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

## **DISCUSSION**

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

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

1. Commission costs, trade costs, and any soft dollar amounts.
2. Market Impact Cost, an industry performance metric, which measures the difference between a manager's trade price and the market's volume weighted average price (VWAP). VWAP is the average security price weighted by the share volume trade that day.
3. Total trading costs.

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

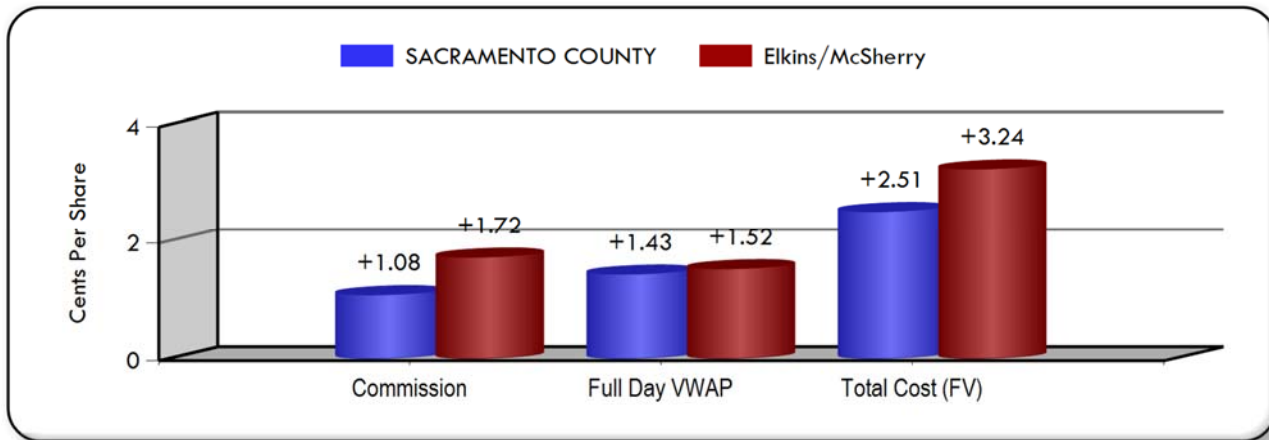
## **SCERS TRADE COST SUMMARY**

### **U.S. EQUITY**

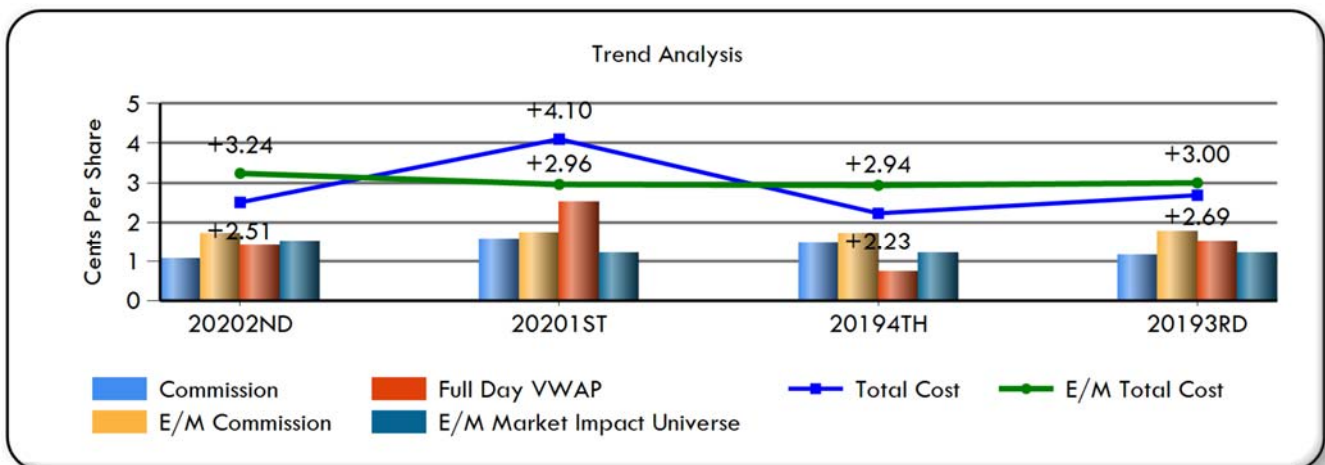
- SCERS' U.S. equity managers traded 7.2 million shares across the AMEX, NASDAQ, and NYSE exchanges totaling \$280 million in principal. SCERS' equity managers generated an E/M E-Score<sup>1</sup> of 0.01 during the quarter, which signifies that costs were basically in line with the VWAP when considering the volatility of stocks traded.
- SCERS' total trading costs equaled +2.51 cps, which is 0.73 cps lower than the peer group at +3.24 cps, as follows:
  - Commission cost of +1.08 cps versus peer group cost of +1.72 cps
  - Market impact costs of +1.43 cps versus peer group cost of +1.52 cps
- SCERS' total trading costs during the second quarter were significantly lower compared to the prior quarter, as the first quarter costs were elevated due to greater market impact costs and higher volatility experienced due to the COVID-19 pandemic. Market impact costs in the second quarter declined to +1.43 cps compared to +2.53 cps in the first quarter. Commission costs also declined, with average commission of +1.08 cps in the second quarter, compared to +1.57 cps average commission costs in the first quarter. AQR had the most significant impact on commission costs, with \$111 million in principal traded at an average of +0.06 cps.

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<sup>1</sup> 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.

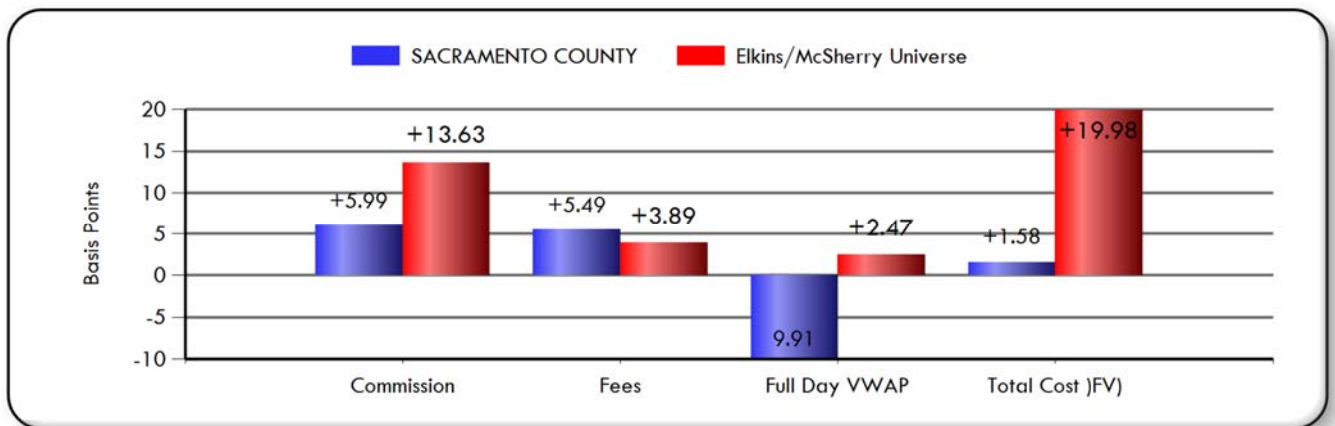


- SCERS’ total trading costs ranking was in the 56<sup>th</sup> percentile.
- SCERS’ U.S. Equity managers that experienced unfavorable total trading costs (commission plus full day VWAP) compared to the U.S. Equity peer group average cost of +3.24 cps include:
  - Weatherbie at +11.73 cps
  - Alliance Bernstein at +11.37
- As illustrated below, over the past four quarters SCERS’ managers have generated slightly lower commission costs than the peer group, with the exception of Q1 2020.
- 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 +3.96 cps, which is higher than both of SCERS’ U.S. Small Cap managers during the third quarter.

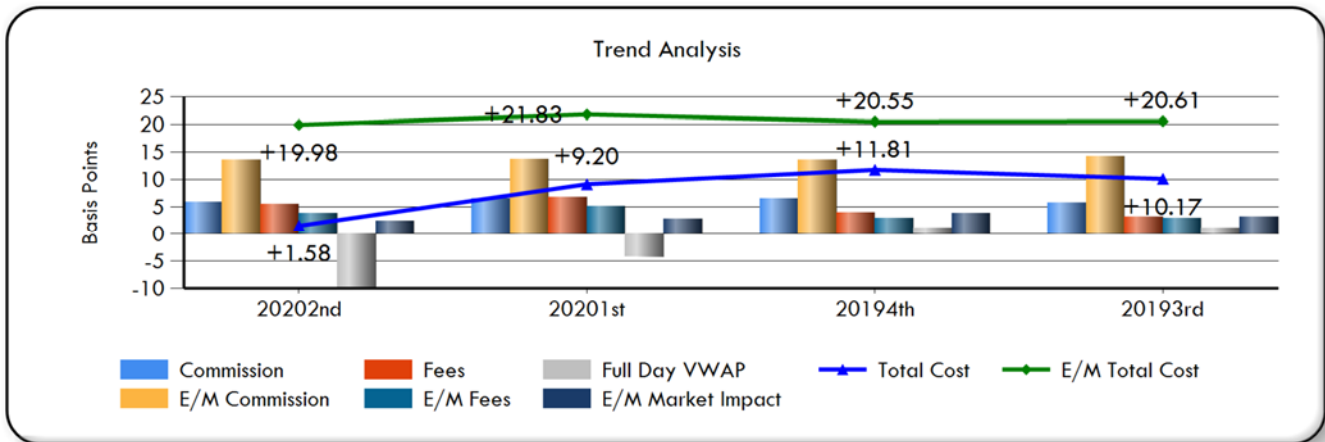


**INTERNATIONAL EQUITY**

- SCERS’ International Equity managers traded 6.2 million shares totaling \$88 million in principal across 23 countries.
- Total trading cost equaled +1.58 bps, which is 18.40 bps lower than the peer group at +19.98 bps, as follows:
  - Commission cost of +5.99 bps versus +13.63 bps
  - Fees (country taxes, tariffs) of +5.49 bps versus +3.89 bps
  - Market impact savings 9.91 bps versus market impact costs of +2.47 bps

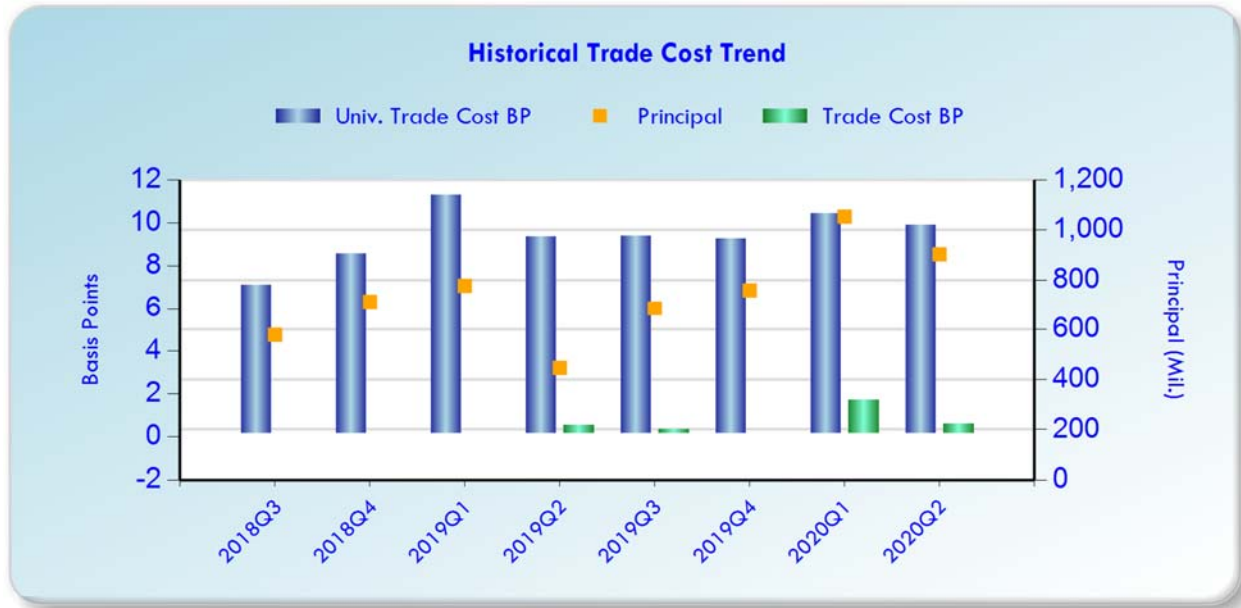


- All of SCERS’ International Equity managers analyzed generated commission costs (ranging from +4.52 bps to +6.75 bps), significantly less than the E/M peer group (ranging from +13.24 bps to +13.81 bps). This result is consistent with the previous quarters’ lower trade costs versus the peer group, as illustrated below (commission vs. E/M commission).
- SCERS’ International Equity managers generated lower market impact cost versus the peer group during the quarter (full day VWAP vs. E/M market impact), with the following exceptions:
  - William Blair at +2.62 bps versus +2.38 bps for their benchmark
- Lazard Asset Management generated significant market savings during the quarter, significantly reducing the overall trading costs for SCERS. Lazard generated market savings of 28.84 bps versus the VWAP, compared to the benchmark universe costs of +2.75 bps.
- SCERS’ total international trading costs have been consistently below the total trading costs of the E/M universe, as shown in the chart below, with the difference averaging 12.55 bps over the past four quarters.



U.S. FIXED INCOME

- SCERS’ U.S. Fixed Income managers conducted 445 trades totaling \$900 million in principal, as follows:
  - Governments: 216 trades totaling \$472 million
  - Mortgages: 126 trades totaling \$385 million
  - Corporates: 99 trades totaling \$45 million
  - Municipals: 3 trades totaling less than \$1 million
  - Agencies: 1 trade totaling less than \$1 million
- Total trading cost equaled 0.78 bps, which is 9.30 bps lower than the E/M peer group cost of +10.08 bps, as follows:
  - Governments at -0.30 bps versus +9.25 bps
  - Mortgages at +1.78 bps versus +9.35 bps
  - Corporates at +3.48 bps versus +25.17 bps
  - Municipals at +0.51 bps versus +6.14 bps
  - Agencies at +4.98 bps versus +2.75 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 and Governments, where SCERS’ experienced a cost savings (versus expense) on trading activity.
- As illustrated below, the total trade cost (in basis points) declined in the second quarter, compared to slightly higher costs in the first quarter. SCERS’ overall trading volume (in Principal) also declined compared to the first quarter, but remains slightly elevated compared to historical averages.



- Comparing SCERS’ U.S. Fixed Income Core Plus and Treasury managers trade costs versus their peer group is as follows:
  - TCW / MetWest (Core Plus) at +0.00 bps versus +11.04 bps
  - NeubergerBerman (Treasury) at +3.06 bps versus +7.29 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 143 international trades totaling \$86 million in principal as follows:
    - Corporates: 93 trades totaling \$42 million
    - Governments: 38 trades totaling \$32 million
    - Mortgages: 11 trades totaling \$12 million
    - Municipals: 1 trade totaling less than \$1 million
  - Total trading cost was -21.32 bps, which was 26.14 bps lower than the E/M peer group cost of +4.82 bps, as follows:
    - Corporates at -38.87 bps versus +4.82 bps
    - Governments at -0.04 bps versus +4.82 bps
    - Mortgages at -15.84 bps versus +4.82 bps
    - Municipals at -36.07 bps versus +4.82 bps



- Trading costs were significantly lower compared to prior quarters, primarily from Corporates and Mortgages, which generated significant trade savings. Trade cost savings occurred across the spectrum of credit ratings (AAA to B rated securities), with a broad range among brokers utilized.

**COMMISSION RECAPTURE**

- SCERS’ commission recapture program, administered by State Street, instructs investment managers to trade with the program’s brokerage partners but only if the trade cost is lower and is the best execution.
- For the second quarter of 2020, SCERS’ brokerage partners provided a rebate back to SCERS for approximately 49% of the commissions paid.
  - For the quarter ending June 30, 2020, the commission rebate totaled \$8,010. For comparison, the commission rebate for the quarter ending June 30, 2019 totaled \$9,253.

**ATTACHMENTS**

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

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## SACRAMENTO COUNTY

Trade Cost Summary - U.S. Equity Trading

Period End June 30, 2020





## REPORT CONTENTS

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(+) = Cost

**EXECUTIVE SUMMARY**

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates U.S. equity executions from April 1 , 2020 to June 30, 2020. The analysis included trading of 7,218,058 shares representing \$279.99 million in principal.

Methodology :

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

Results :

**BENCHMARK PERFORMANCE**

Commission	Full Day VWAP	E - Score
<ul style="list-style-type: none"> <li>Your commission cost was +1.08 cps (+2.78 bp) or +\$77,872 (0.64 cps (1.65 bp) better than the Elkins/McSherry All Trading Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact cost was +1.43 cps (+3.68 bp) or 0.09 cps (0.24 bp) better than the Elkins/McSherry Universe</li> <li>Your overall trading cost of +2.51 cps (+6.46 bp) was 0.73 cps (1.88 bp) better than the Elkins/McSherry Universe</li> <li>Full Day VWAP Universe Rank: 51%</li> <li>Total Cost Universe Rank: 56%</li> </ul>	<ul style="list-style-type: none"> <li>E-Score : 0.01</li> </ul>

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)	
Bundled	All Trading	Execution Only	Program	Median	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	75 %	+1.52
				25 %	+3.54



(+) = Cost

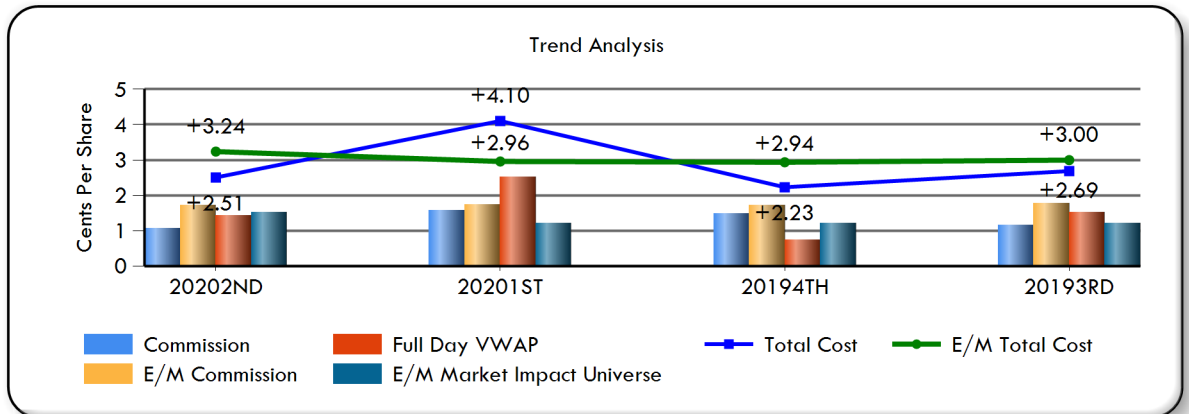
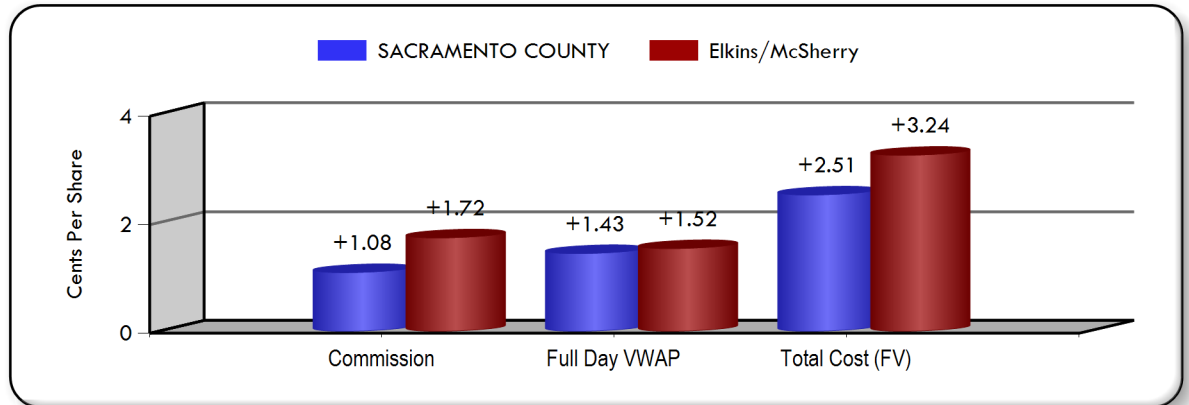
**EXECUTIVE SUMMARY**

**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	+1.16	+1.72	+3.96	+2.41	+1.52	+3.57	+0.33	0.03
Buys	+0.99	+1.72	+3.96	+0.35	+1.52	+1.35	1.89	-0.01
Total	+1.08	+1.72	+3.96	+1.43	+1.52	+2.51	0.73	0.01

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	139,800,581	140,188,690
Shares	3,450,735	3,767,323
Unique Names	689	720
Liquidity (% ADV)	0.035	0.034
Avg. Execution Size	2,554	2,952
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	1,351	1,276





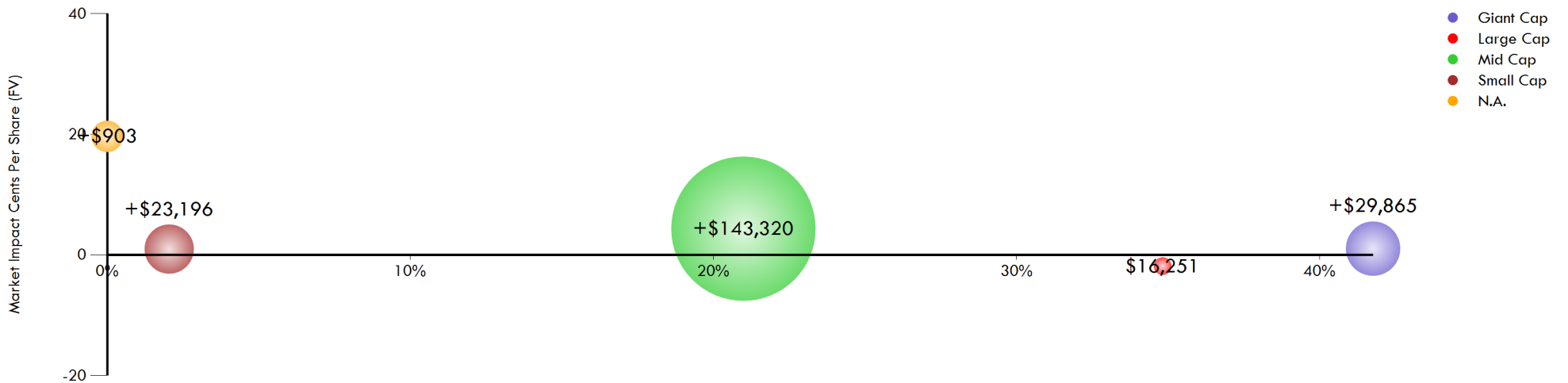
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**EXECUTIVE SUMMARY**

**MARKET CAPITALIZATION**

Market Cap	% Traded	Avg. Shares Per Order	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score	Market Cap Definition
			Your Commission	All Trading Universe	Full Day VWAP	Universe Full Day VWAP	Rank Full Day VWAP	(cps)	Commission+ Full Day VWAP Vs. Universe		
	(\$)		(cps)	(cps)	(cps)	(cps)		(cps)			
Giant Cap	41.84 %	2,480	+0.74	+1.72	+1.02	+2.11	61 %	+1.76	2.06	-0.01	Over \$25 B
Large Cap	34.90 %	2,066	+1.07	+1.72	1.88	+1.65	78 %	0.81	4.17	-0.03	\$5 B To \$25 B
Mid Cap	21.07 %	3,062	+1.09	+1.72	+4.34	+1.23	19 %	+5.42	+2.48	0.10	\$1 B To \$5 B
Small Cap	2.12 %	8,379	+1.74	+1.72	+0.95	+0.65	43 %	+2.69	+0.32	-0.01	\$250 M To \$1 B
N.A.	0.08 %	1,529	+0.03	+1.72	+19.65	+1.52	1 %	+19.68	+16.44	0.14	

**Total Cost by Market Cap: (USD)**

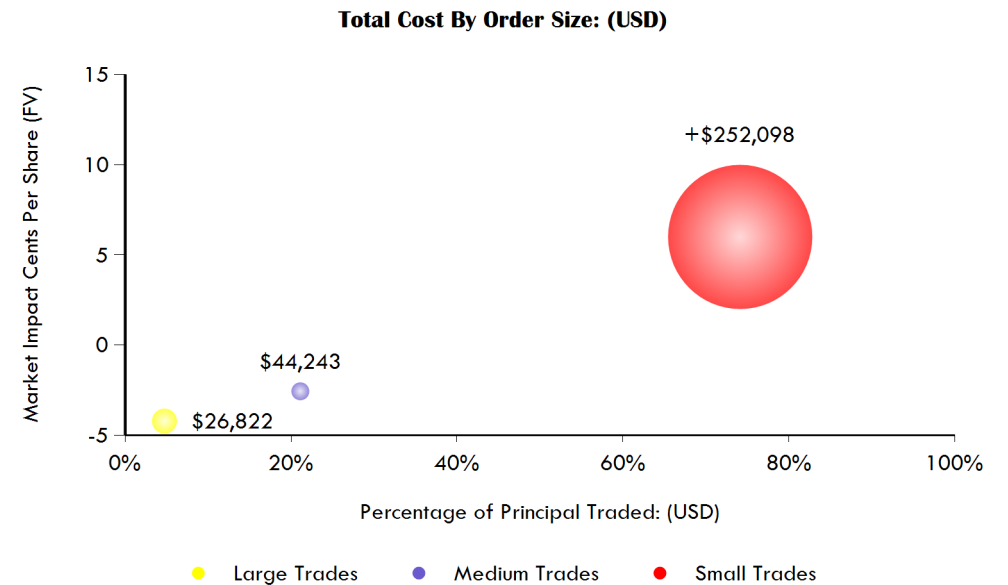
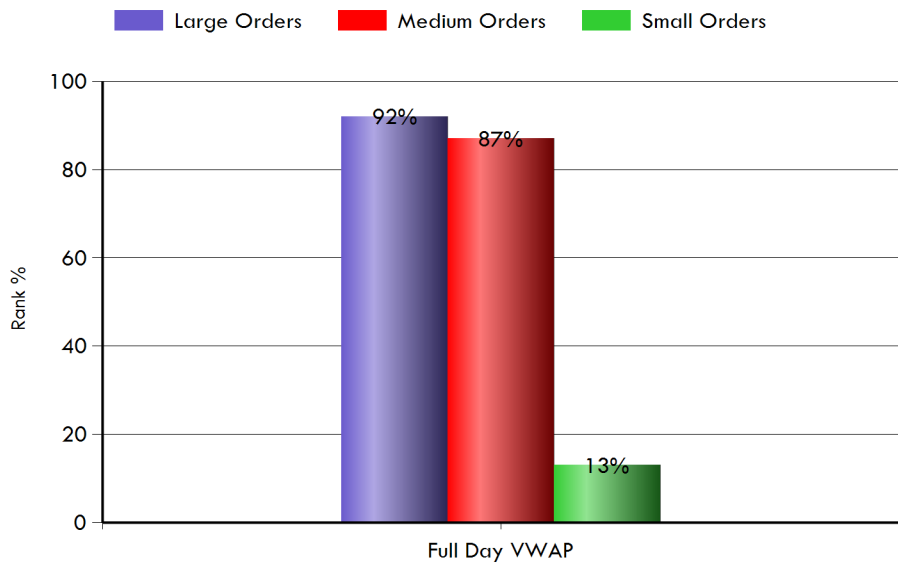


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EXECUTIVE SUMMARY

ORDER SIZE EVALUATION

Order Size	Total # Of Orders	Avg. Shares Per Order	Avg. Order Completion Time (min)	COMMISSION		MARKET IMPACT			Total Cost	Total Cost/Savings	E - Score	Absolute Size (Shares)
				Your Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Universe Full Day VWAP (cps)	Rank Full Day VWAP	(cps)	Commission+Full Day VWAP Vs. Universe (cps)		
Large Orders	11	86,775	N/A	+1.41	+1.72	4.22	+1.52	92 %	2.81	6.05	-0.50	50K Or More
Med. Orders	148	18,222	N/A	+0.93	+1.72	2.50	+1.52	87 %	1.57	4.80	-0.12	10K-50K
Small Orders	2,468	1,445	N/A	+1.10	+1.72	+5.91	+1.52	13 %	+7.01	+3.77	0.08	10K Or Less





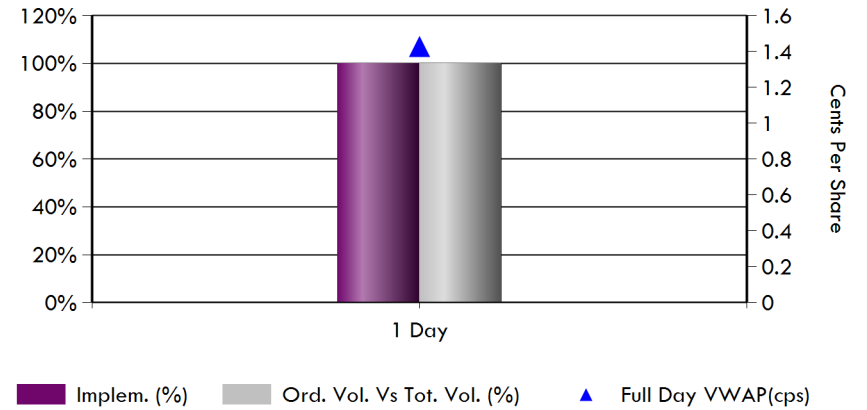
(+) = Cost

**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%	+1.43	0.01

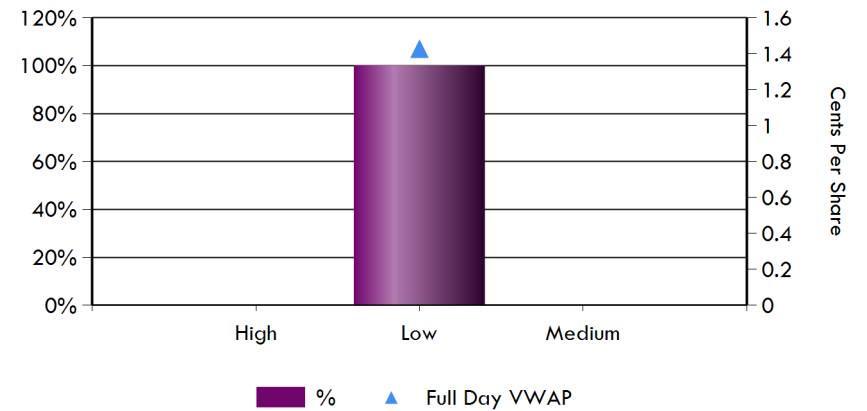
**Implementation Days**



**TRADE DIFFICULTY**

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (cps)	E - Score
0%~20% of daily vol.	L	100%	+1.43	0.01

**Avg. % of Daily Volume**





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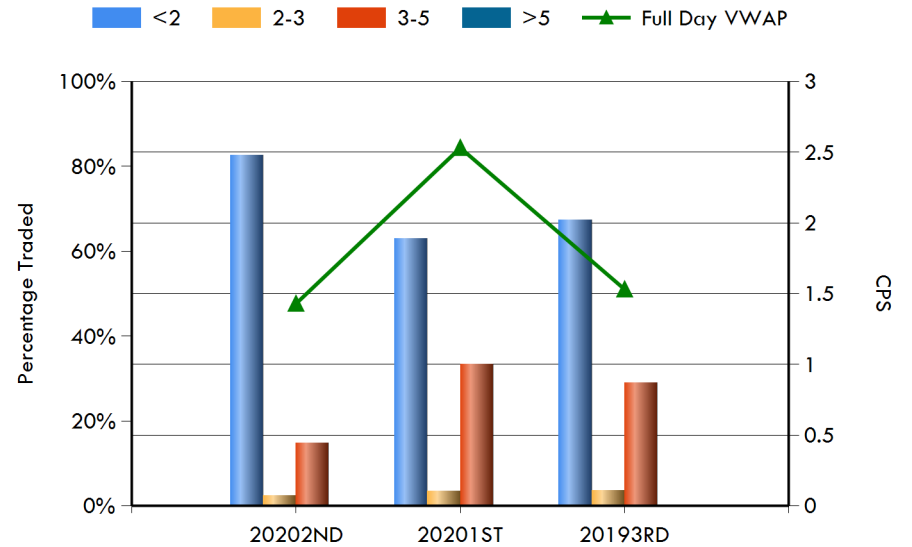
**EXECUTIVE SUMMARY**

**COMMISSION REVIEW**

**Top 10 Broker**

Broker	Total Commission (\$)	Commission 20202nd (cps)	All Trading Universe (cps)	Bundled Universe (cps)	Commission Trends		
					20201ST (cps)	20194TH (cps)	20193RD (cps)
THEMIS TRA	3,520	+2.07	+1.72	+3.96	+3.53	+3.42	+3.56
COWEN & CO	13,219	+3.57	+1.72	+3.96	+3.06	+4.05	+3.99
WILLIAM BL	2,505	+3.60	+1.72	+3.96	+3.44	+3.31	+3.77
LIQUIDNET	4,575	+2.87	+1.72	+3.96	+3.45	+3.58	+2.21
ITG	3,825	+2.88	+1.72	+3.96	+3.52	+2.78	+3.58
CAPITAL IN	11,659	+2.84	+1.72	+3.96	+3.15	+3.15	+3.82
SC BERNSTE	2,207	+0.56	+1.72	+3.96	+1.50	N.A	N.A
MORGAN STA	6,884	+0.95	+1.72	+3.96	+0.08	+0.12	+0.08
JP MORGAN	4,307	+0.26	+1.72	+3.96	+0.39	+0.15	+0.05
CREDIT SUI	3,077	+0.58	+1.72	+3.96	+0.09	+0.09	+0.09

**Commission Category Trend**



**NOTES**





(+) = Cost

**TRADE CYCLE DETAIL**

**Manager Performance (Full Day VWAP)**



Manager	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVIN GS	RANK TREND - Full Day VWAP		
					Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)	20193RD (%)
AQR	124	4,738	3,245,537	0.01	+0.07	+1.72	+1.05	55 %	2.12	40	57	44
ALLIANCE R 3000 CAPI	52	839	1,109,189	0.21	+0.06	+1.72	+11.31	2 %	+8.13	67	4	1
WEATHERBIE	46	1,838	832,501	0.10	+3.02	+1.72	+8.71	6 %	+8.49	7	10	70
EAGLE CAPITAL MANAGE	45	30,379	1,093,657	-0.27	+2.15	+1.72	10.28	98 %	11.37	8	96	29
DALTON, GREINER, HAR	14	7,154	937,174	-0.12	+2.82	+1.72	1.76	84 %	2.18	98	92	83

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	+1.52

**NOTES**

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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)
JP MORGAN CHASE	71	1,164	1,636,603	0.15	4,307	+0.26	+1.72	+7.17	9 %	+4.20	88	36	38
MERRILL LYNCH	38	5,365	949,539	-0.01	392	+0.04	+1.72	0.17	72 %	3.36	9	50	59
GOLDMAN SACHS	26	4,672	710,169	0.02	1,916	+0.27	+1.72	+1.31	52 %	1.66	28	39	55
MORGAN STANLEY	23	8,607	723,003	-0.22	6,884	+0.95	+1.72	2.98	89 %	5.27	96	56	21
CREDIT SUISSE	18	4,659	526,496	-0.12	3,077	+0.58	+1.72	1.98	85 %	4.63	3	61	39
CAPITAL INSTL SVCS	13	22,836	411,048	-0.02	11,659	+2.84	+1.72	4.47	92 %	4.87	99	92	66
CITIGROUP	13	3,626	282,796	-0.05	1,943	+0.69	+1.72	0.22	73 %	2.77	39	58	69
THEMIS TRADING LLC	13	1,591	170,204	0.09	3,520	+2.07	+1.72	+10.75	3 %	+9.57	5	3	90
SC BERNSTEIN	13	8,331	391,536	-0.09	2,207	+0.56	+1.72	1.19	80 %	3.86	99	-	-
UBS	10	14,083	70,413	-0.17	1,056	+1.50	+1.72	16.65	99 %	18.38	-	-	14

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	+1.52

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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	20201ST (%)	20194TH (%)	20193RD (%)
COWEN & CO	9	4,625	369,964	-0.10	13,219	+3.57	+1.72	2.82	88 %	2.48	31	94	83
ITG	8	1,748	132,811	0.12	3,825	+2.88	+1.72	+15.30	1 %	+14.94	1	11	86
LIQUIDNET	5	1,733	159,457	0.07	4,575	+2.87	+1.72	+2.91	31 %	+2.54	96	63	41
WILLIAM BLAIR	5	2,047	69,602	0.19	2,505	+3.60	+1.72	+24.05	1 %	+24.41	2	11	19
OPPENHEIMER & CO INC	3	2,528	50,555	-0.07	1,820	+3.60	+1.72	10.06	98 %	9.70	1	2	1
RBC CAPITAL MARKETS	2	3,385	64,309	-0.32	1,801	+2.80	+1.72	13.34	99 %	13.77	1	85	99
CRAIG - HALLUM	2	2,554	43,425	0.00	1,563	+3.60	+1.72	+0.76	59 %	+1.12	-	-	3
NEEDHAM & CO INC	1	3,226	54,835	0.07	1,580	+2.88	+1.72	+4.46	20 %	+4.10	7	99	56
WELLS FARGO	1	19,622	39,243	0.08	1,187	+3.03	+1.72	+3.75	24 %	+3.53	34	5	23
CANACCORD GENUITY	1	1,781	17,811	-0.06	627	+3.52	+1.72	5.62	95 %	5.34	29	1	27

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	+1.52

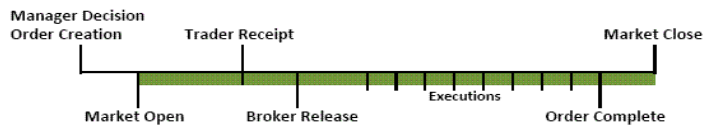
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(+) = Cost

TRADE CYCLE DETAIL

Broker Performance (Full Day VWAP)



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP		Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)
PIPER JAFFRAY	1	2,976	35,710	0.03	1,345	+3.77	+1.72	+2.76	33 %	+3.29	99	59	4
JEFFERIES & CO	<1	3,205	44,865	0.19	1,313	+2.93	+1.72	+4.44	20 %	+4.12	1	46	93
INSTINET	<1	2,302	18,415	-0.04	552	+3.00	+1.72	4.50	92 %	4.74	49	97	98
STEPHENS & CO INC	<1	1,198	7,185	0.47	255	+3.55	+1.72	+28.95	1 %	+29.26	85	11	1
NATL FINANCIAL SERVS	<1	1,919	24,953	-0.33	824	+3.30	+1.72	6.04	95 %	5.98	93	1	3
STIFEL NICOLAUS & CO	<1	3,837	30,694	0.29	727	+2.37	+1.72	+4.95	19 %	+4.08	99	99	97
RAYMOND JAMES	<1	6,528	39,167	0.11	610	+1.56	+1.72	+2.83	32 %	+1.15	92	1	44
ISI GROUP INC	<1	10,815	21,630	-0.15	846	+3.91	+1.72	3.77	91 %	3.09	99	72	78
BAIRD, ROBERT W	<1	60,000	60,000	0.09	600	+1.00	+1.72	+1.83	43 %	0.41	-	8	99
KEEFE BRUYETTE WOODS	<1	30,760	30,760	0.01	615	+2.00	+1.72	+0.07	70 %	1.16	88	93	-

ELKINS/MCSHERRY UNIVERSE VALUES

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	+1.52

NOTES

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(+) = Cost

**TRADE CYCLE DETAIL**

**Broker Performance (Full Day VWAP)**



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)	20193RD (%)
JANNEY MONTGOMERY	<1	10,660	10,660	0.41	320	+3.00	+1.72	+4.12	22 %	+3.88	11	84	-
NORTHLAND SECURITIES	<1	20,200	20,200	0.24	202	+1.00	+1.72	+0.87	58 %	1.37	-	-	48

**ELKINS/MCSHERRY UNIVERSE VALUES**

Commission (cps)				Market Impact (cps)
Bundled	All Trading	Execution Only	Program	Full Day VWAP
+3.96	+1.72	+1.20	+1.52	+1.52

**NOTES**

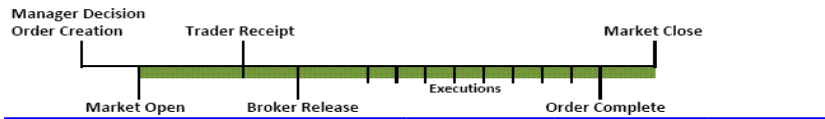
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(+) = Cost

**TRADE CYCLE DETAIL**

**ALLIANCE R 3000 CAPITAL MANAGEM Performance (Full Day VWAP)**



Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)	20193RD (%)
<b>Grand Total</b>	52	839	1,109,189	0.21	656	+0.06	+1.72	+11.31	2 %	+8.13	67	4	1
JP MORGAN CHASE	51	839	1,107,688	0.23	647	+0.06	+1.72	+11.61	2 %	+8.43	67	5	1
CITIGROUP	<1	1,195	1,195	-1.27	7	+0.60	+1.72	263.17	99 %	265.81	-	-	11
GOLDMAN SACHS	<1	306	306	-0.19	2	+0.50	+1.72	5.32	95 %	8.06	-	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	20201ST (%)	20194TH (%)	20193RD (%)
<b>Grand Total</b>	124	4,738	3,245,537	0.01	2,201	+0.07	+1.72	+1.05	55 %	2.12	40	57	44
MERRILL LYNCH	37	5,348	935,854	0.00	187	+0.02	+1.72	0.16	72 %	3.38	44	50	49
GOLDMAN SACHS	24	4,656	665,756	0.01	865	+0.13	+1.72	+0.73	60 %	2.38	67	55	54
CREDIT SUISSE	16	4,106	459,918	-0.04	414	+0.09	+1.72	0.97	77 %	4.11	3	61	39
JP MORGAN CHASE	15	5,088	396,847	0.01	198	+0.05	+1.72	+2.04	41 %	1.15	94	65	61
MORGAN STANLEY	13	4,161	295,451	0.05	59	+0.02	+1.72	+6.54	11 %	+3.32	82	57	18
CITIGROUP	12	3,532	226,034	0.02	158	+0.07	+1.72	+1.27	53 %	1.90	39	58	69
SC BERNSTEIN	7	6,326	265,677	0.03	319	+0.12	+1.72	+1.83	43 %	1.28	-	-	-



(+) = 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	20201ST (%)	20194TH (%)	20193RD (%)
<b>Grand Total</b>	14	7,154	937,174	-0.12	26,405	+2.82	+1.72	1.76	84 %	2.18	98	92	83
COWEN & CO	7	5,028	341,905	-0.18	12,284	+3.59	+1.72	3.91	91 %	3.55	92	94	85
RBC CAPITAL MARKETS	2	3,385	64,309	-0.32	1,801	+2.80	+1.72	13.34	99 %	13.77	1	85	99
CAPITAL INSTL SVCS	2	20,002	160,019	0.25	4,128	+2.58	+1.72	+5.44	15 %	+4.78	99	92	66
JP MORGAN CHASE	<1	4,068	12,205	-0.29	568	+4.66	+1.72	54.52	99 %	53.10	-	-	-
INSTINET	<1	2,302	18,415	-0.04	552	+3.00	+1.72	4.50	92 %	4.74	49	97	98
LIQUIDNET	<1	5,663	50,969	-0.15	1,577	+3.09	+1.72	2.67	87 %	2.82	97	87	97
ISI GROUP INC	<1	10,815	21,630	-0.15	846	+3.91	+1.72	3.77	91 %	3.09	99	72	78
PIPER JAFFRAY	<1	4,938	14,813	-0.13	593	+4.00	+1.72	3.05	89 %	2.29	1	64	85
BAIRD, ROBERT W	<1	60,000	60,000	0.09	600	+1.00	+1.72	+1.83	43 %	0.41	-	-	-
MORGAN STANLEY	<1	37,500	37,500	0.42	750	+2.00	+1.72	+8.77	6 %	+7.53	-	-	86
STIFEL NICOLAUS & CO	<1	11,825	23,650	0.01	473	+2.00	+1.72	0.37	74 %	1.61	60	98	77
NEEDHAM & CO INC	<1	24,630	24,630	0.64	493	+2.00	+1.72	+9.80	5 %	+8.56	-	-	15
KEEFE BRUYETTE WOODS	<1	30,760	30,760	0.01	615	+2.00	+1.72	+0.07	70 %	1.16	88	93	-
JEFFERIES & CO	<1	7,370	14,739	-0.16	296	+2.01	+1.72	2.57	87 %	3.80	-	33	95
RAYMOND JAMES	<1	30,770	30,770	-0.08	308	+1.00	+1.72	0.26	73 %	2.50	-	-	50
JANNEY MONTGOMERY	<1	10,660	10,660	0.41	320	+3.00	+1.72	+4.12	22 %	+3.88	-	-	-
NORTHLAND SECURITIES	<1	20,200	20,200	0.24	202	+1.00	+1.72	+0.87	58 %	1.37	-	-	48





(+) = Cost

**TRADE CYCLE DETAIL**

**EAGLE CAPITAL MANAGEMENT Performance (Full Day VWAP)**



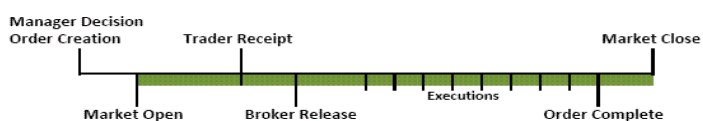
Broker	Principal Traded (USD/Mil)	Shares Per Order	Total Shares	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	RANK TREND - Full Day VWAP		
					Commission (USD)	Your Avg. Commission (cps)	All Trading Universe (cps)	Full Day VWAP (cps)	Rank Full Day VWAP	Commission + Full Day VWAP Vs. Universe	20201ST (%)	20194TH (%)	20193RD (%)
<b>Grand Total</b>	45	30,379	1,093,657	-0.27	23,494	+2.15	+1.72	10.28	98 %	11.37	8	96	29
CAPITAL INSTL SVCS	12	25,103	251,029	-0.06	7,531	+3.00	+1.72	10.79	99 %	11.03	99	92	-
UBS	10	14,083	70,413	-0.17	1,056	+1.50	+1.72	16.65	99 %	18.38	-	-	30
MORGAN STANLEY	9	75,878	379,391	-0.67	5,691	+1.50	+1.72	12.52	99 %	14.25	99	-	99
SC BERNSTEIN	6	25,172	125,859	-0.25	1,888	+1.50	+1.72	7.57	97 %	9.31	99	-	-
JP MORGAN CHASE	5	23,973	119,863	-0.13	2,893	+2.41	+1.72	10.59	98 %	11.41	99	-	-
MERRILL LYNCH	1	6,843	13,685	-0.27	205	+1.50	+1.72	0.50	75 %	2.24	1	-	87
CREDIT SUISSE	1	66,578	66,578	-1.36	2,663	+4.00	+1.72	8.99	97 %	8.23	-	-	-
GOLDMAN SACHS	1	25,680	25,680	0.03	385	+1.50	+1.72	+2.16	40 %	+0.42	1	-	-
WELLS FARGO	<1	37,579	37,579	0.04	1,127	+3.00	+1.72	+2.80	32 %	+2.56	-	-	-
COWEN & CO	<1	3,580	3,580	0.18	54	+1.50	+1.72	+14.42	1 %	+12.68	1	-	-



(+) = 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	20201ST (%)	20194TH (%)	20193RD (%)
<b>Grand Total</b>	46	1,838	832,501	0.10	25,117	+3.02	+1.72	+8.71	6 %	+8.49	7	10	70
THEMIS TRADING LLC	13	1,591	170,204	0.09	3,520	+2.07	+1.72	+10.75	3 %	+9.57	5	3	90
ITG	8	1,748	132,811	0.12	3,825	+2.88	+1.72	+15.30	1 %	+14.94	1	9	86
WILLIAM BLAIR	5	2,047	69,602	0.19	2,505	+3.60	+1.72	+24.05	1 %	+24.41	2	11	22
LIQUIDNET	5	1,307	108,488	0.10	2,998	+2.76	+1.72	+5.54	15 %	+5.06	96	56	57
OPPENHEIMER & CO INC	3	2,528	50,555	-0.07	1,820	+3.60	+1.72	10.06	98 %	9.70	1	2	1
COWEN & CO	2	2,225	24,479	0.14	881	+3.60	+1.72	+9.88	5 %	+10.24	14	80	35
CRAIG - HALLUM	2	2,554	43,425	0.00	1,563	+3.60	+1.72	+0.76	59 %	+1.12	-	-	3
NEEDHAM & CO INC	1	1,888	30,205	0.04	1,087	+3.60	+1.72	+0.11	69 %	+0.47	7	99	89
CANACCORD GENUITY	1	1,781	17,811	-0.06	627	+3.52	+1.72	5.62	95 %	5.34	29	1	27
CITIGROUP	<1	4,274	55,567	-0.07	1,778	+3.20	+1.72	0.62	76 %	0.66	48	-	-
MORGAN STANLEY	<1	1,523	10,661	0.36	384	+3.60	+1.72	+31.13	1 %	+31.49	34	10	99
JEFFERIES & CO	<1	2,511	30,126	0.22	1,018	+3.38	+1.72	+7.86	8 %	+8.00	1	64	91
PIPER JAFFRAY	<1	2,322	20,897	0.08	752	+3.60	+1.72	+6.87	10 %	+7.24	99	29	1
GOLDMAN SACHS	<1	2,632	18,427	0.41	663	+3.60	+1.72	+21.15	1 %	+21.51	99	4	95
STEPHENS & CO INC	<1	1,198	7,185	0.47	255	+3.55	+1.72	+28.95	1 %	+29.26	85	1	1
NATL FINANCIAL SERVS	<1	1,919	24,953	-0.33	824	+3.30	+1.72	6.04	95 %	5.98	7	1	3
WELLS FARGO	<1	1,664	1,664	0.17	60	+3.60	+1.72	+25.18	1 %	+25.54	34	5	23
STIFEL NICOLAUS & CO	<1	1,174	7,044	0.35	254	+3.60	+1.72	+22.83	1 %	+23.20	99	99	99
RAYMOND JAMES	<1	1,679	8,397	0.14	302	+3.60	+1.72	+14.16	1 %	+14.53	92	1	18



(+) = 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)
LBTYK	6	354,232	7,018,381	+2.66	1.35%	-0.27	4.59
NEX	8	300,676	614,405	+1.23	0.98%	0.13	+2.45
GE	6	259,496	1,833,598	+1.09	0.03%	-0.42	4.63
KOS	4	186,157	253,132	+0.10	0.12%	0.21	+0.76
WFC	9	135,132	3,689,161	+1.73	0.02%	-0.16	7.57
ORCL	6	112,144	5,956,158	+1.41	0.13%	-0.68	10.83
MTG	6	109,909	726,732	+0.02	0.18%	-0.04	0.31
OII	8	105,040	374,386	+2.51	0.50%	0.07	+1.37
BLMN	7	100,191	1,159,412	+3.90	0.22%	-0.37	5.35
PGNY	38	90,318	2,176,653	+2.60	0.20%	-0.01	2.91

**Names Most Traded - Total Orders**

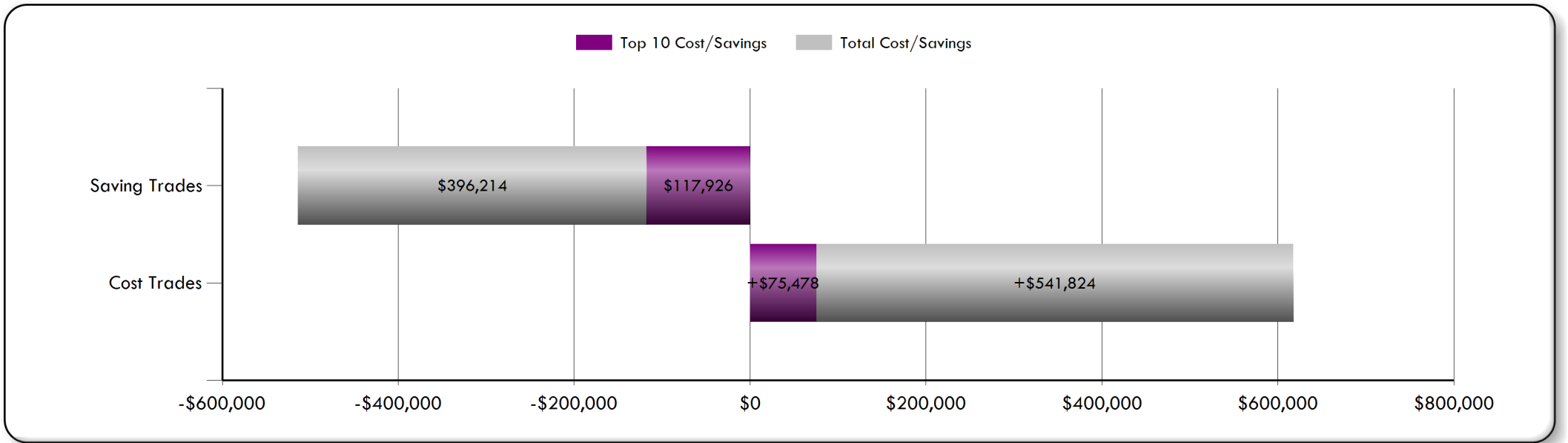
							Market Impact
Security	# Orders	Shares	US Dollars	Commission (cps)	% of Volume	E - Score	Full Day VWAP (cps)
W	24	32,607	4,687,044	+3.37	0.03%	0.11	+19.82
TTD	17	14,021	4,737,826	+1.63	0.04%	0.04	+13.40
WFC	9	135,132	3,689,161	+1.73	0.02%	-0.16	7.57
C	8	86,365	3,868,584	+1.37	0.03%	-0.03	+1.42
DIS	8	50,649	5,901,183	+1.26	0.03%	-0.35	15.49
ORCL	6	112,144	5,956,158	+1.41	0.13%	-0.68	10.83
MSFT	6	23,002	4,365,714	+0.31	0.01%	0.33	+50.17
LBTYK	6	354,232	7,018,381	+2.66	1.35%	-0.27	4.59
HLT	5	52,392	3,689,423	+2.26	0.15%	-0.10	14.43
FISV	4	32,400	3,353,459	+2.93	0.09%	0.05	1.38



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost\Savings Performance				
Category	Principal USD	# of Trades	Avg. Market Impact (cps)	Percentage of all Cost\Savings
10 High Cost Trades	8,473,363	10	+468.75	12.23%
Cost Trades	144,638,623	1,524	+55.86	100.00%
Saving Trades	135,350,648	1,103	47.10	100.00%
10 Low Cost Trades	14,615,622	10	54.04	22.94%





(+) = Cost

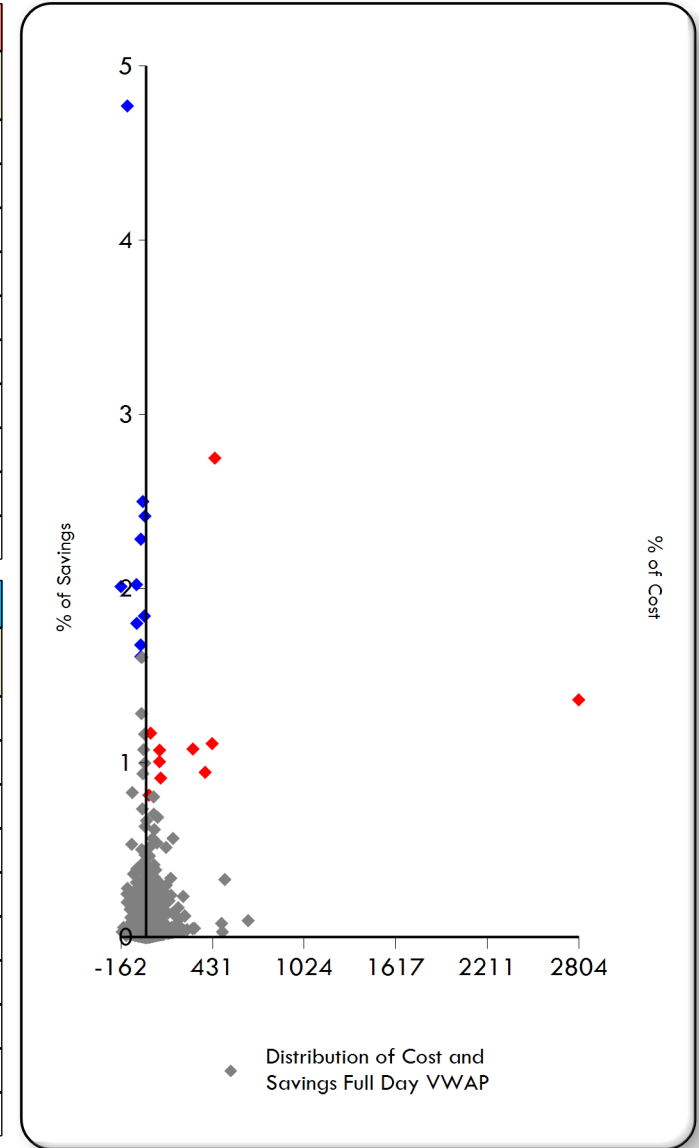
TRADE LEVEL DETAILS

10 High Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Cost (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Sell	AAPL	2020/06/26	3,800	2.75	1.05	+446.59	ALLIANCE R	JP MORGAN
Sell	GOOG	2020/06/26	300	1.36	1.11	+2,803.56	ALLIANCE R	JP MORGAN
Buy	C	2020/06/11	23,808	1.17	0.19	+30.37	EAGLE CAPI	SC BERNSTE
Buy	QDEL	2020/06/26	1,600	1.11	0.95	+428.71	ALLIANCE R	JP MORGAN
Sell	TTD	2020/04/30	2,193	1.08	0.54	+304.12	WEATHERBIE	THEMIS TRA
Sell	MSFT	2020/06/26	7,500	1.07	0.59	+88.29	ALLIANCE R	JP MORGAN
Buy	ZM	2020/06/26	7,100	1.01	0.24	+87.53	ALLIANCE R	JP MORGAN
Sell	TTD	2020/06/04	1,522	0.95	0.69	+383.49	WEATHERBIE	THEMIS TRA
Buy	NTRA	2020/05/07	5,914	0.91	0.00	+95.27	WEATHERBIE	ITG
Sell	URBN	2020/06/01	25,753	0.81	1.05	+19.53	DALTON, GR	CAPITAL IN

10 Low Cost Trades (Full Day VWAP)

Side	Security	Trade Date	Shares	Savings (%)	E - Score	Full Day VWAP (cps)	Manager	Broker
Buy	MAR	2020/04/01	20,363	4.77	-1.48	120.44	EAGLE CAPI	CAPITAL IN
Sell	LBTYK	2020/04/06	63,822	2.50	-1.00	20.14	EAGLE CAPI	MORGAN STA
Buy	GE	2020/06/19	182,156	2.42	-0.62	6.82	EAGLE CAPI	MORGAN STA
Sell	WFC	2020/04/06	35,649	2.28	-0.65	32.95	EAGLE CAPI	MORGAN STA
Buy	PINS	2020/06/26	16,900	2.02	-1.19	61.53	ALLIANCE R	JP MORGAN
Buy	DDOG	2020/06/26	6,400	2.01	-0.86	161.61	ALLIANCE R	JP MORGAN
Sell	ORCL	2020/06/02	94,840	1.84	-0.66	9.99	EAGLE CAPI	MORGAN STA
Sell	MHK	2020/05/14	15,485	1.80	-0.37	59.80	EAGLE CAPI	SC BERNSTE
Buy	HLT	2020/05/11	25,361	1.68	-0.41	34.01	EAGLE CAPI	UBS
Sell	C	2020/04/06	25,025	1.61	-0.44	33.08	EAGLE CAPI	JP MORGAN



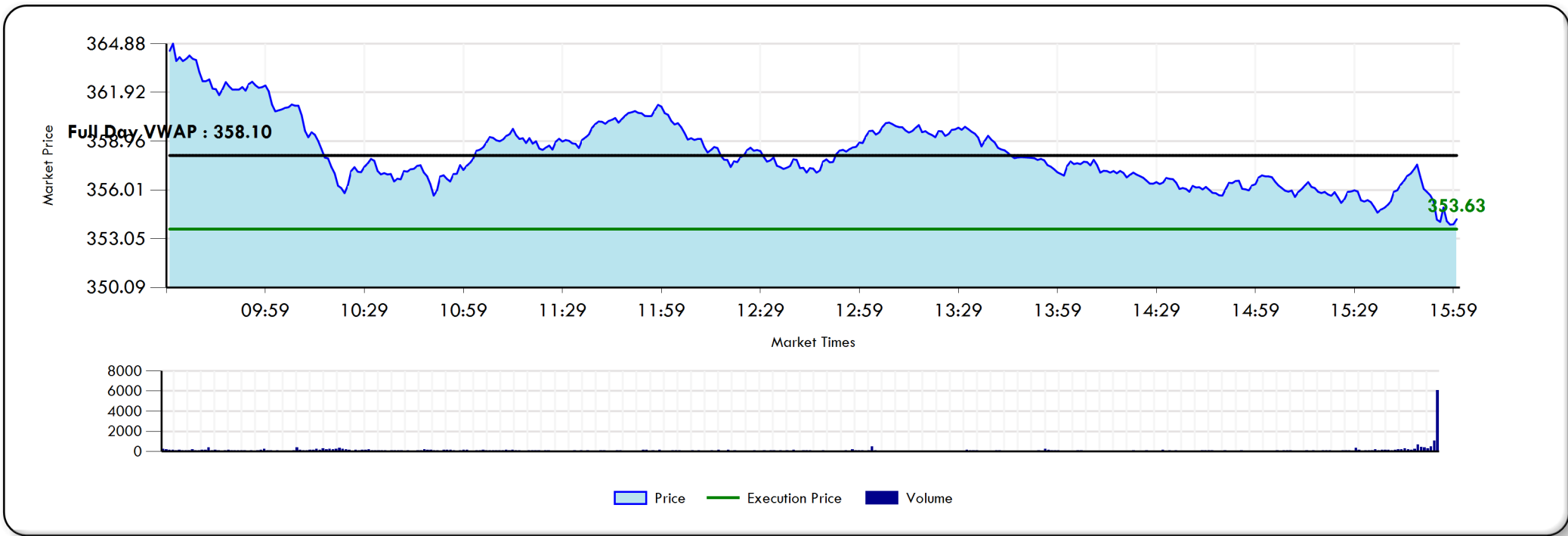


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

AAPL - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	3,800	353.6300	358.0959	+16,971	+446.59	1.05	0.01



NOTES

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

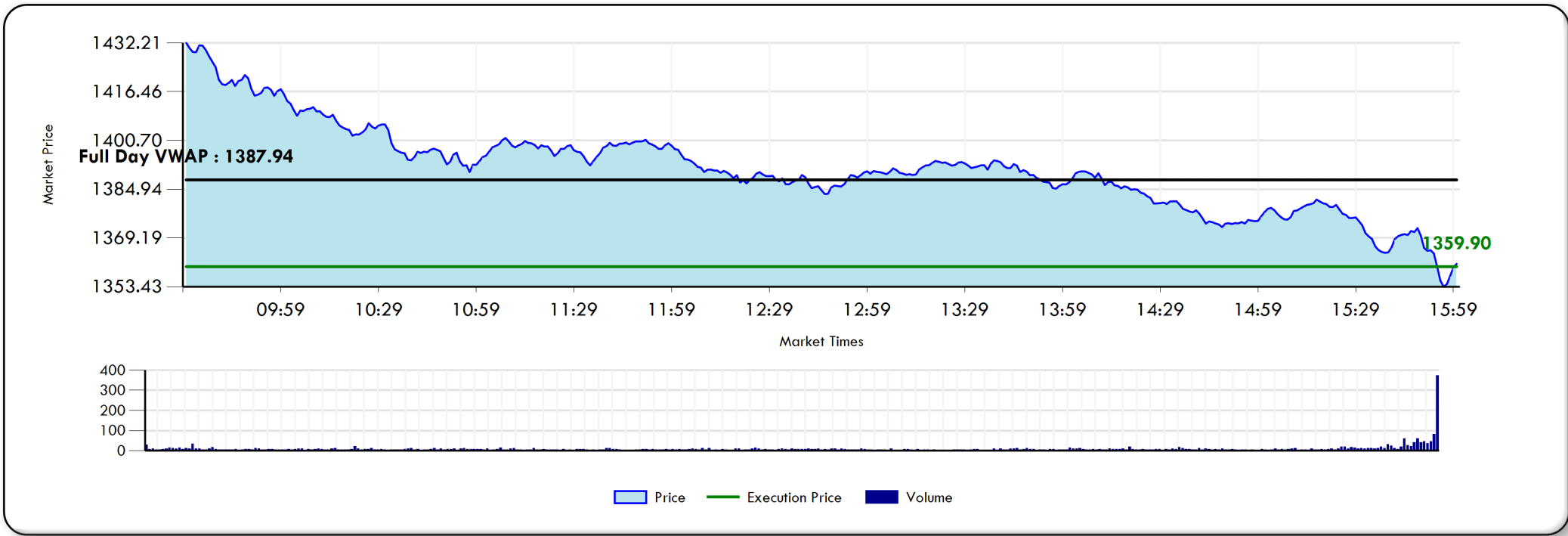


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TRADE LEVEL DETAIL - HIGH COST

GOOG - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	300	1359.9000	1387.9356	+8,411	+2,803.56	1.11	0.01



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.36% of your market impact cost.

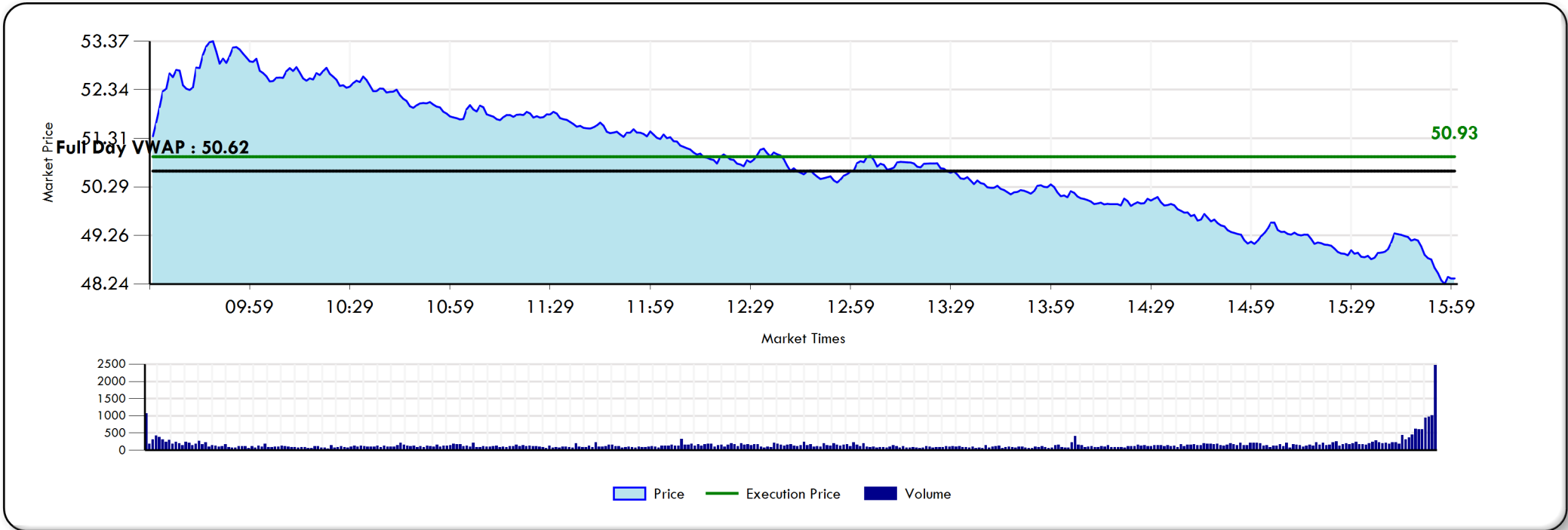


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

C - 2020/06/11

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	SC BERNSTEIN	06/11/2020 09:30:00	06/11/2020 16:00:00	23,808	50.9272	50.6235	+7,230	+30.37	0.19	0.04



NOTES

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



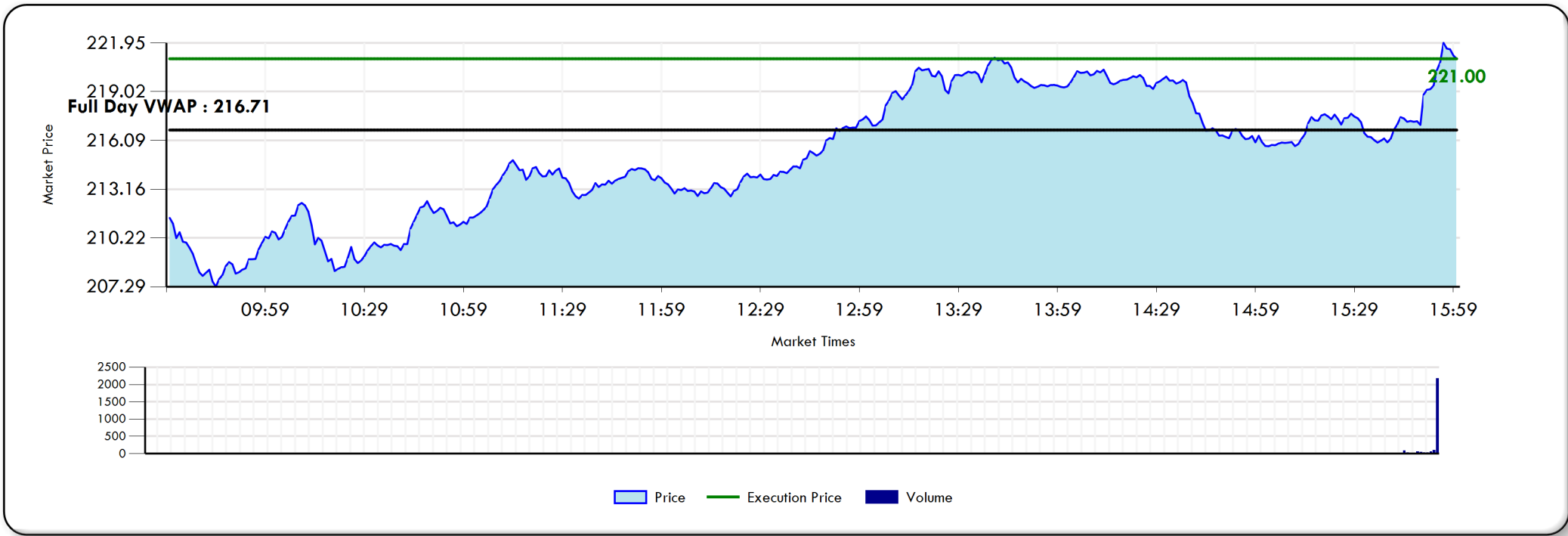


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

QDEL - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	1,600	221.0000	216.7129	+6,859	+428.71	0.95	0.03



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TTD - 2020/04/30

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	04/30/2020 09:30:00	04/30/2020 16:00:00	2,193	293.1533	296.1945	+6,669	+304.12	0.54	0.08



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.08% of your market impact cost.

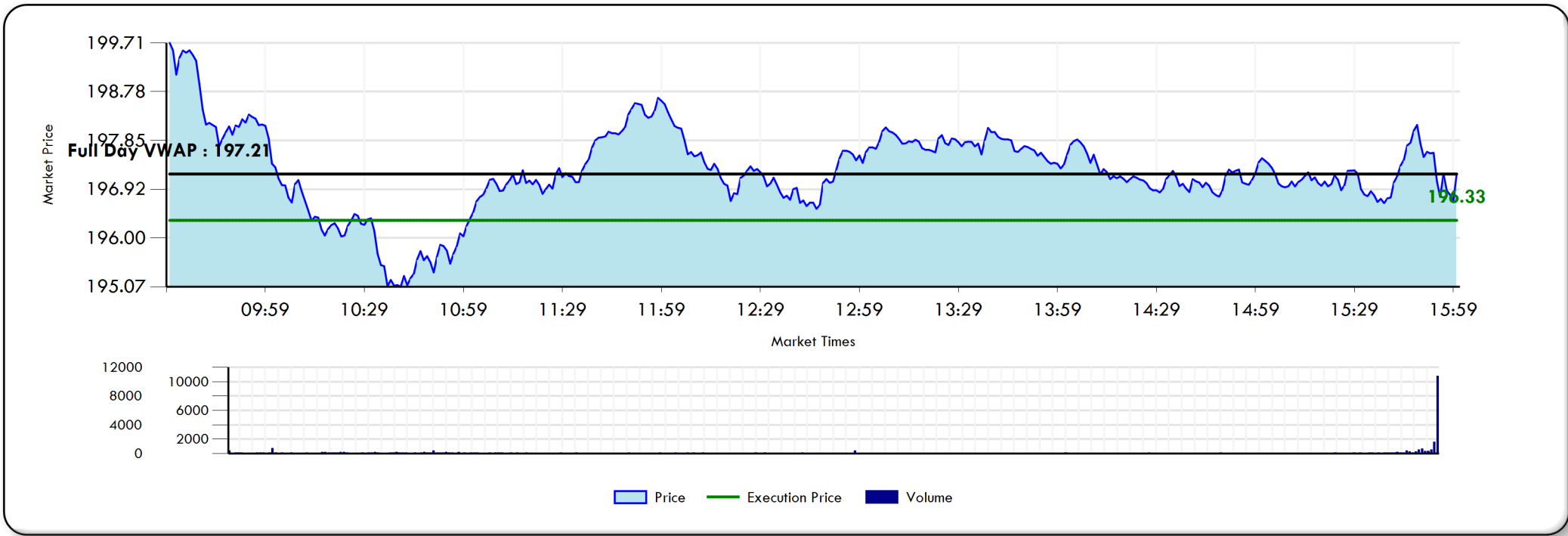


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

MSFT - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	7,500	196.3300	197.2129	+6,622	+88.29	0.59	0.01



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.07% of your market impact cost.

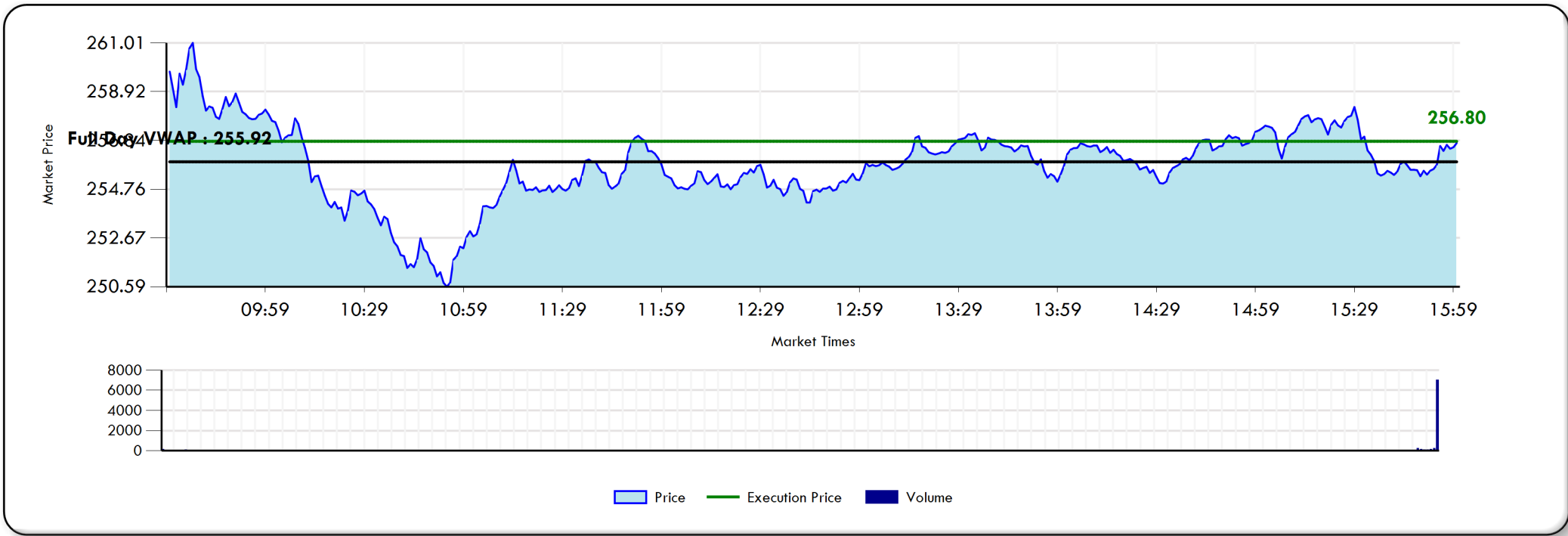


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

ZM - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	7,100	256.8000	255.9247	+6,215	+87.53	0.24	0.04



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.01% of your market impact cost.

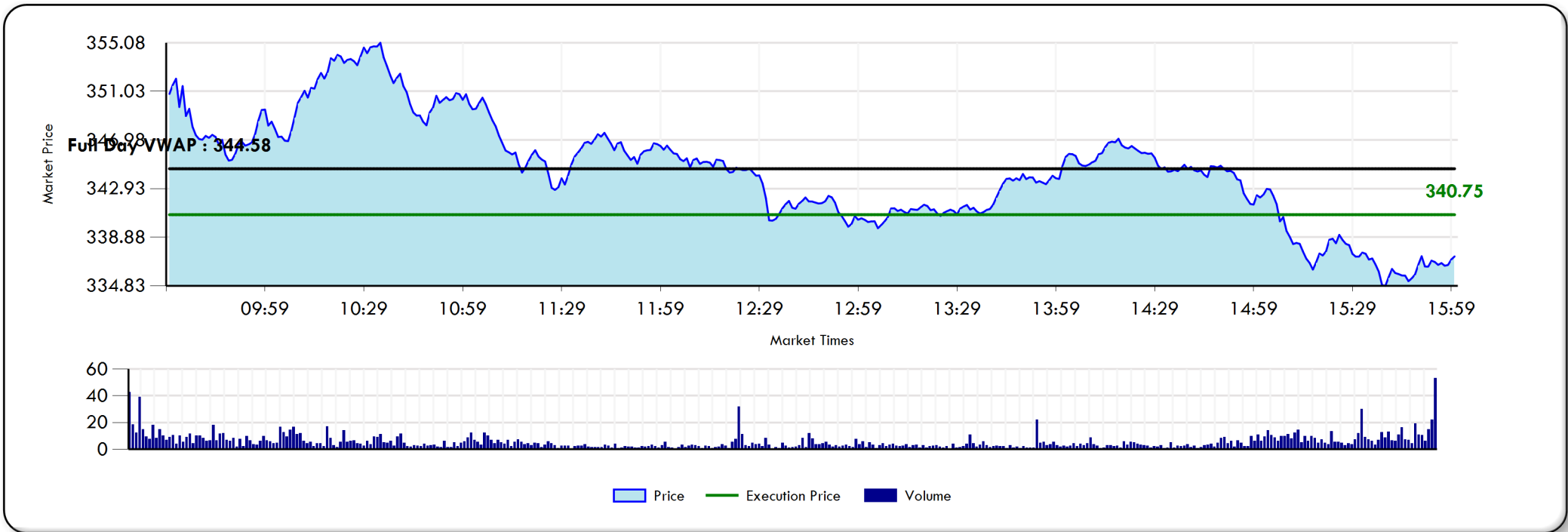


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

TTD - 2020/06/04

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	WEATHERBIE	THEMIS TRADING LLC	06/04/2020 09:30:00	06/04/2020 16:00:00	1,522	340.7455	344.5804	+5,837	+383.49	0.69	0.07



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 0.95% of your market impact cost.

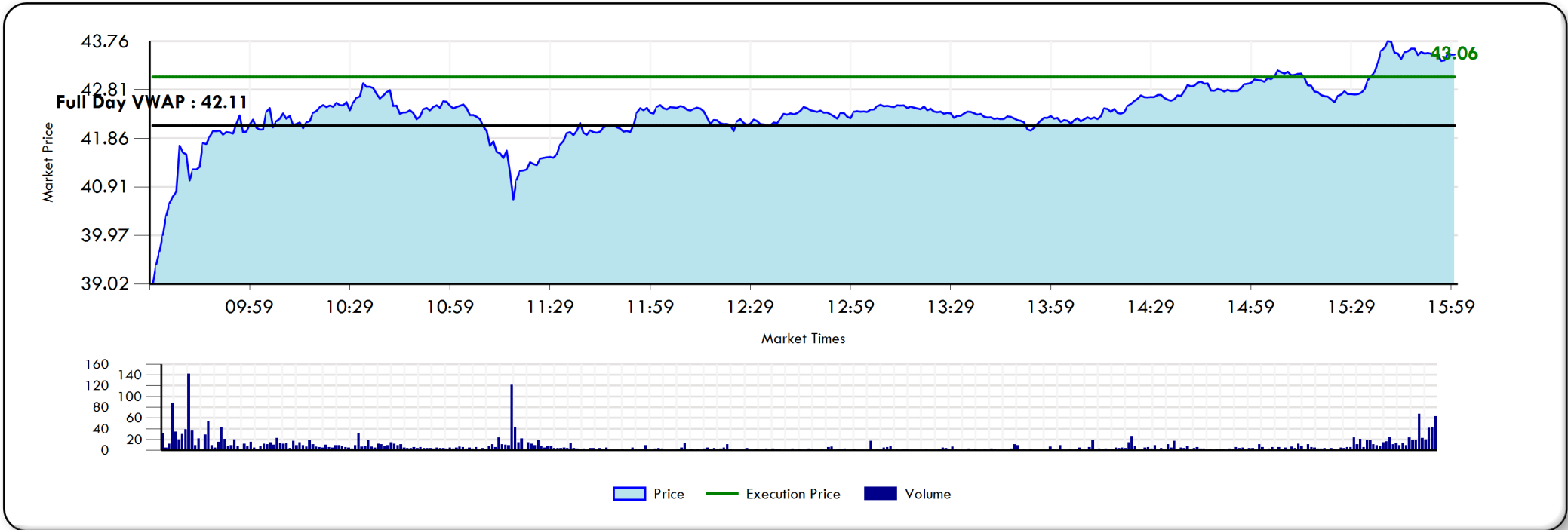


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NTRA - 2020/05/07

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	WEATHERBIE	ITG	05/07/2020 09:30:00	05/07/2020 16:00:00	5,914	43.0616	42.1089	+5,634	+95.27	0.00	0.20



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 0.91% of your market impact cost.

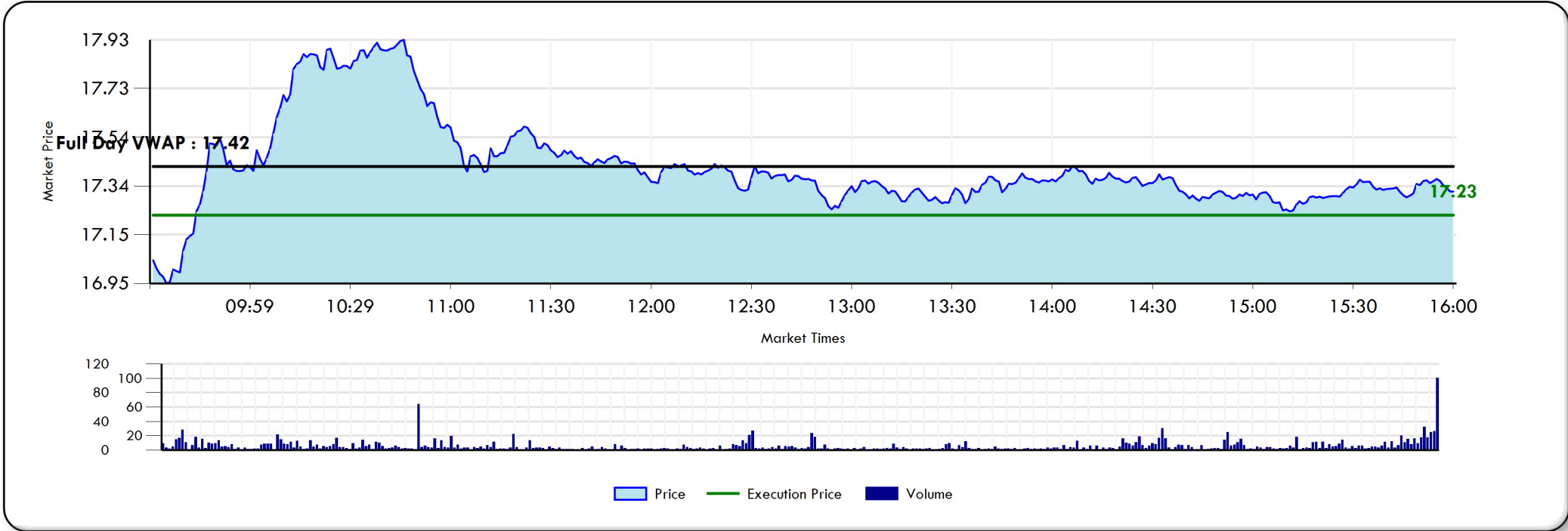


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

URBN - 2020/06/01

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	DALTON, GREINER, HARTMAN, MAHER	CAPITAL INSTL SVCS	06/01/2020 09:30:00	06/01/2020 16:00:00	25,753	17.2253	17.4206	+5,030	+19.53	1.05	1.13



NOTES

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

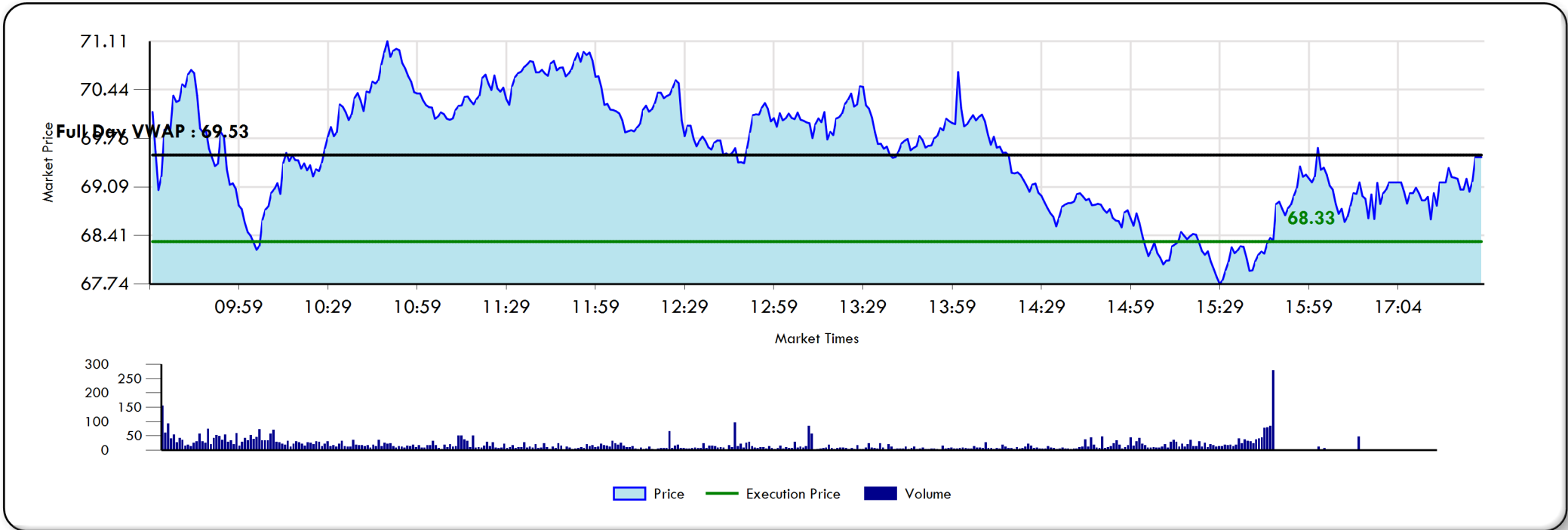


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MAR - 2020/04/01

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	CAPITAL INSTL SVCS	04/01/2020 09:30:00	04/01/2020 16:00:00	20,363	68.3267	69.5311	24,525	120.44	-1.48	0.27



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.77% of your market impact savings.



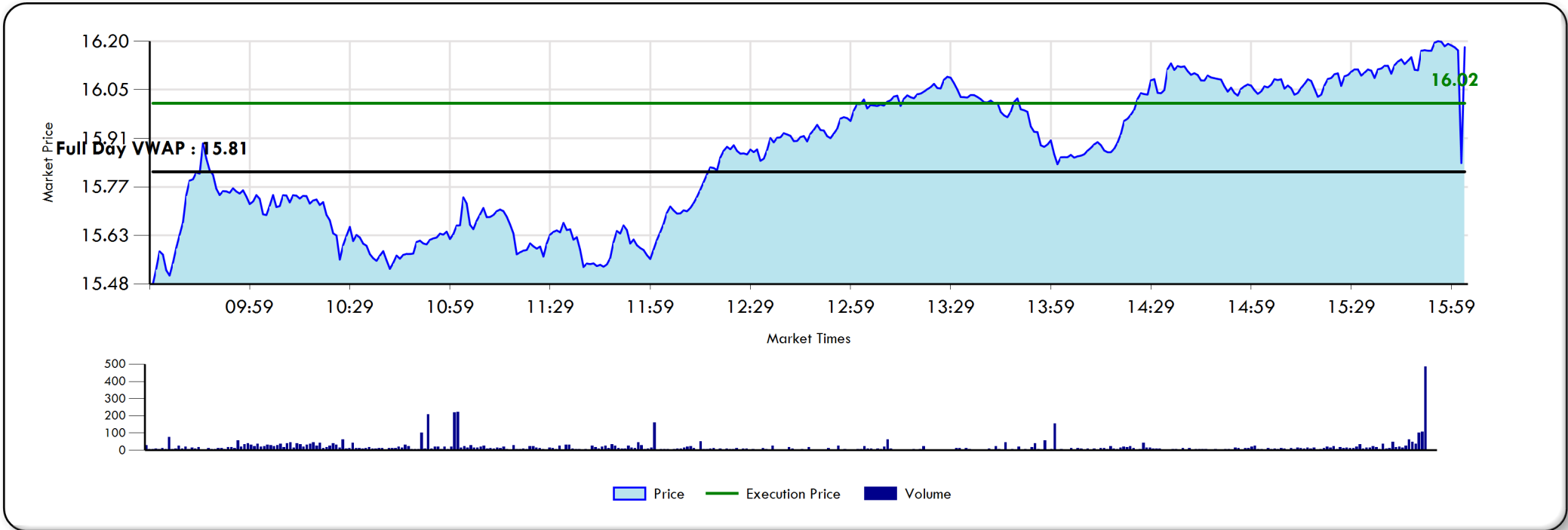


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

LBTYK - 2020/04/06

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	MORGAN STANLEY	04/06/2020 09:30:00	04/06/2020 16:00:00	63,822	16.0150	15.8136	12,852	20.14	-1.00	0.94



NOTES

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



(+) = Cost

TRADE LEVEL DETAIL - LOW COST

GE - 2020/06/19

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	MORGAN STANLEY	06/19/2020 09:30:00	06/19/2020 16:00:00	182,156	7.2090	7.2772	12,423	6.82	-0.62	0.15



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.42% of your market impact savings.

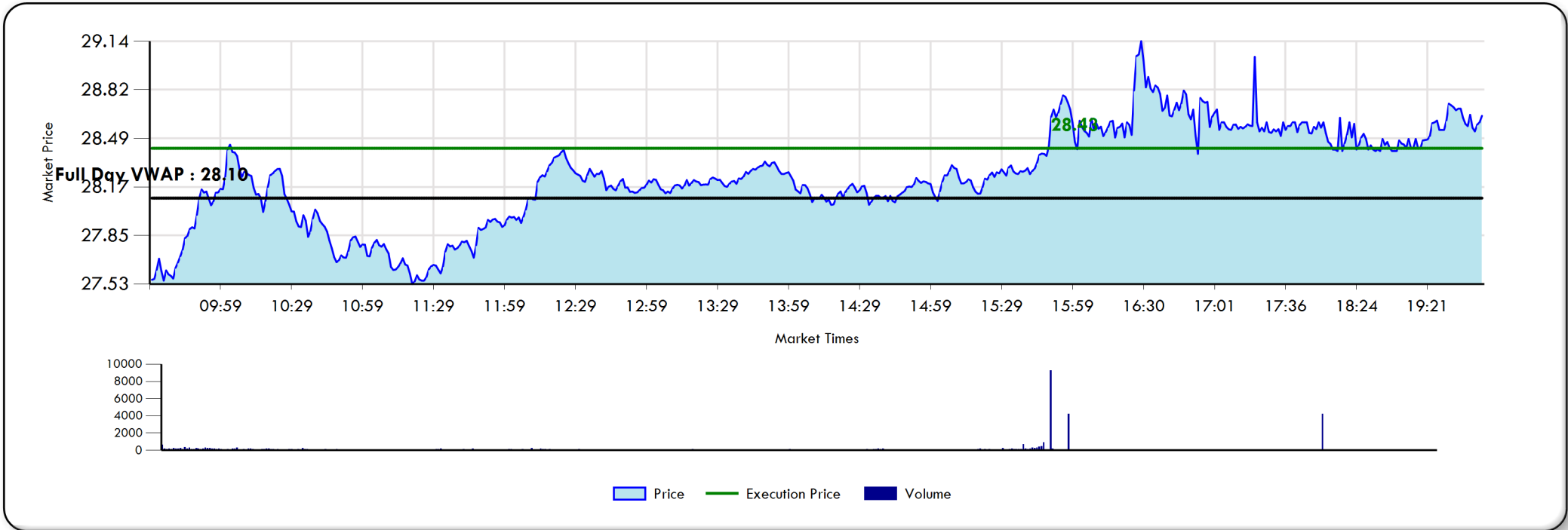


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

WFC - 2020/04/06

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	MORGAN STANLEY	04/06/2020 09:30:00	04/06/2020 16:00:00	35,649	28.4283	28.0988	11,745	32.95	-0.65	0.08



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.28% of your market impact savings.

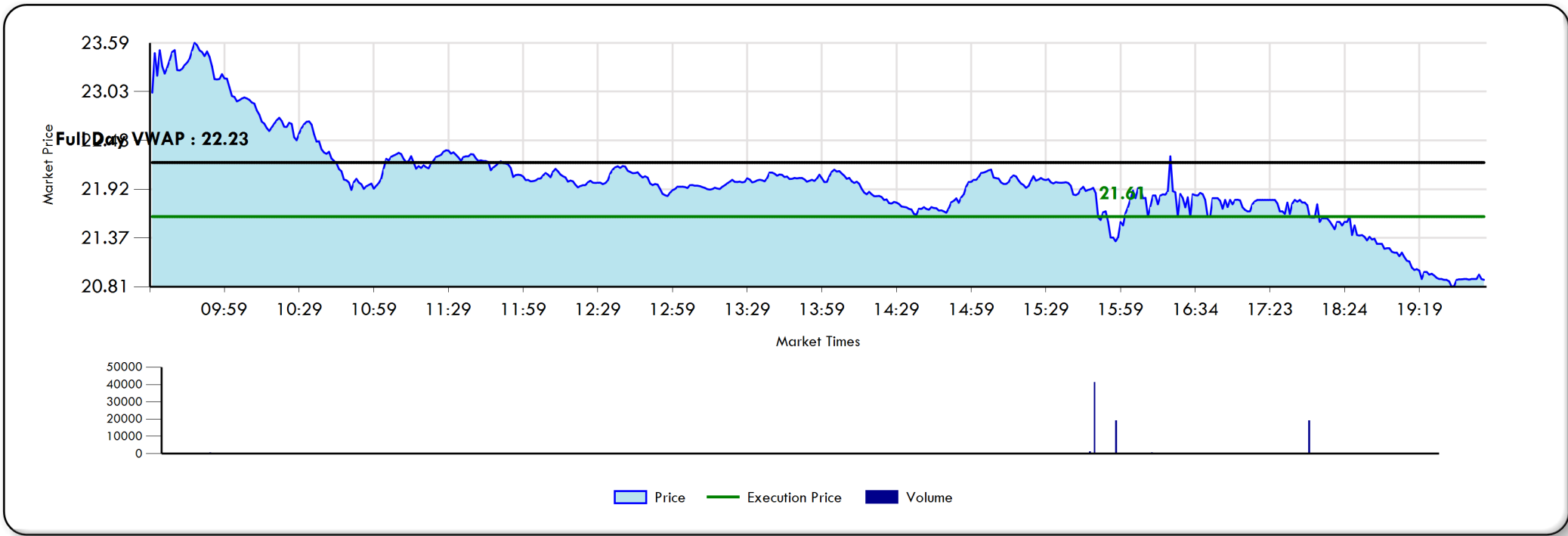


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

PINS - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	16,900	21.6100	22.2253	10,399	61.53	-1.19	0.02



NOTES

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

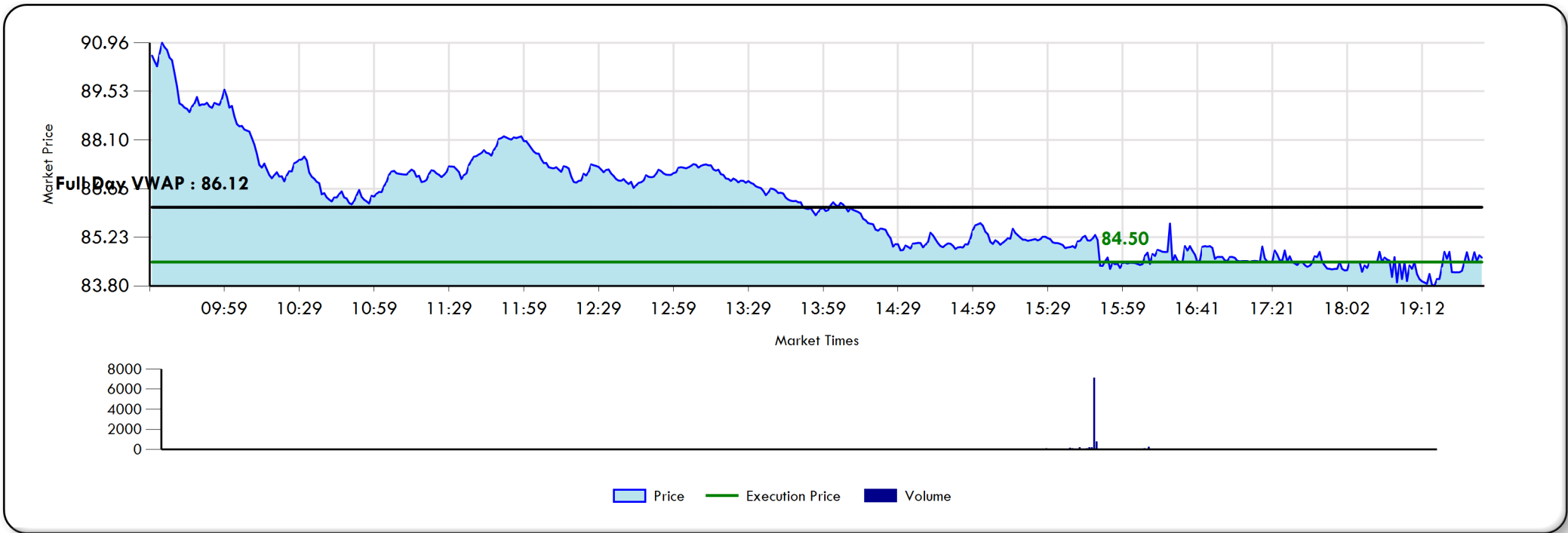


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

DDOG - 2020/06/26

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	ALLIANCE R 3000 CAPITAL MANAGEM	JP MORGAN CHASE	06/26/2020 09:30:00	06/26/2020 16:00:00	6,400	84.5000	86.1161	10,343	161.61	-0.86	0.05



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.01% of your market impact savings.

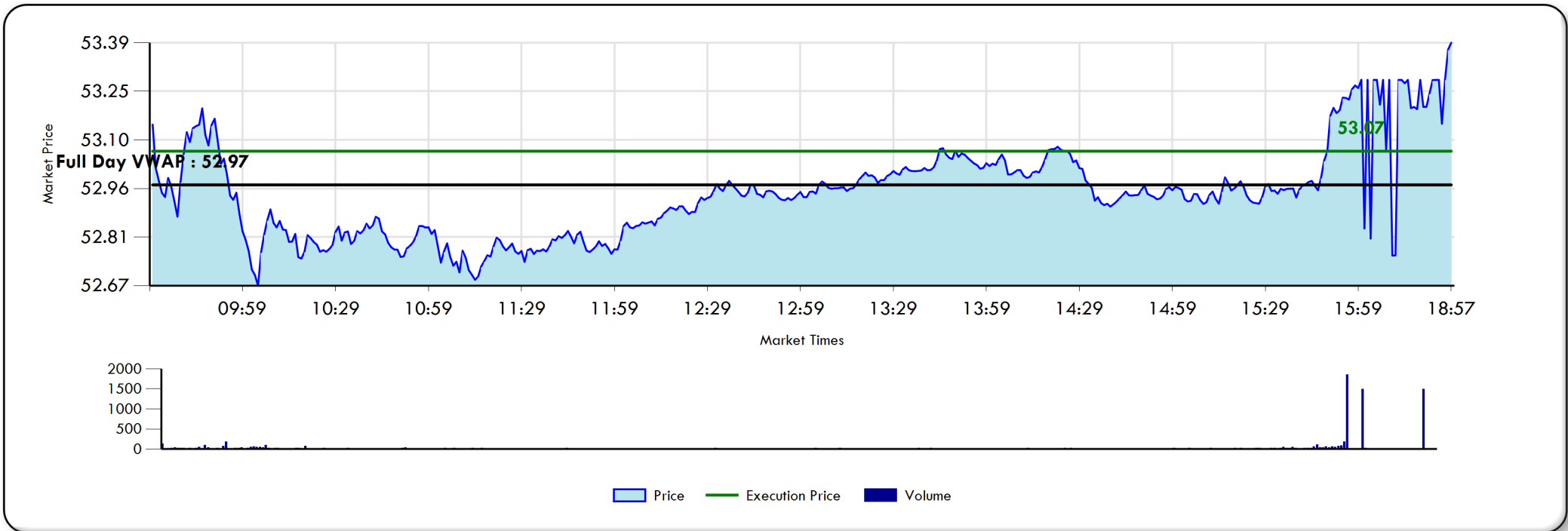


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

ORCL - 2020/06/02

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	MORGAN STANLEY	06/02/2020 09:30:00	06/02/2020 16:00:00	94,840	53.0690	52.9691	9,475	9.99	-0.66	0.80



NOTES

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

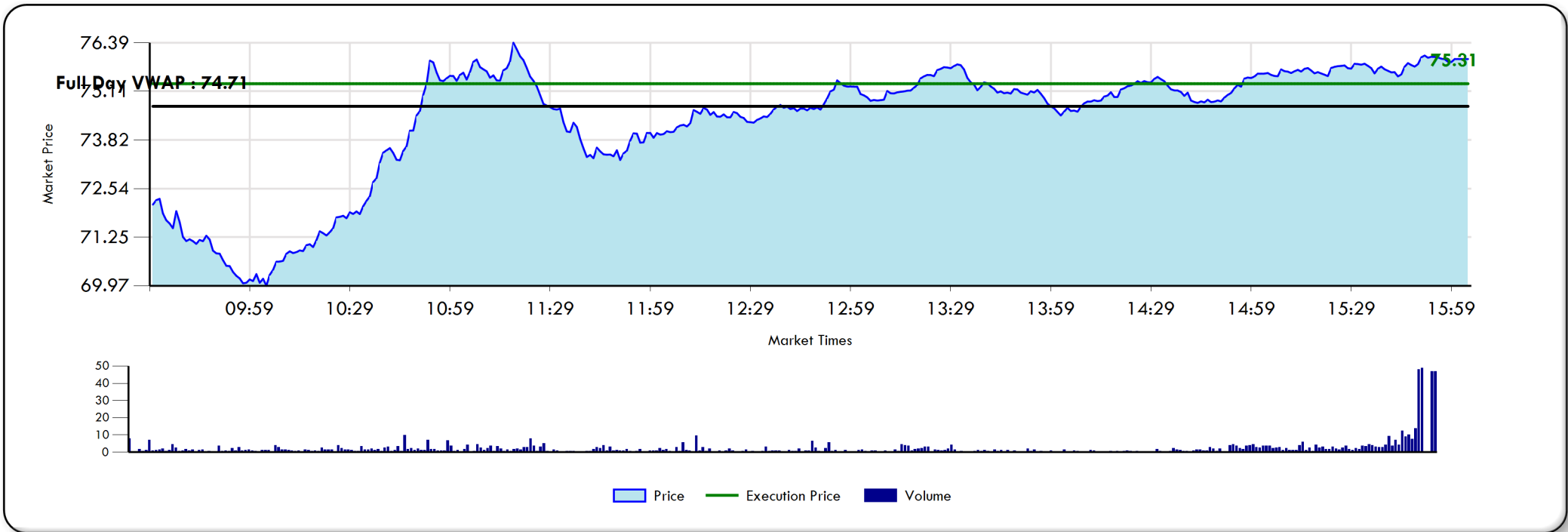


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

MHK - 2020/05/14

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	SC BERNSTEIN	05/14/2020 09:30:00	05/14/2020 16:00:00	15,485	75.3084	74.7104	9,260	59.80	-0.37	1.81



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.80% of your market impact savings.

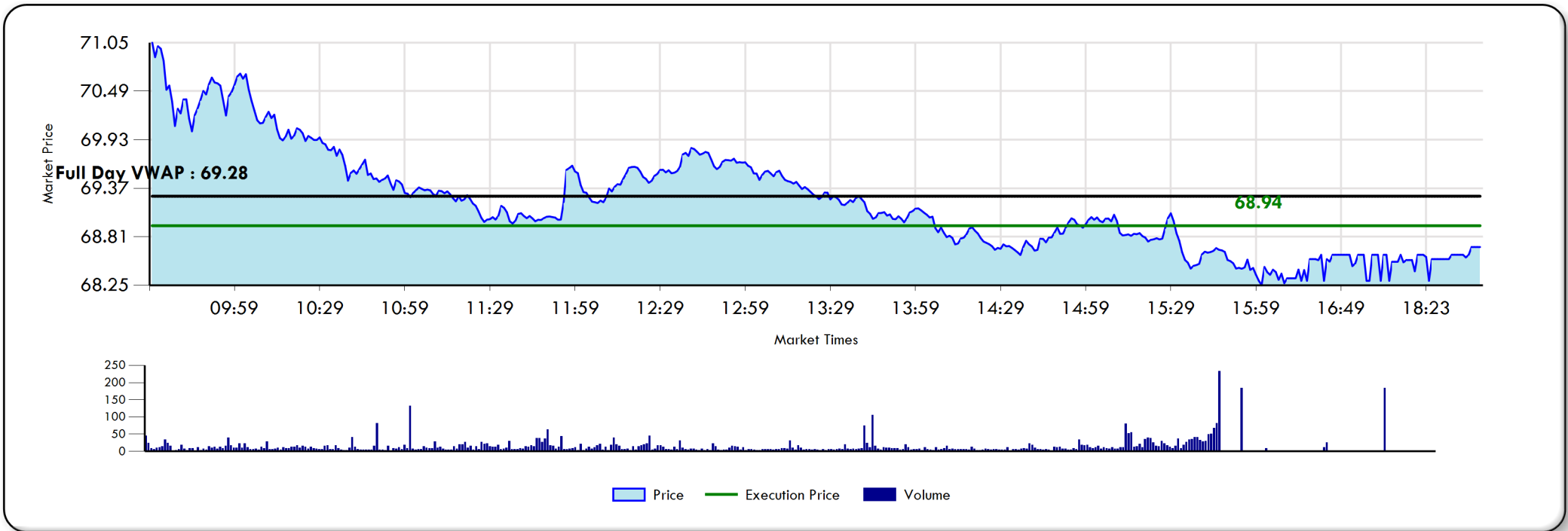


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

HLT - 2020/05/11

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Buy	EAGLE CAPITAL MANAGEMENT	UBS	05/11/2020 09:30:00	05/11/2020 16:00:00	25,361	68.9358	69.2759	8,624	34.01	-0.41	0.43



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.68% of your market impact savings.



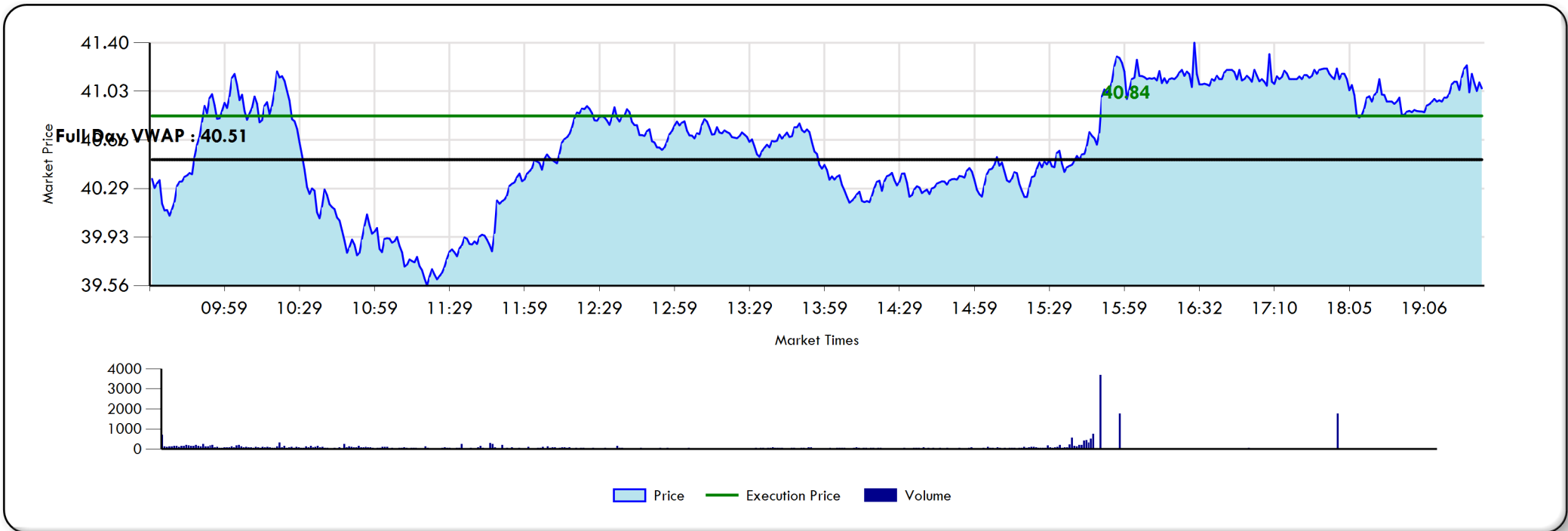


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

C - 2020/04/06

Side	Manager	Broker	Time In (EST)	Time Out (EST)	Shares	Client Price (USD)	Full Day VWAP (USD)	Cost Full Day VWAP (USD)	Cost Full Day VWAP (cps)	E - Score	Volume (%)
Sell	EAGLE CAPITAL MANAGEMENT	JP MORGAN CHASE	04/06/2020 09:30:00	04/06/2020 16:00:00	25,025	40.8419	40.5111	8,279	33.08	-0.44	0.07



NOTES

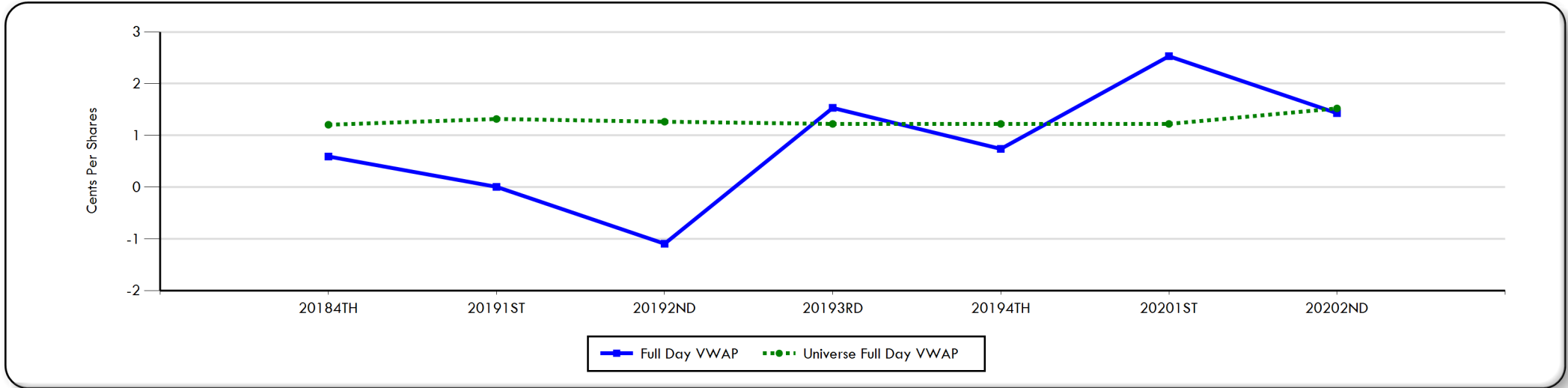
- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.61% of your market impact savings.



(+) = Cost

**TRADE HISTORY**

Trade History						
Period	Total Shares	Total Dollars Traded	Commission		Full Day VWAP	Full Day VWAP Universe Rank
			(cps)	(\$)		
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
20202ND	7,218,058	279,989,271	+1.08	77,872	+1.43	51



**Note on Universes:**

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

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## SACRAMENTO COUNTY

Trade Cost Summary - Global Equity Trading

Period End June 30, 2020





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- **Implementation days / Liquidity By Trade Performance**
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- **High / Low Cost Managers**
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(+) = Cost

## EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analysis to institutional investors since 1991, serving many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global equity market and Universe data, Elkins/McSherry has produced a Trading Cost Analysis on behalf of SACRAMENTO COUNTY. This study evaluates global equity executions from April 1, 2020 to June 30, 2020. The analysis included trading of 6,183,699 shares representing \$87.81 million in principal across 23 countries.

### Methodology :

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

### Results :

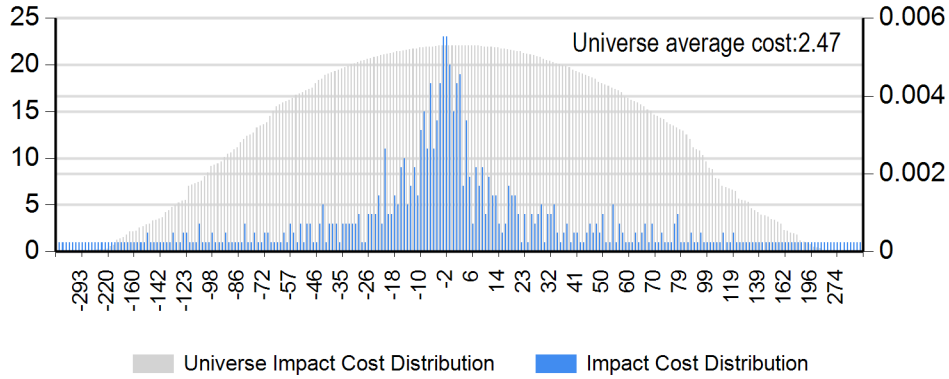
BENCHMARK PERFORMANCE			E - Score
Commission	Fees	Full Day VWAP	
<ul style="list-style-type: none"> <li>Your commission cost was +5.99 bp or \$ +\$52,639 (7.64 bp better than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your fee cost was +5.49 bp or \$ +48,241 (+1.61 bp worse than the Elkins/McSherry Universe)</li> </ul>	<ul style="list-style-type: none"> <li>Your market impact savings was 9.91 bp or \$87,042 (12.38 bp better than the Elkins/McSherry Universe)</li> <li>Your overall trading cost of +1.58 bp was 18.40 bp better than the Elkins/McSherry Universe.</li> <li>Sacramento County trading was higher than the Elkins/McSherry Universe in 7 countries and lower than the Elkins/McSherry Universe in 19 countries.</li> <li>12 of your brokers had trading cost higher than summary universe of countries (principal weighted) in which they traded. 31 of your brokers had lower trading cost.</li> </ul>	<ul style="list-style-type: none"> <li>E - Score : -0.08</li> </ul>



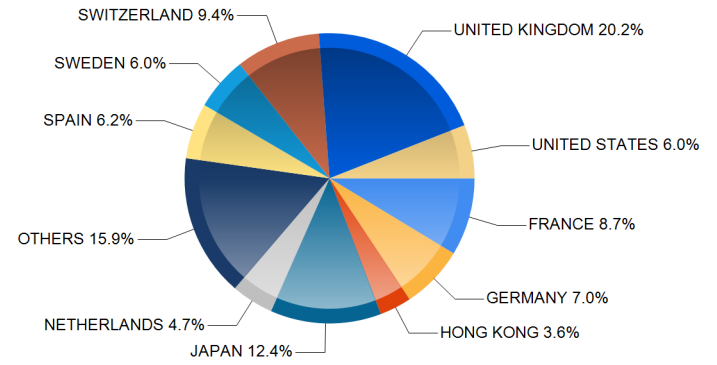
(+) = Cost

**EXECUTIVE SUMMARY**

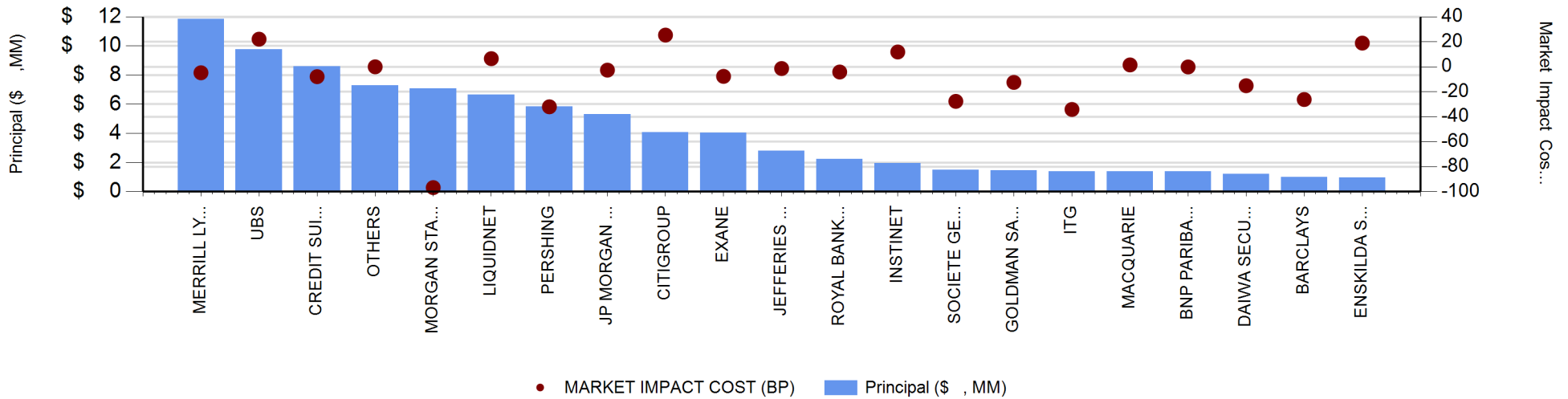
**Cost Distribution**



**Principal Across Country**



**Top 20 Brokers in Principal Traded**





(+) = Cost

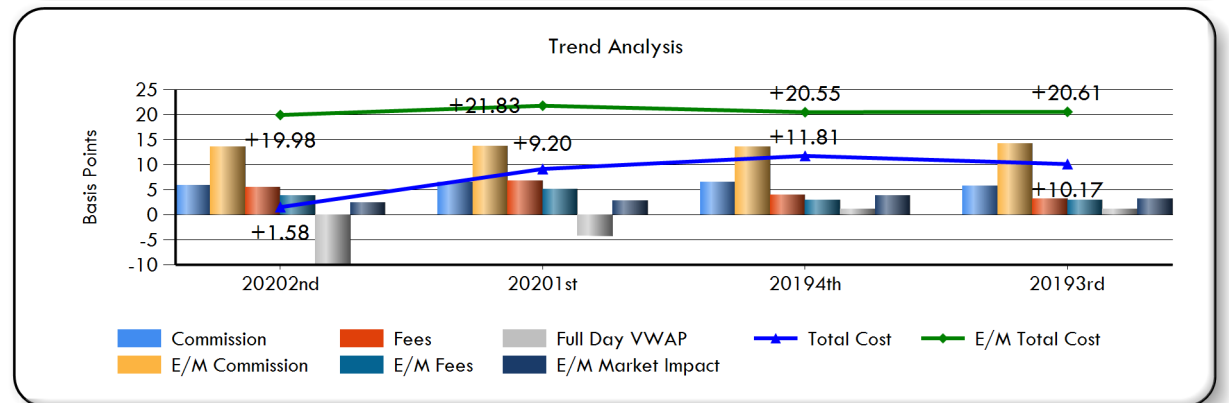
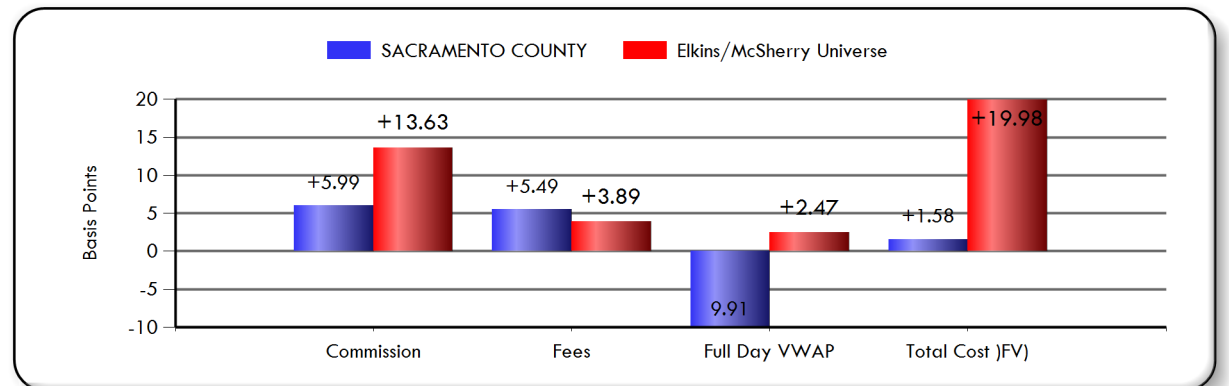
**EXECUTIVE SUMMARY**

**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	+6.13	+13.87	+4.70	+0.12	+0.10	7.08	+2.97	0.82	17.77	-0.07
Buy	+5.87	+13.41	+4.67	+10.46	+7.38	12.52	+2.00	+3.80	18.99	-0.08
<b>Total</b>	<b>+5.99</b>	<b>+13.63</b>	<b>+4.68</b>	<b>+5.49</b>	<b>+3.89</b>	<b>9.91</b>	<b>+2.47</b>	<b>+1.58</b>	<b>18.40</b>	<b>-0.08</b>

**TRADING COMPONENTS**

	Buys	Sells
Trade Principal	45,629,317	42,176,027
Shares	4,069,763	2,113,936
Unique Names	72	61
Liquidity (% POV)	0.389	0.357
Avg. Order Size	9,760	6,367
Avg. Order Completion Time (min)	N/A	N/A
Total Number of Trades	417	332







(+) = Cost

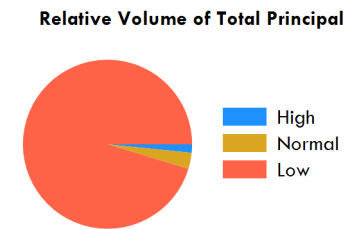
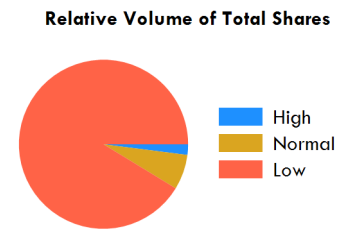
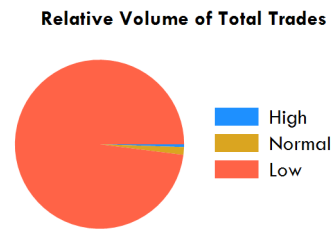
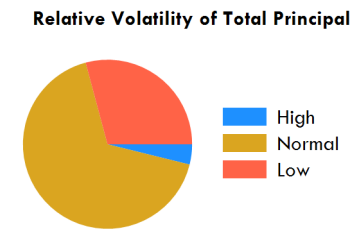
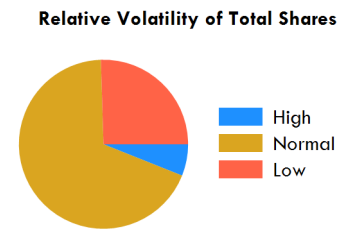
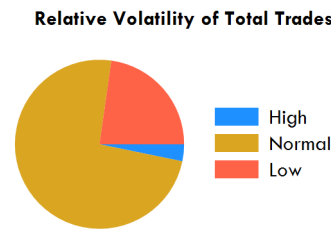
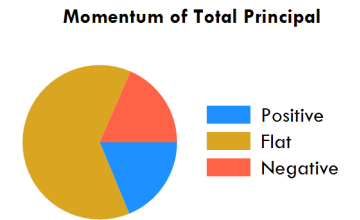
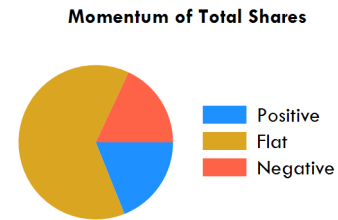
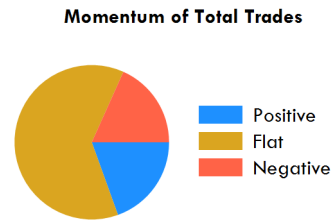
**EXECUTIVE SUMMARY**

**Market Metrics Summary**

Momentum	Positive			Flat			Negative		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
<b>Buys</b>	11%	12%	10%	34%	41%	34%	10%	13%	8%
<b>Sells</b>	8%	7%	9%	28%	22%	29%	9%	5%	10%
<b>Total</b>	19%	19%	19%	62%	63%	63%	18%	18%	18%

Relative Volatility	High			Normal			Low		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
<b>Buys</b>	1%	2%	2%	41%	47%	35%	14%	18%	16%
<b>Sells</b>	2%	4%	2%	33%	22%	32%	9%	8%	13%
<b>Total</b>	3%	6%	4%	74%	68%	67%	23%	25%	29%

Relative Volume	High			Normal			Low		
	Trades	Shares	Principal	Trades	Shares	Principal	Trades	Shares	Principal
% Of Total									
<b>Buys</b>	0%	2%	1%	1%	5%	2%	54%	59%	49%
<b>Sells</b>	0%	0%	0%	1%	1%	1%	44%	33%	47%
<b>Total</b>	1%	2%	2%	1%	7%	3%	98%	91%	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%



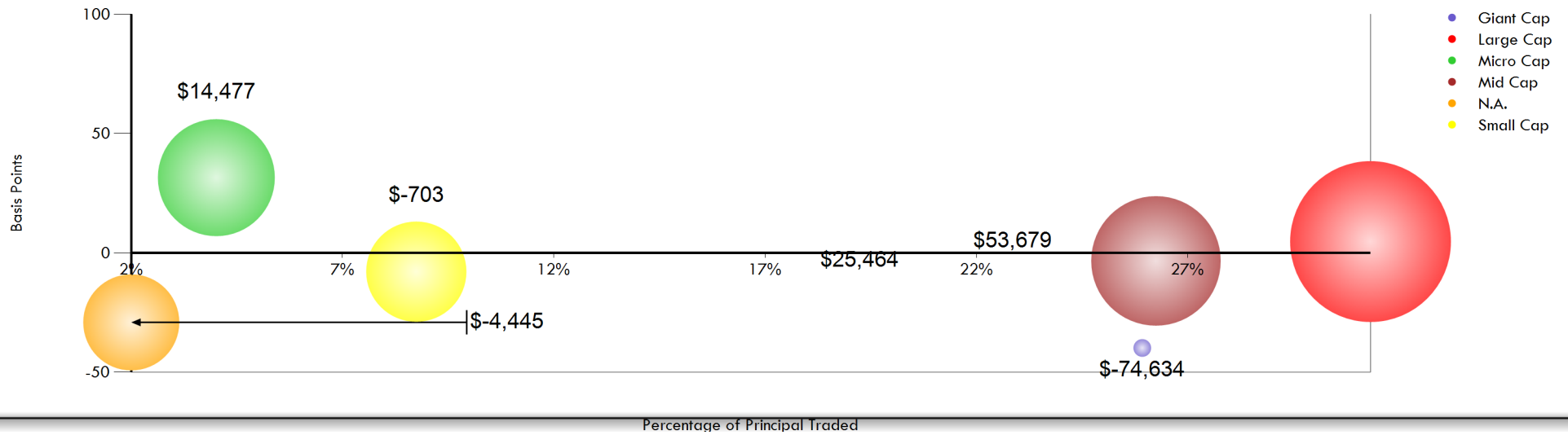
(+) = Cost

**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)		
Large Cap	31.62 %	170,314	+6.20	+13.03	+4.72	+2.39	+19.34	1.34	0.11	\$5 Billion To \$25 Billion
Mid Cap	26.54 %	67,740	+5.92	+14.15	3.39	+2.59	+10.93	12.33	-0.04	\$1 Billion To \$5 Billion
Giant Cap	26.22 %	247,510	+5.42	+14.15	39.88	+2.39	32.36	50.60	-0.32	Over \$25 Billion
Small Cap	9.04 %	95,583	+6.45	+13.19	7.91	+2.56	0.89	17.19	-0.15	\$250 Million To \$1 Billion
Micro Cap	4.30 %	72,669	+6.94	+12.99	+31.50	+2.64	+38.45	+22.79	0.11	Under \$250 Million
N.A.	2.29 %	143,643	+7.15	+12.97	29.16	+2.17	22.01	37.17	-0.03	

**Total Cost by Market Cap**





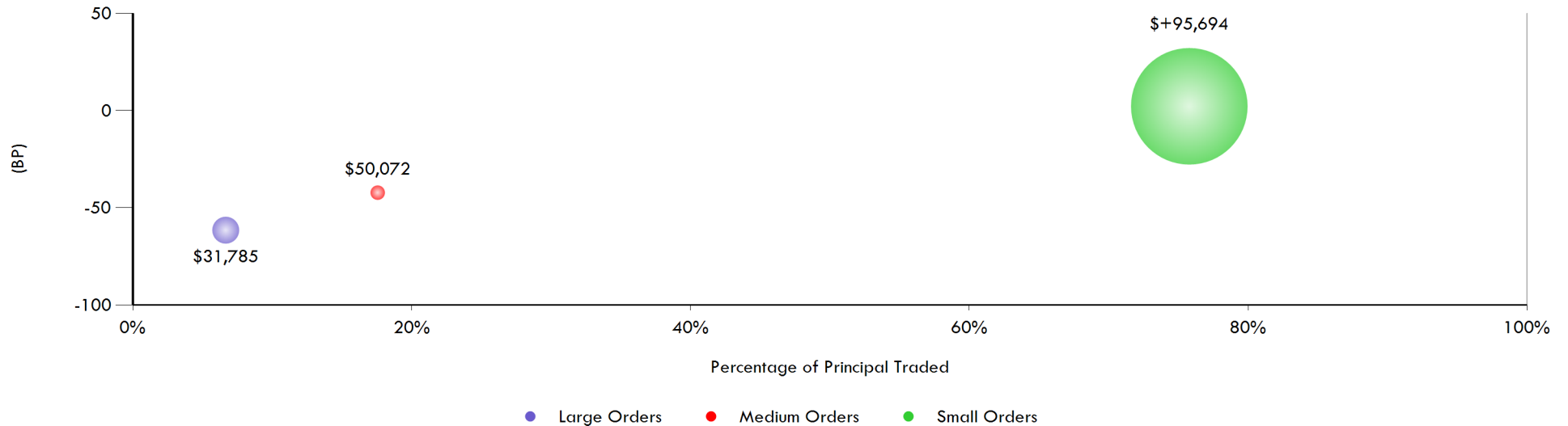
(+) = Cost

**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	4	1,462,357	N/A	+7.07	+15.12	61.59	+1.86	54.46	71.48	-0.42	1M or Greater
Medium Orders	23	670,378	N/A	+5.51	+13.74	42.28	+2.25	32.34	52.70	-0.39	Between 500k - 1M
Small Orders	722	92,157	N/A	+6.01	+13.48	+2.15	+2.57	+14.37	5.79	0.03	500K or Less

**Total Cost By Order Size**





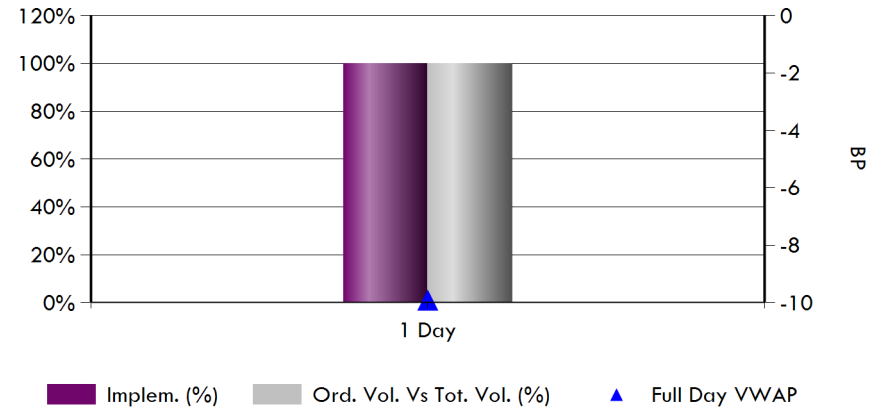
(+) = Cost

**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%	9.91	-0.09

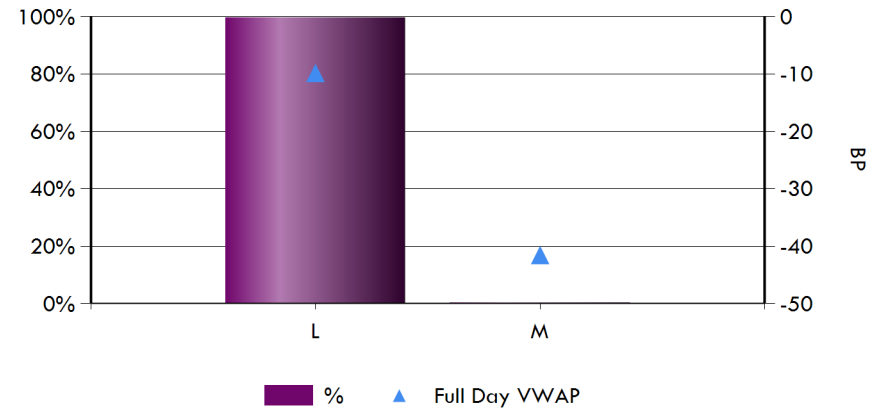
**Implementation Days**



**TRADE DIFFICULTY**

Methodology	Liquid. Cat.	Percent Traded (%)	Full Day VWAP (bp)	E - Score
0%~20% of daily vol.	L	100%	9.78	-0.09
20%~50% of daily vol.	M	0%	41.51	-0.29

**Avg. % of Daily Volume**



**EXECUTIVE SUMMARY**

**COUNTRY PERFORMANCE**

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
<b>HIGHEST COST COUNTRIES - Total Cost Universe Difference</b>										
ITALY - SELLS	<1	0.08%	+4.95	+12.56	+0.00	+0.00	+247.81	+4.17	+236.04	1.75
INDIA	<1	0.41%	+12.24	+15.66	+11.95	+11.19	+143.40	+1.44	+139.30	0.80
AUSTRALIA	<1	0.98%	+4.59	+12.91	+0.00	+1.18	+95.60	+2.03	+84.07	0.67
HONG KONG	3	3.55%	+8.19	+12.84	+10.77	+8.35	+33.94	+0.81	+30.91	0.63
KOREA - BUYS	<1	1.03%	+10.00	+16.14	+0.00	+0.00	+30.83	+3.02	+21.67	0.51
PORTUGAL	2	1.93%	+11.90	+12.87	+0.00	+0.01	+9.72	+3.78	+4.95	0.17
BRAZIL	<1	0.06%	+11.55	+14.99	+3.05	+2.29	+10.12	+3.92	+3.52	N/A

## EXECUTIVE SUMMARY

### COUNTRY PERFORMANCE

Country	Principal (\$ Millions)	Total Principal Traded (%)	COMMISSION		FEES		MARKET IMPACT		Total Cost Diff. From Universe (bp)	E - Score
			Commission (bp)	Bundled Universe Commission (bp)	Fees (bp)	Universe Fees (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)		
<b>LOWEST COST COUNTRIES - Total Cost Universe Difference</b>										
CANADA	2	2.80%	+8.02	+26.36	+0.00	+0.02	93.13	+2.22	113.71	-0.43
ITALY - BUYS	1	1.52%	+7.16	+13.20	+10.00	+12.00	67.72	+1.45	77.21	-0.77
NEW ZEALAND	<1	0.88%	+8.00	+32.86	+0.00	+0.05	39.19	+3.43	67.53	-0.63
SPAIN	5	6.20%	+4.51	+12.97	+0.00	+0.01	50.65	+2.04	61.16	-0.88
NORWAY	<1	0.50%	+6.39	+12.90	+0.00	+0.01	43.57	+3.48	53.56	-0.05
U.K. - BUYS	10	11.93%	+4.63	+12.85	+36.96	+23.93	34.98	+1.16	31.32	-0.06
FRANCE - BUYS	1	1.56%	+5.05	+13.05	+30.00	+30.00	13.24	+1.74	22.98	-0.01
U.K. - SELLS	7	8.29%	+8.96	+13.80	+0.11	+0.00	7.94	+7.45	20.12	-0.08
JAPAN	11	12.37%	+6.40	+12.69	+0.00	+0.02	8.81	+3.01	18.13	-0.12
FRANCE - SELLS	6	7.10%	+4.85	+14.39	+0.00	+0.00	6.08	+1.79	17.41	-0.16
GREECE	<1	0.35%	+9.48	+13.64	+3.25	+2.52	4.80	+7.65	15.88	0.32
DENMARK	3	3.48%	+6.58	+12.77	+0.00	+0.01	5.46	+3.24	14.90	-0.16
GERMANY	6	7.03%	+5.02	+13.03	+0.00	+0.02	4.12	+2.20	14.35	0.02
NETHERLANDS	4	4.70%	+6.27	+12.86	+0.00	+0.03	0.04	+2.10	8.76	0.06
SWEDEN	5	5.96%	+5.96	+12.90	+0.00	+0.01	+0.04	+0.76	7.66	0.13
SWITZERLAND	8	9.44%	+4.84	+13.07	+0.00	+0.02	+5.49	+2.00	4.76	0.09
U.S.	5	5.96%	+3.09	+12.14	+0.19	+0.09	+6.38	+1.29	3.86	-0.15
ISRAEL	<1	0.77%	+10.00	+13.15	+0.00	+0.03	+3.31	+2.18	2.05	-0.09
FINLAND	<1	1.11%	+5.00	+12.95	+0.00	+0.01	+9.80	+3.60	1.76	0.07



(+) = Cost

**TRADE CYCLE DETAIL**

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



Manager	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION		MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20201st (bp)	20194th (bp)	20193rd (bp)
WILLIAM BLAIR & COMP	33	358	37.54%	92,073	-0.02	+6.23	+13.72	+2.62	+2.38	5.01	24.86	0.64	9.17
LSV ASSET MANAGEMENT	22	240	25.07%	91,723	-0.03	+4.52	+13.24	0.41	+2.17	10.18	17.73	3.69	2.04
LAZARD ASSET MANAGEM	33	151	37.39%	217,417	-0.16	+6.75	+13.81	28.84	+2.75	37.35	2.99	7.52	19.80

**NOTES**

- Manager above made up 100.00 % of principal traded.



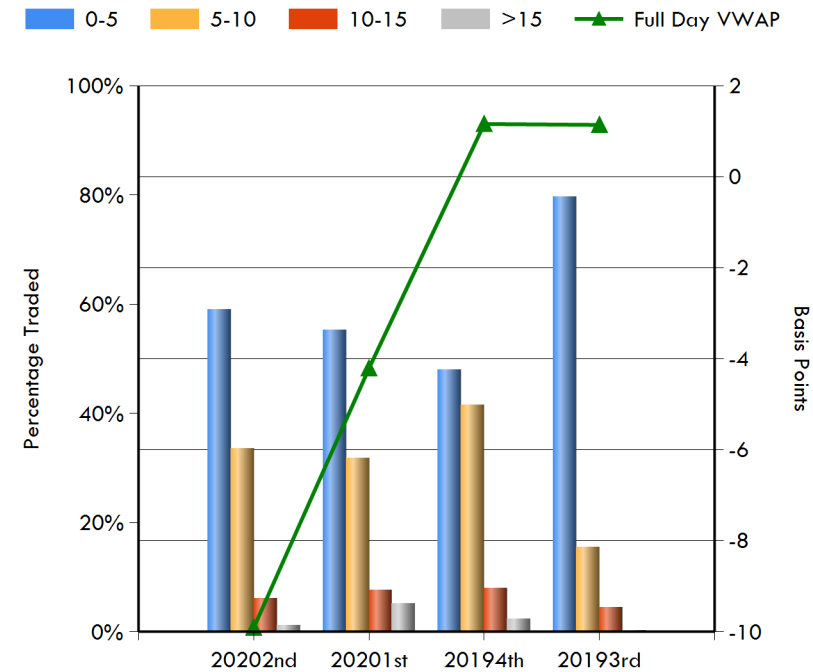
(+) = Cost

**COMMISSION REVIEW**

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

Broker	Total Commission	Commission (bp)	Bundled Universe (bp)	All Trading Universe (bp)	Commission Trends		
					20201st (bp)	20194th (bp)	20193rd (bp)
MERRILL LY	6,357	+5.36	+12.80	+4.52	+6.47	+7.04	+5.06
CREDIT SUI	5,655	+6.58	+13.15	+4.65	+8.05	+8.19	+6.47
UBS	5,544	+5.67	+13.83	+4.65	+7.72	+6.99	+7.60
MORGAN STA	4,942	+6.98	+14.95	+4.84	+8.24	+8.80	+6.40
JP MORGAN	3,783	+7.11	+15.60	+5.20	+8.44	+7.30	+7.70
LIQUIDNET	3,147	+4.72	+12.91	+4.13	+4.94	+4.22	+4.19
PERSHING	2,841	+4.85	+13.23	+4.84	+5.28	-	-
ROYAL BANK	2,682	+12.00	+13.80	+4.61	+12.00	+12.00	-
CITIGROUP	1,972	+4.85	+13.12	+4.95	+4.35	+6.01	+4.34
INSTINET	1,403	+7.13	+12.83	+4.53	+4.01	+4.72	+3.98
JEFFERIES	1,335	+4.74	+12.45	+3.73	+5.31	+9.63	+6.08
EXANE	1,225	+3.04	+13.70	+4.59	+3.44	+3.96	+4.69
GOLDMAN SA	1,137	+7.82	+13.44	+4.79	+8.93	+9.67	+5.09
BNP PARIBA	1,007	+7.35	+12.76	+4.72	+7.00	+6.82	+7.52
BARCLAYS	973	+9.62	+13.50	+4.61	+9.14	+10.67	+8.42
MACQUARIE	941	+6.84	+12.75	+4.70	+7.67	+12.00	+7.76
MIRAE ASSE	908	+10.00	+16.14	+6.69	-	-	-
DAIWA SECU	780	+6.40	+12.69	+4.51	+5.21	+6.79	+5.00
SOCIETE GE	741	+5.00	+13.15	+4.63	+5.81	+5.13	+4.78
ITG	703	+5.08	+13.14	+4.55	+5.58	+4.99	+4.69

**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)	20201st (bp)	20194th (bp)	20193rd (bp)
WILLIAM BLAIR & COMP	33	358	37.54%	92,073	-0.02	+6.23	+13.72	+2.62	+2.38	5.01	24.86	0.64	9.17
LAZARD ASSET MANAGEM	33	151	37.39%	217,417	-0.16	+6.75	+13.81	28.84	+2.75	37.35	2.99	7.52	19.80
LSV ASSET MANAGEMENT	22	240	25.07%	91,723	-0.03	+4.52	+13.24	0.41	+2.17	10.18	17.73	3.69	2.04

**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)	20201st (bp)	20194th (bp)	20193rd (bp)
MERRILL LYNCH	12	83	13.50%	142,863	-0.07	6,357	+5.36	+12.80	4.78	+2.15	12.53	6.06	+1.85	+2.30
UBS	10	100	11.13%	97,735	0.21	5,544	+5.67	+13.83	+22.19	+2.84	+12.28	32.32	12.26	10.93
CREDIT SUISSE	9	73	9.79%	117,744	-0.08	5,655	+6.58	+13.15	7.88	+2.38	16.65	2.34	10.69	0.01
MORGAN STANLEY	7	57	8.06%	124,182	-0.24	4,942	+6.98	+14.95	96.35	+1.66	109.43	38.33	+1.88	30.41
LIQUIDNET	7	64	7.59%	104,105	-0.11	3,147	+4.72	+12.91	+6.58	+1.75	+8.84	26.81	53.25	8.84
PERSHING	6	41	6.67%	142,820	-0.43	2,841	+4.85	+13.23	31.87	+2.43	42.78	29.37	-	-
JP MORGAN CHASE	5	45	6.06%	118,222	-0.06	3,783	+7.11	+15.60	2.65	+2.50	13.35	+40.95	+26.76	46.68
CITIGROUP	4	32	4.63%	127,008	0.26	1,972	+4.85	+13.12	+25.42	+1.99	+15.28	15.33	6.35	+8.79
EXANE	4	11	4.59%	366,607	-0.42	1,225	+3.04	+13.70	7.66	+1.68	13.34	13.38	44.41	4.04
JEFFERIES & CO	3	27	3.21%	104,353	-0.02	1,335	+4.74	+12.45	1.36	+1.65	9.81	5.99	+0.25	7.70

**NOTES**

- Brokers above made up 75.23 % 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)	20201st (bp)	20194th (bp)	20193rd (bp)
ROYAL BANK OF CANADA	2	9	2.55%	248,297	-0.09	2,682	+12.00	+13.80	4.14	+7.45	13.34	+0.38	+11.75	-
INSTINET	2	28	2.24%	70,280	0.34	1,403	+7.13	+12.83	+11.90	+3.00	+3.18	+36.30	+15.02	13.53
SOCIETE GENERALE	1	15	1.69%	98,841	-0.36	741	+5.00	+13.15	27.61	+1.79	37.60	7.21	17.26	17.93
GOLDMAN SACHS	1	11	1.66%	132,140	-0.17	1,137	+7.82	+13.44	12.45	+5.07	21.77	25.88	46.74	+8.61
ITG	1	22	1.58%	62,921	-0.22	703	+5.08	+13.14	34.22	+4.44	45.44	+18.39	21.05	17.58
MACQUARIE	1	8	1.57%	171,975	0.11	941	+6.84	+12.75	+1.52	+2.08	5.46	48.92	+26.20	1.72
BNP PARIBAS	1	9	1.56%	152,171	0.34	1,007	+7.35	+12.76	0.09	+1.98	6.36	24.36	21.11	14.18
DAIWA SECURITIES	1	5	1.39%	243,894	-0.21	780	+6.40	+12.69	15.13	+3.01	24.45	17.08	8.09	12.80
BARCLAYS	1	12	1.15%	84,324	0.04	973	+9.62	+13.50	26.30	+5.26	29.24	26.87	6.96	9.16
ENSKILDA SECURITIES	<1	5	1.09%	191,090	0.24	669	+7.00	+12.90	+18.98	+0.76	+12.31	+12.54	-	9.49

**NOTES**

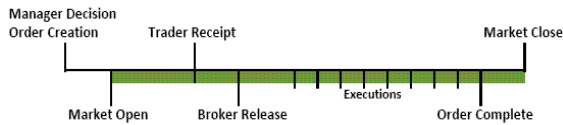
- Brokers above made up 16.46 % of principal traded.



(+) = 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)	20201st (bp)	20194th (bp)	20193rd (bp)
MIRAE ASSET	<1	2	1.03%	453,973	0.51	908	+10.00	+16.14	+30.83	+3.02	+21.67	-	-	-
TD WATERHOUSE	<1	3	0.85%	248,832	-0.13	458	+6.14	+26.36	+1.15	+2.22	21.31	-	-	-
MIZUHO	<1	11	0.70%	55,772	-0.55	307	+5.00	+12.69	48.61	+3.01	59.33	13.23	10.12	10.29
SVENSKA HANDELSBANKE	<1	2	0.62%	270,977	0.02	379	+7.00	+12.90	3.88	+0.76	10.55	17.15	+22.36	28.93
SMBC SECURITIES INC	<1	6	0.60%	88,423	-0.19	293	+5.52	+12.69	+1.33	+3.01	8.87	17.95	12.59	20.42
JOH BERENBERG GOSSLE	<1	3	0.56%	162,603	0.05	341	+7.00	+13.03	+1.36	+2.20	6.89	+2.75	12.50	15.81
DANSKE BANK	<1	5	0.54%	94,163	-0.16	330	+7.00	+12.79	2.77	+2.84	11.41	-	-	-
NUMIS SECURITIES	<1	5	0.45%	78,427	0.00	265	+6.75	+13.59	3.69	+6.05	16.99	+20.74	-	-
CREDIT AGRICOLE	<1	5	0.44%	77,683	-0.29	238	+6.11	+13.85	13.89	+3.03	24.68	+37.24	4.99	+33.32
D CARNEGIE AG	<1	3	0.39%	113,144	-0.65	238	+7.00	+12.90	132.24	+0.76	138.91	106.88	35.01	+14.94

**NOTES**

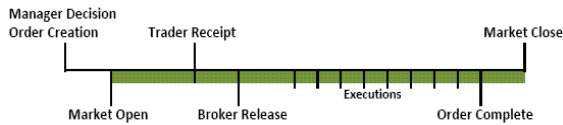
- Brokers above made up 6.17 % of principal traded.



(+) = Cost

**TRADE CYCLE DETAIL**

**BROKER PERFORMANCE (FULL DAY VWAP)**



Broker	Principal Traded (\$ Millions)	Total Orders Traded	% Principal	Avg. Principal (\$)	E - Score	COMMISSION			MARKET IMPACT		TOTAL COST/SAVINGS	Commission+Fees+Full Day VWAP Vs. Universe TREND		
						Commission (\$)	Commission (bp)	Bundled Universe (bp)	Full Day VWAP (bp)	Universe Full Day VWAP (bp)	Commission +Fees+Full Day VWAP Vs. Universe (bp)	20201st (bp)	20194th (bp)	20193rd (bp)
SKANDINAVISKA ENSKIL	<1	1	0.35%	306,828	0.36	215	+7.00	+12.90	+29.84	+3.48	+20.45	-	-	-
BANK J. VONTOBEL	<1	11	0.28%	22,572	-0.20	174	+7.00	+13.07	3.70	+2.00	11.79	-	9.27	-
MAINFIRSTBANK	<1	6	0.28%	40,977	-0.45	172	+7.00	+13.07	36.86	+2.00	44.95	-	-	-
HSBC BANK	<1	4	0.27%	59,409	-1.02	71	+3.00	+12.86	53.95	+1.24	39.21	70.08	15.17	36.27
KEPLER EQUITIES	<1	3	0.24%	71,002	N/A	90	+4.24	+14.39	+21.66	+1.79	+9.72	-	+52.01	31.28
SCOTIA CAPITAL	<1	6	0.18%	26,465	-0.38	47	+2.94	+26.36	48.22	+2.22	73.89	51.79	20.02	24.10
SC BERNSTEIN	<1	2	0.17%	74,212	1.12	59	+4.00	+12.81	+24.32	+1.26	+16.18	+57.99	+12.83	14.59
PAVILION GLOBAL MKT	<1	6	0.10%	15,255	-0.63	27	+3.00	+26.36	95.37	+2.22	120.97	47.54	19.57	-
NOMURA	<1	1	0.09%	76,047	0.34	91	+12.00	+15.66	+45.40	+1.44	+41.09	13.90	+48.00	12.88
LIBERUM CAPITAL LTD	<1	2	0.05%	23,691	-0.47	33	+7.00	+12.85	30.99	+1.16	11.41	21.64	+11.87	-

**NOTES**

- Brokers above made up 2.02 % 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)	20201st (bp)	20194th (bp)	20193rd (bp)
ABG SECURITIES	<1	1	0.05%	46,367	0.51	32	+7.00	+12.90	+51.76	+0.76	+45.08	+105.73	-	-
CANACCORD GENUITY	<1	1	0.04%	31,311	0.00	16	+5.00	+12.85	0.53	+1.16	33.07	-	15.59	-
MEDIOBANCA	<1	3	0.03%	7,379	0.30	16	+7.00	+12.56	+61.45	+4.17	+51.72	-	-	-

**NOTES**

- Brokers above made up 0.11 % 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)	20201st (bp)	20194th (bp)	20193rd (bp)
<b>GRAND TOTAL</b>	33	151	37.39%	217,417	-0.16	22,147	+6.75	+13.81	28.84	+2.75	37.35	2.99	7.52	19.80
MERRILL LYNCH	6	13	6.69%	452,138	-0.12	3,376	+5.74	+12.62	9.64	+2.08	16.20	+4.27	+4.00	17.46
EXANE	4	10	4.55%	399,406	-0.43	1,198	+3.00	+13.69	7.98	+1.68	13.63	16.04	47.91	+21.31
PERSHING	4	12	4.31%	315,203	-0.76	1,980	+5.23	+13.17	68.02	+1.97	78.23	24.74	-	-
CREDIT SUISSE	3	16	3.49%	191,794	-0.01	2,813	+9.17	+12.84	+0.38	+2.88	5.49	+13.00	15.87	+1.33
MORGAN STANLEY	2	13	2.71%	183,169	-0.37	1,874	+7.87	+18.88	245.15	+1.64	270.58	31.83	3.73	58.04
ROYAL BANK OF CANADA	2	9	2.55%	248,297	-0.09	2,682	+12.00	+13.80	4.14	+7.45	13.34	+0.38	+11.75	-
LIQUIDNET	2	14	2.09%	130,951	0.11	964	+5.26	+13.16	+8.94	+2.59	+13.68	+3.58	91.60	33.46
ITG	1	22	1.58%	62,921	-0.22	703	+5.08	+13.14	34.22	+4.44	45.44	+20.43	21.93	11.08
UBS	1	7	1.27%	159,414	0.56	737	+6.61	+13.29	+23.14	+4.00	+12.50	33.82	10.56	16.91
SOCIETE GENERALE	1	7	1.24%	154,962	0.00	542	+5.00	+13.05	4.99	+1.74	14.78	+20.98	10.40	9.51



(+) = 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)	20201st (bp)	20194th (bp)	20193rd (bp)
<b>GRAND TOTAL</b>	22	240	25.07%	91,723	-0.03	9,948	+4.52	+13.24	0.41	+2.17	10.18	17.73	3.69	2.04
CREDIT SUISSE	5	50	5.63%	98,834	-0.10	2,471	+5.00	+13.38	5.42	+2.11	16.04	+1.11	11.17	+2.21
MERRILL LYNCH	5	52	5.26%	88,814	-0.03	1,847	+4.00	+12.98	+0.33	+2.31	10.99	21.52	7.42	+11.31
UBS	4	31	4.95%	140,192	0.22	2,173	+5.00	+13.09	+13.50	+2.38	+3.02	26.40	16.08	8.72
CITIGROUP	4	28	4.19%	131,379	0.27	1,471	+4.00	+13.00	+27.60	+1.87	+16.85	10.94	10.68	+10.13
INSTINET	1	22	1.27%	50,681	0.40	444	+3.98	+12.93	+28.85	+3.00	+16.88	+42.24	+31.19	13.65
JP MORGAN CHASE	<1	11	0.99%	78,839	-0.69	260	+3.00	+12.99	59.93	+2.00	72.05	77.97	+27.29	-
LIQUIDNET	<1	3	0.83%	242,703	-0.64	510	+7.00	+12.85	34.26	+1.16	15.15	37.37	-	-
MIZUHO	<1	10	0.47%	41,201	-0.29	206	+5.00	+12.69	14.49	+3.01	25.21	6.76	8.92	10.41
SOCIETE GENERALE	<1	8	0.45%	49,735	-1.28	199	+5.00	+13.41	89.05	+1.91	99.57	27.95	17.61	36.50
HSBC BANK	<1	4	0.27%	59,409	-1.02	71	+3.00	+12.86	53.95	+1.24	39.21	70.08	15.17	36.34





(+) = 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)	20201st (bp)	20194th (bp)	20193rd (bp)
<b>GRAND TOTAL</b>	33	358	37.54%	92,073	-0.02	20,544	+6.23	+13.72	+2.62	+2.38	5.01	24.86	0.64	9.17
MORGAN STANLEY	5	38	5.14%	118,687	-0.14	2,993	+6.64	+12.95	19.71	+1.66	26.34	29.98	+38.11	9.09
UBS	4	62	4.91%	69,543	0.10	2,634	+6.11	+14.72	+30.74	+3.02	+21.60	35.81	12.10	+1.42
LIQUIDNET	4	47	4.67%	87,261	-0.10	1,673	+4.08	+12.81	+12.83	+1.48	+10.98	0.75	+12.92	+4.84
JP MORGAN CHASE	3	31	3.84%	108,839	0.11	2,229	+6.61	+17.18	+12.22	+2.51	0.37	+55.75	+80.01	8.33
JEFFERIES & CO	2	20	2.52%	110,758	-0.19	565	+2.55	+12.36	10.27	+1.76	21.19	4.09	11.38	+19.52
PERSHING	2	29	2.36%	71,489	0.18	861	+4.16	+13.32	+34.41	+3.28	+22.22	34.46	-	-
MERRILL LYNCH	1	18	1.55%	75,640	-0.02	1,134	+8.33	+12.95	1.10	+1.90	1.85	39.50	+6.64	+17.86
GOLDMAN SACHS	1	8	1.50%	164,586	-0.17	1,066	+8.10	+13.52	13.05	+5.29	22.24	26.77	0.19	11.08
ENSKILDA SECURITIES	<1	5	1.09%	191,090	0.24	669	+7.00	+12.90	+18.98	+0.76	+12.31	-	-	9.49
MACQUARIE	<1	7	1.07%	133,690	-0.19	589	+6.30	+12.71	6.95	+2.68	15.70	78.59	-	+17.47



(+) = Cost

**TRADE DETAIL ANALYSIS**

**Largest Principal Volume Traded**

							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Principal (\$)	% of Volume	E - Score	Full Day VWAP (bp)
INDUSTRIA DE DISENO TEXTIL COM	4	117,418	-3,262,693	3,262,693	1.36%	-1.15	61.57
SWISS RE AG COMMON STOCK CHF.1	15	38,620	3,068,789	3,068,789	0.14%	0.35	+22.38
RENTOKIL INITIAL PLC COMMON ST	16	465,927	2,742,395	2,742,395	0.89%	-0.02	+1.88
SIEMENS AG REG COMMON STOCK NP	20	23,880	1,697,224	2,614,878	0.03%	-0.15	12.06
VIVENDI COMMON STOCK EUR5.5	4	100,910	2,579,518	2,579,518	0.95%	-0.09	2.30
INTERCONTINENTAL HOTELS GROU C	10	57,397	-2,456,394	2,456,394	1.09%	0.00	6.84
SANDS CHINA LTD COMMON STOCK U	5	516,800	-2,067,364	2,067,364	0.58%	0.75	+32.63
FANUC CORP COMMON STOCK	4	10,500	-1,922,823	1,922,823	0.27%	-0.11	12.71
GENMAB A/S COMMON STOCK DKK1.0	11	6,141	1,872,320	1,872,320	0.14%	-0.17	12.30
RYANAIR HOLDINGS PLC SP ADR AD	1	21,911	1,768,130	1,768,130	0.44%	-0.44	38.97

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

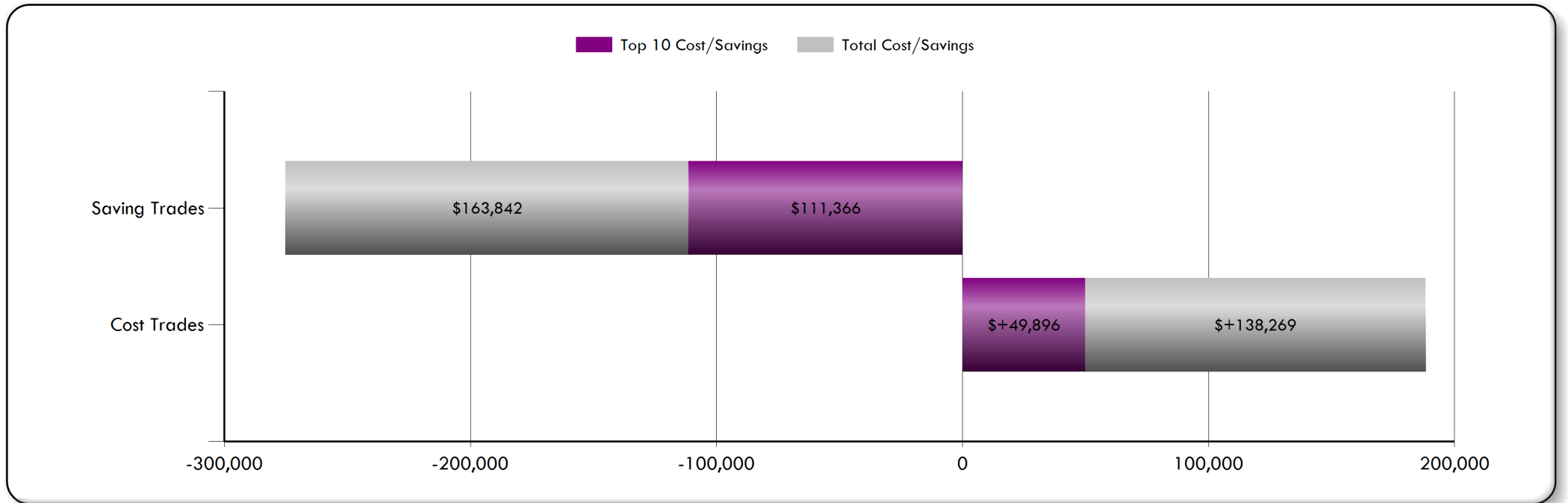
							Market Impact
Name	# Orders	Shares	Net Principal (\$)	Commission (bp)	% of Volume	E - Score	Full Day VWAP (bp)
VICTREX PLC COMMON STOCK GBP.0	30	19,802	494,611	+5.51	0.30%	0.20	+8.49
SIEMENS AG REG COMMON STOCK NP	20	23,880	1,697,224	+4.00	0.03%	-0.15	12.06
MENICON CO LTD COMMON STOCK	18	28,100	-1,315,859	+6.81	0.56%	-0.10	9.60
TRAINLINE PLC COMMON STOCK GBP	17	149,557	-755,576	+5.29	1.41%	0.00	25.53
RENAULT SA COMMON STOCK EUR3.8	16	18,300	475,176	+5.00	0.05%	-0.17	15.20
RENTOKIL INITIAL PLC COMMON ST	16	465,927	2,742,395	+10.74	0.89%	-0.02	+1.88
SWISS RE AG COMMON STOCK CHF.1	15	38,620	3,068,789	+4.79	0.14%	0.35	+22.38
ENAGAS SA COMMON STOCK EUR1.5	15	13,800	-303,703	+3.48	0.22%	-0.14	16.24
HUAZHU GROUP LTD ADR ADR	14	26,421	803,931	+4.44	0.10%	-0.38	40.76
BLUE PRISM GROUP PLC COMMON ST	14	53,788	-815,889	+6.63	0.53%	0.00	18.20



(+) = Cost

**TRADE CONTRIBUTIONS**

Cost/Savings Performance				
Category	Principal (\$)	# of Trades	Avg. Market Impact (bp)	Percentage of all Cost/Savings
10 High Cost Trades	4,271,746	10	+207.43	26.52%
Cost Trades	38,547,211	335	+59.26	100.00%
Saving Trades	49,258,133	414	55.89	100.00%
10 Low Cost Trades	8,051,693	10	160.93	40.47%





(+) = Cost

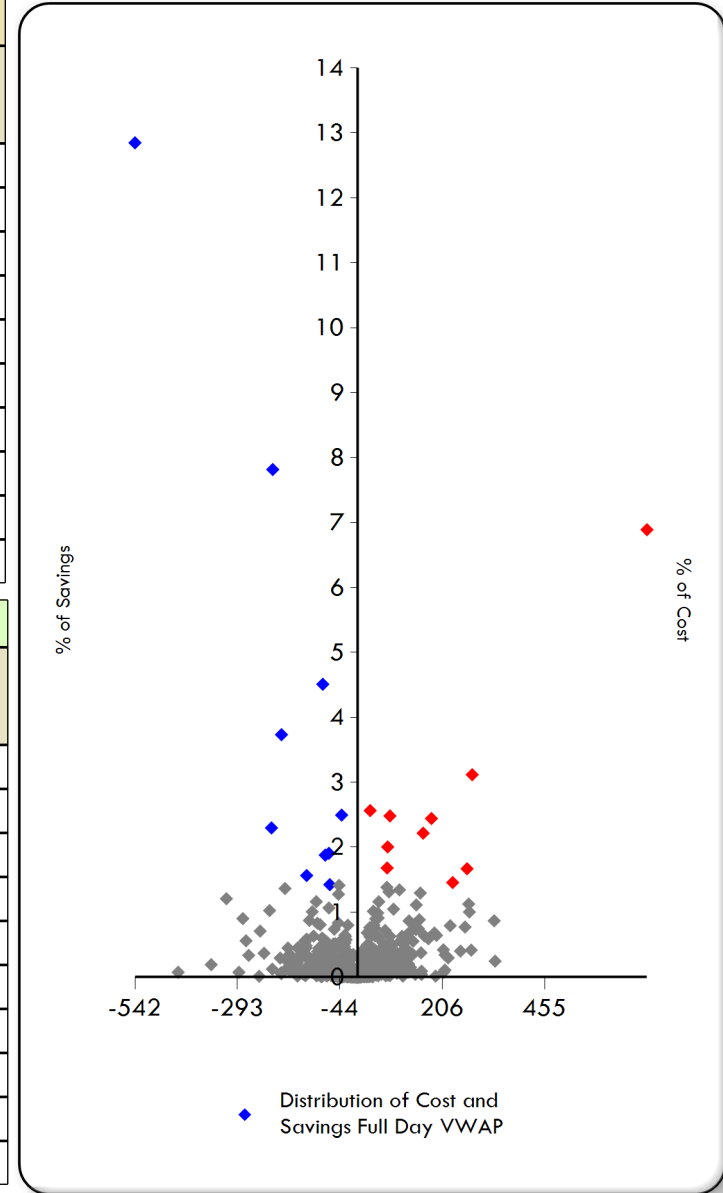
**TRADE LEVEL DETAILS**

**10 High Cost Trades (Full Day VWAP)**

Side	Country	Security	Trade Date	Principal (\$)	Cost (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	US	GSX TECHED	20200414	196,981	6.89%	2.34	+704.37	WILLI	UBS
Sell	AST	CSR LTD CO	20200401	204,340	3.12%	1.40	+278.95	LSV A	CREDI
Sell	NTH	ASML HOLDI	20200608	1,571,281	2.56%	0.32	+30.61	LAZAR	MERRI
Buy	HKG	SANDS CHIN	20200527	598,141	2.48%	1.71	+78.70	LAZAR	BNP P
Sell	US	GLOBANT SA	20200610	251,223	2.44%	1.00	+179.65	WILLI	JEFFE
Sell	IND	PVR LTD CO	20200519	257,260	2.22%	0.87	+159.49	WILLI	JP MO
Sell	SWI	SWISS RE A	20200608	512,112	2.00%	0.86	+73.09	LSV A	CITIG
Buy	NTH	NN GROUP N	20200605	443,709	1.68%	1.25	+71.75	LSV A	UBS
Buy	UK	NETWORK IN	20200610	120,997	1.67%	0.03	+266.28	WILLI	MORGA
Sell	UK	FEVERTREE	20200406	115,702	1.46%	0.02	+231.39	WILLI	PERSH

**10 Low Cost Trades (Full Day VWAP)**

Side	Country	Security	Trade Date	Principal (\$)	Savings (%)	E - Score	Full Day VWAP (bp)	Manager	Exbroker
Buy	UK	COMPASS GR	20200519	616,797	12.85%	-0.01	542.12	LAZAR	MORGA
Sell	CAN	SUNCOR ENE	20200401	1,062,028	7.82%	-0.81	206.72	LAZAR	MORGA
Buy	SPA	INDUSTRIA	20200617	1,447,988	4.51%	-0.91	84.98	LAZAR	PERSH
Buy	ITA	TECHNOGYM	20200401	543,431	3.73%	-1.35	185.54	LAZAR	PERSH
Sell	US	RYANAIR HO	20200605	1,768,130	2.49%	-0.44	38.97	LAZAR	MERRI
Buy	GER	TEAMVIEWER	20200514	294,909	2.30%	-1.72	209.84	WILLI	MORGA
Buy	SPA	INDUSTRIA	20200619	743,802	1.91%	-2.44	70.01	LAZAR	EXANE
Sell	US	WIX.COM LT	20200521	659,107	1.88%	-0.72	79.04	WILLI	JEFFE
Buy	UK	NETWORK IN	20200507	341,868	1.56%	N/A	124.31	WILLI	MORGA
Buy	SPA	IBERDROLA	20200415	573,634	1.42%	-0.81	67.81	LSV A	JP MO



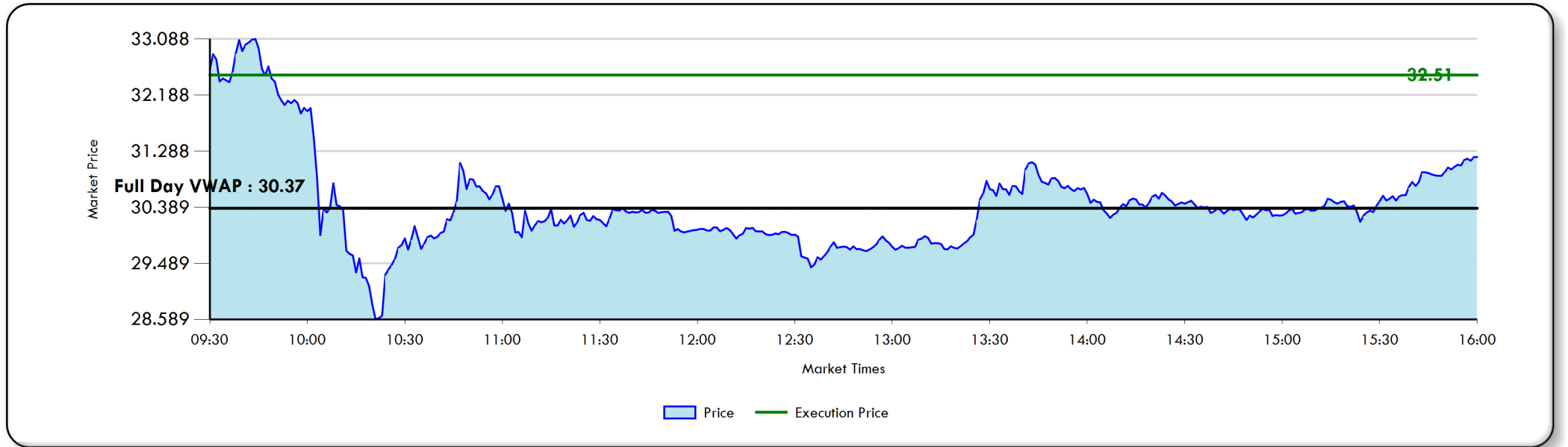


(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**GSX TECHEDU INC ADR ADR USD.0 - 20200414**

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	UBS	US	USD	BK1VBN1	04/14/2020 09:30:00	04/14/2020 16:00:00	196,981	32.51	30.37	+12,962	+704.37	2.34	0.03



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 6.89% of your market impact cost.

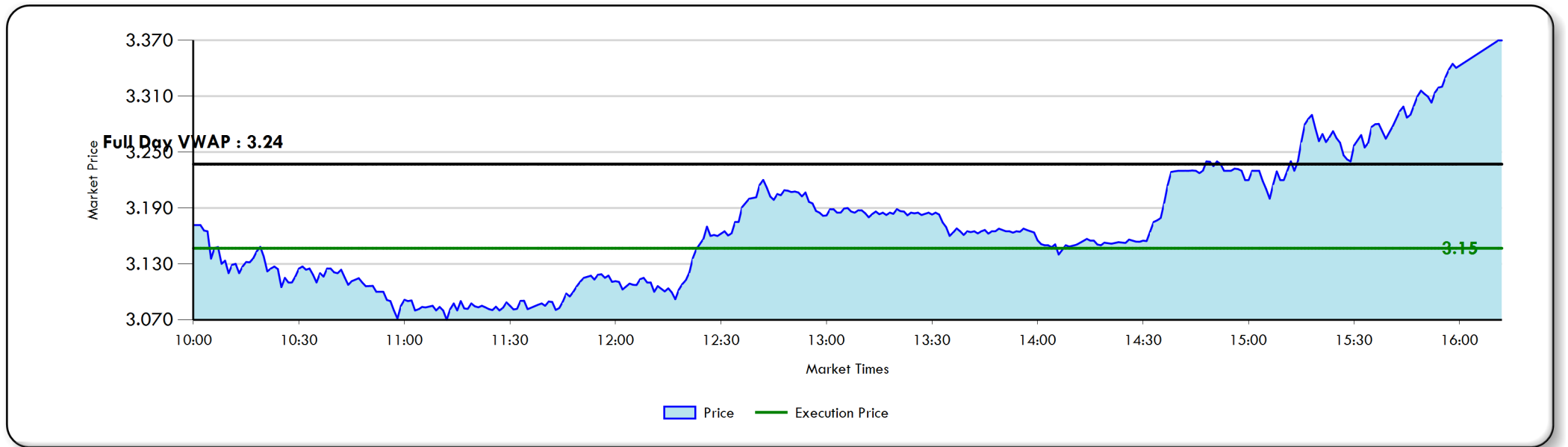


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**TRADE LEVEL DETAIL - HIGH COST**

**CSR LTD COMMON STOCK - 20200401**

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	CREDIT SUISSE	AST	AUD	6238645	04/01/2020 10:00:00	04/01/2020 16:12:00	204,340	3.15	3.24	+5,864	+278.95	1.40	2.92



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 3.12% of your market impact cost.

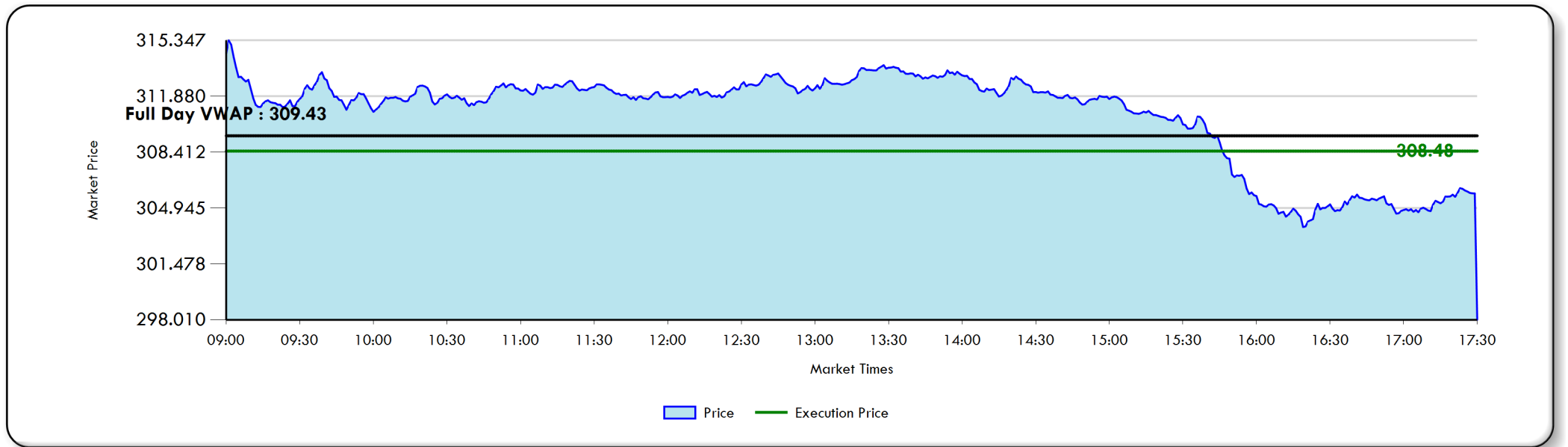


(+) = Cost

**TRADE LEVEL DETAIL - HIGH COST**

**ASML HOLDING NV COMMON STOCK E - 20200608**

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	NTH	EUR	B929F46	06/08/2020 09:00:00	06/08/2020 17:30:00	1,571,281	308.48	309.43	+4,824	+30.60	0.32	0.43



**NOTES**

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.56% of your market impact cost.

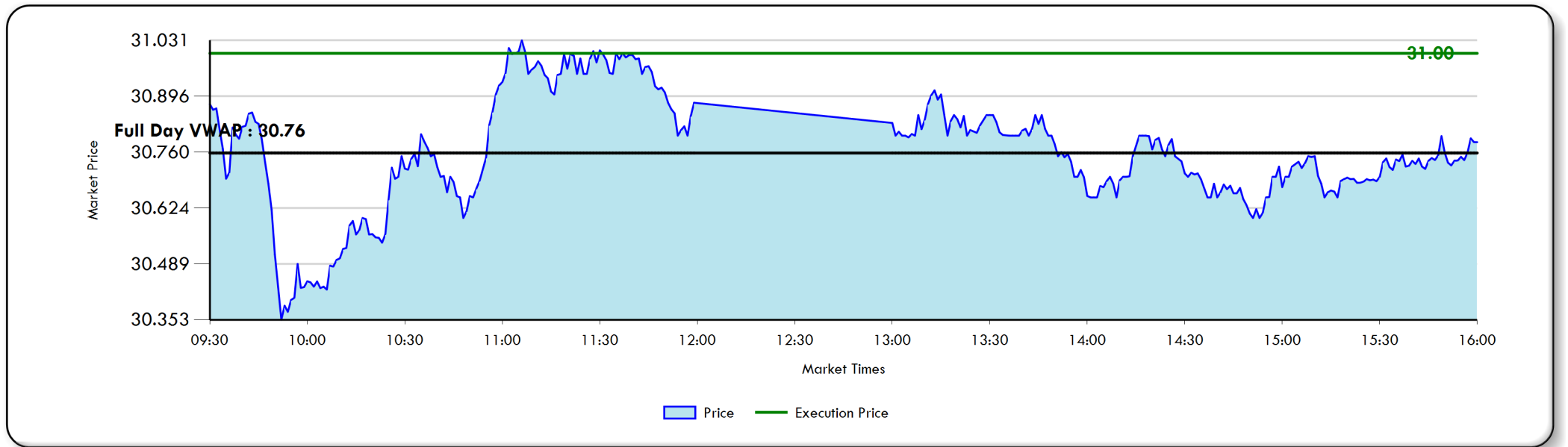


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**TRADE LEVEL DETAIL - HIGH COST**

**SANDS CHINA LTD COMMON STOCK U - 20200527**

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	BNP PARIBAS	HKG	HKD	B5B23W2	05/27/2020 09:30:00	05/27/2020 16:00:00	598,141	31.00	30.76	+4,671	+78.69	1.71	0.65



**NOTES**

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



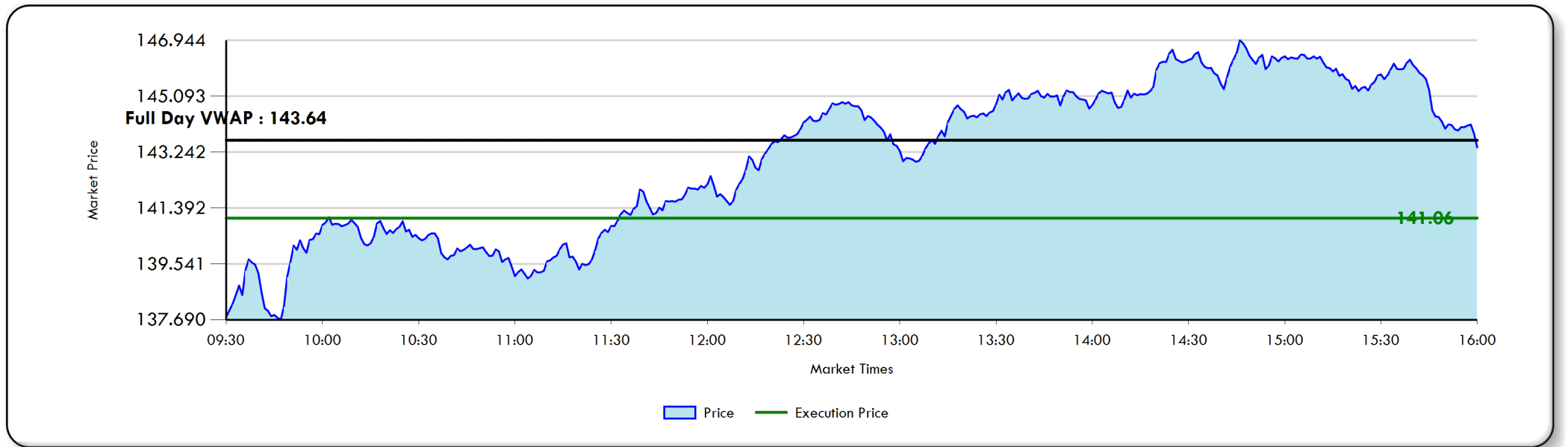


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

GLOBALT SA COMMON STOCK USD1.2 - 20200610

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	JEFFERIES & CO	US	USD	BP40HF4	06/10/2020 09:30:00	06/10/2020 16:00:00	251,223	141.06	143.64	+4,596	+179.64	1.00	0.15



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.44% of your market impact cost.

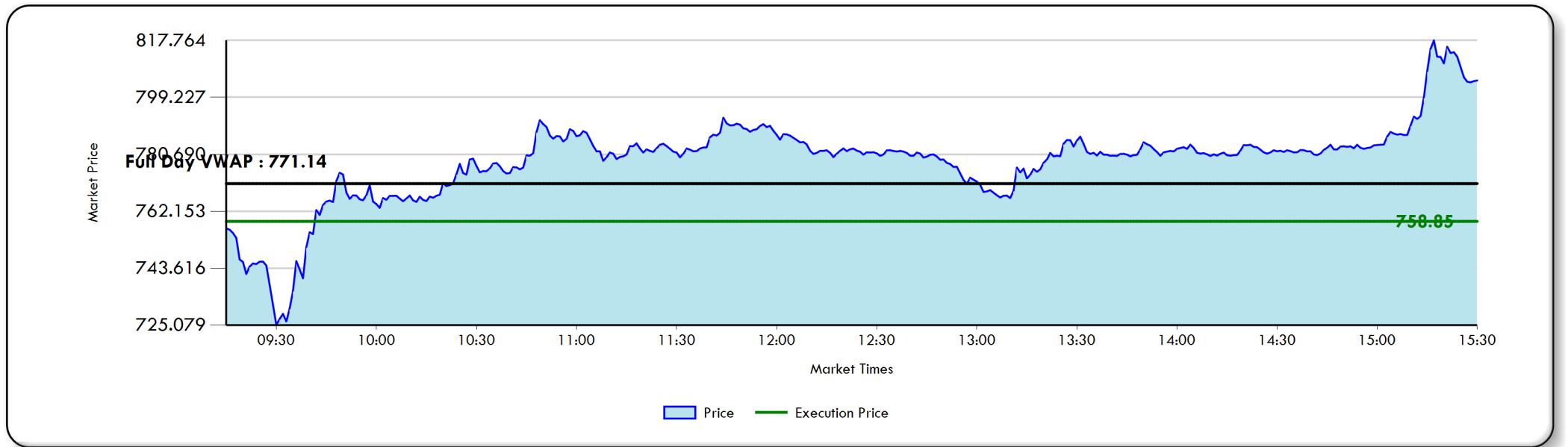


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TRADE LEVEL DETAIL - HIGH COST

PVR LTD COMMON STOCK INR10. - 20200519

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	JP MORGAN CHASE	IND	INR	BOLX4M7	05/19/2020 09:15:00	05/19/2020 15:30:00	257,260	758.85	771.14	+4,170	+159.49	0.87	0.30



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 2.22% of your market impact cost.

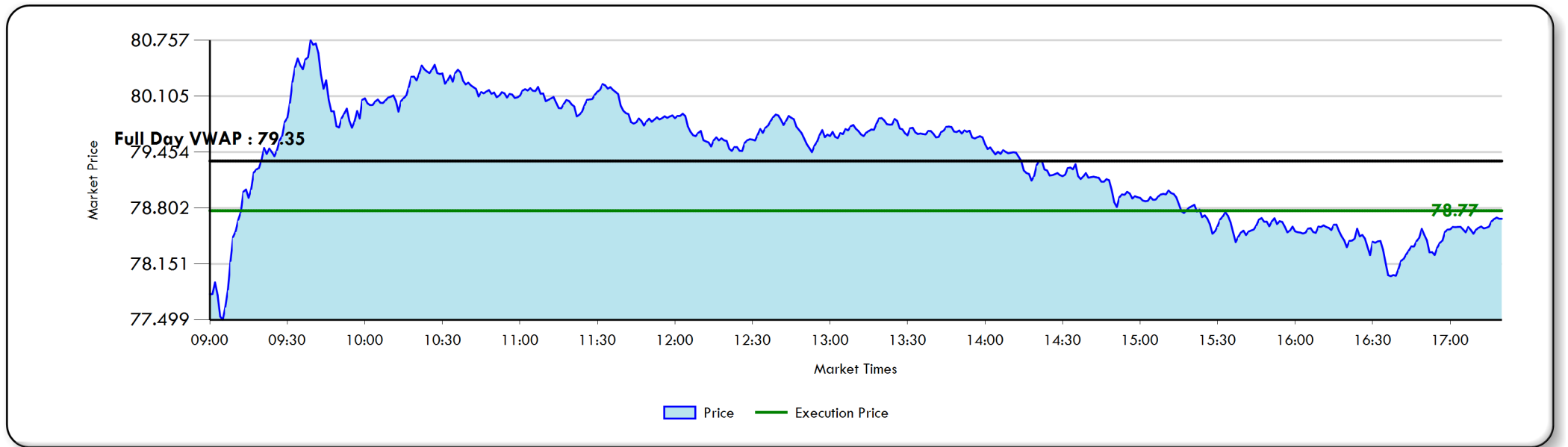


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

SWISS RE AG COMMON STOCK CHF.1 - 20200608

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	LSV ASSET MANAGEMENT	CITIGROUP	SWI	CHF	B545MG5	06/08/2020 09:00:00	06/08/2020 17:20:00	512,112	78.77	79.35	+3,770	+73.08	0.86	0.20



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.

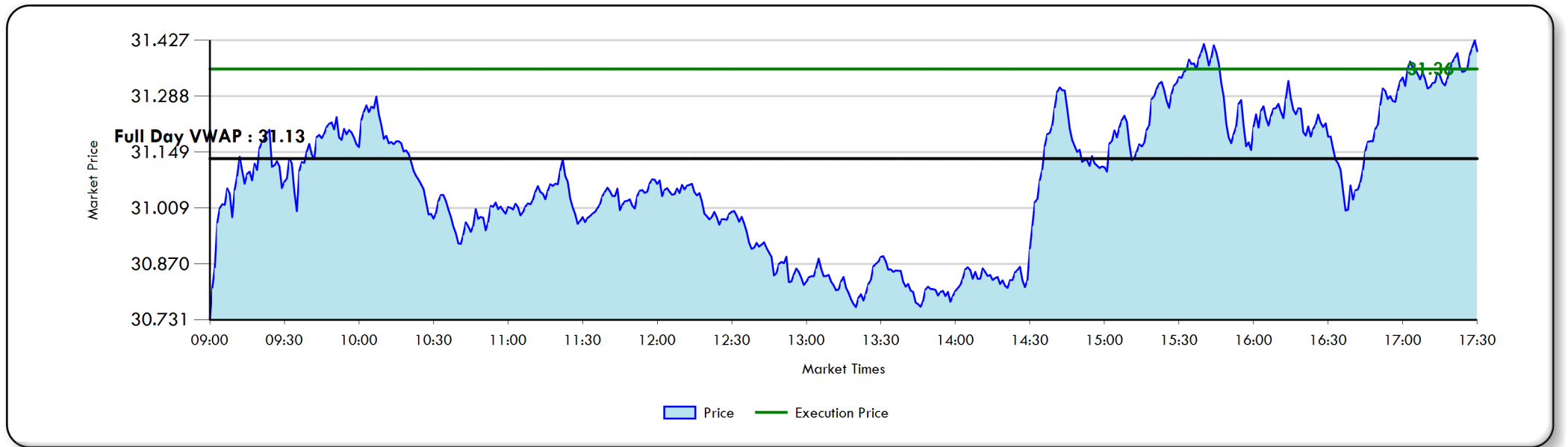


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NN GROUP NV COMMON STOCK - 20200605

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	UBS	NTH	EUR	BNG8PQ9	06/05/2020 09:00:00	06/05/2020 17:30:00	443,709	31.36	31.13	+3,161	+71.75	1.25	0.89



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.68% of your market impact cost.

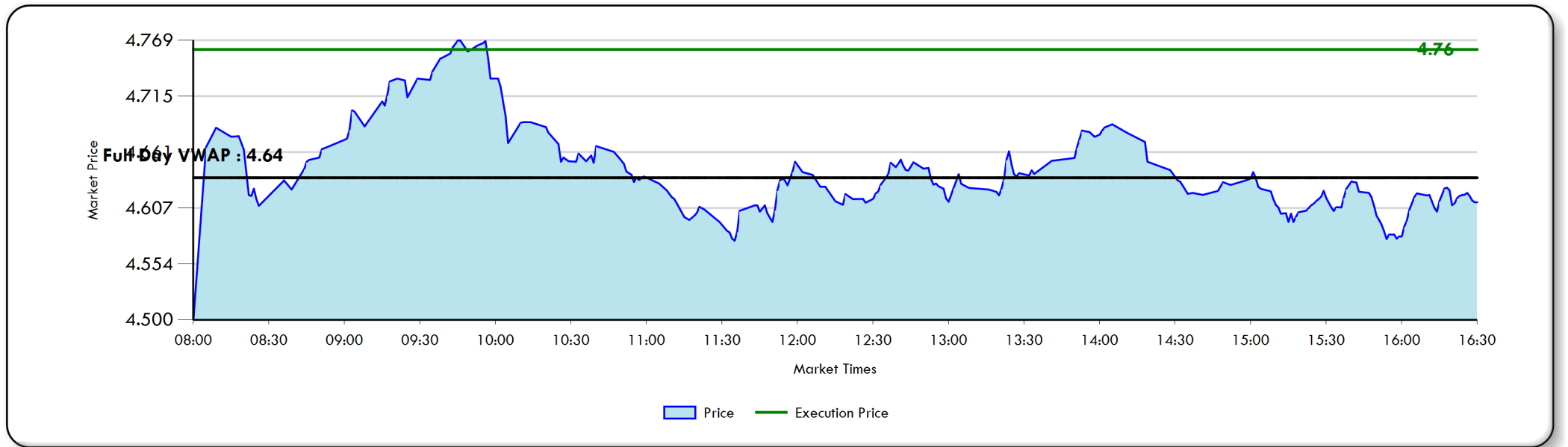


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

NETWORK INTERNATIONAL HOLDIN C - 20200610

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	MORGAN STANLEY	UK	GBP	BH3VJ78	06/10/2020 08:00:00	06/10/2020 16:30:00	120,997	4.76	4.64	+3,138	+266.28	0.03	3.45



NOTES

- Out of all your high cost trades that lost to Full Day VWAP, this order made up 1.67% of your market impact cost.

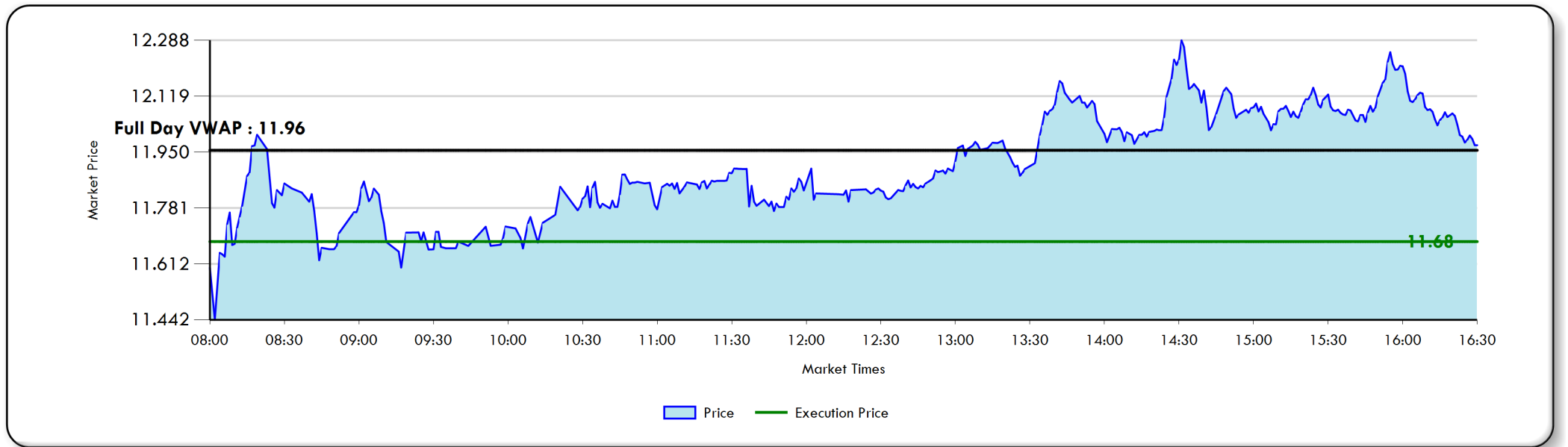


(+) = Cost

TRADE LEVEL DETAIL - HIGH COST

FEVERTREE DRINKS PLC COMMON ST - 20200406

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	PERSHING	UK	GBP	BRJ9BJ2	04/06/2020 08:00:00	04/06/2020 16:30:00	115,702	11.68	11.96	+2,741	+231.38	0.02	1.04



NOTES

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

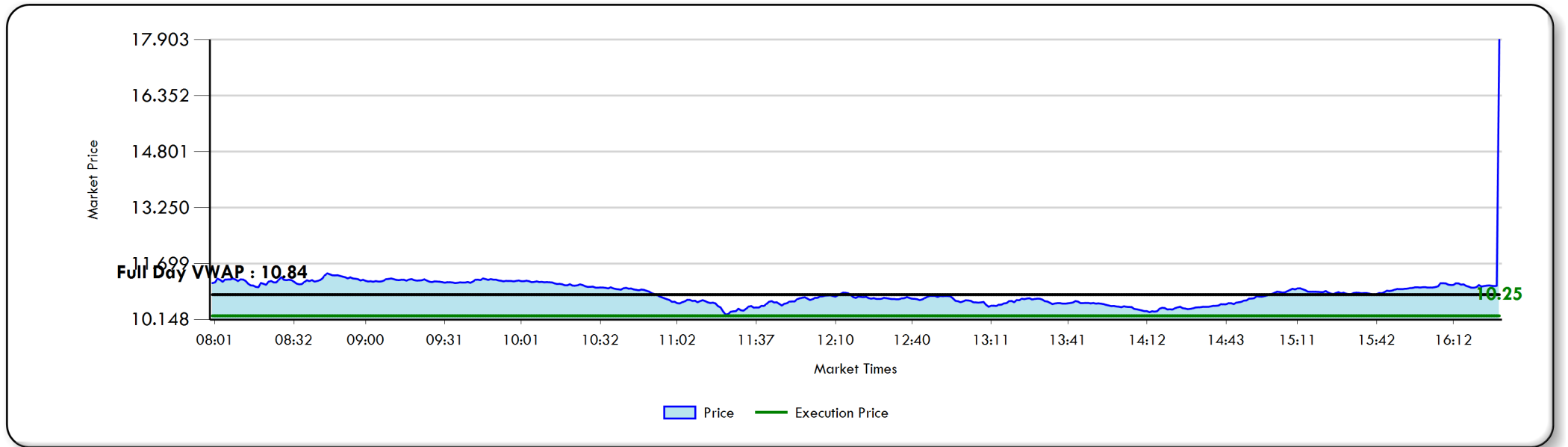


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

COMPASS GROUP PLC COMMON STOCK - 20200519

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	MORGAN STANLEY	UK	GBP	BD6K457	05/19/2020 08:00:00	05/19/2020 16:30:00	616,797	10.25	10.84	35,355	542.12	-0.01	0.26



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 12.85% of your market impact cost.

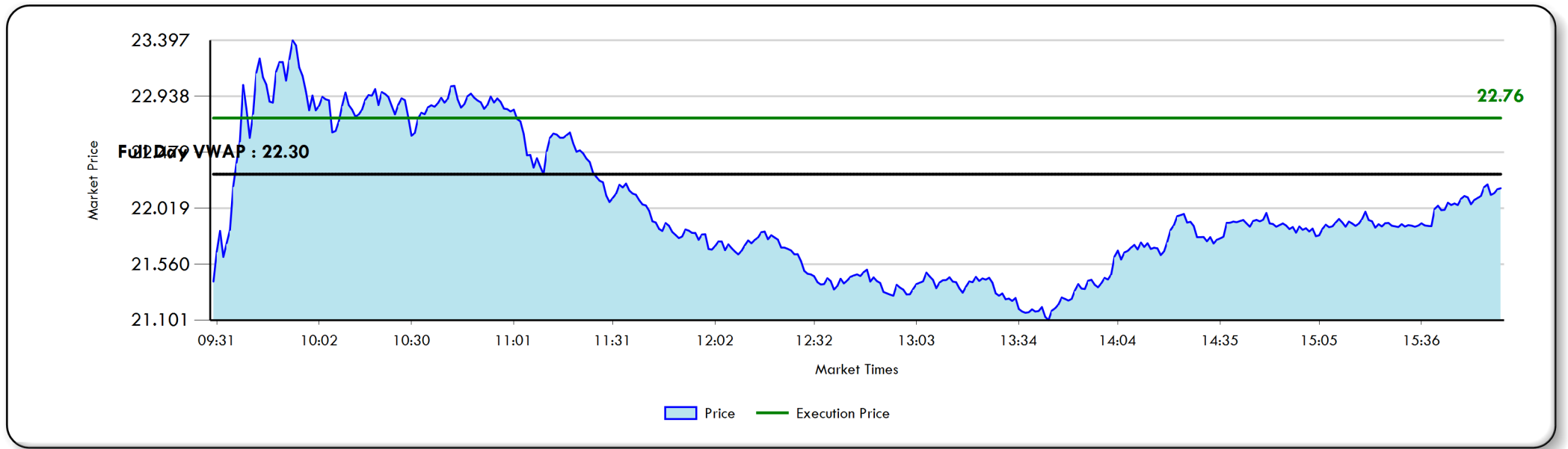


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

SUNCOR ENERGY INC COMMON STOCK - 20200401

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	CAN	CAD	B3NB1P2	04/01/2020 09:30:00	04/01/2020 16:00:00	1,062,028	22.76	22.30	21,510	206.72	-0.81	0.45



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 7.82% of your market impact cost.



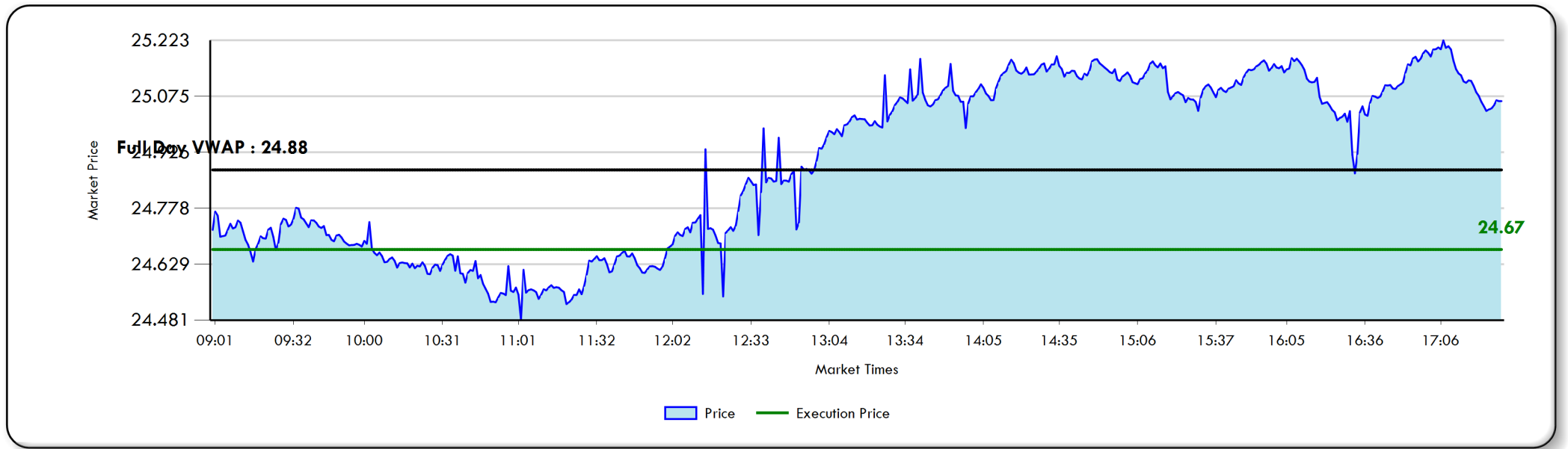


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INDUSTRIA DE DISENO TEXTIL COM - 20200617

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	PERSHING	SPA	EUR	BP9DL90	06/17/2020 09:00:00	06/17/2020 17:30:00	1,447,988	24.67	24.88	12,410	84.98	-0.91	2.70



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 4.51% of your market impact cost.

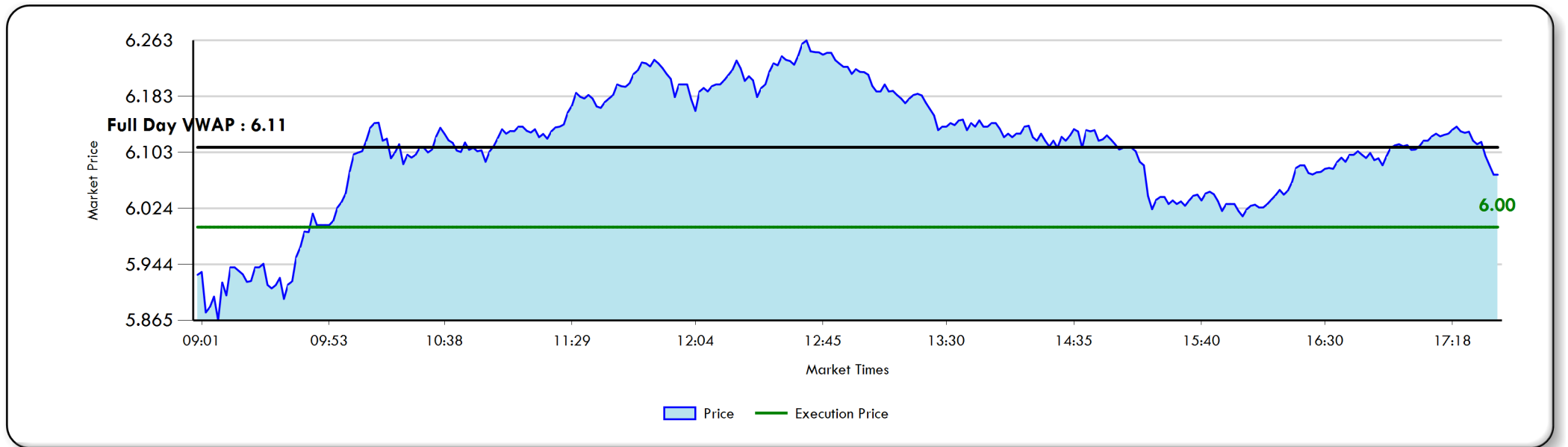


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TECHNOGYM SPA COMMON STOCK NPV - 20200401

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	LAZARD ASSET MANAGEMENT	PERSHING	ITA	EUR	BD9Y5C0	04/01/2020 09:00:00	04/01/2020 17:30:00	543,431	6.00	6.11	10,273	185.53	-1.35	7.35



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 3.73% of your market impact cost.

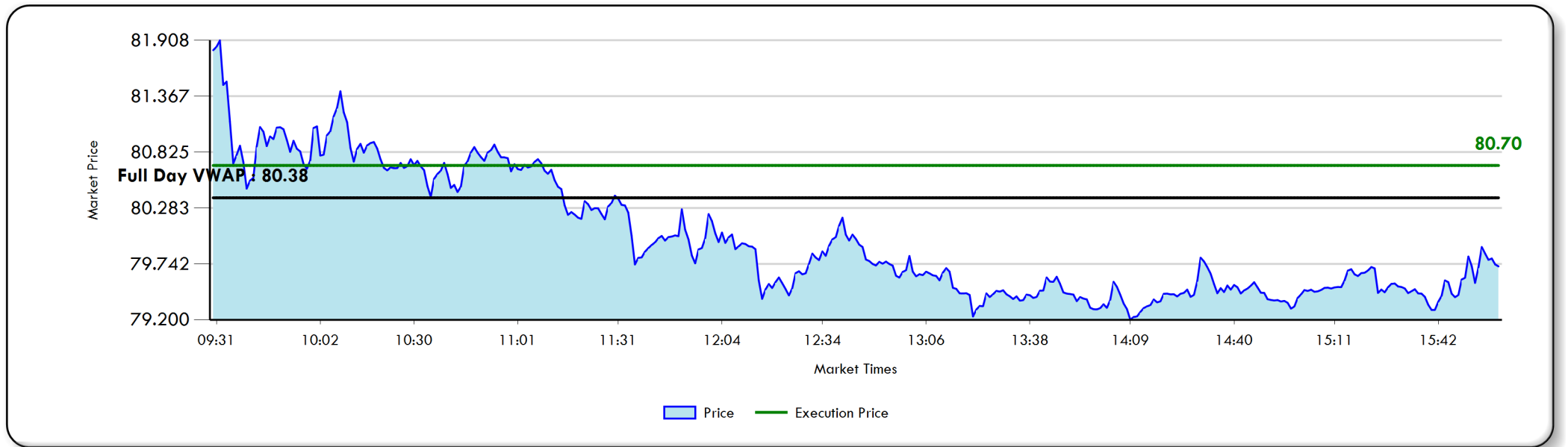


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

RYANAIR HOLDINGS PLC SP ADR AD - 20200605

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	US	USD	BYYN585	06/05/2020 09:30:00	06/05/2020 16:00:00	1,768,130	80.70	80.38	6,864	38.97	-0.44	0.44



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.49% of your market impact cost.

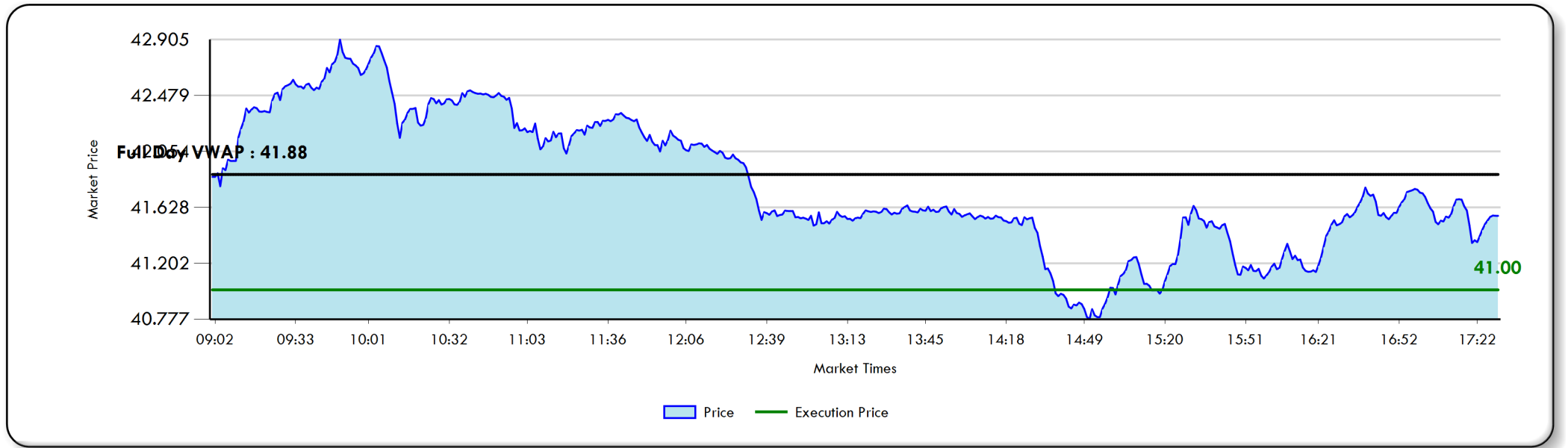


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

TEAMVIEWER AG COMMON STOCK - 20200514

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	MORGAN STANLEY	GER	EUR	BJ7WGS1	05/14/2020 09:00:00	05/14/2020 17:30:00	294,909	41.00	41.88	6,321	209.83	-1.72	0.19



NOTES

- Out of all your low cost trades that beat to Full Day VWAP, this order made up 2.30% of your market impact cost.

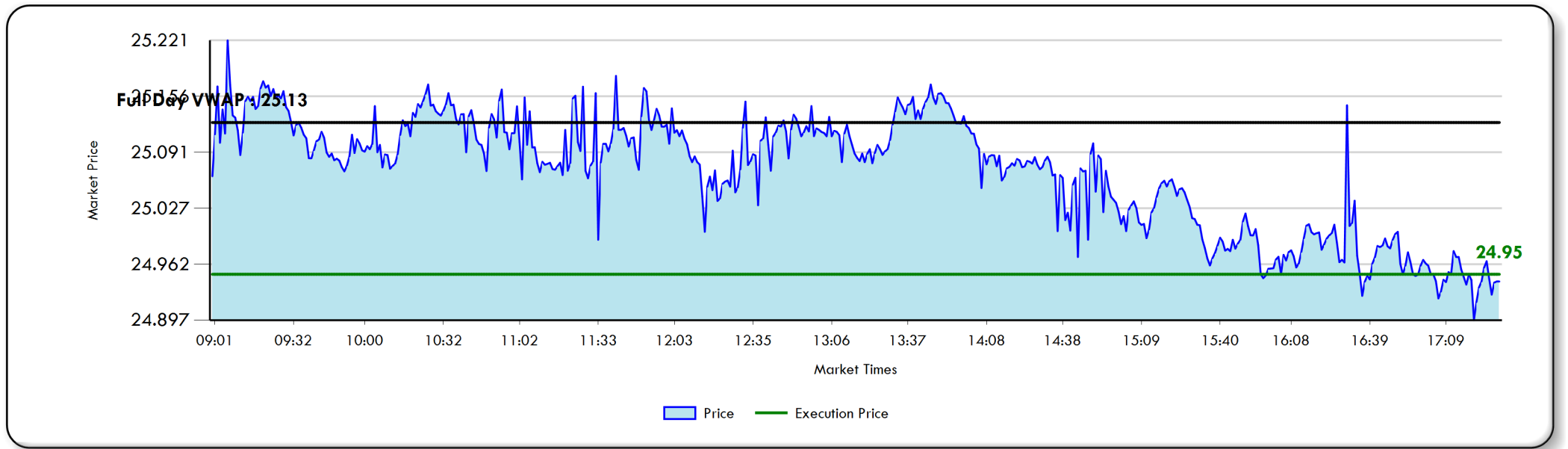


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

INDUSTRIA DE DISENO TEXTIL COM - 20200619

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	EXANE	SPA	EUR	BP9DL90	06/19/2020 09:00:00	06/19/2020 17:30:00	743,802	24.95	25.13	5,244	70.01	-2.44	0.76



NOTES

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

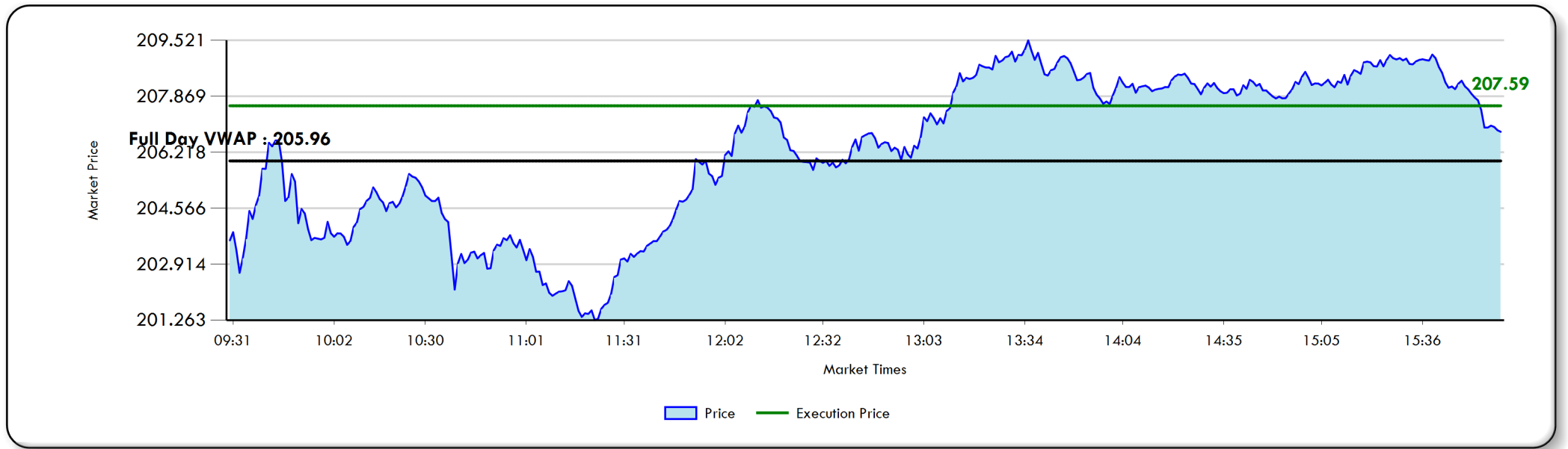


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

WIX.COM LTD COMMON STOCK ILS.0 - 20200521

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
S	WILLIAM BLAIR & COMPANY	JEFFERIES & CO	US	USD	BFZCHN7	05/21/2020 09:30:00	05/21/2020 16:00:00	659,107	207.59	205.96	5,168	79.03	-0.72	0.26



NOTES

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

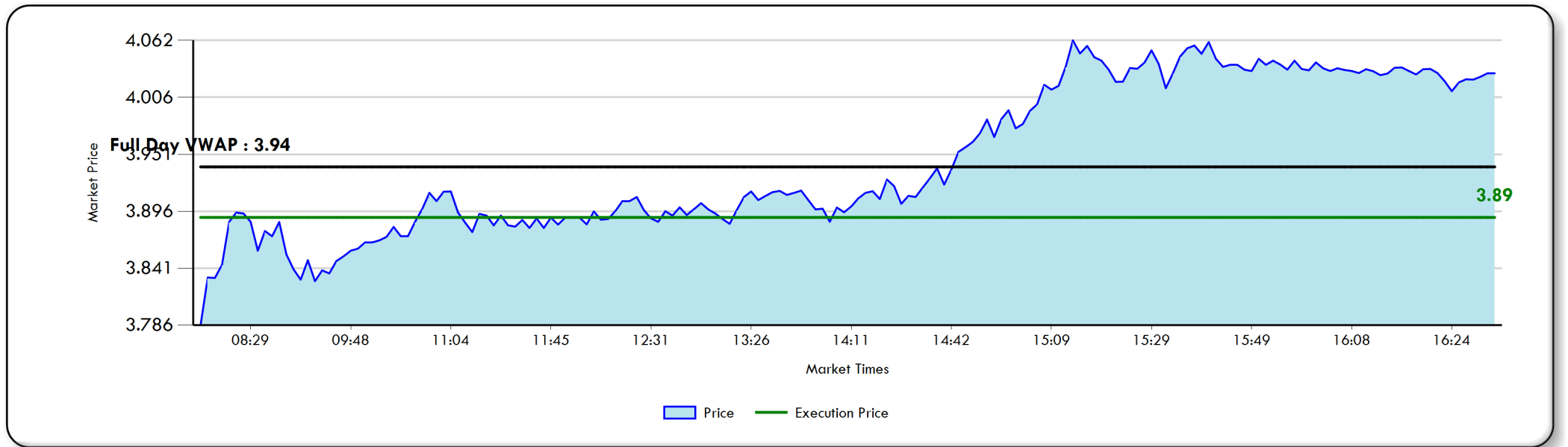


(+) = Cost

TRADE LEVEL DETAIL - LOW COST

NETWORK INTERNATIONAL HOLDIN C - 20200507

Side	Manager	Broker	Country	Currency	CUSIP	Time In	Time Out	Principal	Client Price	Full Day VWAP	Cost Full Day VWAP	Cost Full Day VWAP	E - Score	Volume
								(\$)			(\$)	(bp)		(%)
B	WILLIAM BLAIR & COMPANY	MORGAN STANLEY	UK	GBP	BH3VJ78	05/07/2020 08:00:00	05/07/2020 16:30:00	341,868	3.89	3.94	4,303	124.31	N/A	15.76



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.

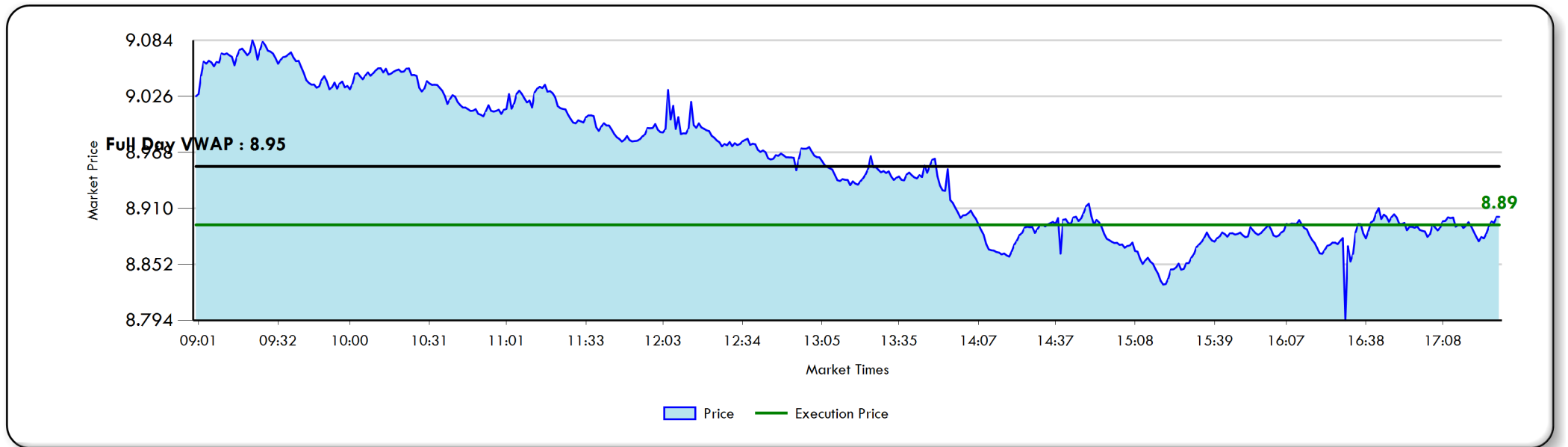


(+) = Cost

**TRADE LEVEL DETAIL - LOW COST**

**IBERDROLA SA COMMON STOCK EUR. - 20200415**

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	JP MORGAN CHASE	SPA	EUR	B288C92	04/15/2020 09:00:00	04/15/2020 17:30:00	573,634	8.89	8.95	3,916	67.81	-0.81	0.72



**NOTES**

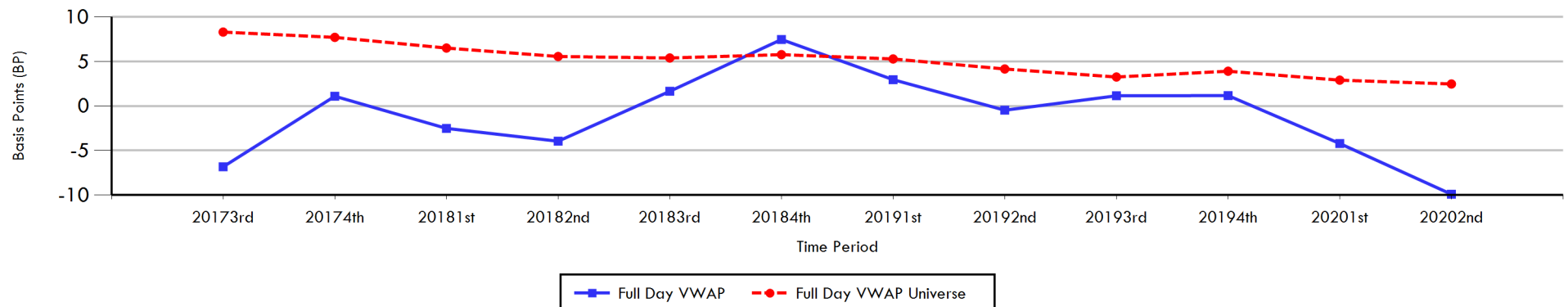
- Out of all your low cost trades that beat to Full Day VWAP, this order made up 1.42% of your market impact cost.



### 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)
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
20202nd	87,805,344	+5.99	+13.63	+5.49	+3.89	9.91	+2.47	18.40

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	5.71 BP	12.91 BP	1.18 BP	2.03 BP	16.12 BP
AUSTRIA	24.92 BP	13.28 BP	0.05 BP	3.74 BP	17.07 BP
BELGIUM	49.85 BP	12.90 BP	0.02 BP	2.20 BP	15.12 BP
BRAZIL	5.68 BP	14.99 BP	2.29 BP	3.92 BP	21.20 BP
CANADA	20.59 BP	26.36 BP	0.02 BP	2.22 BP	28.60 BP
CHILE	0.23 BP	15.29 BP	0.74 BP	2.21 BP	18.24 BP
CHINA	2.75 BP	13.93 BP	5.10 BP	1.07 BP	20.10 BP
COLOMBIA	1.38 BP	14.89 BP	0.65 BP	6.02 BP	21.56 BP
CZECH REPUBLIC	8.53 BP	19.01 BP	0.19 BP	1.83 BP	21.03 BP
DENMARK	66.21 BP	12.77 BP	0.01 BP	3.24 BP	16.02 BP
EGYPT	2.08 BP	19.45 BP	17.37 BP	4.37 BP	41.19 BP
FINLAND	23.49 BP	12.95 BP	0.01 BP	3.60 BP	16.56 BP
FRANCE - BUYS	57.17 BP	13.05 BP	30.00 BP	1.74 BP	44.79 BP
FRANCE - SELLS	51.52 BP	14.39 BP	0.00 BP	1.79 BP	16.18 BP
GERMANY	44.84 BP	13.03 BP	0.02 BP	2.20 BP	15.25 BP
GREECE	3.76 BP	13.64 BP	2.52 BP	7.65 BP	23.81 BP
HONG KONG	2.59 BP	12.84 BP	8.35 BP	0.81 BP	22.00 BP
HUNGARY	21.22 BP	16.49 BP	0.00 BP	1.54 BP	18.03 BP
INDONESIA	0.26 BP	17.96 BP	8.15 BP	1.97 BP	28.08 BP

**Elkins/McSherry Global Universe**

Country	Price	Commission	Fees	Market Impact	Total
INDIA	6.80 BP	15.66 BP	11.19 BP	1.44 BP	28.29 BP
IRELAND - BUYS	3.26 BP	14.87 BP	100.00 BP	1.57 BP	116.44 BP
IRELAND - SELLS	11.31 BP	14.82 BP	0.00 BP	9.44 BP	24.26 BP
ISRAEL	3.79 BP	13.15 BP	0.03 BP	2.18 BP	15.36 BP
ITALY - BUYS	14.96 BP	13.20 BP	12.00 BP	1.45 BP	26.65 BP
ITALY - SELLS	9.15 BP	12.56 BP	0.00 BP	4.17 BP	16.73 BP
JAPAN	23.23 BP	12.69 BP	0.02 BP	3.01 BP	15.72 BP
KOREA - BUYS	49.07 BP	16.14 BP	0.00 BP	3.02 BP	19.16 BP
KOREA - SELLS	60.42 BP	18.37 BP	18.88 BP	1.70 BP	38.95 BP
LUXEMBOURG	4.31 BP	0.00 BP	0.00 BP	18.12 BP	18.12 BP
MALAYSIA	1.28 BP	17.01 BP	3.81 BP	0.88 BP	21.70 BP
MEXICO	1.73 BP	14.84 BP	0.00 BP	0.79 BP	15.63 BP
NORWAY	7.63 BP	12.90 BP	0.01 BP	3.48 BP	16.39 BP
NETHERLANDS	55.13 BP	12.86 BP	0.03 BP	2.10 BP	14.99 BP
NEW ZEALAND	4.91 BP	32.86 BP	0.05 BP	3.43 BP	36.34 BP
PERU	1.18 BP	18.24 BP	2.92 BP	3.18 BP	24.34 BP
PHILIPPINES - BUYS	0.75 BP	18.37 BP	4.01 BP	1.20 BP	23.58 BP
PHILIPPINES - SELLS	0.50 BP	26.91 BP	62.57 BP	0.66 BP	90.14 BP
POLAND	11.92 BP	14.04 BP	0.00 BP	2.47 BP	16.51 BP
PORTUGAL	6.47 BP	12.87 BP	0.01 BP	3.78 BP	16.66 BP

**Elkins/McSherry Global Universe**

Country	Price	Commission	Fees	Market Impact	Total
RUSSIA	0.20 BP	16.67 BP	0.00 BP	9.33 BP	26.00 BP
SOUTH AFRICA - BUYS	10.90 BP	12.86 BP	18.84 BP	2.73 BP	34.43 BP
SOUTH AFRICA - SELLS	13.65 BP	16.51 BP	0.06 BP	2.05 BP	18.62 BP
SINGAPORE	2.78 BP	13.01 BP	3.62 BP	1.15 BP	17.78 BP
SPAIN	8.06 BP	12.97 BP	0.01 BP	2.04 BP	15.02 BP
SWEDEN	12.77 BP	12.90 BP	0.01 BP	0.76 BP	13.67 BP
SWITZERLAND	68.09 BP	13.07 BP	0.02 BP	2.00 BP	15.09 BP
TAIWAN - BUYS	3.63 BP	18.12 BP	0.00 BP	0.97 BP	19.09 BP
TAIWAN - SELLS	3.22 BP	18.05 BP	24.50 BP	1.85 BP	44.40 BP
THAILAND	1.60 BP	19.15 BP	0.55 BP	1.59 BP	21.29 BP
TURKEY	1.61 BP	14.57 BP	0.00 BP	2.38 BP	16.95 BP
U.K. - BUYS	7.48 BP	12.85 BP	23.93 BP	1.16 BP	37.94 BP
U.K. - SELLS	6.66 BP	13.80 BP	0.00 BP	7.45 BP	21.25 BP
U.S.	55.60 BP	12.14 BP	0.09 BP	1.29 BP	13.52 BP
VENEZUELA	10.50 BP	43.22 BP	9.10 BP	31.03 BP	83.35 BP
TOTAL: 55	16.01 BP	16.26 BP	6.78 BP	3.91 BP	26.95 BP



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## SACRAMENTO COUNTY

US Fixed Income Analysis

Period End June 30, 2020



## EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates U.S. fixed income executions from April 01,2020 to June 30,2020. The analysis included trading of 445 trades in 148 different issues representing \$903,498,421 in principal across municipals, mortgages, governments, corporates And agencies.

### 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.

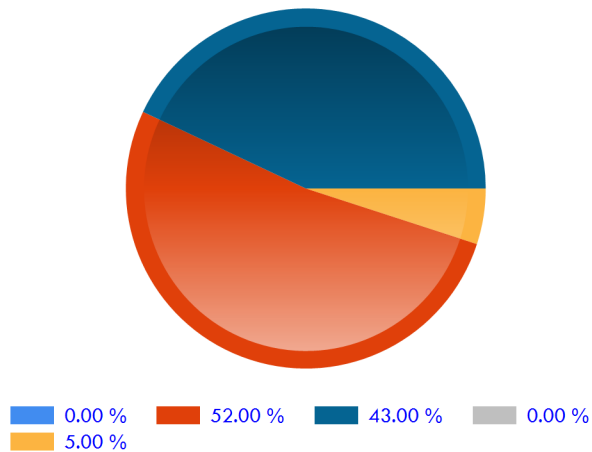
### Results:

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	Q1 2020	Q4 2019	Q3 2019	Q2 2019
BUYS	430	216	100	+56.30	+1.31	+10.40	390.97	9.09	+3.35	+0.75	+10.49	+1.20
SELLS	473	229	84	+13.93	+0.29	+9.79	449.40	9.50	+0.32	1.10	10.32	+0.28
GRAND TOTAL	903	445	148	+70.23	+0.78	+10.08	840.37	9.30	+1.89	0.23	+0.54	+0.74

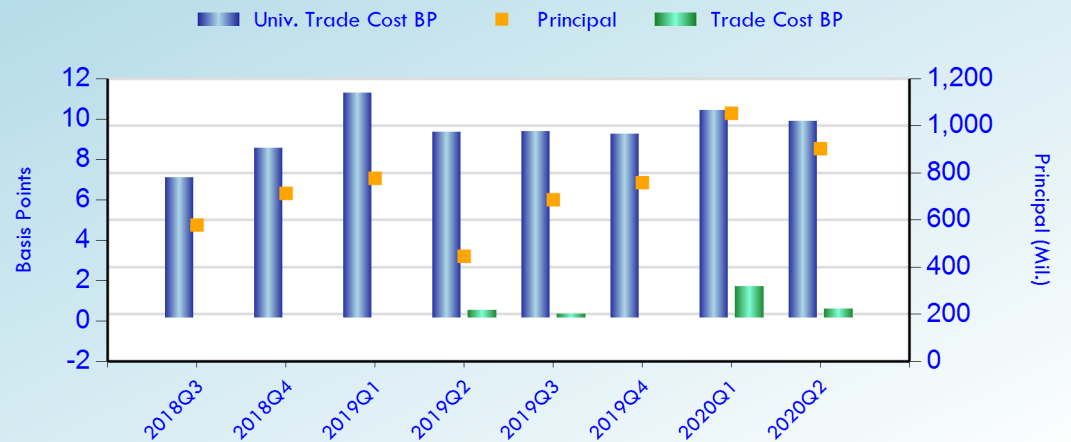
EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q1 2020	Q4 2019	Q3 2019	Q2 2019
Governments	472	216	44	14.26	0.30	+9.25	450.99 9.55	+1.45	0.45	+0.28	+0.87
Mortgages	385	126	30	+68.34	+1.78	+9.35	291.36 7.57	+4.23	-	+0.45	1.02
Corporates	45	99	70	+15.67	+3.48	+25.17	97.86 21.69	15.65	+5.42	+6.98	1.30
Agencies	<1	1	1	+0.44	+4.98	+2.75	+0.20 +2.23	-	+2.75	-	-
Municipals	<1	3	3	+0.03	+0.51	+6.14	0.36 5.63	+4.13	-	-	+4.52

Bonds by Principal Traded



Historical Trade Cost Trend

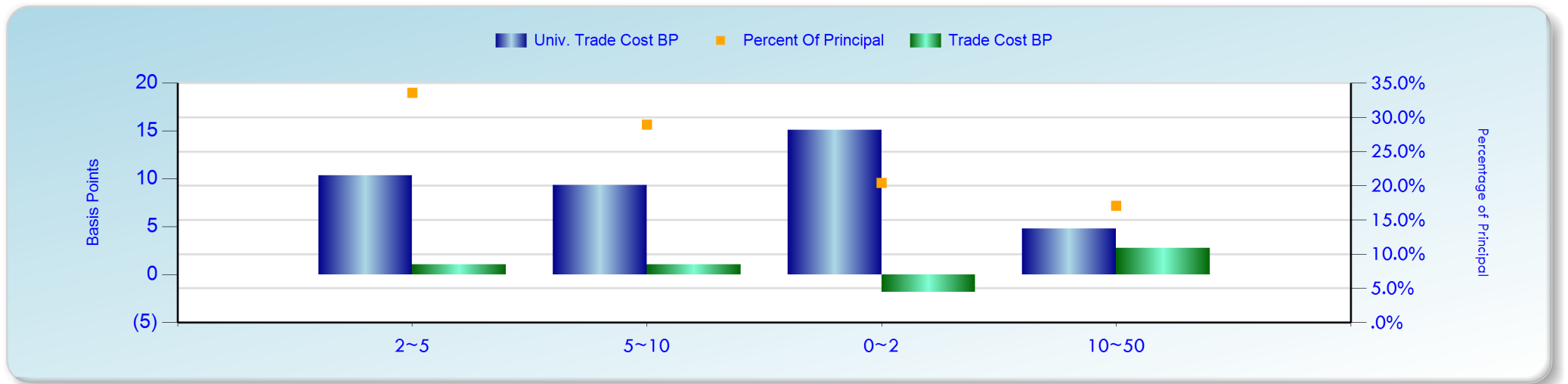




EXECUTIVE SUMMARY

EXECUTION PERFORMANCE SUMMARY

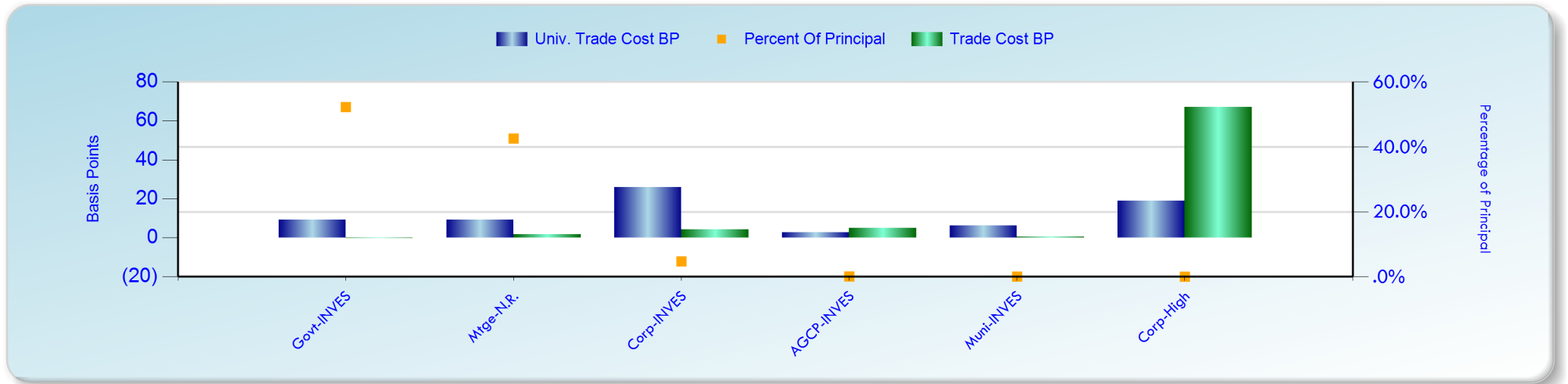
Trade Size (Millions)	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
2~5	303	100	36	+32.92	+1.09	+10.35	281.25	9.26
5~10	261	39	20	+27.48	+1.05	+9.33	216.39	8.28
0~2	184	299	123	33.05	1.79	+15.09	311.31	16.88
10~50	154	7	7	+42.88	+2.78	+4.82	31.43	2.04



EXECUTIVE SUMMARY

GRADING SUMMARY

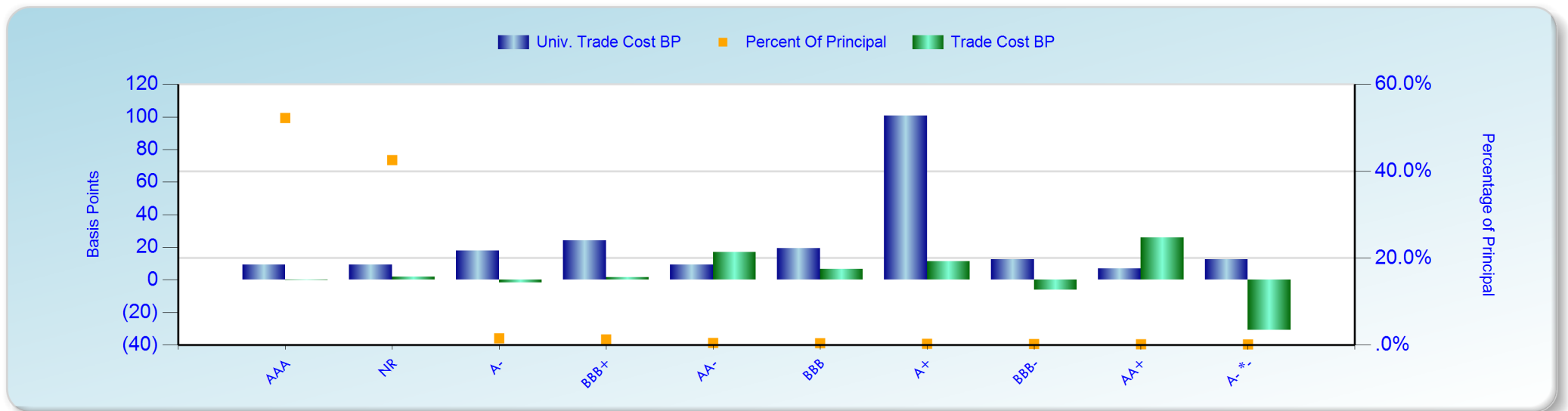
Grading	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Govt-INVESTMENT GRADE	472	216	44	14.26	0.30	+9.25	450.99	9.55
Mtge-N.R.	385	126	30	+68.34	+1.78	+9.35	291.36	7.57
Corp-INVESTMENT GRADE	43	93	66	+17.82	+4.18	+25.97	92.99	21.79
AGCP-INVESTMENT GRADE	<1	1	1	+0.44	+4.98	+2.75	+0.20	+2.23
Muni-INVESTMENT GRADE	<1	3	3	+0.03	+0.51	+6.14	0.36	5.63
Corp-High Yield	<1	1	1	+1.23	+67.04	+18.94	+0.88	+48.10



EXECUTIVE SUMMARY

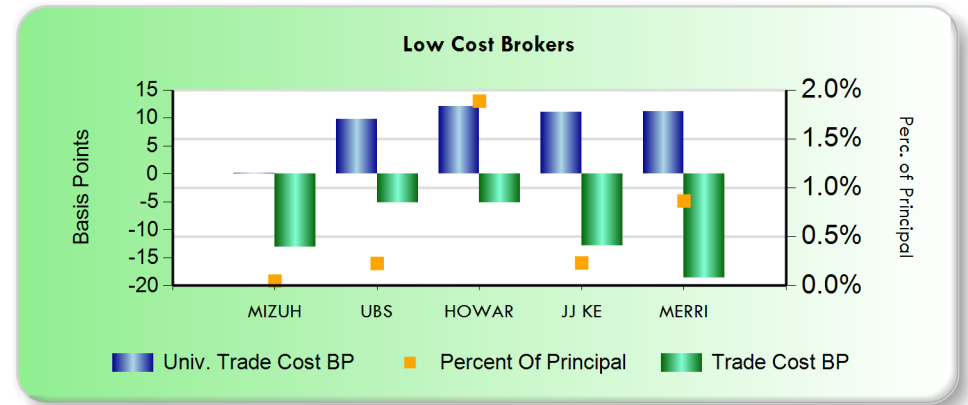
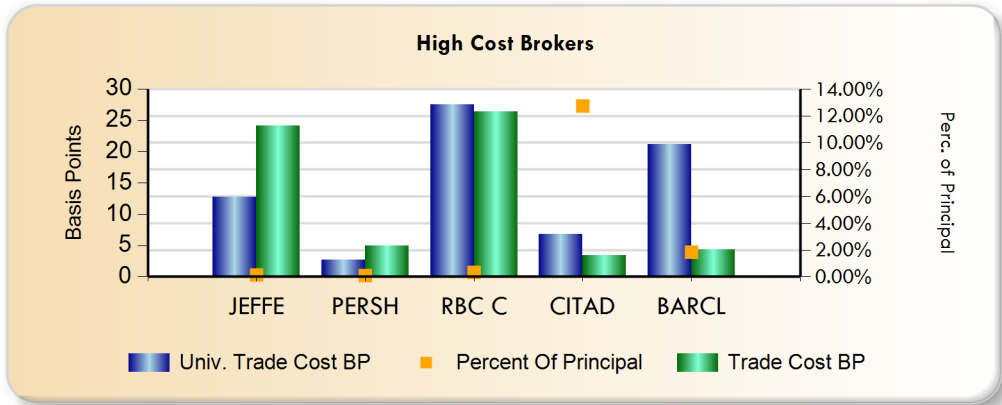
RATING SUMMARY

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	472.23	216	44	14.26	0.30	+9.25	450.99	9.55
NR	384.65	126	30	+68.34	+1.78	+9.35	291.36	7.57
A-	14.16	25	19	2.37	1.67	+17.79	27.55	19.46
BBB+	11.86	29	19	+1.74	+1.47	+24.15	26.90	22.68
AA-	4.58	11	8	+7.74	+16.90	+9.26	+3.50	+7.64
BBB	4.09	8	8	+2.69	+6.59	+19.30	5.20	12.71
A+	2.72	7	3	+3.09	+11.35	+100.81	24.38	89.46
BBB-	2.33	6	4	1.42	6.11	+12.58	4.35	18.69
AA+	1.73	3	3	+4.47	+25.91	+6.90	+3.28	+19.01
A- *-	1.56	3	2	4.76	30.62	+12.58	6.72	43.20



**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
<b>5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)</b>								
JEFFERIES & CO	1	8	3	+3.02	+24.13	+12.78	+1.42	+11.35
PERSHING	<1	1	1	+0.44	+4.98	+2.75	+0.20	+2.23
RBC CAPITAL MARKETS	3	10	9	+7.84	+26.43	+27.47	0.31	1.04
CITADEL SECURITIES	115	8	5	+39.95	+3.47	+6.77	38.04	3.30
BARCLAYS	17	21	16	+7.17	+4.31	+21.19	28.10	16.88
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
MIZUHO	<1	1	1	0.57	13.07	+0.07	0.57	13.14
UBS	2	5	5	1.07	5.19	+9.77	3.08	14.96
HOWARD TAYLOR & COMP	17	21	7	8.71	5.11	+12.06	29.26	17.17
JJ KENNY DRAKE INC	2	1	1	2.71	12.82	+11.05	5.04	23.87
MERRILL LYNCH	8	2	2	14.58	18.63	+11.18	23.33	29.81





**COUNTRY PERFORMANCE BASED ON BUYS AND SELLS**

Country									
		Principal	No. of	No. of	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	Side	(Mil. \$ )	Trades	Issues	(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	BUYS	430	216	100	+56.30	+1.31	+10.40	390.97	9.09
	SELLS	473	229	84	+13.93	+0.29	+9.79	449.40	9.50

**Manager PERFORMANCE**

Manager PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q1 2020	Q4 2019	Q3 2019	Q2 2019
METROPOLITAN WEST MG	671	400	117	.21	+0.00	+11.04	741.33	11.04	0.64	0.57	0.56	+0.61
NEUBERGER BERMAN	230	33	27	+70.44	+3.06	+7.29	97.20	4.23	+2.66	+0.29	+7.00	+1.42
BARCLAYS 1-10 YR TIP	2	12	12	+0.00	+0.00	+7.65	1.85	7.65	+70.62	2.19	2.84	+1.36

### BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q1 2020	Q4 2019	Q3 2019	Q2 2019
CREDIT SUISSE	209	64	25	+42.03	+2.01	+7.91	123.29	5.90	+2.73	+5.55	+3.82	+1.45
CITIGROUP	190	81	43	+26.60	+1.40	+11.40	189.92	10.00	+1.64	3.79	0.49	+0.54
CITADEL SECURITIES	115	8	5	+39.95	+3.47	+6.77	38.04	3.30	0.51	+0.01	0.07	0.18
GOLDMAN SACHS	109	61	30	+3.50	+0.32	+10.63	112.33	10.31	+1.72	0.75	+0.00	0.50
JP MORGAN CHASE	78	51	31	+3.85	+0.49	+14.48	109.79	13.99	+10.80	+4.69	+11.72	+2.60
NOMURA	40	13	9	15.24	3.84	+5.82	38.33	9.66	0.03	0.55	1.96	1.59
BANK OF AMERICA	35	34	22	2.31	0.65	+15.32	56.65	15.97	18.07	+0.65	+2.21	0.08
DEUTSCHE BANK	33	24	13	15.94	4.77	+6.91	39.04	11.68	+19.97	0.53	2.41	1.81
MORGAN STANLEY	20	17	13	7.84	4.00	+11.13	29.67	15.13	+3.32	+4.24	4.60	0.57
HOWARD TAYLOR & COMP	17	21	7	8.71	5.11	+12.06	29.26	17.17	0.54	3.10	1.44	+8.22
BARCLAYS	17	21	16	+7.17	+4.31	+21.19	28.10	16.88	+6.47	+4.53	12.55	+2.02
WELLS FARGO	14	13	11	+3.44	+2.44	+7.76	7.52	5.32	57.07	+0.24	1.05	+1.80
BNY MELLON	9	9	7	+1.34	+1.57	+10.60	7.72	9.03	12.59	8.65	0.28	+2.27
MERRILL LYNCH	8	2	2	14.58	18.63	+11.18	23.33	29.81	2.66	-	-	208.89
RBC CAPITAL MARKETS	3	10	9	+7.84	+26.43	+27.47	0.31	1.04	16.59	+12.73	+7.56	0.68
JJ KENNY DRAKE INC	2	1	1	2.71	12.82	+11.05	5.04	23.87	88.62	+0.08	+0.04	7.67
UBS	2	5	5	1.07	5.19	+9.77	3.08	14.96	+84.60	1.86	5.87	+0.32
JEFFERIES & CO	1	8	3	+3.02	+24.13	+12.78	+1.42	+11.35	+14.90	+0.81	6.99	1.87
PERSHING	<1	1	1	+0.44	+4.98	+2.75	+0.20	+2.23	-	+0.30	+0.48	-
MIZUHO	<1	1	1	0.57	13.07	+0.07	0.57	13.14	-	-	-	-

### TRADE DETAILS

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
<b>15 Highest Cost Trades</b>											
B	912828Z9 US TREASURY N/B 02/30 1.5	Govt	04/30/2020 02/15/2030	NEUBERGER BERMA CITADEL SECURIT	US	USD	19,396,053	108.692	108.460	+21.36	+41,431
S	01F03065 FNCL 3 5/12	Mtge	04/07/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	13,687,116	105.082	105.320	+22.51	+30,814
B	912810SL US TREASURY N/B 02/50 2	Govt	05/14/2020 02/15/2050	NEUBERGER BERMA JP MORGAN CHASE	US	USD	4,168,312	118.250	117.556	+58.67	+24,455
B	01F02266 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	04/16/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	5,619,586	104.066	103.700	+35.21	+19,786
B	21H03067 GNMA II TBA 30 YR 3 JUMBOS	Mtge	06/04/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	3,747,329	105.559	105.040	+49.13	+18,410
S	912810SR US TREASURY N/B 05/40 1.125	Govt	06/15/2020 05/15/2040	NEUBERGER BERMA GOLDMAN SACHS	US	USD	2,939,531	97.984	98.458	+48.32	+14,203
B	01F02265 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	04/17/2020 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	5,280,775	104.055	103.850	+19.67	+10,388
B	912828ZF US TREASURY N/B 03/25 0.5	Govt	04/15/2020 03/31/2025	METROPOLITAN WE GOLDMAN SACHS	US	USD	7,759,554	100.773	100.648	+12.40	+9,625
B	21H03066 GNMA II TBA 30 YR 3 JUMBOS	Mtge	05/01/2020 12/31/2099	METROPOLITAN WE CREDIT SUISSE	US	USD	3,767,992	106.141	105.890	+23.61	+8,897
S	01F02245 FNCL 2.5 5/12	Mtge	04/21/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	7,092,401	103.918	104.040	+11.74	+8,329
B	912828Z9 US TREASURY N/B 02/30 1.5	Govt	04/06/2020 02/15/2030	METROPOLITAN WE GOLDMAN SACHS	US	USD	9,680,301	108.172	108.080	+8.52	+8,250
B	912810RJ US TREASURY N/B 11/44 3	Govt	06/19/2020 11/15/2044	NEUBERGER BERMA MORGAN STANLEY	US	USD	2,529,481	132.434	132.012	+31.86	+8,058
B	912810SN US TREASURY N/B 05/50 1.25	Govt	06/19/2020 05/15/2050	NEUBERGER BERMA DEUTSCHE BANK	US	USD	944,437	94.918	94.135	+82.56	+7,797
B	912810QA US TREASURY N/B	Govt	06/19/2020 02/15/2039	NEUBERGER BERMA NOMURA	US	USD	1,812,674	140.517	139.979	+38.35	+6,952





S	912828ZF US TREASURY N/B 03/25 0.5	Govt	05/29/2020 03/31/2025	METROPOLITAN WE BANK OF AMERICA	US	USD	3,761,261	100.703	100.887	+18.23	+6,857
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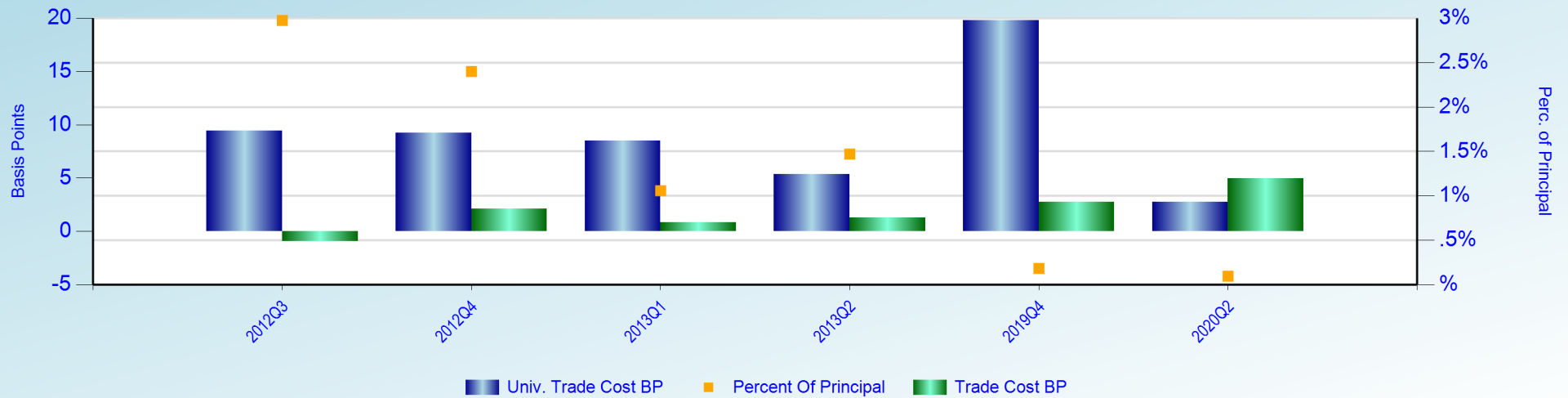
**TRADE DETAILS**

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
<b>15 Lowest Cost Trades</b>											
S	912810RM US TREASURY N/B 05/45 3	Govt	04/30/2020 05/15/2045	NEUBERGER BERMA DEUTSCHE BANK	US	USD	9,106,847	138.402	138.087	22.74	20,707
B	912828ZQ US TREASURY N/B 05/30 0.625	Govt	05/12/2020 05/15/2030	METROPOLITAN WE GOLDMAN SACHS	US	USD	3,431,640	99.037	99.617	58.56	20,095
S	21H03066 GNMA II TBA 30 YR 3 JUMBOS	Mtge	06/04/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	3,754,818	105.770	105.230	51.01	19,153
S	01F02265 FNMA TBA 30 YR 2.5 SINGLE FA	Mtge	04/16/2020 01/01/1900	METROPOLITAN WE CITIGROUP	US	USD	5,628,234	104.227	103.920	29.41	16,554
B	912810SL US TREASURY N/B 02/50 2	Govt	05/06/2020 02/15/2050	METROPOLITAN WE NOMURA	US	USD	1,894,993	114.156	115.061	79.22	15,011
S	912828Z9 US TREASURY N/B 02/30 1.5	Govt	04/15/2020 02/15/2030	METROPOLITAN WE GOLDMAN SACHS	US	USD	4,111,718	108.203	107.813	36.10	14,844
B	912828Z9 US TREASURY N/B 02/30 1.5	Govt	05/08/2020 02/15/2030	METROPOLITAN WE MERRILL LYNCH	US	USD	7,435,415	107.838	108.053	19.93	14,820
S	21H03067 GNMA II TBA 30 YR 3 JUMBOS	Mtge	06/24/2020 12/31/2099	METROPOLITAN WE CITIGROUP	US	USD	1,637,914	105.672	104.950	68.31	11,189
S	912810SK US TREASURY N/B 11/49 2.375	Govt	04/15/2020 11/15/2049	METROPOLITAN WE JP MORGAN CHASE	US	USD	784,125	127.500	125.869	127.94	10,032
S	912810QX US TREASURY N/B	Govt	06/19/2020 08/15/2042	NEUBERGER BERMA MORGAN STANLEY	US	USD	2,701,355	126.824	126.379	35.11	9,485
S	21H03065 GNMA II TBA 30 YR 3 JUMBOS	Mtge	05/01/2020 01/01/1900	METROPOLITAN WE CREDIT SUISSE	US	USD	3,774,787	106.332	106.070	24.64	9,302
B	369604BX GENERAL ELECTRIC CO SR UNSEC	Corp	04/13/2020 05/01/2040	METROPOLITAN WE BANK OF AMERICA	US	USD	473,660	99.718	101.635	192.29	9,108
S	912828Z9 US TREASURY N/B 02/30 1.5	Govt	04/16/2020 02/15/2030	METROPOLITAN WE CITIGROUP	US	USD	3,259,251	108.461	108.189	25.07	8,170
B	46647PBN JPMORGAN CHASE + CO SR UNSEC	Corp	04/15/2020 04/22/2051	METROPOLITAN WE JP MORGAN CHASE	US	USD	925,000	100.000	100.853	85.26	7,887
B	912828ZT US TREASURY N/B 05/25 0.25	Govt	05/29/2020 05/31/2025	METROPOLITAN WE BANK OF AMERICA	US	USD	3,616,825	99.500	99.691	19.24	6,958

**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
AGENCIES	<1	1	1	+0.44	+4.98	+2.75	+0.20	+2.23

**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	45	99	70	+15.67	+3.48	+25.17	97.86	21.69

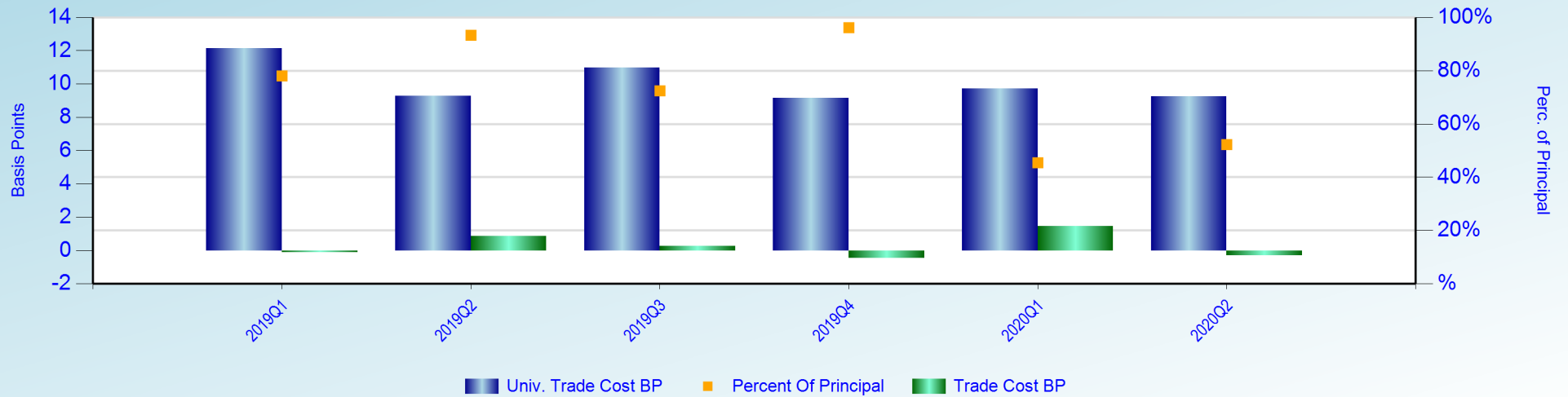
**CORPORATES**



**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	472	216	44	14.26	0.30	+9.25	450.99	9.55

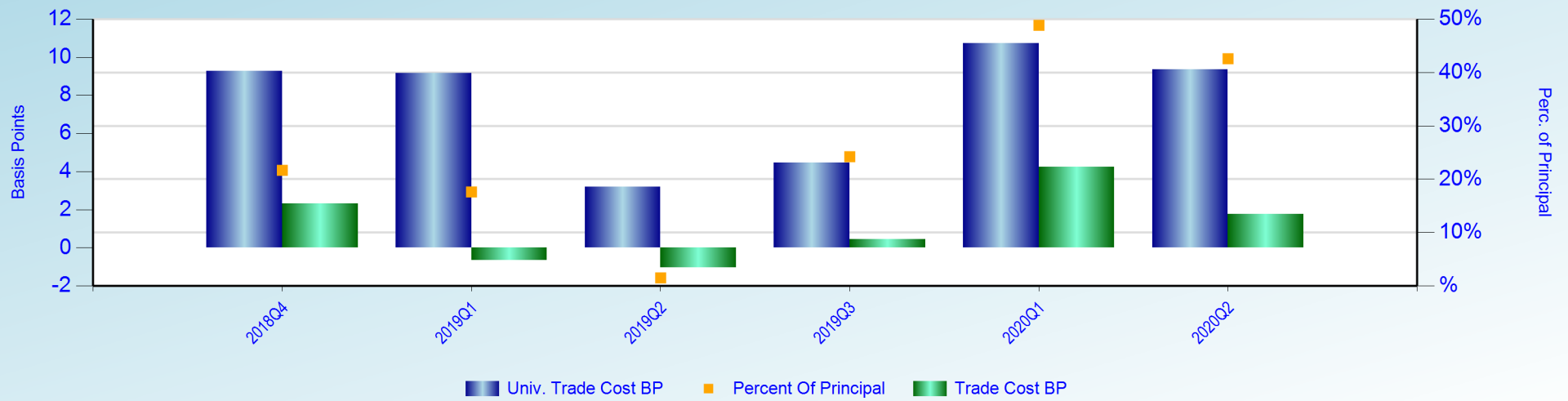
**GOVERNMENTS**



**BOND TYPE PERFORMANCE**

Bond Type	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous.\$)	BP
MORTGAGES	385	126	30	+68.34	+1.78	+9.35	291.36	7.57

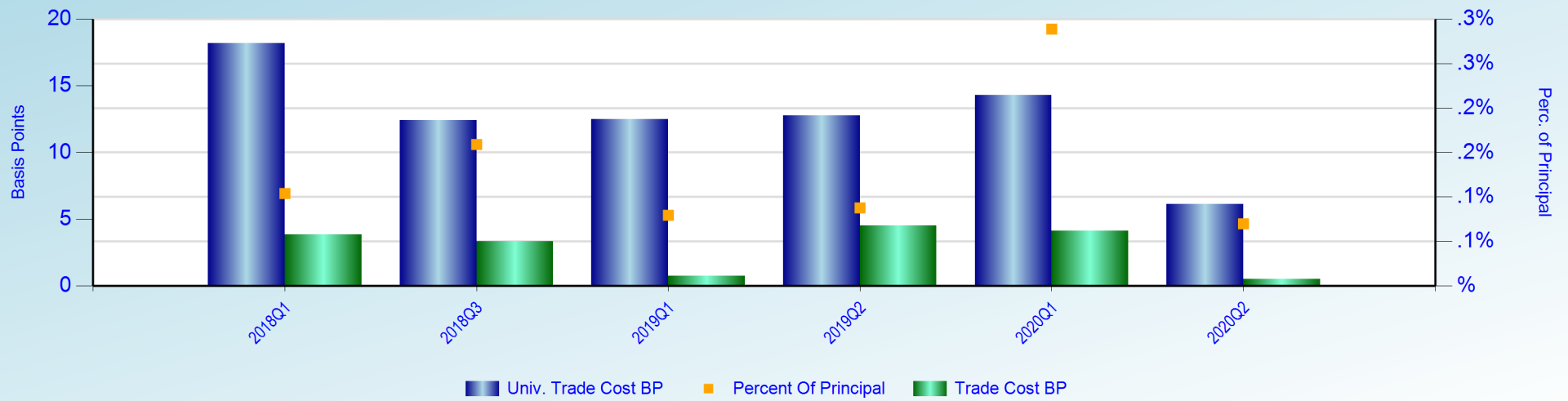
**MORTGAGES**



**BOND TYPE PERFORMANCE**

Bond Type	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost		Cost Diff. from Universe	
					BP	Univ. Trade Cost BP	(Thous.\$)	BP
MUNICIPALS	<1	3	3	+0.03	+0.51	+6.14	0.36	5.63

**MUNICIPALS**







**RATING BY EACH BOND TYPE**

**GOVERNMENTS - RATING DETAILS**

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$ )	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	472	216	44	14.26	0.30	+9.25	450.99	9.55



**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	385	126	30	+68.34	+1.78	+9.35	291.36	7.57

**RATING BY EACH BOND TYPE**

**CORPORATES - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost		Univ. Trade Cost BP	Cost Diff. from Universe	
				(Thous. \$)	BP		(Thous. \$)	BP
A-	14	25	19	2.37	1.67	+17.79	27.55	19.46
BBB+	12	28	18	+2.87	+2.48	+24.43	25.40	21.95
AA-	4	9	6	+6.58	+15.54	+9.96	+2.36	+5.57
BBB	4	8	8	+2.69	+6.59	+19.30	5.20	12.71
A+	3	7	3	+3.09	+11.35	+100.81	24.38	89.46
BBB-	2	6	4	1.42	6.11	+12.58	4.35	18.69
A- *-	2	3	2	4.76	30.62	+12.58	6.72	43.20
A	1	4	2	+4.11	+28.76	+85.17	8.07	56.41
AA	1	4	4	1.78	13.87	+13.47	3.50	27.34
AA+	<1	2	2	+4.03	+47.61	+11.20	+3.09	+36.41
BB+ *-	<1	2	1	+1.39	+19.74	+5.90	+0.97	+13.84
BB+	<1	1	1	+1.23	+67.04	+18.94	+0.88	+48.10



**RATING BY EACH BOND TYPE**

**AGENCIES - 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	+0.44	+4.98	+2.75	+0.20	+2.23



**RATING BY EACH BOND TYPE**

**MUNICIPALS - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AA-	<1	2	2	+1.16	+33.58	+0.58	+1.14	+32.99
BBB+	<1	1	1	1.13	39.40	+12.85	1.50	52.26

### 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
04/01/2020-06/30/2020	903,498	445	148	+70.23	+0.78	+10.08	840.37	9.30
01/02/2020-03/31/2020	1,053,957	691	217	+198.86	+1.89	+10.64	922.37	8.75
Year-Ending 2020	1,957,455	1136		+269.10	+1.37	+10.38	1,762.74	9.01
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

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. \$)	Cost Diff. from Universe BP
07/01/2015-09/30/2015	992,841	1625	204	225.86	2.27	+3.74	596.77	6.01
04/01/2015-06/30/2015	1,141,971	1504	246	310.14	2.72	+7.36	1,150.64	10.08
01/01/2015-03/31/2015	944,141	1100	191	8.38	0.09	+6.57	628.26	6.66
Year-Ending 2015	3,899,478	5209		683.23	1.75	+6.49	3,213.25	8.24
10/01/2014-12/31/2014	676,216	885	213	+41.55	+0.61	+5.86	354.40	5.25
07/01/2014-09/30/2014	905,295	785	133	+534.89	+5.91	+6.85	85.46	0.94
04/01/2014-06/30/2014	727,152	957	240	48.64	0.67	+7.04	560.46	7.71
01/02/2014-03/31/2014	920,513	1033	210	131.04	1.42	+6.54	733.34	7.96
Year-Ending 2014	3,229,176	3660		+396.76	+1.23	+6.60	1,733.66	5.37
10/01/2013-12/31/2013	804,252	799	216	45.80	0.57	+5.50	487.92	6.07
07/01/2013-09/30/2013	778,379	825	214	+21.56	+0.28	+6.25	465.02	5.97
04/01/2013-06/30/2013	937,180	803	217	51.74	0.55	+7.82	784.80	8.37
01/02/2013-03/31/2013	635,964	613	190	+89.06	+1.40	+8.12	427.14	6.72
Year-Ending 2013	3,155,775	3040		+13.07	+0.04	+6.90	2,164.88	6.86
10/01/2012-12/31/2012	528,034	613	192	215.02	4.07	+7.49	610.46	11.56
07/01/2012-09/30/2012	567,084	722	230	+18.83	+0.33	+8.56	466.39	8.23
04/01/2012-06/30/2012	520,106	739	204	+102.98	+1.98	+8.39	333.44	6.41
01/02/2012-03/31/2012	136,055	131	54	+29.91	+2.20	+7.08	66.46	4.88
Year-Ending 2012	1,751,279	2205		63.30	0.36	+8.07	1,476.76	8.43
10/01/2011-12/31/2011	91,474	88	43	18.39	2.01	+6.04	73.67	8.05
07/01/2011-09/30/2011	101,872	106	49	47.22	4.64	+4.74	95.51	9.38
04/01/2011-06/30/2011	100,523	97	54	4.28	0.43	+4.90	53.56	5.33
01/02/2011-03/31/2011	205,267	171	56	143.81	7.01	+7.08	289.08	14.09
Year-Ending 2011	499,136	462		213.70	4.28	+5.97	511.82	10.25
10/01/2010-12/31/2010	184,240	138	57	8.71	0.47	+5.73	114.34	6.20



**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
07/01/2010-09/30/2010	219,586	151	60	20.80	0.95	+4.97	129.88	5.92
04/01/2010-06/30/2010	161,213	123	50	+101.24	+6.28	+7.34	17.15	1.06
01/02/2010-03/31/2010	221,701	181	70	+60.21	+2.72	+11.49	194.49	8.77
Year-Ending 2010	786,740	593		+131.95	+1.68	+7.47	455.85	5.79





**BENCHMARK VENDOR REPORT**

Bonds	Number of Trades	Number of Issues	Vendor Benchmark	Percent Of Principal
AGENCIES	1	1	BVAL	100.00 %
CORPORATES	82	61	MARKETAXESS-TRADES	87.30 %
	5	5	ISSUE PRICE	6.51 %
	12	5	BVAL	6.19 %
GOVERNMENTS	214	43	TULLET PREBON	98.93 %
	1	1	BVAL	0.54 %
	1	1	MARKETAXESS-TRADES	0.54 %
MORTGAGES	126	30	BLOOMBERGTERMINAL	100.00 %
MUNICIPALS	3	3	MSRB-TRADES	100.00 %

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## SACRAMENTO COUNTY

Global Fixed Income Analysis

Period End June 30, 2020



## EXECUTIVE SUMMARY

Elkins/McSherry has been providing trading cost analyses to institutional investors since 1991. During that time we have produced Post-Trade Cost Analyses for many of the worlds largest investment managers, pension funds, banks, and broker dealers. Using this vast experience combined with an un-matched collection of global fixed income market and Universe data, Elkins/McSherry has recently produced a Trading Cost Analysis on behalf of Sacramento County. This study evaluates global fixed income executions from April 01,2020 to June 30,2020. The analysis included trading of 143 trades in 98 different issues representing \$85,881,195 in principal across municipals, mortgages, governments And corporates.

### Methodology:

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

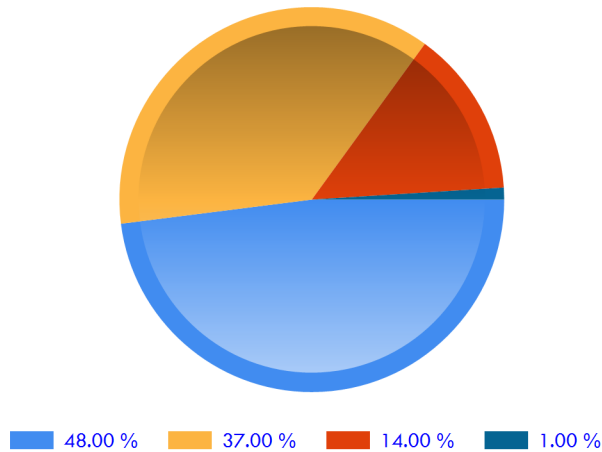
### Results:

GRAND TOTAL PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Buy/Sell	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q1 2020	Q4 2019	Q3 2019	Q2 2019
BUYS	57	100	80	206.14	36.44	+4.82	233.41	41.26	+0.64	5.06	4.26	3.89
SELLS	29	43	28	+23.06	+7.87	+4.82	+8.92	+3.05	1.14	+0.47	0.99	+2.14
GRAND TOTAL	86	143	98	183.09	21.32	+4.82	224.49	26.14	0.14	2.22	3.26	1.18

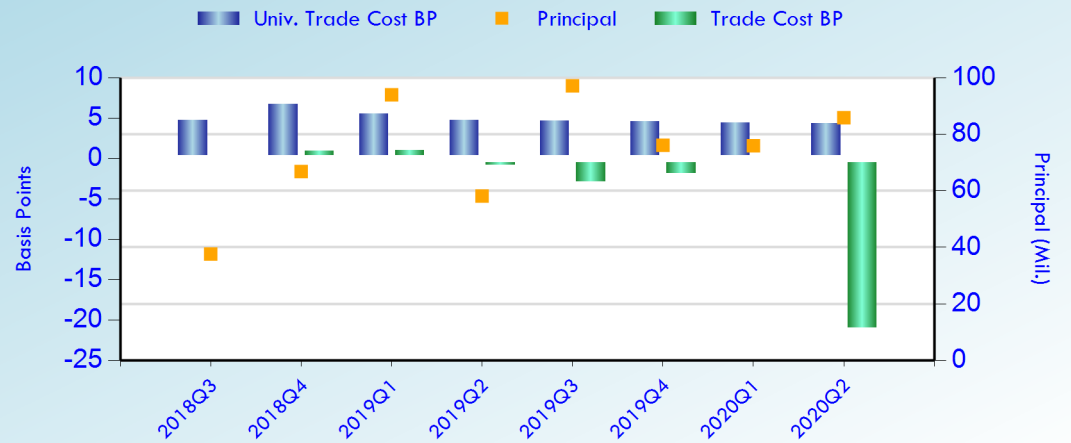
EXECUTIVE SUMMARY

BOND TYPES PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE				
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP	Q1 2020	Q4 2019	Q3 2019	Q2 2019
Corporates	42	93	71	161.57	38.87	+4.82	181.61	43.69	8.37	+8.24	6.57	1.00
Governments	32	38	17	.12	0.04	+4.82	15.45	4.86	+7.72	6.76	1.15	+1.06
Mortgages	12	11	9	18.54	15.84	+4.82	24.18	20.66	2.04	-	16.02	14.45
Municipals	<1	1	1	2.87	36.07	+4.82	3.25	40.89	-	112.14	1.66	-

Bonds by Principal Traded



Historical Trade Cost Trend

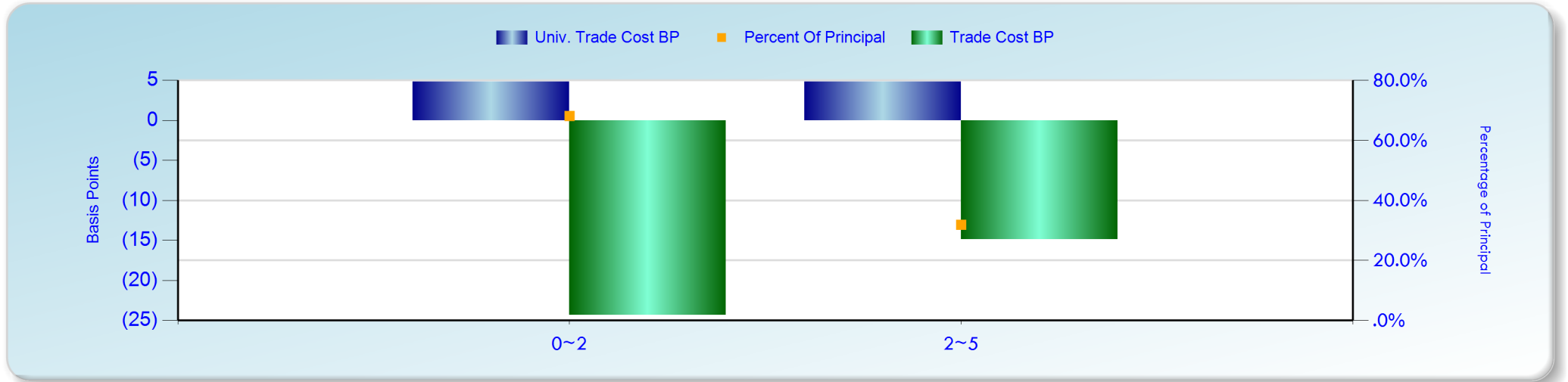




**EXECUTIVE SUMMARY**

**EXECUTION PERFORMANCE SUMMARY**

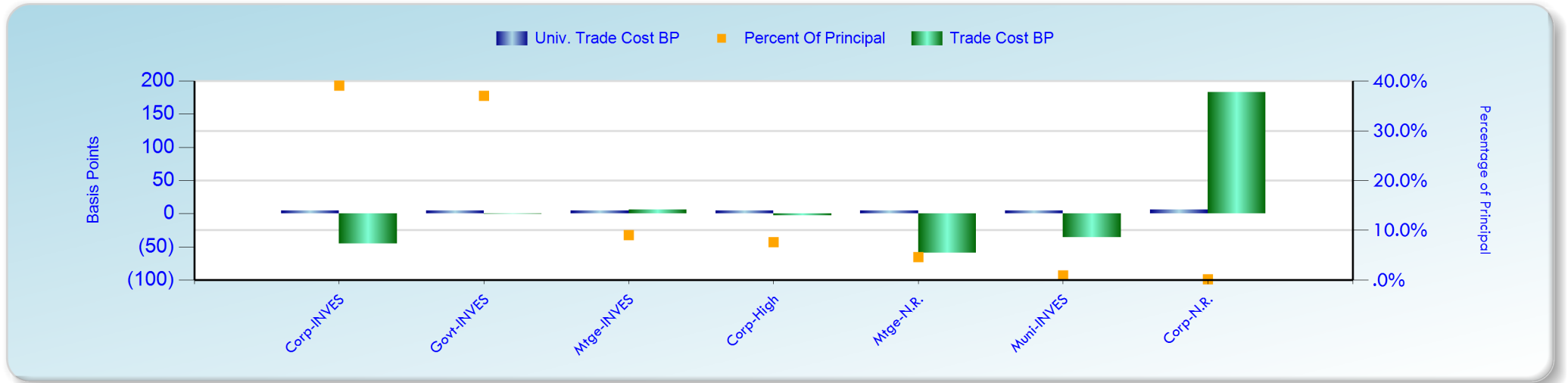
Trade Size (Millions)	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
0~2	58	132	92	142.29	24.32	+4.82	170.50	29.14
2~5	27	11	9	40.79	14.90	+4.82	53.99	19.72



EXECUTIVE SUMMARY

GRADING SUMMARY

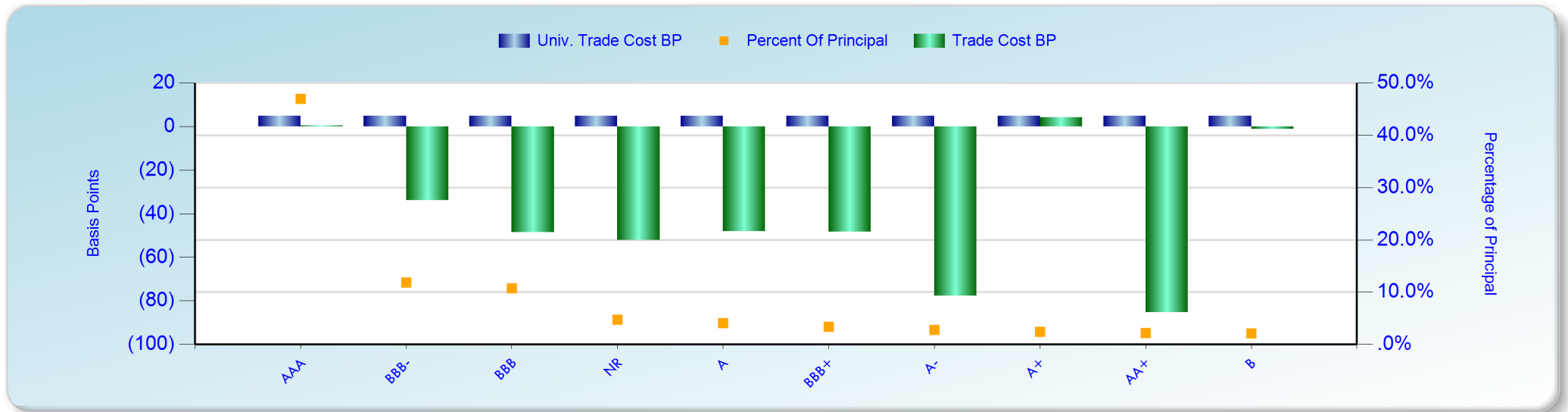
Grading	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
Corp-INVESTMENT GRADE	34	64	47	151.23	45.04	+4.82	167.41	49.86
Govt-INVESTMENT GRADE	32	38	17	0.12	0.04	+4.82	15.45	4.86
Mtge-INVESTMENT GRADE	8	4	4	+4.74	+6.12	+4.82	+1.01	+1.30
Corp-High Yield	7	24	20	2.02	3.09	+4.82	5.17	7.91
Mtge-N.R.	4	7	5	23.28	58.92	+4.82	25.18	63.74
Muni-INVESTMENT GRADE	<1	1	1	2.87	36.07	+4.82	3.25	40.89
Corp-N.R.	<1	1	1	+2.12	+183.04	+5.68	+2.05	+177.36



EXECUTIVE SUMMARY

RATING SUMMARY

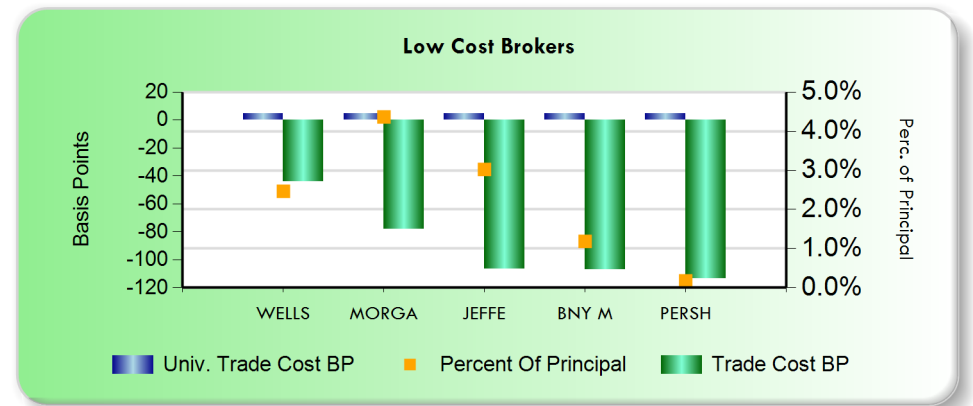
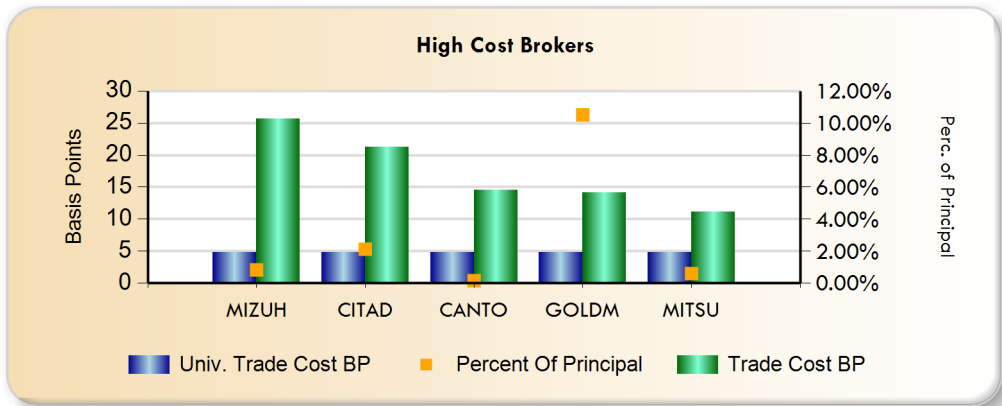
Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
AAA	40.37	43	22	+1.76	+0.44	+4.82	17.70	4.38
BBB-	10.18	16	12	34.45	33.85	+4.82	39.36	38.67
BBB	9.23	12	11	44.72	48.45	+4.82	49.17	53.27
NR	4.07	8	6	21.16	52.03	+4.84	23.13	56.87
A	3.50	5	5	16.82	48.10	+4.82	18.51	52.92
BBB+	2.91	17	8	14.08	48.33	+4.82	15.48	53.15
A-	2.39	4	4	18.58	77.75	+4.82	19.74	82.57
A+	2.06	3	2	+0.86	+4.16	+4.82	0.14	0.66
AA+	1.88	3	3	16.03	85.34	+4.82	16.94	90.16
B	1.81	7	5	0.18	1.00	+4.82	1.05	5.82





EXECUTIVE SUMMARY

BROKER	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous.\$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
<b>5 HIGHEST COST BROKERS (Sorted By Trade Cost BP)</b>								
MIZUHO	<1	2	2	+1.84	+25.67	+4.82	+1.49	+20.85
CITADEL SECURITIES	2	3	2	+3.89	+21.29	+4.82	+3.01	+16.47
CANTOR FITZGERALD	<1	3	1	+0.20	+14.58	+4.82	+0.14	+9.76
GOLDMAN SACHS	9	12	12	+12.75	+14.12	+4.82	+8.39	+9.30
MITSUBISHI UFJ SECS	<1	1	1	+0.58	+11.15	+4.82	+0.33	+6.33
<b>5 LOWEST COST BROKERS (Sorted By Trade Cost BP)</b>								
WELLS FARGO	2	5	5	9.36	44.25	+4.82	10.38	49.07
MORGAN STANLEY	4	10	8	29.17	77.89	+4.82	30.98	82.71
JEFFERIES & CO	3	8	6	27.66	106.54	+4.82	28.91	111.36
BNY MELLON	1	2	2	10.92	107.09	+4.82	11.41	111.91
PERSHING	<1	1	1	1.75	113.52	+4.82	1.82	118.34



**COUNTRY PERFORMANCE**

COUNTRY SUMMARY								TRADE COST HISTORICAL PERFORMANCE			
Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q1 2020	Q4 2019	Q3 2019	Q2 2019
UNITED STATES	86	142	97	185.21	21.59	+4.82	226.55 26.41	0.36	2.31	3.36	1.23
GERMANY	<1	1	1	+2.12	+183.04	+5.68	+2.05 +177.36	+14.17	-	-	+6.46



**COUNTRY PERFORMANCE BASED ON BUYS AND SELLS**

Country	Side	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
								(Thous. \$)	BP
UNITED STATES	SELLS	29	42	27	+20.94	+7.17	+4.82	+6.86	+2.35
	BUYS	57	100	80	206.14	36.44	+4.82	233.41	41.26
GERMANY	SELLS	<1	1	1	+2.12	+183.04	+5.68	+2.05	+177.36

**Manager PERFORMANCE**

Manager PERFORMANCE								TRADE COST HISTORICAL PERFORMANCE			
Manager	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP	Q1 2020	Q4 2019	Q3 2019	Q2 2019
PRUDENTIAL INVESTMEN	86	143	98	183.09	21.32	+4.82	224.49 26.14	0.14	2.22	3.26	1.18

### BROKER PERFORMANCE

BROKER PERFORMANCE									TRADE COST HISTORICAL PERFORMANCE			
BROKER	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$) BP		Q1 2020	Q4 2019	Q3 2019	Q2 2019
JP MORGAN CHASE	20	26	24	40.06	20.52	+4.82	49.47	25.34	+15.76	5.79	0.53	5.28
BANK OF AMERICA	16	18	17	63.94	40.52	+4.82	71.55	45.34	3.85	3.57	10.71	4.57
GOLDMAN SACHS	9	12	12	+12.75	+14.12	+4.82	+8.39	+9.30	+4.99	+2.46	+10.71	+11.54
TD SECURITIES	9	4	3	+0.58	+0.68	+4.82	3.55	4.14	-	+0.14	+1.79	0.04
CITIGROUP	6	12	12	+1.04	+1.81	+4.82	1.72	3.01	+0.60	11.29	6.46	3.25
MORGAN STANLEY	4	10	8	29.17	77.89	+4.82	30.98	82.71	+22.14	2.06	+2.77	17.96
DEUTSCHE BANK	4	3	3	14.12	40.02	+4.82	15.82	44.84	18.67	0.25	+12.42	3.78
CREDIT SUISSE	3	5	5	0.35	1.05	+4.82	1.94	5.87	+35.90	+1.60	0.75	+5.67
BARCLAYS	3	18	17	+0.37	+1.34	+4.86	0.97	3.52	6.85	+2.41	16.43	+2.61
JEFFERIES & CO	3	8	6	27.66	106.54	+4.82	28.91	111.36	-	+12.08	+24.10	+1.42
HSBC BANK	2	6	3	1.12	4.68	+4.82	2.27	9.50	22.27	0.38	+24.98	+40.75
WELLS FARGO	2	5	5	9.36	44.25	+4.82	10.38	49.07	16.44	7.08	+1.88	-
CITADEL SECURITIES	2	3	2	+3.89	+21.29	+4.82	+3.01	+16.47	0.20	+0.21	+0.17	+0.06
RBC CAPITAL MARKETS	1	2	2	1.59	13.14	+4.82	2.17	17.96	11.90	+19.75	0.04	47.90
BNY MELLON	1	2	2	10.92	107.09	+4.82	11.41	111.91	+19.30	+1.20	+16.83	20.19
MERRILL LYNCH	<1	1	1	2.87	36.07	+4.82	3.25	40.89	+123.84	+0.00	+15.29	-
MIZUHO	<1	2	2	+1.84	+25.67	+4.82	+1.49	+20.85	-	+1.75	+36.78	+3.36
MITSUBISHI UFJ SECS	<1	1	1	+0.58	+11.15	+4.82	+0.33	+6.33	41.45	-	-	-
SG AMERICAS	<1	1	1	1.43	32.64	+4.82	1.65	37.46	-	-	-	-
PERSHING	<1	1	1	1.75	113.52	+4.82	1.82	118.34	-	+18.91	-	+9.42
CANTOR FITZGERALD	<1	3	1	+0.20	+14.58	+4.82	+0.14	+9.76	+14.97	+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
<b>15 Highest Cost Trades</b>											
S	23307DAZ DBGS MORTGAGE TRUST DBGS 201	Mtge	04/16/2020 10/15/2051	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	1,035,610	112.566	114.830	+201.09	+20,825
S	00751YAD ADVANCE AUTO PARTS COMPANY G	Corp	06/05/2020 04/15/2030	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,793,179	103.652	104.040	+37.45	+6,716
B	912810SK US TREASURY N/B 11/49 2.375	Govt	04/03/2020 11/15/2049	PRUDENTIAL INVE CITADEL SECURIT	US	USD	445,211	129.047	127.900	+88.84	+3,955
B	912810SK US TREASURY N/B 11/49 2.375	Govt	04/01/2020 11/15/2049	PRUDENTIAL INVE CITIGROUP	US	USD	442,354	128.219	127.172	+81.65	+3,612
S	912810RM US TREASURY N/B 05/45 3	Govt	04/24/2020 05/15/2045	PRUDENTIAL INVE CITIGROUP	US	USD	1,296,623	139.422	139.809	+27.74	+3,596
S	22160KAP COSTCO WHOLESALE CORP SR UNS	Corp	06/30/2020 04/20/2030	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	960,203	101.074	101.384	+30.64	+2,942
B	912810RJ US TREASURY N/B 11/44 3	Govt	06/08/2020 11/15/2044	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	1,082,128	128.063	127.733	+25.74	+2,786
S	912810RM US TREASURY N/B 05/45 3	Govt	04/02/2020 05/15/2045	PRUDENTIAL INVE HSBC BANK	US	USD	525,350	138.250	138.967	+51.88	+2,725
S	912810SK US TREASURY N/B 11/49 2.375	Govt	05/18/2020 11/15/2049	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	2,536,931	124.359	124.478	+9.55	+2,423
S	912810RN US TREASURY N/B 08/45 2.875	Govt	04/07/2020 08/15/2045	PRUDENTIAL INVE HSBC BANK	US	USD	641,100	133.563	134.034	+35.33	+2,265
S	BWX5RF9 PETROLEOS MEXICANOS COMPANY	Corp	04/24/2020 01/01/1900	PRUDENTIAL INVE BARCLAYS	GER	EUR	115,860	71.600	72.911	+183.05	+2,121
B	912810SL US TREASURY N/B 02/50 2	Govt	05/14/2020 02/15/2050	PRUDENTIAL INVE CITADEL SECURIT	US	USD	677,844	117.886	117.556	+27.98	+1,896
B	912810SK US TREASURY N/B 11/49 2.375	Govt	04/23/2020 11/15/2049	PRUDENTIAL INVE BANK OF AMERICA	US	USD	467,156	129.766	129.295	+36.24	+1,693
B	256677AH DOLLAR GENERAL CORP SR UNSEC	Corp	04/02/2020 04/03/2050	PRUDENTIAL INVE MIZUHO	US	USD	613,117	100.511	100.259	+25.06	+1,537



B	71654QCG PETROLEOS MEXICANOS COMPANY	Corp	04/24/2020 03/13/2027	PRUDENTIAL INVE BARCLAYS	US	USD	116,025	77.350	76.362	+127.79	+1,483
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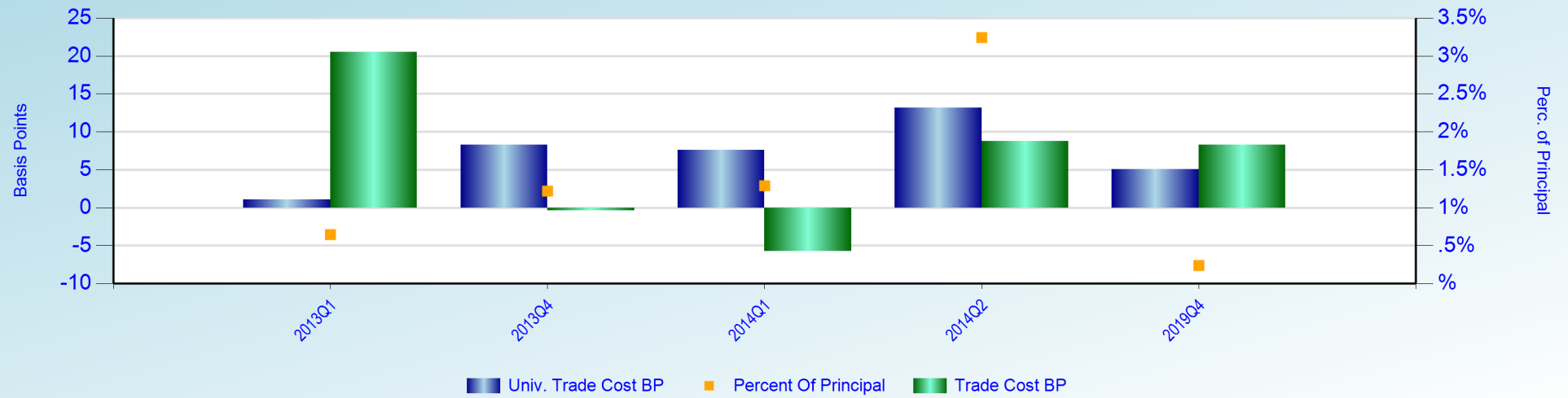


**TRADE DETAILS**

Buy/Sell	Security	Bond Type	Trade Date/ Maturity	Manager/ Broker	Cty	Local Curr.	Principal (\$)	Price	Benchmark Price	Trade Cost BP	Trading Cost
<b>15 Lowest Cost Trades</b>											
B	472319AL JEFFERIES GROUP LLC SR UNSEC	Corp	04/21/2020 01/20/2023	PRUDENTIAL INVE JEFFERIES & CO	US	USD	1,282,862	102.629	105.060	236.87	30,388
B	30301NAA FREFM MORTGAGE TRUST FREFM 2	Mtge	06/10/2020 10/25/2031	PRUDENTIAL INVE MORGAN STANLEY	US	USD	717,506	0.727	0.750	322.62	23,148
B	337738AU FISERV INC SR UNSECURED 07/2	Corp	04/08/2020 07/01/2029	PRUDENTIAL INVE BANK OF AMERICA	US	USD	2,644,427	102.896	103.742	82.24	21,749
S	12629NAF COMM MORTGAGE TRUST COMM 201	Mtge	05/19/2020 02/10/2048	PRUDENTIAL INVE DEUTSCHE BANK	US	USD	2,965,265	105.902	105.390	48.38	14,346
B	037833DW APPLE INC SR UNSECURED 05/50	Corp	05/04/2020 05/11/2050	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	1,133,566	98.571	99.566	100.94	11,443
B	571903BD MARRIOTT INTERNATIONAL SR UN	Corp	04/14/2020 05/01/2025	PRUDENTIAL INVE BANK OF AMERICA	US	USD	349,986	99.996	103.220	322.39	11,283
B	898813AR TUCSON ELECTRIC POWER CO SR	Corp	04/06/2020 06/15/2050	PRUDENTIAL INVE BNY MELLON	US	USD	594,828	99.138	100.958	183.60	10,921
B	918204BC VF CORP SR UNSECURED 04/30 2	Corp	04/21/2020 04/23/2030	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,571,613	99.785	100.449	66.50	10,451
B	369604BY GENERAL ELECTRIC CO SR UNSEC	Corp	04/13/2020 05/01/2050	PRUDENTIAL INVE BANK OF AMERICA	US	USD	298,950	99.650	102.630	299.05	8,940
B	835495AL SONOCO PRODUCTS CO SR UNSECU	Corp	04/20/2020 05/01/2030	PRUDENTIAL INVE BANK OF AMERICA	US	USD	1,773,012	99.888	100.352	46.47	8,239
B	30231GBM EXXON MOBIL CORPORATION SR U	Corp	04/13/2020 04/15/2051	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	620,000	100.000	101.089	108.90	6,752
B	369604BX GENERAL ELECTRIC CO SR UNSEC	Corp	04/13/2020 05/01/2040	PRUDENTIAL INVE BANK OF AMERICA	US	USD	324,083	99.718	101.635	192.29	6,232
B	134429BK CAMPBELL SOUP CO SR UNSECURE	Corp	04/20/2020 04/24/2050	PRUDENTIAL INVE JP MORGAN CHASE	US	USD	872,628	99.729	100.309	58.16	5,075
B	668444AS NORTHWESTERN UNIVERSITY UNSE	Corp	05/20/2020 12/01/2050	PRUDENTIAL INVE GOLDMAN SACHS	US	USD	375,000	100.000	101.224	122.39	4,590
B	03040WAX AMERICAN WATER CAPITAL C SR	Corp	04/08/2020 05/01/2050	PRUDENTIAL INVE RBC CAPITAL MAR	US	USD	249,485	99.794	101.607	181.63	4,531



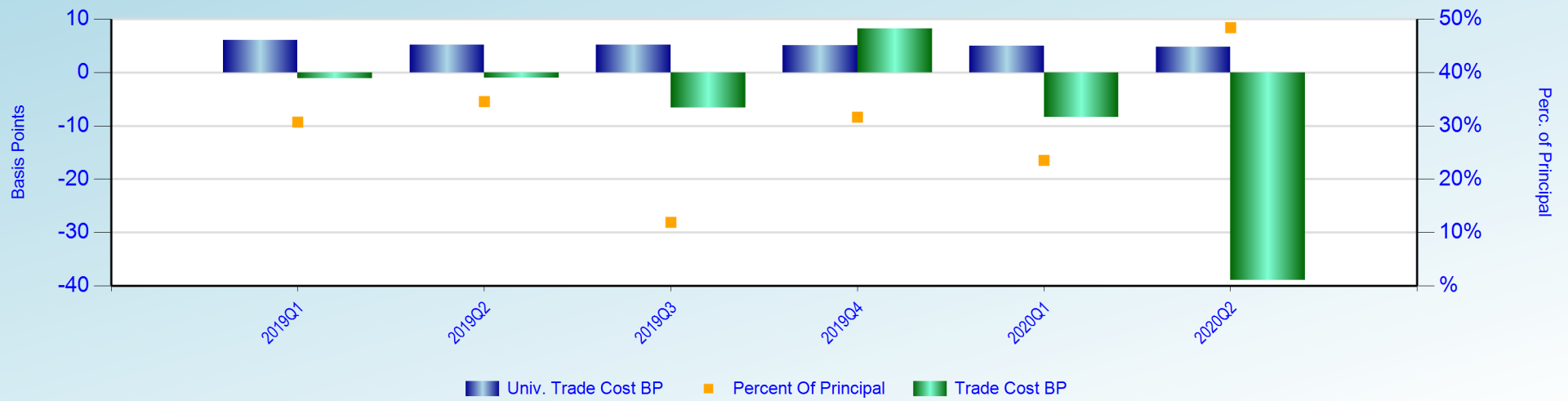
AGENCIES



**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	42	93	71	161.57	38.87	+4.82	181.61	43.69

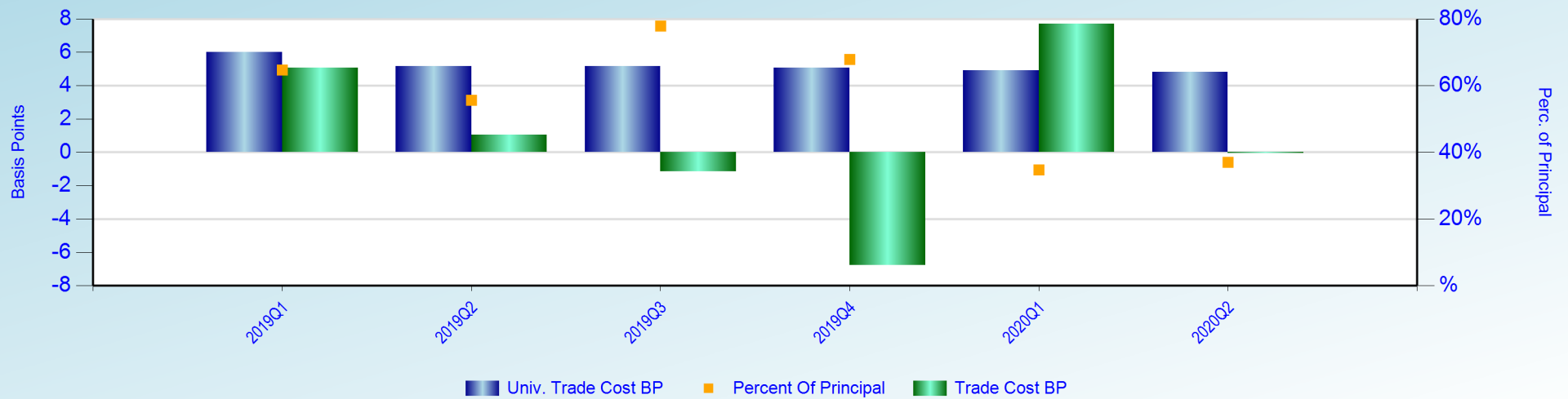
**CORPORATES**



**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	32	38	17	0.12	0.04	+4.82	15.45	4.86

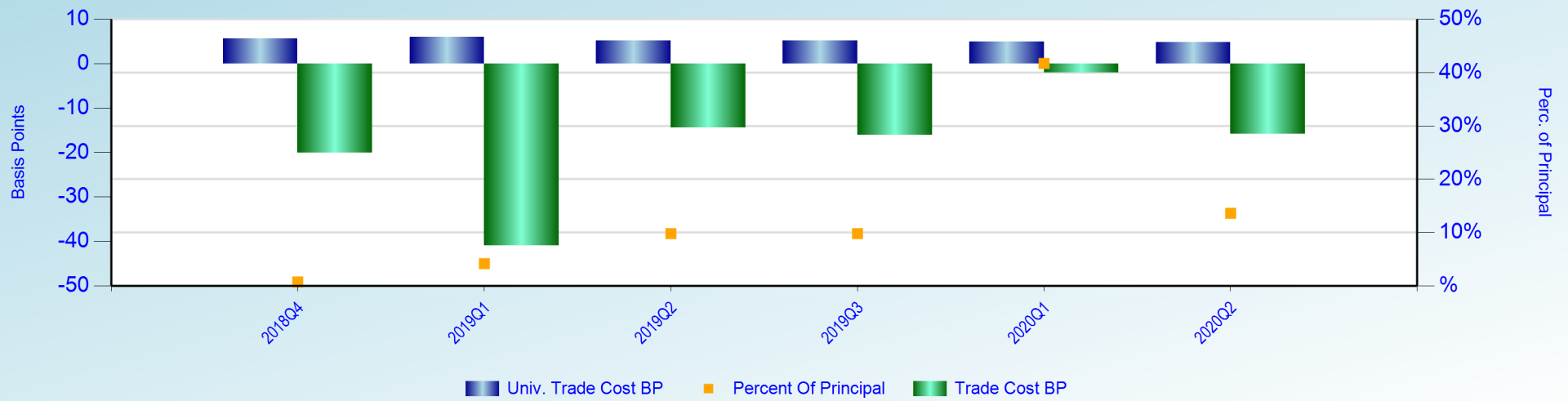
**GOVERNMENTS**



**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	12	11	9	18.54	15.84	+4.82	24.18	20.66

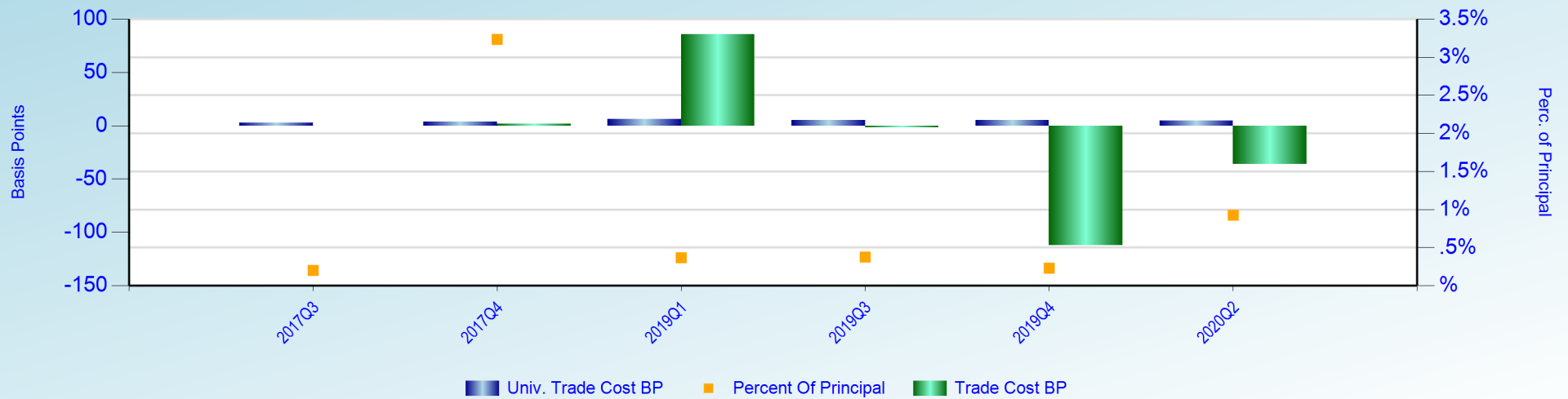
**MORTGAGES**



**BOND TYPE PERFORMANCE**

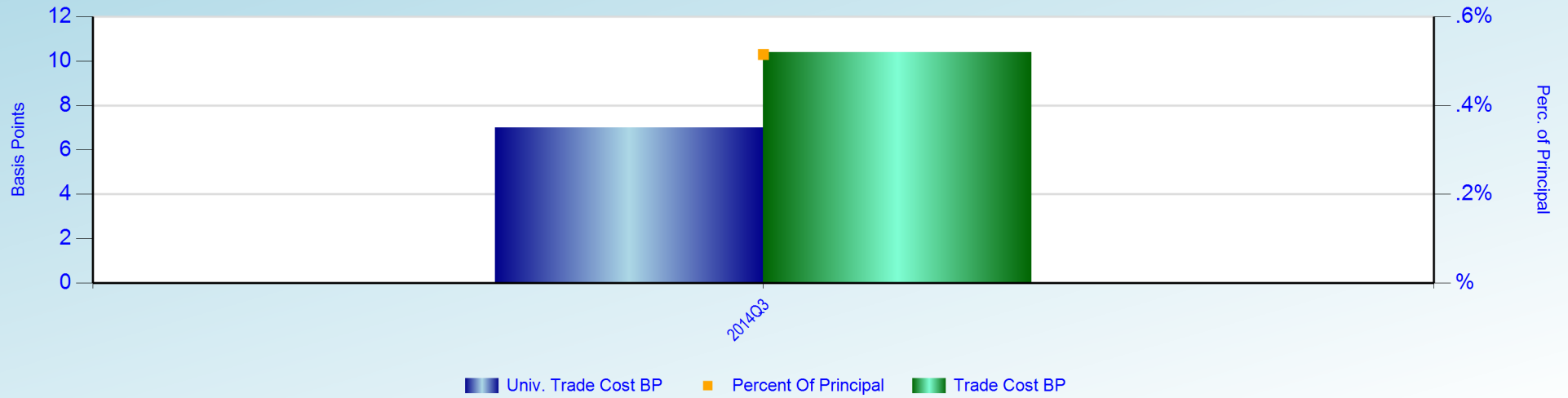
Bond Type	Principal (Mil. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous.\$)	BP
MUNICIPALS	<1	1	1	2.87	36.07	+4.82	3.25	40.89

**MUNICIPALS**





UNCLASSIFIED





**RATING BY EACH BOND TYPE**

**GOVERNMENTS - RATING DETAILS**

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$ )	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	32	38	17	0.12	0.04	+4.82	15.45	4.86



**RATING BY EACH BOND TYPE**

**CORPORATES - RATING DETAILS**

Rating	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost		Univ. Trade		Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP	
BBB-	10	16	12	34.45	33.85	+4.82	39.36	38.67	
BBB	9	12	11	44.72	48.45	+4.82	49.17	53.27	
A	3	5	5	16.82	48.10	+4.82	18.51	52.92	
BBB+	3	17	8	14.08	48.33	+4.82	15.48	53.15	
A-	2	4	4	18.58	77.75	+4.82	19.74	82.57	
A+	2	3	2	+0.86	+4.16	+4.82	0.14	0.66	
AA+	2	3	3	16.03	85.34	+4.82	16.94	90.16	
B	2	7	5	0.18	1.00	+4.82	1.05	5.82	
BB	2	4	4	+0.43	+2.69	+4.82	0.34	2.13	
B+	1	3	3	+0.51	+3.77	+4.82	0.14	1.05	
AA	1	3	1	6.27	48.97	+4.82	6.88	53.79	
BB-	<1	5	4	3.43	37.84	+4.82	3.86	42.66	
BBB- *-	<1	2	1	11.05	155.01	+4.82	11.40	159.83	
BB+	<1	2	2	+0.58	+8.98	+4.82	+0.27	+4.16	
BBB *-	<1	1	1	+0.61	+13.20	+4.82	+0.39	+8.38	
B-	<1	3	2	+0.07	+3.21	+4.82	0.04	1.61	
BB- *-	<1	1	1	+0.00	+0.00	+4.82	0.08	4.82	
AA-	<1	1	1	1.13	75.89	+4.82	1.20	80.71	
NR	<1	1	1	+2.12	+183.04	+5.68	+2.05	+177.36	



**RATING BY EACH BOND TYPE**

**MORTGAGES - RATING DETAILS**

Rating	Principal	No. of	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
	(Mil. \$ )	Trades		(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
AAA	8	4	4	+4.74	+6.12	+4.82	+1.01	+1.30
NR	4	7	5	23.28	58.92	+4.82	25.18	63.74



**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
AAA	<1	1	1	2.87	36.07	+4.82	3.25	40.89



**COUNTRIES BY EACH BOND TYPE**

CORPORATES								
Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	41	92	70	163.69	39.49	+4.82	183.67	44.31
GERMANY	<1	1	1	+2.12	+183.04	+5.68	+2.05	+177.36



**COUNTRIES BY EACH BOND TYPE**

**GOVERNMENTS**

Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost	Trade Cost	Univ. Trade	Cost Diff. from Universe	
				(Thous. \$)	BP	Cost BP	(Thous. \$)	BP
UNITED STATES	32	38	17	0.12	0.04	+4.82	15.45	4.86



**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	12	11	9	18.54	15.84	+4.82	24.18	20.66



**COUNTRIES BY EACH BOND TYPE**

MUNICIPALS								
Country	Principal (Mil. \$ )	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe	
							(Thous. \$)	BP
UNITED STATES	<1	1	1	2.87	36.07	+4.82	3.25	40.89

### 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
04/01/2020-06/30/2020	85,881	143	98	183.09	21.32	+4.82	224.49	26.14
01/02/2020-03/31/2020	75,943	157	84	1.05	0.14	+4.93	38.49	5.07
Year-Ending 2020	161,824	300		184.14	11.38	+4.87	262.99	16.25
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



HISTORICAL DATA

Quarter	Principal (Thous. \$)	No. of Trades	No. of Issues	Trade Cost (Thous. \$)	Trade Cost BP	Univ. Trade Cost BP	Cost Diff. from Universe (Thous. \$)	BP
07/01/2015-09/30/2015	20,663	41	24	68.34	33.07	+4.30	77.22	37.37
04/01/2015-06/30/2015	143,060	122	71	98.11	6.86	+5.55	177.48	12.41
01/01/2015-03/31/2015	116,093	109	56	60.79	5.24	+5.51	124.75	10.75
Year-Ending 2015	323,008	332		257.06	7.96	+5.67	440.30	13.63
10/01/2014-12/31/2014	48,315	72	50	+9.25	+1.91	+5.72	18.39	3.81
07/01/2014-09/30/2014	266,740	204	99	216.37	8.11	+7.08	405.13	15.19
04/01/2014-06/30/2014	244,265	204	138	+42.48	+1.74	+8.55	166.48	6.81
01/02/2014-03/31/2014	187,634	187	128	+186.20	+9.92	+8.13	+33.59	+1.79
Year-Ending 2014	746,953	667		+21.55	+0.29	+7.74	556.41	7.45
10/01/2013-12/31/2013	143,798	142	84	+56.51	+3.93	+8.36	63.70	4.43
07/01/2013-09/30/2013	187,166	136	90	+47.79	+2.55	+6.68	77.19	4.13
04/01/2013-06/30/2013	157,154	129	98	+104.81	+6.67	+1.44	+82.21	+5.23
01/02/2013-03/31/2013	281,064	206	156	+366.87	+13.05	+1.56	+323.04	+11.49
Year-Ending 2013	769,183	613		+575.98	+7.49	+4.05	+264.35	+3.44
10/01/2012-12/31/2012	132,722	116	90	+470.95	+35.48	+2.11	+442.94	+33.37
07/01/2012-09/30/2012	120,859	101	77	+125.20	+10.36	+2.09	+99.92	+8.27
04/01/2012-06/30/2012	85,150	85	60	+71.84	+8.44	+2.27	+52.54	+6.17
01/02/2012-03/31/2012	31,666	13	9	0.75	0.24	+7.38	24.12	7.62
Year-Ending 2012	370,398	315		+667.24	+18.01	+2.59	+571.28	+15.42
10/01/2011-12/31/2011	54,456	22	11	+249.88	+45.89	+3.18	+232.57	+42.71
07/01/2011-09/30/2011	45,561	26	10	+31.66	+6.95	+4.14	+12.80	+2.81
04/01/2011-06/30/2011	40,214	15	6	+83.99	+20.88	+4.01	+67.86	+16.87
01/02/2011-03/31/2011	45,680	23	3	+2.18	+0.48	+5.21	21.63	4.73
Year-Ending 2011	185,912	86		+367.70	+19.78	+4.09	+291.59	+15.68
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	48	36	MARKETAXESS-TRADES	59.70 %
	24	24	ISSUE PRICE	23.93 %
	17	12	BVAL	11.80 %
	4	4	BLOOMBERGTERMINAL	4.57 %
GOVERNMENTS	34	14	TULLET PREBON	98.41 %
	4	3	BVAL	1.59 %
MORTGAGES	11	9	BLOOMBERGTERMINAL	100.00 %
MUNICIPALS	1	1	MSRB-TRADES	100.00 %

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