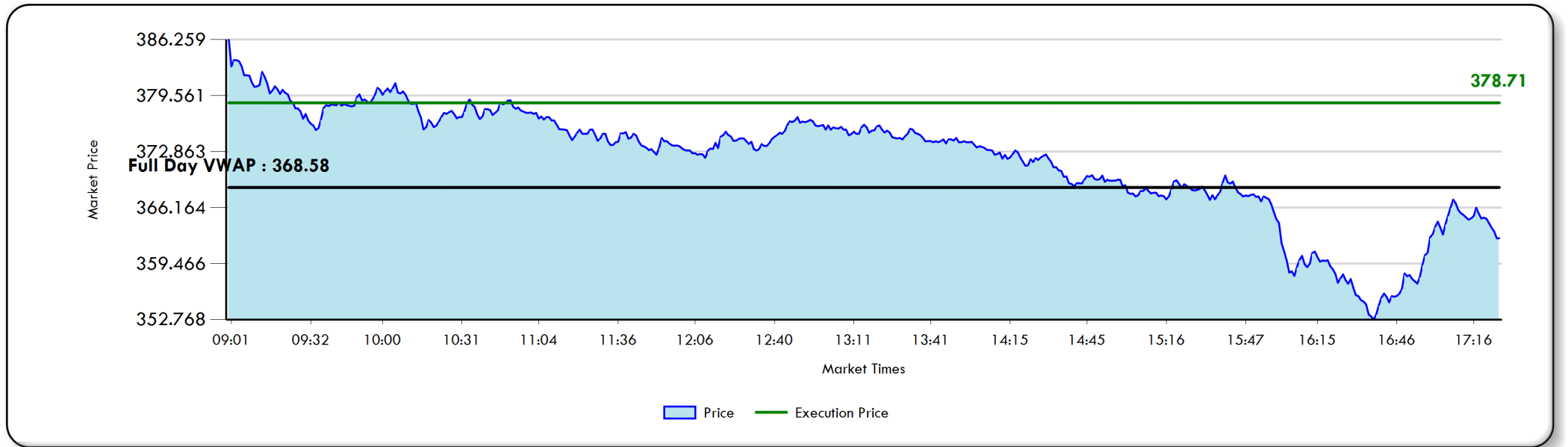


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

EVOLUTION GAMING GROUP COMMON - 20200227

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	CREDIT SUISSE	SWE	SEK	BJXSCH4	02/27/2020 09:00:00	02/27/2020 17:30:00	512,364	378.71	368.58	13,714	275.02	-1.50	0.99



NOTES

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

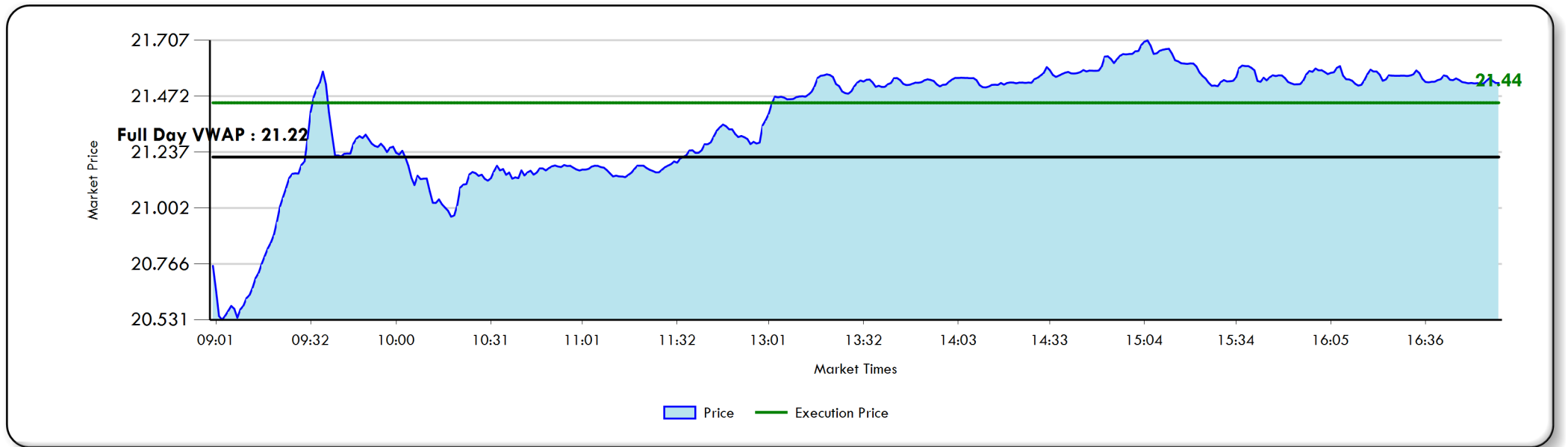


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DBS GROUP HOLDINGS LTD COMMON - 20200310

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	MORGAN STANLEY	SGP	SGD	6175203	03/10/2020 09:00:00	03/10/2020 17:00:00	1,009,294	21.44	21.22	10,751	107.66	-0.92	0.40



NOTES

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

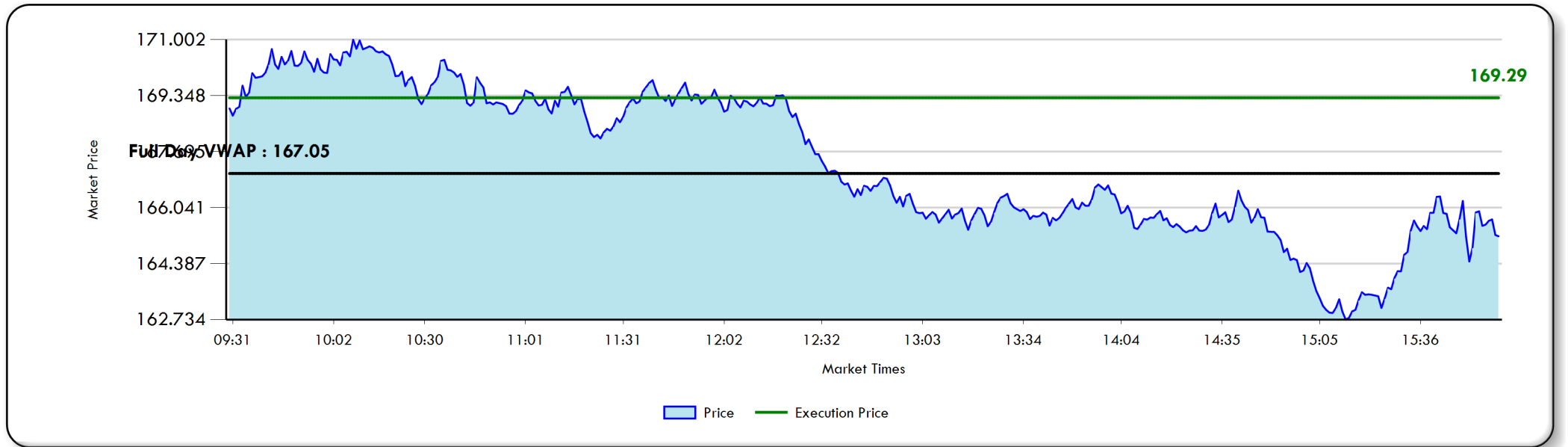


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ACCENTURE PLC CL A COMMON STOC - 20200311

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	US	USD	B4BNMY3	03/11/2020 09:30:00	03/11/2020 16:00:00	761,787	169.29	167.05	10,067	133.91	-0.78	0.07



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.02% of your market impact cost.

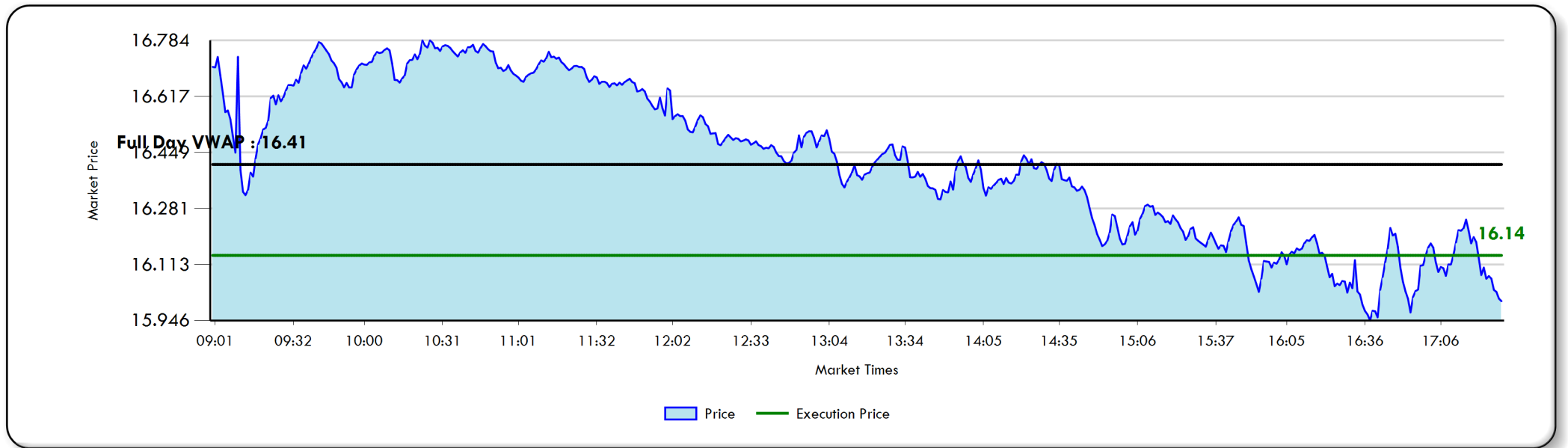


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INFINEON TECHNOLOGIES AG COMMO - 20200310

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	GER	EUR	5889505	03/10/2020 09:00:00	03/10/2020 17:30:00	500,852	16.14	16.41	8,453	165.96	-1.08	0.09



NOTES

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

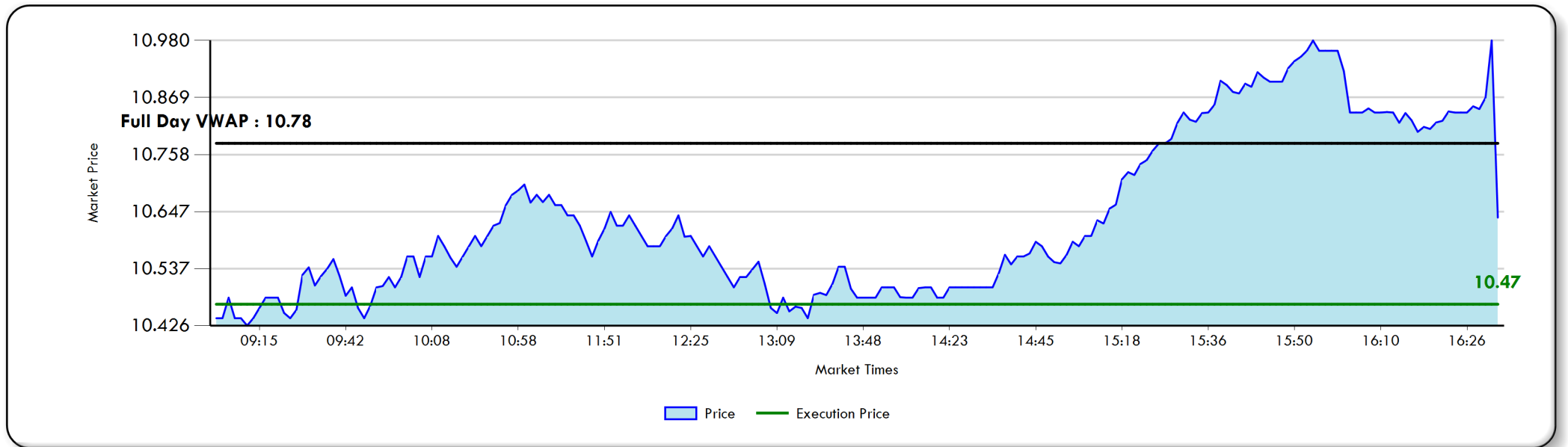


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

EDP RENOVAVEIS SA COMMON STOCK - 20200331

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	PERSHING	POR	EUR	B39GNW 2	03/31/2020 09:00:00	03/31/2020 17:30:00	259,854	10.47	10.78	7,769	290.30	-2.04	2.33



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.56% of your market impact cost.

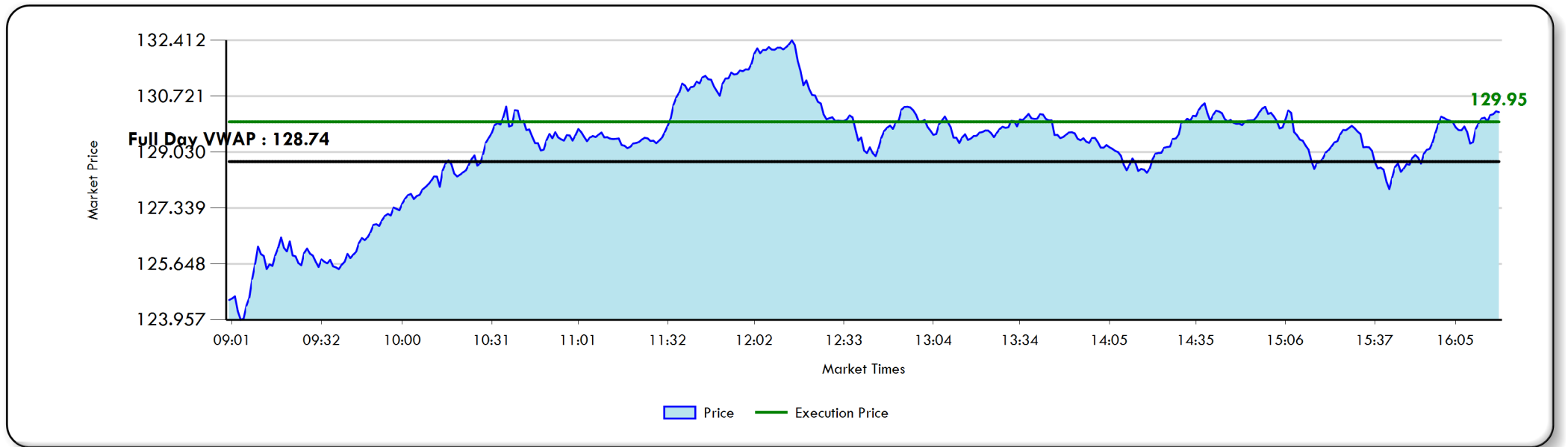


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

EQUINOR ASA COMMON STOCK NOK2. - 20200331

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LAZARD ASSET MANAGEMENT	MERRILL LYNCH	NOR	NOK	7133608	03/31/2020 09:00:00	03/31/2020 16:20:00	811,578	129.95	128.74	7,509	93.39	-0.76	0.60



NOTES

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

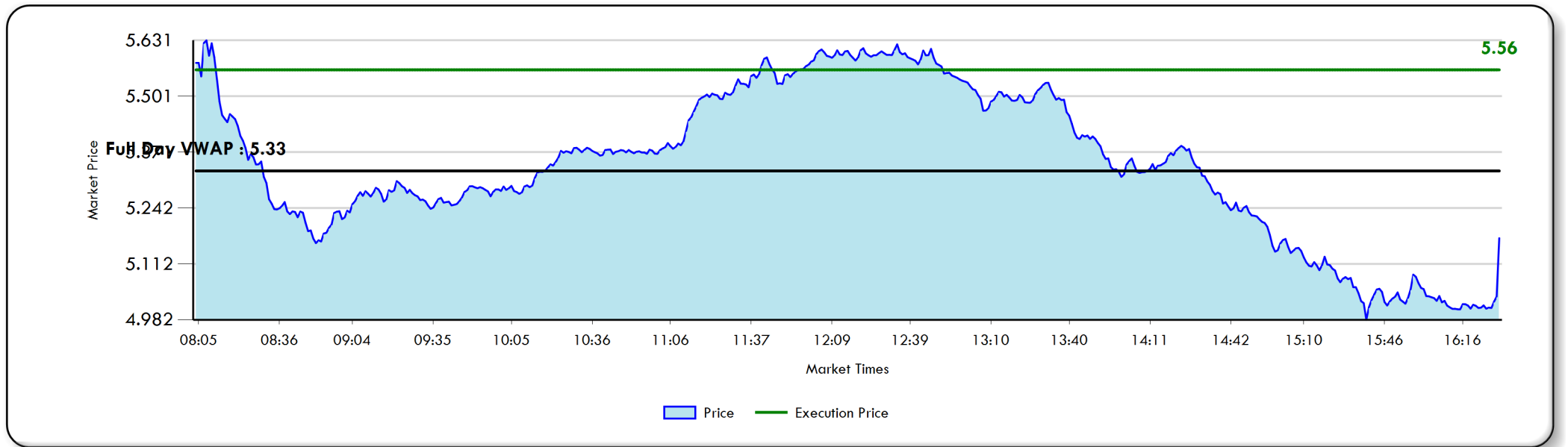


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INFORMA PLC COMMON STOCK GBP.0 - 20200313

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	ITG	UK	GBP	BMJ6DW5	03/13/2020 08:00:00	03/13/2020 16:30:00	176,013	5.56	5.33	7,442	441.47	N/A	0.36



NOTES

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

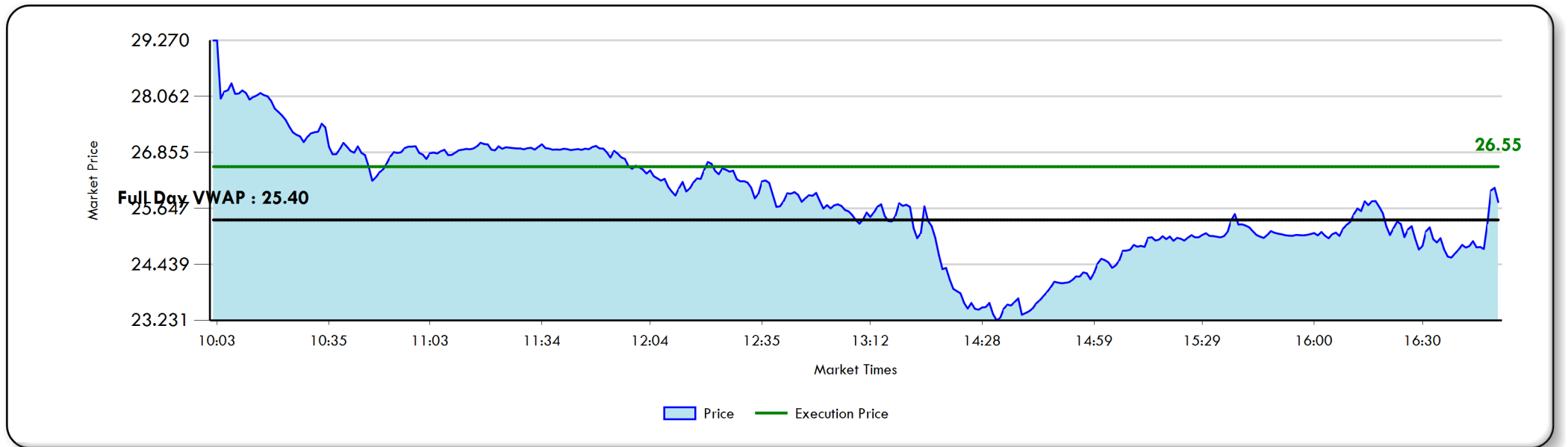


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SUL AMERICA SA UNITS UNIT - 20200318

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	BANCO ITAU SA	BRZ	BRL	B27WYK0	03/18/2020 10:00:00	03/18/2020 17:00:00	166,232	26.55	25.40	7,192	452.24	-0.97	0.51



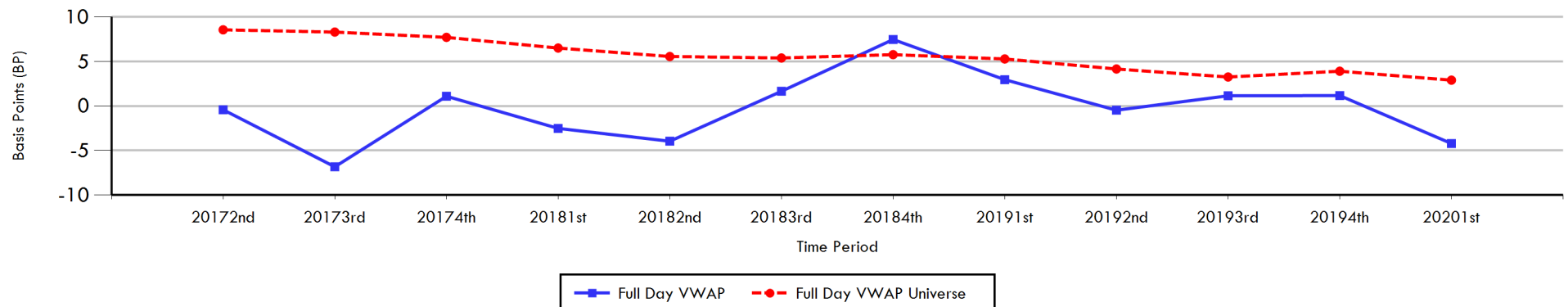
NOTES

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

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)
20172nd	199,438,944	+6.90	+14.86	+4.37	+4.99	0.43	+8.55	17.56
20173rd	186,109,779	+7.65	+14.45	+5.00	+5.31	6.83	+8.29	22.23
20174th	198,018,280	+7.13	+14.19	+3.98	+4.19	+1.09	+7.70	13.88
20181st	207,232,838	+8.30	+14.33	+5.34	+5.43	2.52	+6.50	15.12
20182nd	152,374,616	+7.46	+14.16	+10.17	+6.65	3.96	+5.55	12.69
20183rd	84,663,286	+6.92	+13.97	+5.95	+3.81	+1.64	+5.39	8.65
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

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	6.51 BP	12.97 BP	1.40 BP	2.25 BP	16.62 BP
AUSTRIA	27.44 BP	13.11 BP	0.05 BP	4.16 BP	17.32 BP
BELGIUM	50.68 BP	12.85 BP	0.01 BP	2.45 BP	15.31 BP
BRAZIL	7.36 BP	14.82 BP	2.21 BP	4.36 BP	21.39 BP
CANADA	18.42 BP	27.44 BP	0.02 BP	2.47 BP	29.93 BP
CHILE	0.25 BP	15.53 BP	0.64 BP	2.45 BP	18.62 BP
CHINA	2.82 BP	13.93 BP	5.97 BP	1.18 BP	21.08 BP
COLOMBIA	1.51 BP	14.89 BP	0.94 BP	6.69 BP	22.52 BP
CZECH REPUBLIC	8.64 BP	20.98 BP	0.16 BP	2.03 BP	23.17 BP
DENMARK	62.51 BP	12.62 BP	0.01 BP	3.60 BP	16.23 BP
EGYPT	2.16 BP	18.92 BP	16.87 BP	4.86 BP	40.65 BP
FINLAND	23.62 BP	13.03 BP	0.01 BP	4.00 BP	17.04 BP
FRANCE - BUYS	46.55 BP	13.07 BP	30.00 BP	1.94 BP	45.01 BP
FRANCE - SELLS	51.17 BP	13.96 BP	0.00 BP	1.99 BP	15.95 BP
GERMANY	47.76 BP	13.12 BP	0.02 BP	2.44 BP	15.58 BP
GREECE	3.50 BP	14.49 BP	2.49 BP	8.50 BP	25.48 BP
HONG KONG	2.08 BP	13.03 BP	7.94 BP	0.90 BP	21.87 BP
HUNGARY	18.67 BP	15.84 BP	0.00 BP	1.71 BP	17.55 BP
INDONESIA	0.26 BP	16.88 BP	7.61 BP	2.19 BP	26.68 BP



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
INDIA	7.19 BP	18.49 BP	10.97 BP	1.60 BP	31.06 BP
IRELAND - BUYS	3.94 BP	14.00 BP	100.00 BP	1.74 BP	115.74 BP
IRELAND - SELLS	14.14 BP	13.00 BP	0.00 BP	10.49 BP	23.49 BP
ISRAEL	4.22 BP	13.12 BP	0.03 BP	2.42 BP	15.57 BP
ITALY - BUYS	7.93 BP	13.29 BP	12.00 BP	1.61 BP	26.90 BP
ITALY - SELLS	10.14 BP	12.35 BP	0.00 BP	4.63 BP	16.98 BP
JAPAN	22.51 BP	12.86 BP	0.02 BP	3.34 BP	16.22 BP
KOREA - BUYS	48.17 BP	18.25 BP	0.00 BP	3.36 BP	21.61 BP
KOREA - SELLS	62.15 BP	18.64 BP	19.82 BP	1.89 BP	40.35 BP
LUXEMBOURG	92.50 BP	10.46 BP	0.05 BP	20.13 BP	30.64 BP
MALAYSIA	1.27 BP	17.60 BP	3.46 BP	0.98 BP	22.04 BP
MEXICO	1.96 BP	14.43 BP	0.00 BP	0.88 BP	15.31 BP
NORWAY	8.34 BP	12.83 BP	0.01 BP	3.87 BP	16.71 BP
NETHERLANDS	40.24 BP	13.49 BP	0.06 BP	2.33 BP	15.88 BP
NEW ZEALAND	4.51 BP	23.38 BP	0.02 BP	3.81 BP	27.21 BP
PERU	1.03 BP	20.36 BP	3.32 BP	3.53 BP	27.21 BP
PHILIPPINES - BUYS	0.98 BP	22.42 BP	4.43 BP	1.33 BP	28.18 BP
PHILIPPINES - SELLS	0.52 BP	24.17 BP	63.26 BP	0.73 BP	88.16 BP
POLAND	11.62 BP	14.36 BP	0.00 BP	2.75 BP	17.11 BP
PORTUGAL	5.06 BP	13.40 BP	0.01 BP	4.20 BP	17.61 BP



Elkins/McSherry Global Universe

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.06 BP	17.49 BP	0.00 BP	10.37 BP	27.86 BP
SOUTH AFRICA - BUYS	8.76 BP	13.16 BP	15.38 BP	3.04 BP	31.58 BP
SOUTH AFRICA - SELLS	15.18 BP	17.59 BP	0.06 BP	2.27 BP	19.92 BP
SINGAPORE	2.90 BP	13.68 BP	3.54 BP	1.28 BP	18.50 BP
SPAIN	7.19 BP	13.46 BP	0.01 BP	2.27 BP	15.74 BP
SWEDEN	13.25 BP	13.25 BP	0.01 BP	0.84 BP	14.10 BP
SWITZERLAND	64.08 BP	13.31 BP	0.02 BP	2.22 BP	15.55 BP
TAIWAN - BUYS	3.02 BP	18.16 BP	0.02 BP	1.08 BP	19.26 BP
TAIWAN - SELLS	2.39 BP	18.29 BP	23.85 BP	2.05 BP	44.19 BP
THAILAND	1.63 BP	17.62 BP	0.57 BP	1.77 BP	19.96 BP
TURKEY	1.47 BP	13.98 BP	0.00 BP	2.64 BP	16.62 BP
U.K. - BUYS	7.29 BP	13.22 BP	29.34 BP	1.29 BP	43.85 BP
U.K. - SELLS	6.96 BP	13.57 BP	0.00 BP	8.27 BP	21.84 BP
U.S.	55.23 BP	13.85 BP	0.07 BP	1.43 BP	15.35 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	16.97 BP	16.52 BP	6.83 BP	4.23 BP	27.58 BP



DISCLAIMER

State Street Corporation and its subsidiaries and affiliates, including Elkins/McSherry, LLC (“State Street”), provide products and services to professional and institutional clients and this report and information (“Report”) is provided solely for general, marketing and/or informational purposes and is subject to these terms and conditions, including that the Report does not constitute investment research or investment, legal, regulatory, or tax advice. Nothing herein is an offer or solicitation to buy or sell any product, service or securities or any financial instrument and this does not create or constitute any binding contractual commitment or obligations for State Street of any kind. Not all products and features a may be available in all jurisdictions. Any opinions expressed or other information in the Report are subject to change without notice. The Report has been prepared and obtained from sources believed to be reliable at the time of preparation, however, it is provided “as-is” and State Street makes no guarantee, representation, or warranty of any kind including but not limited to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, etc. This Report is not intended to be relied upon by any person or entity. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs arising, either direct or consequential, from or in connection with the use of the Report. No permission is granted to reprint, sell, copy, distribute, or modify any of the Report, in any form or by any means without the prior written consent of State Street. The Report may contain certain statements that may be deemed forward-looking statements. Please note that any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Investing involves risk, including the risk of loss of principal. Diversification does not ensure a profit or guarantee against loss. The Report does not take into account any client’s particular investment objectives, strategies, or tax and legal status, relevant regulations, nor does it purport to be comprehensive or intended to replace the exercise of a client’s or investor’s own careful independent review regarding any corresponding investment decision or related analysis.

Copyright © 2020 State Street Corporation, All rights reserved.



SACRAMENTO COUNTY

US Fixed Income Analysis

Period End March 31, 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 January 02,2020 to March 31,2020. The analysis included trading of 691 trades in 217 different issues representing \$1,053,957,044 in principal across municipals, mortgages, governments And corporates.

Methodology:

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

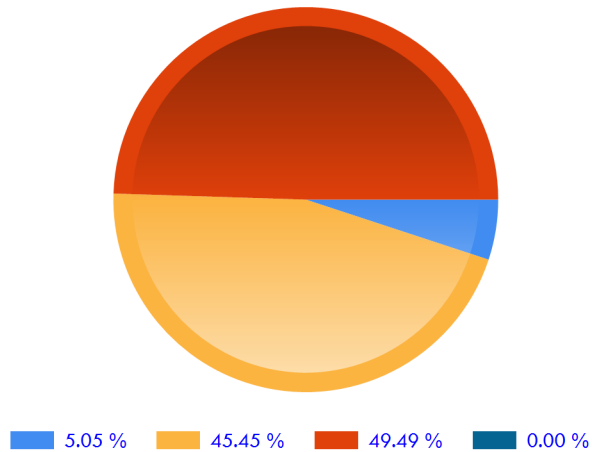
Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q4 2019	Q3 2019	Q2 2019	Q1 2019
BUYS	545	341	178	+182.83	+3.35	+11.54	446.41	8.19	+0.75	+10.49	+1.20	+2.14
SELLS	509	350	108	+16.04	+0.32	+9.67	475.96	9.35	1.10	10.32	+0.28	2.58
GRAND TOTAL	1,054	691	217	+198.86	+1.89	+10.64	922.37	8.75	0.23	+0.54	+0.74	0.25

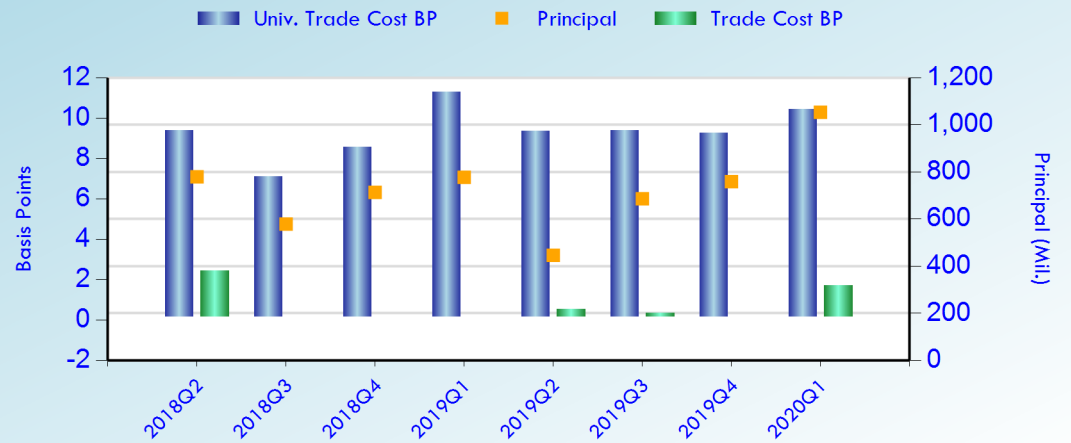
EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q4 2019	Q3 2019	Q2 2019	Q1 2019
Mortgages	515	132	46	+217.64	+4.23	+10.73	334.54 6.50	-	+0.45	1.02	0.64
Governments	479	396	62	+69.50	+1.45	+9.73	396.58 8.28	0.45	+0.28	+0.87	0.12
Corporates	57	158	104	89.53	15.65	+17.24	188.16 32.89	+5.42	+6.98	1.30	0.97
Municipals	3	5	5	+1.26	+4.13	+14.29	3.09 10.16	-	-	+4.52	+0.75

Bonds by Principal Traded



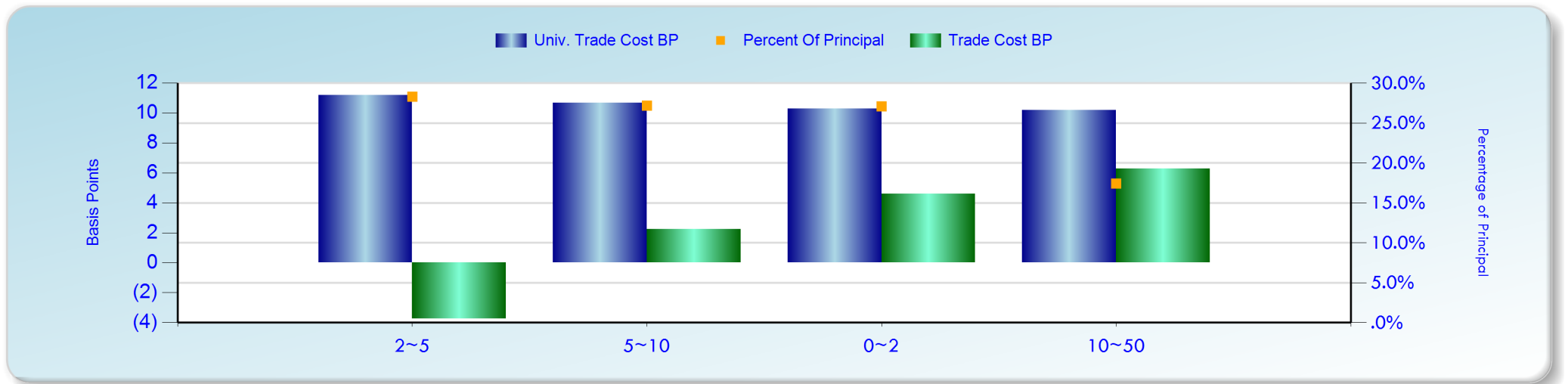
Historical Trade Cost Trend



EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

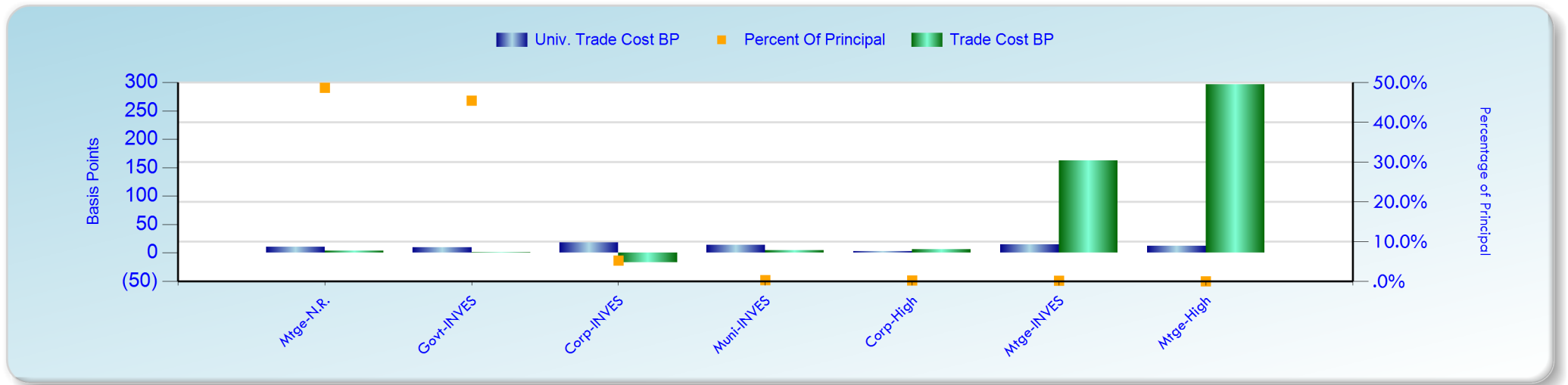
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
2~5	298	89	40	111.79	3.75	+11.20	445.88	14.95
5~10	286	42	20	+63.93	+2.23	+10.67	241.71	8.44
0~2	286	547	192	+131.14	+4.59	+10.30	163.04	5.71
10~50	184	13	9	+115.58	+6.29	+10.20	71.73	3.91



EXECUTIVE SUMMARY

GRADING SUMMARY

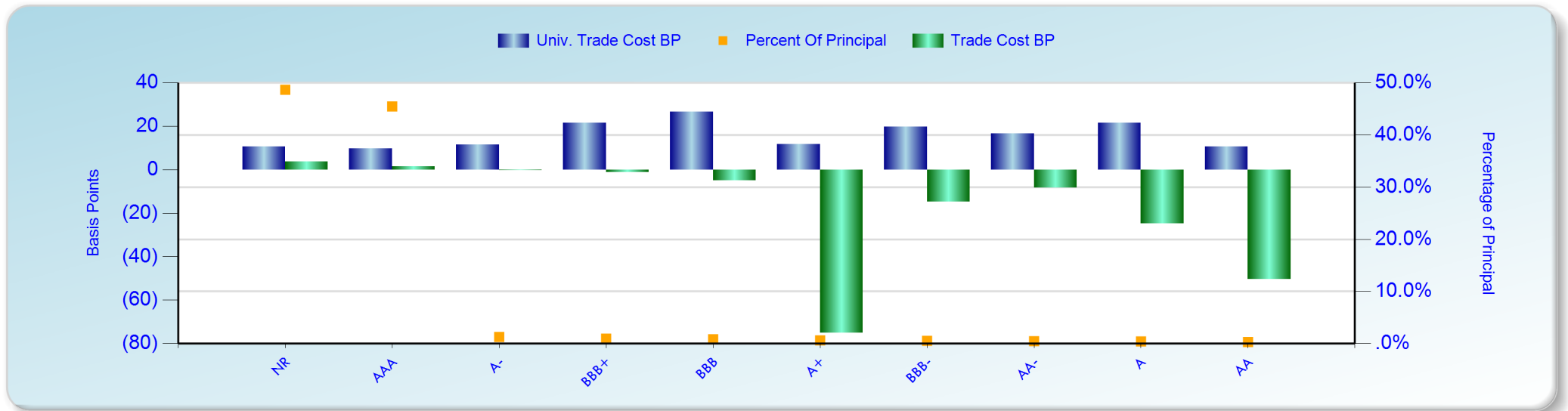
Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Mtge-N.R.	513	129	43	+193.03	+3.76	+10.72	356.97	6.96
Govt-INVESTMENT GRADE	479	396	62	+69.50	+1.45	+9.73	396.58	8.28
Corp-INVESTMENT GRADE	55	148	96	90.81	16.50	+17.76	188.58	34.26
Muni-INVESTMENT GRADE	3	5	5	+1.26	+4.13	+14.29	3.09	10.16
Corp-High Yield	2	9	7	+1.32	+6.54	+3.16	+0.68	+3.38
Mtge-INVESTMENT GRADE	2	2	2	+24.47	+162.51	+14.41	+22.30	+148.10
Mtge-High Yield	<1	1	1	+0.14	+296.41	+12.57	+0.13	+283.84



EXECUTIVE SUMMARY

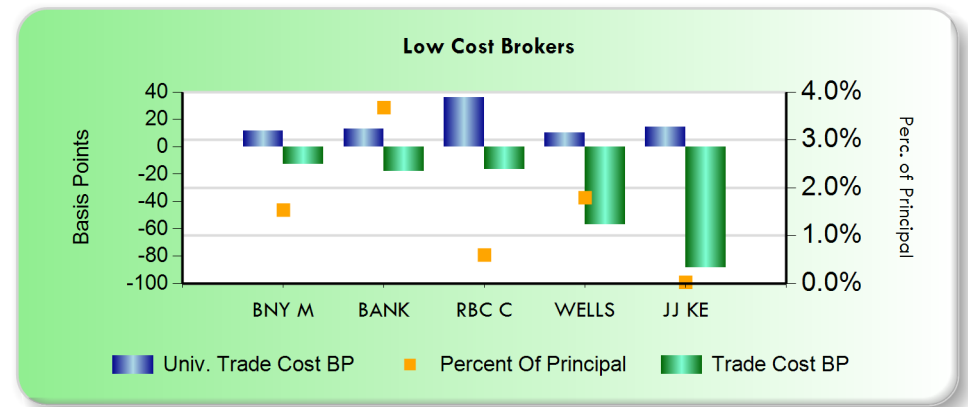
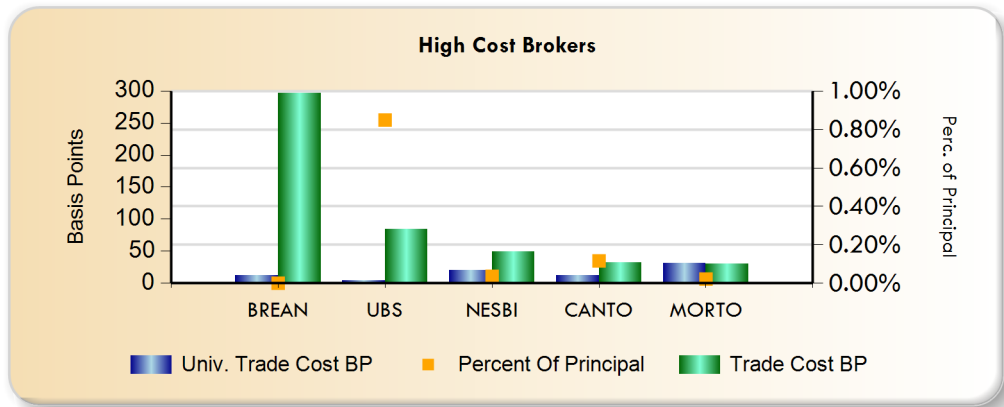
RATING SUMMARY

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
NR	513.09	129	43	+193.03	+3.76	+10.72	356.97	6.96
AAA	479.50	397	63	+71.39	+1.49	+9.74	395.44	8.25
A-	13.51	17	13	0.06	0.05	+11.48	15.57	11.53
BBB+	10.00	23	17	1.13	1.13	+21.65	22.78	22.78
BBB	8.79	35	23	4.41	5.02	+26.59	27.77	31.61
A+	6.54	8	6	49.11	75.11	+11.74	56.79	86.85
BBB-	5.60	32	19	8.26	14.74	+19.78	19.35	34.52
AA-	4.88	18	5	4.03	8.26	+16.70	12.19	24.96
A	4.37	8	7	10.80	24.74	+21.66	20.25	46.40
AA	3.09	7	7	15.58	50.46	+10.74	18.90	61.20



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)								
BREAN CAPITAL LLC	<1	1	1	+0.14	+296.41	+12.57	+0.13	+283.84
UBS	9	18	15	+75.71	+84.60	+4.25	+71.91	+80.35
NESBITT BURNS	<1	1	1	+1.89	+49.50	+19.84	+1.13	+29.66
CANTOR FITZGERALD	1	1	1	+3.96	+32.32	+12.44	+2.44	+19.88
MORTON HALL & ROUNDS	<1	1	1	+0.70	+30.37	+31.34	0.02	0.97
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
BNY MELLON	16	14	8	20.32	12.59	+11.58	39.00	24.17
BANK OF AMERICA	39	38	25	69.99	18.07	+12.85	119.73	30.92
RBC CAPITAL MARKETS	6	20	15	10.38	16.59	+35.81	32.79	52.40
WELLS FARGO	19	29	23	107.65	57.07	+10.20	126.90	67.27
JJ KENNY DRAKE INC	<1	1	1	2.05	88.62	+14.61	2.39	103.23





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	509	350	108	+16.04	+0.32	+9.67	475.96	9.35
	BUYS	545	341	178	+182.83	+3.35	+11.54	446.41	8.19

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		Q4 2019	Q3 2019	Q2 2019	Q1 2019
METROPOLITAN WEST MG	890	582	176	57.02	0.64	+10.90	1,026.70	11.54	0.57	0.56	+0.61	0.75
NEUBERGER BERMAN	133	30	16	+35.36	+2.66	+10.32	102.04	7.66	+0.29	+7.00	+1.42	+0.54
BARCLAYS 1-10 YR TIP	31	79	31	+220.52	+70.62	+4.53	+206.36	+66.09	2.19	2.84	+1.36	0.09

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q4 2019	Q3 2019	Q2 2019	Q1 2019
CITIGROUP	234	97	48	+38.37	+1.64	+11.03	219.92	9.39	3.79	0.49	+0.54	+2.05
CREDIT SUISSE	223	55	25	+60.84	+2.73	+9.64	154.36	6.91	+5.55	+3.82	+1.45	2.28
GOLDMAN SACHS	168	116	53	+28.87	+1.72	+10.94	154.99	9.22	0.75	+0.00	0.50	+2.30
JP MORGAN CHASE	78	73	53	+84.50	+10.80	+13.88	24.11	3.08	+4.69	+11.72	+2.60	+2.00
NOMURA	67	32	22	0.22	0.03	+8.30	55.86	8.33	0.55	1.96	1.59	+2.68
CITADEL SECURITIES	50	26	9	2.54	0.51	+3.63	20.73	4.14	+0.01	0.07	0.18	+0.03
BARCLAYS	39	28	24	+25.38	+6.47	+9.08	10.26	2.61	+4.53	12.55	+2.02	+1.48
BANK OF AMERICA	39	38	25	69.99	18.07	+12.85	119.73	30.92	+0.65	+2.21	0.08	5.66
DEUTSCHE BANK	33	36	13	+66.13	+19.97	+16.11	+12.77	+3.86	0.53	2.41	1.81	2.53
MORGAN STANLEY	23	31	25	+7.60	+3.32	+10.38	16.19	7.06	+4.24	4.60	0.57	5.45
WELLS FARGO	19	29	23	107.65	57.07	+10.20	126.90	67.27	+0.24	1.05	+1.80	4.58
HOWARD TAYLOR & COMP	18	17	8	0.99	0.54	+18.82	35.67	19.36	3.10	1.44	+8.22	+2.20
BNY MELLON	16	14	8	20.32	12.59	+11.58	39.00	24.17	8.65	0.28	+2.27	7.98
BMO CAPITAL MARKETS	9	1	1	5.45	5.99	+2.01	7.27	8.00	+6.06	+3.73	+0.30	1.28
UBS	9	18	15	+75.71	+84.60	+4.25	+71.91	+80.35	1.86	5.87	+0.32	+2.20
RBC CAPITAL MARKETS	6	20	15	10.38	16.59	+35.81	32.79	52.40	+12.73	+7.56	0.68	2.81
MERRILL LYNCH	5	2	2	1.41	2.66	+3.77	3.41	6.43	-	-	208.89	-
WACHOVIA BANK	5	19	17	+10.10	+20.21	+5.97	+7.12	+14.24	2.86	3.34	+0.77	1.63
BNP PARIBAS	4	9	8	+10.05	+26.05	+7.81	+7.04	+18.24	+4.79	-	-	+8.61
HSBC BANK	4	14	12	+3.57	+9.28	+5.91	+1.30	+3.37	5.01	+0.77	+0.77	4.00

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	9128283F US TREASURY N/B 11/27 2.25	Govt	03/03/2020 11/15/2027	NEUBERGER BERMA DEUTSCHE BANK	US	USD	10,803,940	109.852	109.261	+53.80	+58,127
B	912810SL US TREASURY N/B 02/50 2	Govt	03/05/2020 02/15/2050	NEUBERGER BERMA GOLDMAN SACHS	US	USD	6,254,671	110.800	109.898	+81.39	+50,904
S	01F02244 FNCL 2.5 4/12	Mtge	03/20/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	4,135,714	100.871	102.100	+121.83	+50,385
B	01F02245 FNCL 2.5 5/12	Mtge	03/23/2020 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	6,082,070	103.086	102.510	+55.87	+33,980
S	01F03064 FNCL 3 4/12	Mtge	03/26/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	15,990,891	104.516	104.700	+17.64	+28,209
B	01F03064 FNCL 3 4/12	Mtge	03/02/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	11,125,688	103.016	102.790	+21.90	+24,368
S	64034TAA NELNET STUDENT LOAN TRUST NS	Mtge	03/11/2020 09/26/2067	METROPOLITAN WE JP MORGAN CHASE	US	USD	1,123,502	98.324	100.300	+200.94	+22,575
S	912810QX US TREASURY N/B	Govt	01/28/2020 08/15/2042	NEUBERGER BERMA JP MORGAN CHASE	US	USD	5,258,662	112.125	112.584	+40.97	+21,544
S	01F02244 FNCL 2.5 4/12	Mtge	03/19/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,910,988	100.379	101.100	+71.84	+20,912
B	01F02245 FNCL 2.5 5/12	Mtge	03/23/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	4,018,218	103.031	102.510	+50.59	+20,329
B	912810SM TSY INFL IX N/B 02/50 0.25	Govt	02/21/2020 02/15/2050	METROPOLITAN WE JP MORGAN CHASE	US	USD	4,100,399	101.211	100.714	+49.06	+20,118
B	06051GJA BANK OF AMERICA CORP SR UNSE	Corp	03/17/2020 03/20/2051	METROPOLITAN WE BANK OF AMERICA	US	USD	1,760,000	100.000	98.872	+112.84	+19,860
S	01F03264 FNCL 3.5 4/11	Mtge	03/27/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	6,454,697	105.383	105.700	+30.10	+19,428
B	01F02245 FNCL 2.5 5/12	Mtge	03/17/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	2,928,486	102.754	102.100	+63.64	+18,636



B	01F02244 FNCI 2.5 4/12	Mtge	03/09/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	6,549,340	103.547	103.260	+27.71	+18,145
---	---------------------------	------	--------------------------	------------------------------	----	-----	-----------	---------	---------	--------	---------

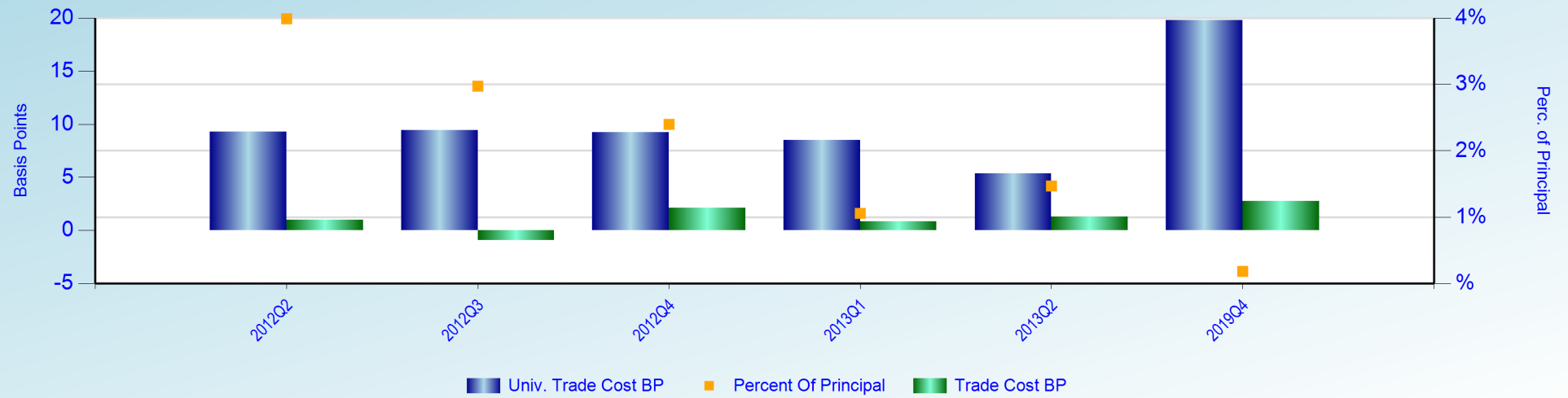


TRADE DETAILS

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	912810SK US TREASURY N/B 11/49 2.375	Govt	03/17/2020 11/15/2049	METROPOLITAN WE BANK OF AMERICA	US	USD	1,358,875	121.328	115.470	482.83	65,611
S	912810SK US TREASURY N/B 11/49 2.375	Govt	03/23/2020 11/15/2049	METROPOLITAN WE WELLS FARGO	US	USD	2,217,600	126.000	122.320	292.04	64,763
S	912810SK US TREASURY N/B 11/49 2.375	Govt	03/05/2020 11/15/2049	NEUBERGER BERMA GOLDMAN SACHS	US	USD	6,485,368	119.656	118.723	77.96	50,558
B	01F02245 FNCI 2.5 5/12	Mtge	03/20/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	4,129,468	100.719	101.950	122.25	50,481
B	458140BM INTEL CORP SR UNSECURED 03/5	Corp	03/20/2020 03/25/2050	METROPOLITAN WE BANK OF AMERICA	US	USD	1,558,268	99.889	102.858	297.18	46,309
S	01F02244 FNCI 2.5 4/12	Mtge	03/23/2020 12/31/2099	METROPOLITAN WE GOLDMAN SACHS	US	USD	6,091,750	103.250	102.670	56.17	34,220
B	95000U2M WELLS FARGO + COMPANY SR UNS	Corp	03/23/2020 04/04/2051	METROPOLITAN WE WELLS FARGO	US	USD	3,140,000	100.000	101.060	106.03	33,294
S	912810RK US TREASURY N/B 02/45 2.5	Govt	03/03/2020 02/15/2045	NEUBERGER BERMA JP MORGAN CHASE	US	USD	3,683,239	117.675	116.634	88.46	32,583
B	912810RB US TREASURY N/B 05/43 2.875	Govt	01/28/2020 05/15/2043	NEUBERGER BERMA JP MORGAN CHASE	US	USD	5,168,077	114.338	114.847	44.51	23,001
S	912810SK US TREASURY N/B 11/49 2.375	Govt	03/12/2020 11/15/2049	METROPOLITAN WE GOLDMAN SACHS	US	USD	491,515	127.666	121.900	451.67	22,200
S	01F02244 FNCI 2.5 4/12	Mtge	03/25/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	8,895,527	104.041	103.790	24.15	21,482
B	01F02245 FNCI 2.5 5/12	Mtge	03/19/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	2,906,797	100.234	100.950	71.39	20,753
S	01F02244 FNCI 2.5 4/12	Mtge	03/23/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	4,024,312	103.188	102.670	50.15	20,183
S	01F02244 FNCI 2.5 4/12	Mtge	03/17/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	2,933,384	102.926	102.260	64.69	18,975
S	01F02264 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	03/25/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	5,595,750	103.625	103.290	32.33	18,090



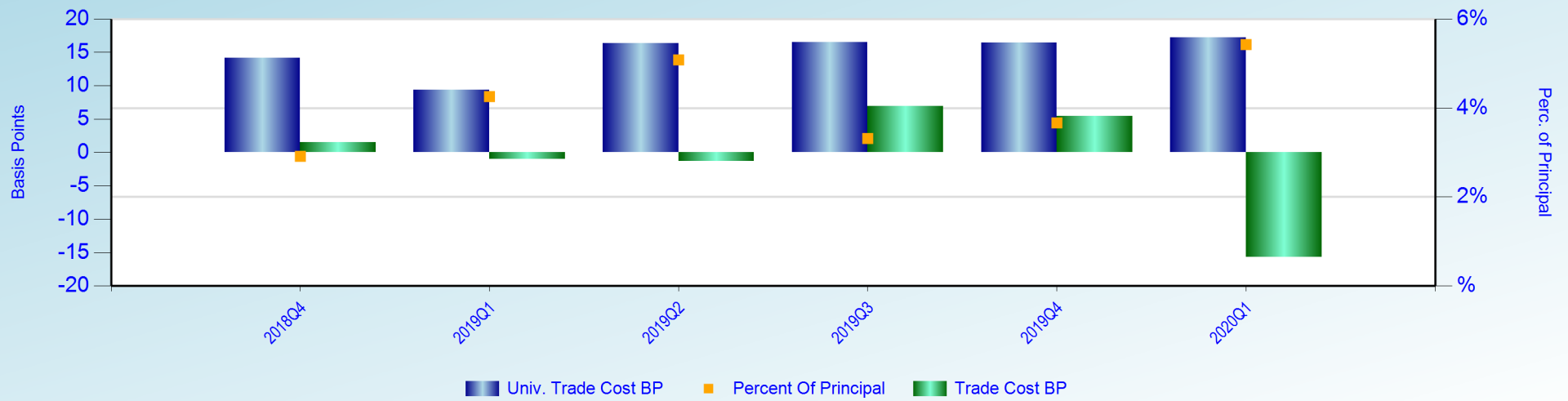
AGENCIES



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	57	158	104	89.53	15.65	+17.24	188.16	32.89

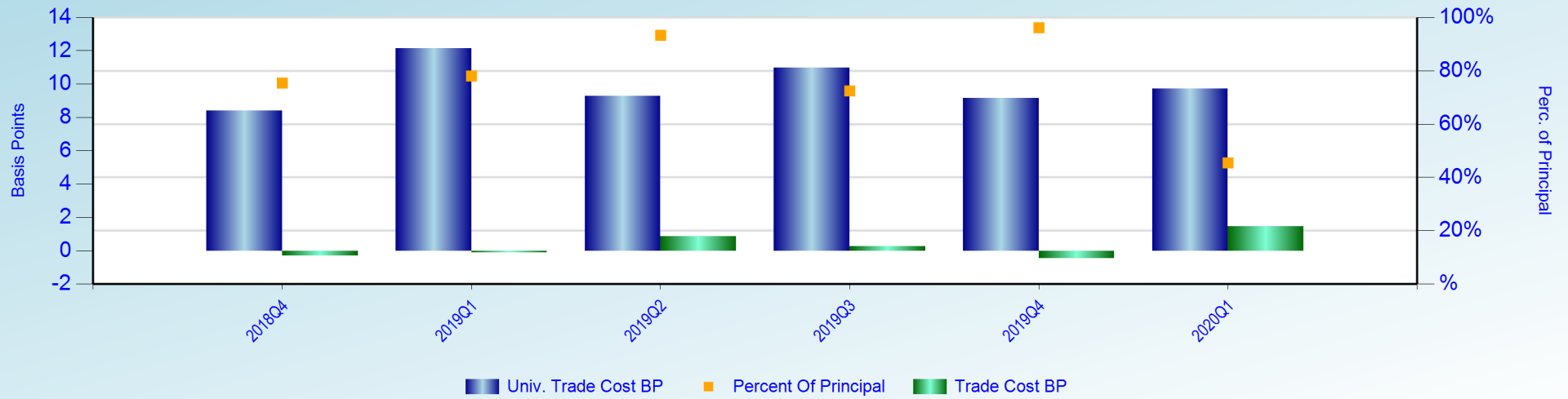
CORPORATES



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	479	396	62	+69.50	+1.45	+9.73	396.58	8.28

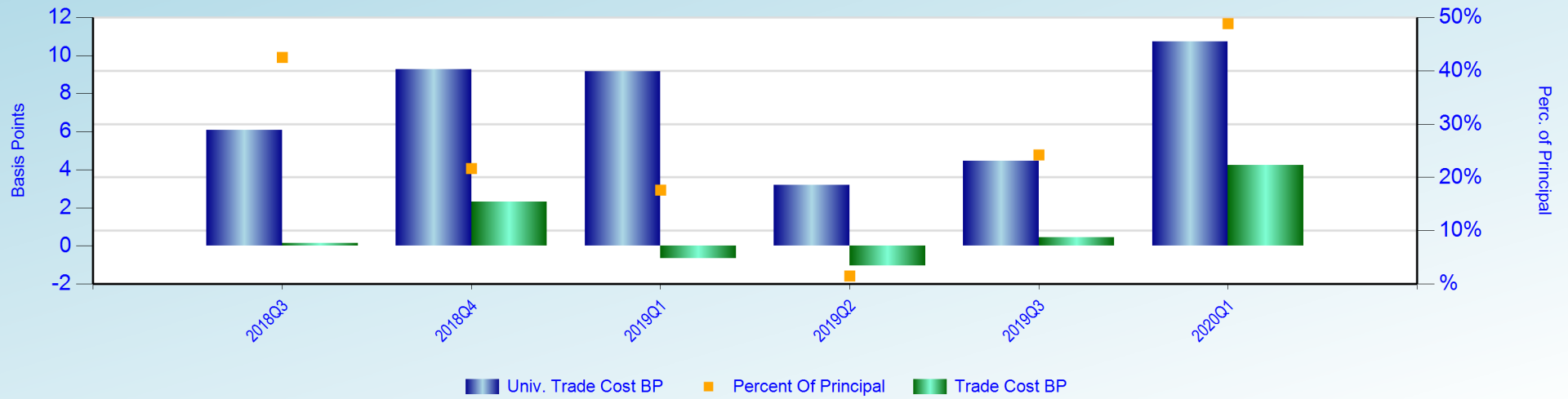
GOVERNMENTS



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
MORTGAGES	515	132	46	+217.64	+4.23	+10.73	334.54	6.50

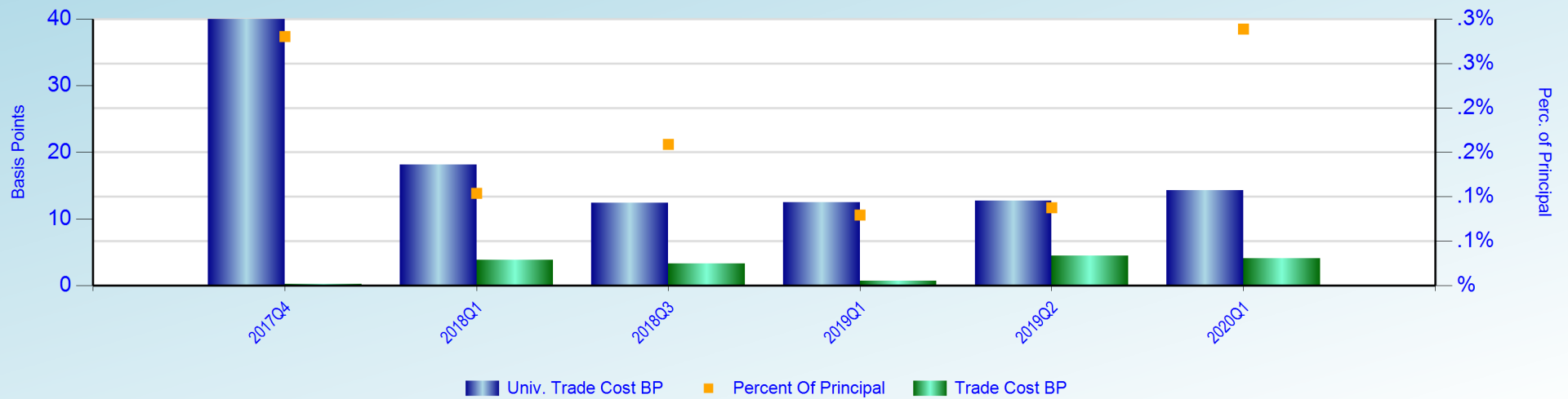
MORTGAGES



BOND TYPE PERFORMANCE

Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
MUNICIPALS	3	5	5	+1.26	+4.13	+14.29	3.09	10.16

MUNICIPALS



RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
NR	513	129	43	+193.03	+3.76	+10.72	356.97	6.96
AA+	1	1	1	+22.58	+200.94	+12.57	+21.16	+188.37
AAA	<1	1	1	+1.89	+49.50	+19.84	+1.13	+29.66
BB	<1	1	1	+0.14	+296.40	+12.57	+0.13	+283.83



RATING BY EACH BOND TYPE

GOVERNMENTS - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	479	396	62	+69.50	+1.45	+9.73	396.58	8.28

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade		Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP	
A-	14	17	13	0.06	0.05	+11.48	15.57	11.53	
BBB+	10	23	17	1.13	1.13	+21.65	22.78	22.78	
BBB	9	35	23	4.41	5.02	+26.59	27.77	31.61	
A+	7	8	6	49.11	75.11	+11.74	56.79	86.84	
BBB-	6	32	19	8.26	14.74	+19.78	19.35	34.52	
A	4	7	6	10.06	25.77	+22.66	18.91	48.43	
AA-	4	17	4	4.10	11.06	+18.03	10.77	29.09	
AA	2	6	6	16.47	69.21	+10.36	18.94	79.57	
BB+	1	3	3	+0.52	+4.24	+1.64	+0.32	+2.60	
AA+	<1	3	2	+2.79	+46.02	+8.17	+2.30	+37.85	
BB-	<1	4	2	+0.73	+13.88	+4.13	+0.51	+9.76	
BB	<1	2	2	+0.07	+2.65	+8.51	0.15	5.86	
A- *-	<1	1	1	0.04	2.63	+15.48	0.27	18.11	



RATING BY EACH BOND TYPE

MUNICIPALS - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
AA-	1	1	1	+0.06	+0.52	+12.53	1.42	12.01
AA	<1	1	1	+0.89	+12.61	+12.04	+0.04	+0.56
AA+	<1	2	2	+1.04	+15.00	+20.35	0.37	5.35
A	<1	1	1	0.74	15.99	+13.14	1.34	29.14

HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
01/02/2020-03/31/2020	1,053,957	691	217	+198.86	+1.89	+10.64	922.37	8.75
Year-Ending 2020	1,053,957	691		+198.86	+1.89	+10.64	922.37	8.75
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
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

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
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
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



HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
04/01/2010-06/30/2010	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	132	87	MARKETAXESS-TRADES	92.00 %
	14	12	BLOOMBERGTERMINAL	3.45 %
	7	6	BVAL	2.28 %
	3	3	ISSUE PRICE	2.06 %
	2	1	MARKETAXESS-EMQUOTES	0.21 %
GOVERNMENTS	385	61	TULLET PREBON	98.89 %
	10	2	BLOOMBERGTERMINAL	0.83 %
	1	1	BVAL	0.28 %
MORTGAGES	132	46	BLOOMBERGTERMINAL	100.00 %
MUNICIPALS	5	5	MSRB-TRADES	100.00 %

DISCLAIMER

State Street Corporation and its subsidiaries and affiliates, including Elkins/McSherry, LLC (“State Street”), provide products and services to professional and institutional clients and this report and information (“Report”) is provided solely for general, marketing and/or informational purposes and is subject to these terms and conditions, including that the Report does not constitute investment research or investment, legal, regulatory, or tax advice. Nothing herein is an offer or solicitation to buy or sell any product, service or securities or any financial instrument and this does not create or constitute any binding contractual commitment or obligations for State Street of any kind. Not all products and features a may be available in all jurisdictions. Any opinions expressed or other information in the Report are subject to change without notice. The Report has been prepared and obtained from sources believed to be reliable at the time of preparation, however, it is provided “as-is” and State Street makes no guarantee, representation, or warranty of any kind including but not limited to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, etc. This Report is not intended to be relied upon by any person or entity. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs arising, either direct or consequential, from or in connection with the use of the Report. No permission is granted to reprint, sell, copy, distribute, or modify any of the Report, in any form or by any means without the prior written consent of State Street. The Report may contain certain statements that may be deemed forward-looking statements. Please note that any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Investing involves risk, including the risk of loss of principal. Diversification does not ensure a profit or guarantee against loss. The Report does not take into account any client’s particular investment objectives, strategies, or tax and legal status, relevant regulations, nor does it purport to be comprehensive or intended to replace the exercise of a client’s or investor’s own careful independent review regarding any corresponding investment decision or related analysis.

Copyright © 2020 State Street Corporation, All rights reserved.



SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End March 31, 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 January 02,2020 to March 31,2020. The analysis included trading of 157 trades in 84 different issues representing \$75,943,024 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.

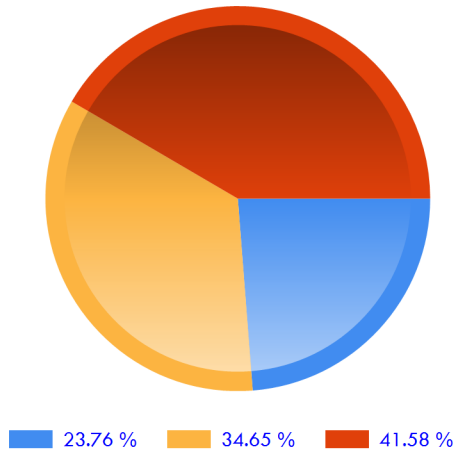
Results:

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		Q4	Q3	Q2	Q1
							(Thous. \$)	BP	2019	2019	2019	2019
BUYS	43	79	53	+2.73	+0.64	+4.94	18.38	4.30	5.06	4.26	3.89	1.20
SELLS	33	78	42	3.78	1.14	+4.92	20.11	6.06	+0.47	0.99	+2.14	+4.01
GRAND TOTAL	76	157	84	1.05	0.14	+4.93	38.49	5.07	2.22	3.26	1.18	+1.53

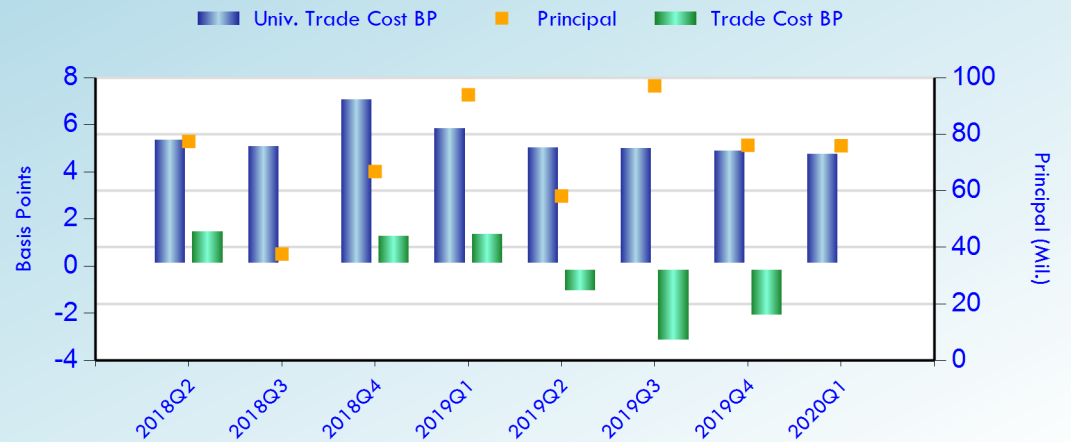
EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q4 2019	Q3 2019	Q2 2019	Q1 2019
Mortgages	32	39	18	6.46	2.04	+4.94	22.10 6.98	-	16.02	14.45	40.89
Governments	26	35	17	+20.38	+7.72	+4.91	+7.41 +2.81	6.76	1.15	+1.06	+5.06
Corporates	18	83	49	14.97	8.37	+4.94	23.80 13.31	+8.24	6.57	1.00	1.10

Bonds by Principal Traded



Historical Trade Cost Trend

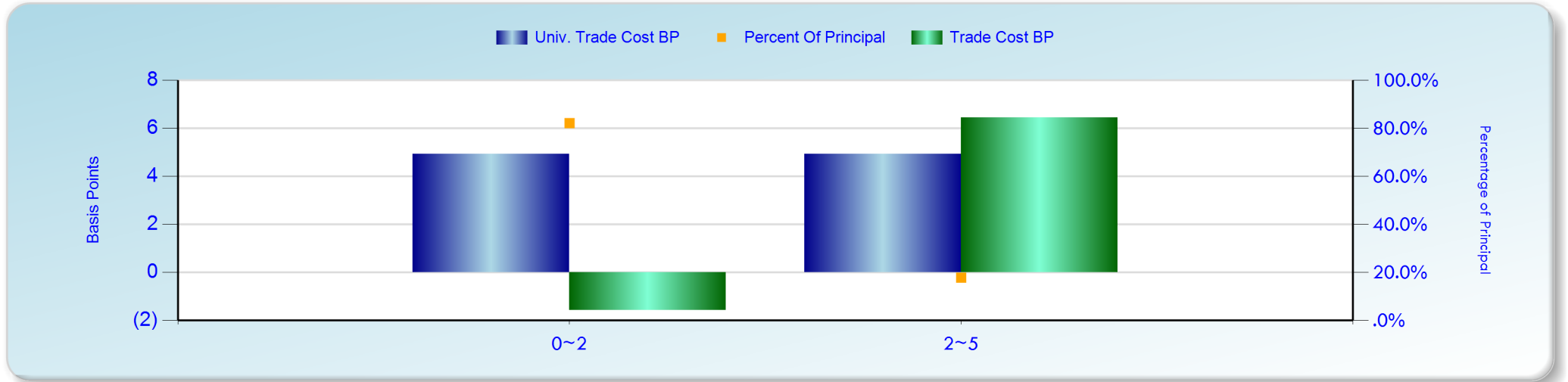




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

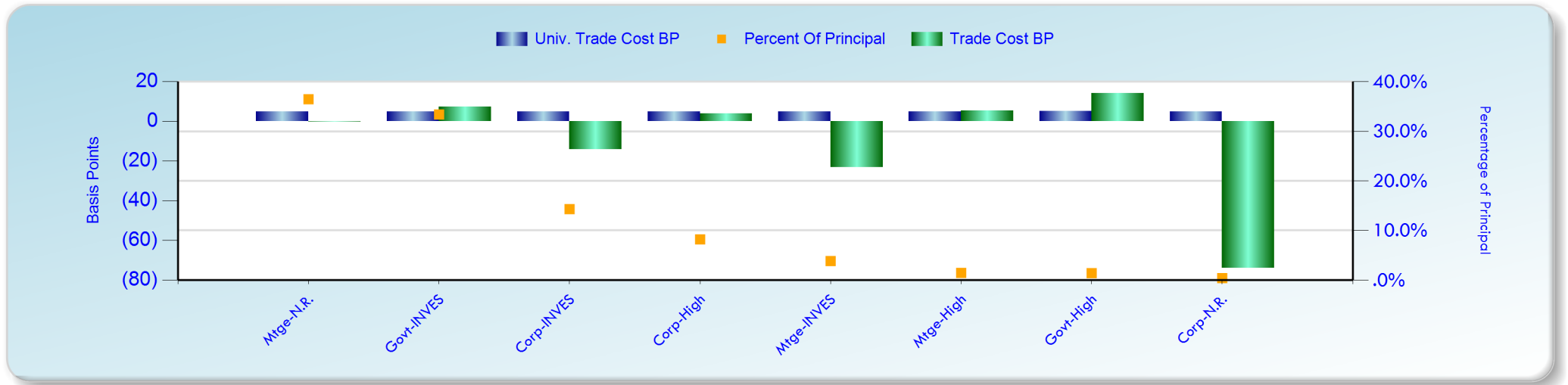
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
0~2	62	152	84	9.77	1.57	+4.93	40.53	6.50
2~5	14	5	2	+8.72	+6.44	+4.94	+2.03	+1.50



EXECUTIVE SUMMARY

GRADING SUMMARY

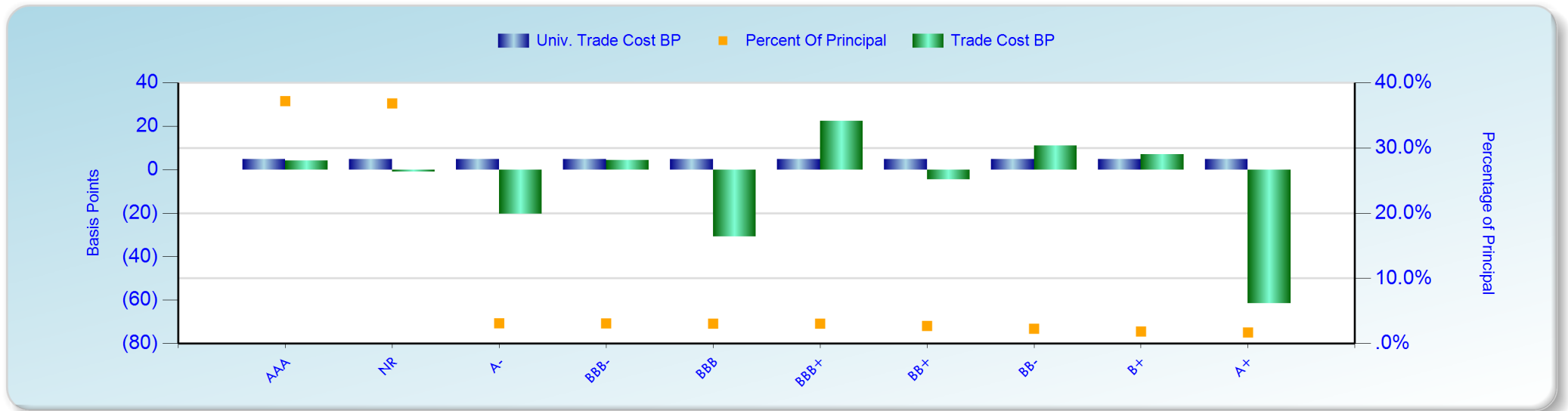
Grading	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	Cost Diff. from Universe BP
Mtge-N.R.	28	33	14	0.29	0.11	+4.94	13.97	5.05
Govt-INVESTMENT GRADE	25	34	16	+18.90	+7.45	+4.90	+6.47	+2.55
Corp-INVESTMENT GRADE	11	41	21	15.26	14.06	+4.94	20.62	19.00
Corp-High Yield	6	37	26	+2.41	+3.88	+4.94	0.66	1.06
Mtge-INVESTMENT GRADE	3	4	3	6.73	23.20	+4.94	8.17	28.14
Mtge-High Yield	1	2	1	+0.57	+5.27	+4.94	+0.04	+0.33
Govt-High Yield	1	1	1	+1.48	+14.17	+5.13	+0.94	+9.04
Corp-N.R.	<1	1	1	2.19	73.96	+4.94	2.34	78.90



EXECUTIVE SUMMARY

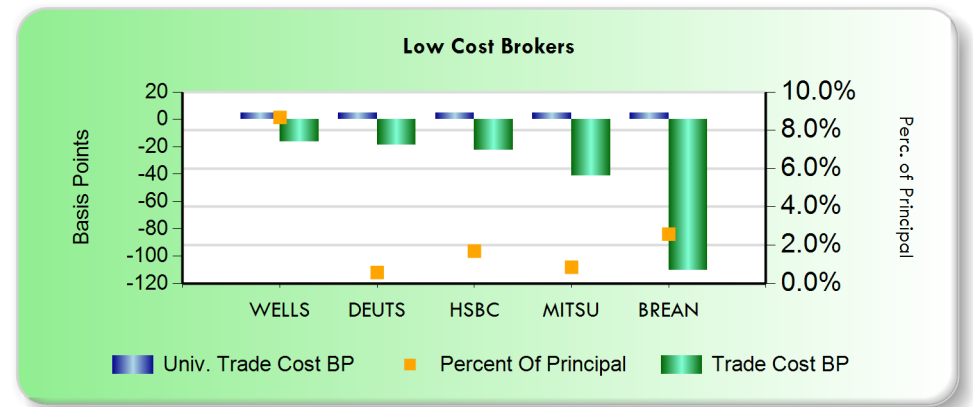
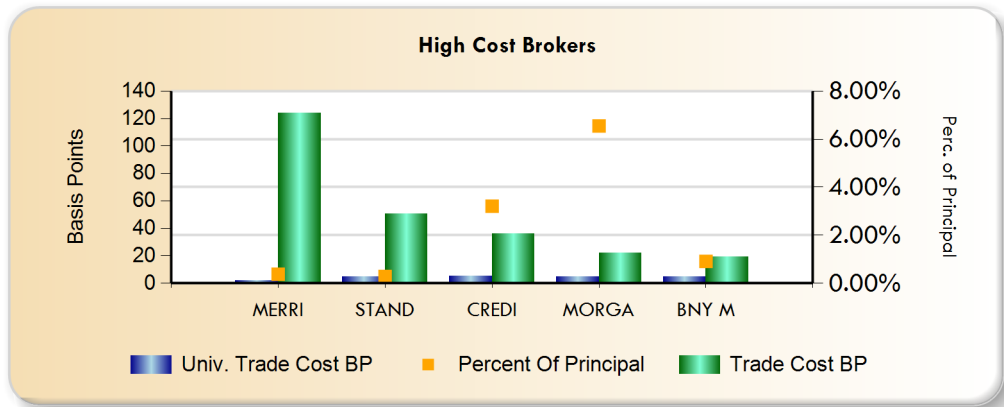
RATING SUMMARY

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	28.25	38	19	+12.17	+4.31	+4.91	1.70	0.60
NR	27.99	34	15	2.49	0.89	+4.94	16.31	5.83
A-	2.37	5	5	4.83	20.38	+4.94	6.00	25.32
BBB-	2.35	25	6	+1.04	+4.44	+4.94	0.12	0.50
BBB	2.33	4	3	7.16	30.77	+4.94	8.31	35.71
BBB+	2.33	3	3	+5.20	+22.36	+4.94	+4.05	+17.42
BB+	2.06	6	6	0.94	4.58	+4.94	1.96	9.52
BB-	1.73	16	10	+1.92	+11.08	+4.94	+1.06	+6.14
B+	1.41	6	3	+1.00	+7.13	+4.94	+0.31	+2.19
A+	1.30	2	2	7.97	61.54	+4.94	8.61	66.48



EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)								
MERRILL LYNCH	<1	2	2	+3.57	+123.84	+1.76	+3.52	+122.08
STANDARD BANK	<1	1	1	+1.07	+50.38	+4.94	+0.97	+45.44
CREDIT SUISSE	2	6	4	+8.75	+35.90	+5.02	+7.53	+30.88
MORGAN STANLEY	5	12	10	+11.01	+22.14	+4.94	+8.55	+17.20
BNY MELLON	<1	4	4	+1.34	+19.30	+4.94	+0.99	+14.36
5 LOWEST COST BROKERS (Sorted By Trade Cost BP)								
WELLS FARGO	7	17	13	10.83	16.44	+4.94	14.08	21.38
DEUTSCHE BANK	<1	3	3	0.80	18.67	+4.94	1.02	23.61
HSBC BANK	1	3	2	2.85	22.27	+4.94	3.48	27.21
MITSUBISHI UFJ SECS	<1	2	2	2.66	41.45	+4.94	2.98	46.39
BREAN CAPITAL LLC	2	3	2	21.58	110.33	+4.94	22.54	115.27



COUNTRY PERFORMANCE

COUNTRY SUMMARY								TRADE COST HISTORICAL PERFORMANCE			
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q4 2019	Q3 2019	Q2 2019	Q1 2019
UNITED STATES	75	155	82	2.71	0.36	+4.94	39.62 5.30	2.31	3.36	1.23	+1.51
GERMANY	1	1	1	+1.48	+14.17	+5.13	+0.94 +9.04	-	-	+6.46	-
UNITED KINGDOM	<1	1	1	+0.18	+9.57	+0.10	+0.18 +9.47	-	+7.85	-	+12.06



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	43	79	53	+2.73	+0.64	+4.94	18.38	4.30
GERMANY	SELLS	1	1	1	+1.48	+14.17	+5.13	+0.94	+9.04
UNITED KINGDOM	SELLS	<1	1	1	+0.18	+9.57	+0.10	+0.18	+9.47

Manager PERFORMANCE

Manager PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q4 2019	Q3 2019	Q2 2019	Q1 2019
PRUDENTIAL INVESTMEN	76	157	84	1.05	0.14	+4.93	38.49 5.07	2.22	3.26	1.18	+1.53

BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q4 2019	Q3 2019	Q2 2019	Q1 2019
BANK OF AMERICA	13	21	13	4.93	3.85	+4.94	11.27	8.79	3.57	10.71	4.57	13.76
JP MORGAN CHASE	12	19	17	+18.57	+15.76	+4.94	+12.75	+10.82	5.79	0.53	5.28	+22.64
CITADEL SECURITIES	10	8	4	0.20	0.20	+4.94	4.98	5.14	+0.21	+0.17	+0.06	0.21
NOMURA	8	6	3	0.46	0.60	+4.94	4.28	5.54	15.68	+2.03	+1.21	+0.91
WELLS FARGO	7	17	13	10.83	16.44	+4.94	14.08	21.38	7.08	+1.88	-	14.37
BARCLAYS	6	22	15	4.00	6.85	+4.94	6.89	11.79	+2.41	16.43	+2.61	+6.57
GOLDMAN SACHS	5	15	13	+2.56	+4.99	+4.94	+0.02	+0.05	+2.46	+10.71	+11.54	+0.89
MORGAN STANLEY	5	12	10	+11.01	+22.14	+4.94	+8.55	+17.20	2.06	+2.77	17.96	+1.39
CITIGROUP	3	7	7	+0.18	+0.60	+4.94	1.30	4.34	11.29	6.46	3.25	+10.15
CREDIT SUISSE	2	6	4	+8.75	+35.90	+5.02	+7.53	+30.88	+1.60	0.75	+5.67	+6.19
BREAN CAPITAL LLC	2	3	2	21.58	110.33	+4.94	22.54	115.27	+5.55	-	-	-
HSBC BANK	1	3	2	2.85	22.27	+4.94	3.48	27.21	0.38	+24.98	+40.75	+4.35
BNY MELLON	<1	4	4	+1.34	+19.30	+4.94	+0.99	+14.36	+1.20	+16.83	20.19	+0.00
MITSUBISHI UFJ SECS	<1	2	2	2.66	41.45	+4.94	2.98	46.39	-	-	-	-
DEUTSCHE BANK	<1	3	3	0.80	18.67	+4.94	1.02	23.61	0.25	+12.42	3.78	23.87
MERRILL LYNCH	<1	2	2	+3.57	+123.84	+1.76	+3.52	+122.08	+0.00	+15.29	-	1.35
STIFEL NICOLAUS & CO	<1	2	1	+0.34	+14.43	+4.94	+0.22	+9.49	3.80	10.52	-	-
STANDARD BANK	<1	1	1	+1.07	+50.38	+4.94	+0.97	+45.44	-	-	-	-
RBC CAPITAL MARKETS	<1	3	2	0.21	11.90	+4.94	0.30	16.84	+19.75	0.04	47.90	+0.31
CANTOR FITZGERALD	<1	1	1	+0.10	+14.97	+4.94	+0.07	+10.03	+6.69	+1.80	12.61	-

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	912810RC US TREASURY N/B 08/43 3.625	Govt	03/03/2020 08/15/2043	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	3,238,289	139.281	138.906	+26.92	+8,719
B	912810RD US TREASURY N/B 11/43 3.75	Govt	02/25/2020 11/15/2043	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	1,349,156	138.375	137.520	+61.77	+8,333
S	36179UUJ GNMA II POOL MA5985 G2 06/49	Mtge	01/15/2020 06/20/2049	PRUDENTIAL INVE CREDIT SUISSE	US	USD	1,033,501	103.340	104.090	+72.59	+7,502
B	3137BMJF FREDDIE MAC FHR 4532 DA	Mtge	02/20/2020 09/15/2042	PRUDENTIAL INVE WELLS FARGO	US	USD	577,045	103.328	102.370	+92.73	+5,351
S	025816BU AMERICAN EXPRESS CO SR UNSEC	Corp	03/11/2020 05/17/2021	PRUDENTIAL INVE MORGAN STANLEY	US	USD	1,446,057	101.835	102.137	+29.61	+4,281
B	912810RC US TREASURY N/B 08/43 3.625	Govt	02/24/2020 08/15/2043	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	1,121,018	135.063	134.611	+33.40	+3,745
S	36179UUJ GNMA II POOL MA5985 G2 06/49	Mtge	01/15/2020 06/20/2049	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	516,965	103.383	104.090	+68.41	+3,536
S	67066GAJ NVIDIA CORP SR UNSECURED 04/	Corp	03/26/2020 04/01/2060	PRUDENTIAL INVE MERRILL LYNCH	US	USD	98,675	103.869	107.437	+343.47	+3,389
B	38379WM2 GOVERNMENT NATIONAL MORTGAGE	Mtge	01/23/2020 05/20/2046	PRUDENTIAL INVE MORGAN STANLEY	US	USD	1,032,734	103.273	102.980	+28.41	+2,934
B	01F03262 FNCL 3.5 2/11	Mtge	01/08/2020 01/01/1900	PRUDENTIAL INVE NOMURA	US	USD	2,573,535	102.941	102.850	+8.88	+2,285
S	50077LAY KRAFT HEINZ FOODS CO COMPANY	Corp	02/25/2020 10/01/2049	PRUDENTIAL INVE MORGAN STANLEY	US	USD	162,424	98.439	99.710	+129.12	+2,097
S	01F03262 FNCL 3.5 2/11	Mtge	01/23/2020 01/01/1900	PRUDENTIAL INVE BANK OF AMERICA	US	USD	3,090,253	103.010	103.070	+5.97	+1,846
S	BD2CBK1 HELLENIC REPUBLIC BONDS REGS	Govt	02/04/2020 01/30/2042	PRUDENTIAL INVE CREDIT SUISSE	GER	EUR	1,041,856	139.692	139.890	+14.17	+1,477
B	50077LAB KRAFT HEINZ FOODS CO COMPANY	Corp	02/13/2020 06/01/2046	PRUDENTIAL INVE MORGAN STANLEY	US	USD	251,269	96.642	96.089	+57.22	+1,438



S	61945CAD MOSAIC CO SR UNSECURED 11/33	Corp	01/15/2020 11/15/2033	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	754,273	116.042	116.224	+15.64	+1,180
---	--	------	--------------------------	----------------------------------	----	-----	---------	---------	---------	--------	--------

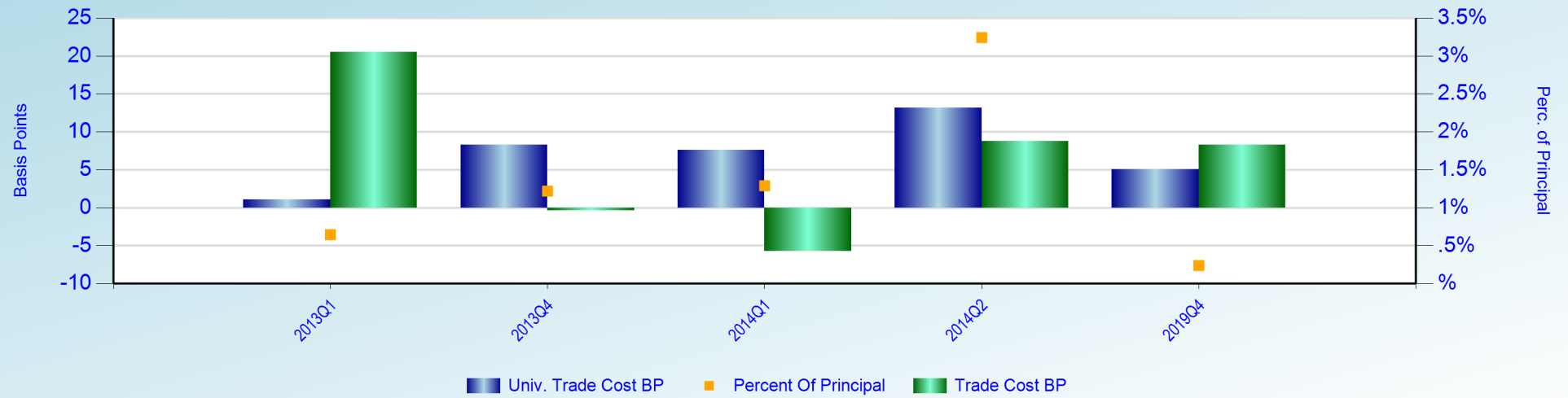


TRADE DETAILS

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	3137BQYV FHLMC MULTIFAMILY STRUCTURED	Mtge	01/08/2020 05/25/2026	PRUDENTIAL INVE BREAN CAPITAL L	US	USD	669,195	6.700	6.500	298.22	19,957
B	68389XBY ORACLE CORP SR UNSECURED 04/	Corp	03/30/2020 04/01/2060	PRUDENTIAL INVE WELLS FARGO	US	USD	647,497	99.615	100.642	103.14	6,678
B	45138LBF IDAHO POWER CO 1ST MORTGAGE	Corp	03/31/2020 03/01/2048	PRUDENTIAL INVE WELLS FARGO	US	USD	585,879	113.763	115.045	112.66	6,600
S	74824DAA QUEENS CENTER MORTGAGE TRUST	Mtge	02/13/2020 01/11/2037	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,265,531	105.461	105.040	39.91	5,051
B	682680BC ONEOK INC COMPANY GUAR 03/50	Corp	03/06/2020 03/15/2050	PRUDENTIAL INVE BARCLAYS	US	USD	885,000	100.000	100.398	39.79	3,522
B	30161NAY EXELON CORP SR UNSECURED 04/	Corp	03/30/2020 04/15/2050	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	124,857	99.886	102.702	281.96	3,520
B	912810SK US TREASURY N/B 11/49 2.375	Govt	03/26/2020 11/15/2049	PRUDENTIAL INVE HSBC BANK	US	USD	250,260	122.078	123.650	128.76	3,222
S	01F03262 FNCL 3.5 2/11	Mtge	01/08/2020 01/01/1900	PRUDENTIAL INVE NOMURA	US	USD	2,573,535	102.941	102.850	8.88	2,285
B	437076CD HOME DEPOT INC SR UNSECURED	Corp	03/26/2020 04/15/2050	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	296,574	98.858	99.589	73.96	2,193
S	912810SK US TREASURY N/B 11/49 2.375	Govt	03/05/2020 11/15/2049	PRUDENTIAL INVE BARCLAYS	US	USD	417,675	119.336	118.723	51.33	2,144
B	00115AAM AEP TRANSMISSION CO LLC SR U	Corp	03/30/2020 04/01/2050	PRUDENTIAL INVE MITSUBISHI UFJ	US	USD	119,956	99.964	101.511	154.75	1,856
B	01F03262 FNCL 3.5 2/11	Mtge	01/23/2020 01/01/1900	PRUDENTIAL INVE BANK OF AMERICA	US	USD	3,090,253	103.008	103.070	5.97	1,846
S	060352AE BANK BANK 2017 BNK6 A4	Mtge	02/14/2020 07/15/2060	PRUDENTIAL INVE BREAN CAPITAL L	US	USD	1,010,463	107.496	107.330	15.45	1,561
B	172967MK CITIGROUP INC JR SUBORDINA 1	Corp	01/15/2020 12/30/1899	PRUDENTIAL INVE CITIGROUP	US	USD	150,000	100.000	100.904	90.40	1,356
B	682680BC ONEOK INC COMPANY GUAR 03/50	Corp	03/05/2020 03/15/2050	PRUDENTIAL INVE BARCLAYS	US	USD	564,163	99.852	100.082	23.06	1,301



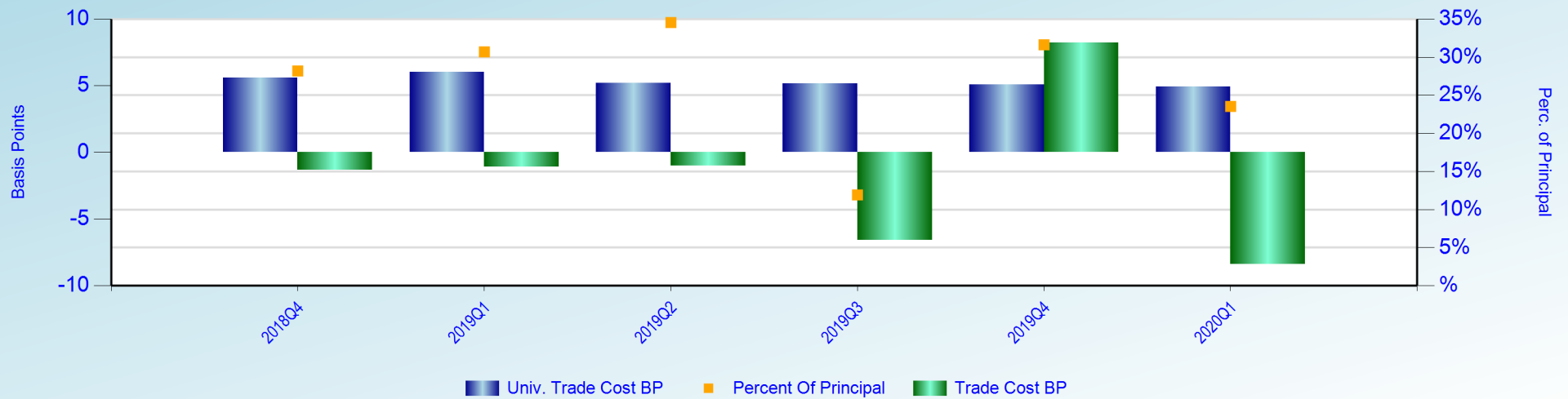
AGENCIES



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	18	83	49	14.97	8.37	+4.94	23.80	13.31

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	26	35	17	+20.38	+7.72	+4.91	+7.41	+2.81

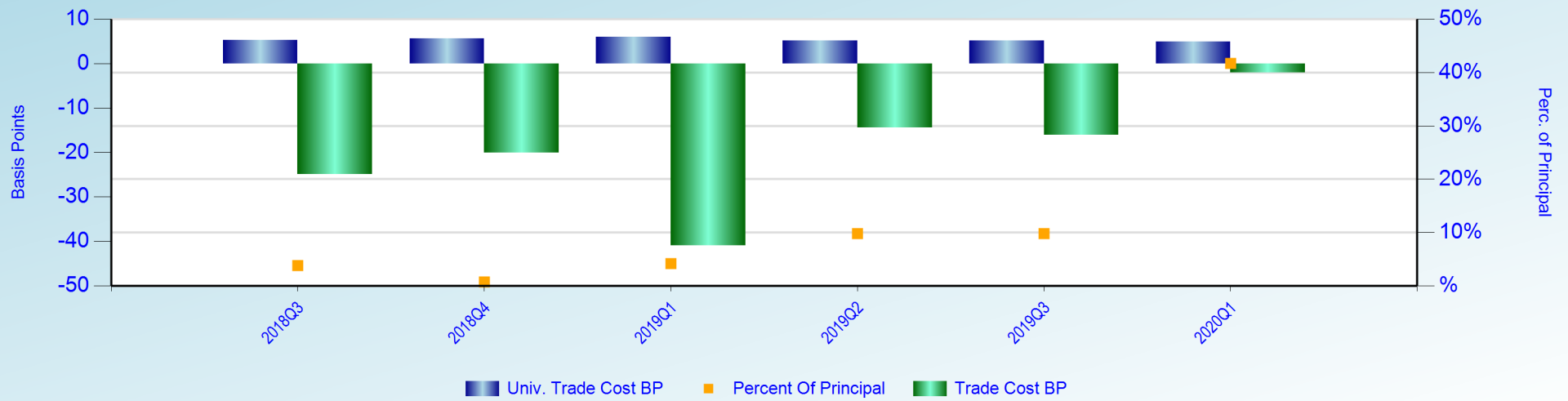
GOVERNMENTS



BOND TYPE PERFORMANCE

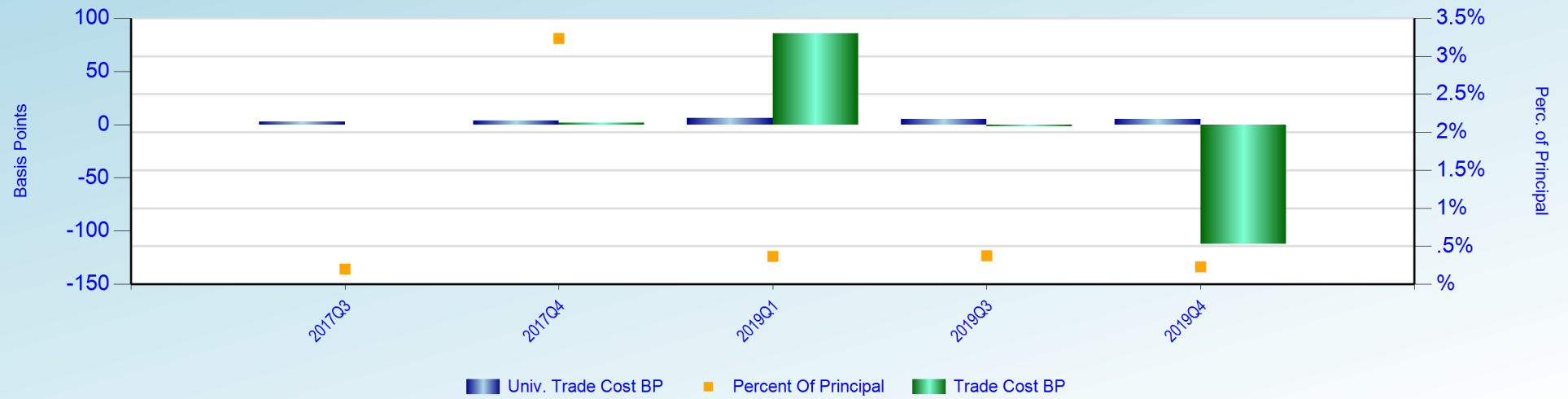
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous.\$)	BP
MORTGAGES	32	39	18	6.46	2.04	+4.94	22.10	6.98

MORTGAGES



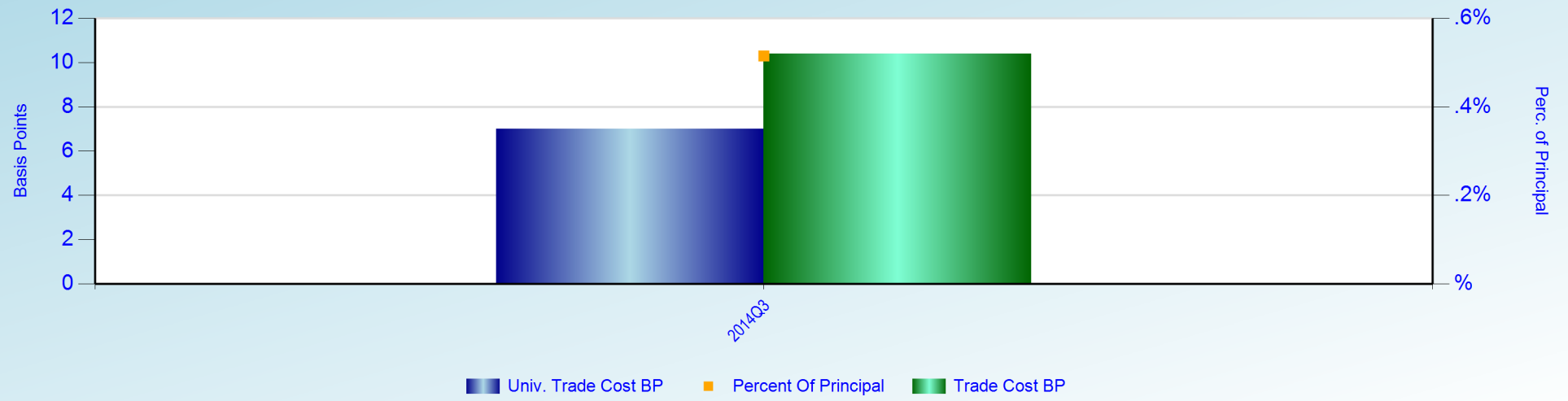


MUNICIPALS





UNCLASSIFIED





RATING BY EACH BOND TYPE

MORTGAGES - RATING DETAILS

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$)	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
NR	28	33	14	0.29	0.11	+4.94	13.97	5.05
AAA	3	4	3	6.73	23.20	+4.94	8.17	28.14
B+	1	2	1	+0.57	+5.27	+4.94	+0.04	+0.33



RATING BY EACH BOND TYPE

GOVERNMENTS - 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
AAA	25	34	16	+18.90	+7.45	+4.90	+6.47	+2.55
B	1	1	1	+1.48	+14.17	+5.13	+0.94	+9.04

RATING BY EACH BOND TYPE

CORPORATES - RATING DETAILS

Rating	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost		Univ. Trade		Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP	
A-	2	5	5	4.83	20.38	+4.94	6.00	25.32	
BBB-	2	25	6	+1.04	+4.44	+4.94	0.12	0.50	
BBB	2	4	3	7.16	30.77	+4.94	8.31	35.71	
BBB+	2	3	3	+5.20	+22.36	+4.94	+4.05	+17.42	
BB+	2	6	6	0.94	4.58	+4.94	1.96	9.52	
BB-	2	16	10	+1.92	+11.08	+4.94	+1.06	+6.14	
A+	1	2	2	7.97	61.54	+4.94	8.61	66.48	
BB	1	3	3	+0.38	+3.57	+4.94	0.15	1.37	
B-	<1	6	3	+0.52	+6.20	+4.94	+0.11	+1.26	
B *	<1	4	1	+0.07	+1.34	+4.94	0.19	3.60	
B+	<1	4	2	+0.43	+13.28	+4.94	+0.27	+8.34	
NR	<1	1	1	2.19	73.96	+4.94	2.34	78.90	
B	<1	1	1	+0.00	+0.00	+4.94	0.06	4.94	
AA-	<1	1	1	0.87	73.04	+4.94	0.93	77.98	
CCC-	<1	1	1	+0.10	+14.97	+4.94	+0.07	+10.03	
A	<1	1	1	0.67	111.50	+4.94	0.70	116.44	



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	32	39	18	6.46	2.04	+4.94	22.10	6.98



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	25	33	15	+18.72	+7.44	+4.94	+6.29	+2.50
GERMANY	1	1	1	+1.48	+14.17	+5.13	+0.94	+9.04
UNITED KINGDOM	<1	1	1	+0.18	+9.56	+0.10	+0.18	+9.46



COUNTRIES BY EACH BOND TYPE

CORPORATES								
Country	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	18	83	49	14.97	8.37	+4.94	23.80	13.31

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
01/02/2020-03/31/2020	75,943	157	84	1.05	0.14	+4.93	38.49	5.07
Year-Ending 2020	75,943	157		1.05	0.14	+4.93	38.49	5.07
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
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

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
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
10/01/2010-12/31/2010	57,022	27	11	152.30	26.71	+8.46	200.51	35.17



HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Year-Ending 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	50	34	MARKETAXESS-TRADES	77.63 %
	6	6	ISSUE PRICE	8.81 %
	21	5	BLOOMBERGTERMINAL	7.84 %
	6	6	BVAL	5.72 %
GOVERNMENTS	28	10	TULLET PREBON	90.54 %
	3	3	BLOOMBERGTERMINAL	5.94 %
	3	3	MARKETAXESS-EMQUOTES	2.00 %
	1	1	ISSUE PRICE	1.52 %
MORTGAGES	39	18	BLOOMBERGTERMINAL	100.00 %

DISCLAIMER

State Street Corporation and its subsidiaries and affiliates, including Elkins/McSherry, LLC (“State Street”), provide products and services to professional and institutional clients and this report and information (“Report”) is provided solely for general, marketing and/or informational purposes and is subject to these terms and conditions, including that the Report does not constitute investment research or investment, legal, regulatory, or tax advice. Nothing herein is an offer or solicitation to buy or sell any product, service or securities or any financial instrument and this does not create or constitute any binding contractual commitment or obligations for State Street of any kind. Not all products and features a may be available in all jurisdictions. Any opinions expressed or other information in the Report are subject to change without notice. The Report has been prepared and obtained from sources believed to be reliable at the time of preparation, however, it is provided “as-is” and State Street makes no guarantee, representation, or warranty of any kind including but not limited to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, etc. This Report is not intended to be relied upon by any person or entity. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any losses, liabilities, damages, expenses or costs arising, either direct or consequential, from or in connection with the use of the Report. No permission is granted to reprint, sell, copy, distribute, or modify any of the Report, in any form or by any means without the prior written consent of State Street. The Report may contain certain statements that may be deemed forward-looking statements. Please note that any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Investing involves risk, including the risk of loss of principal. Diversification does not ensure a profit or guarantee against loss. The Report does not take into account any client’s particular investment objectives, strategies, or tax and legal status, relevant regulations, nor does it purport to be comprehensive or intended to replace the exercise of a client’s or investor’s own careful independent review regarding any corresponding investment decision or related analysis.

Copyright © 2020 State Street Corporation, All rights reserved.