

EXECUTIVE CELEBRITY, INVESTMENT HEURISTICS AND TRADING VOLUME

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ABSTRACT: The behavioral literature offers behavioral biases associated with *base rate*, *ambiguity aversion*, *robust control* and *anchoring* that support a tendency in human nature to use short-cuts in decision-making. In the area of equity investments, investors may demonstrate a similar propensity in their search for positive heuristic signals concerning the value of a stock. Consistent with that premise, the presence of a positive signal may enhance investor interest in ownership, resulting in increased trading volume. This paradigm should be especially true for less sophisticated investors, who are more prone to seek short-cut methods of valuation. On July 31, 2012, the *Wall Street Journal* publicly released its inaugural list of rankings of the top twenty-five finance chiefs (*Best CFOs*) of SP500 corporations, thus providing a positive heuristic signal to investors concerning the quality of management of these companies. We explore this issue by examining the change in the pattern of trading volume surrounding the release of the *Wall Street Journal* rankings. After controlling for trends in the trading volume in each company and its paired industrial sector, we observe a significant relative increase in the trading volume of the ranked companies that is initiated thirteen trading days prior to the public announcement, essentially sustained through the announcement date, and insignificant thereafter. The findings are consistent with the predicted influence of the base rate, ambiguity, and robust control biases, but inconsistent with the anchoring bias.

Key Words: Market Efficiency; CFO Lists; Trading Volume

INTRODUCTION

The *Wall Street Journal's* published its inaugural list of "Best CFOs" on July 31, 2012. The prominence of the *Wall Street Journal* as the globally highest-circulation financial news publication provides a unique scenario to test the association between investor decision heuristics and shareholder liquidity within the context of executive celebrity. The research design controls for trading volume trends in each *Best CFO* company, its

industrial-sector, and cross correlation associated with a common event date. Thirteen days prior to the WSJ public announcement of the CFO rankings, a significant increase in relative trading volume is observed for the *Best CFO* companies that is sustained through the announcement date and insignificant thereafter. The findings are consistent with the premise that at least some investors view the CFO ranking as a positive heuristic signal of the quality of the ranked company managements, and respond by increasing investment in the ranked stocks, thus stimulating trading volume.

LITERATURE REVIEW

Behavioral Biases: Behavior finance may be viewed as a process in which individuals use cognitive shortcuts in decision analysis (McGoun and Skubic, 2000), perhaps exchanging decision accuracy for reduced effort (Payne, 1993). Security analysis is a highly complex process, and decision-makers are more prone to employ heuristics and other associative approaches in more complex decision scenarios (Epstein, 1994; Busemeyer, 1995; and Hammond, 1996). Also, if the investment decision is reversible, it may further enhance a more intuitive approach (Olsen (1998)). All of the securities in the study are actively traded, providing the ability to sell and reverse the investment decision, although not without the possibility of loss.

Alternatively, behavioral finance may more simply be defined as patterns in financial decision-making not explained by conventional financial theory. Unexplained areas of influence in decision-making may be driven by psychological factors, or by market imperfections that permit extended inaccurate valuations to occur (Schleifer and Summers, 1990; Barberis and Thaler, 2002). As an example, one source of evidence of a seemingly irrational decision process is the existence of merger waves (e.g., Auster and Sirower, 2002), even though such actions do not appear to benefit the shareholders of the acquiring firms (Roll, 1986).

Although several behavioral motivations may be offered as consistent with the observed increase in the trading volume of the CFO-ranked companies, perhaps *base rate bias* is the most viable. *Base rate bias* refers to the tendency of individuals to assess probabilities based on the extent to which one event accurately reflects other basic characteristics (Kahneman and Tversky, 1974). Less sophisticated investors may overestimate the importance of the CFO rankings and place too little weight on the company fundamentals evidenced by conventional financial analysis. That is, they may overly associate achievement of the CFO rankings with subsequent superior return performance of their shares. Although not measured in this study, another possibility within this context is a cascading effect with initial increases in trading volume attracting additional investors,

a mimicking pattern observed in other studies outside the financial arena (Abrahamson, 1991; and Mezias and Lant, 1994).

In addition, the increase in trading volume of the CFO-ranked companies may be partially driven by *ambiguity aversion bias*, which is the preference by individuals for decision options in which the probability distribution for success is known over decision options involving unknown probabilities for success (Heath and Tversky, 1991). Investors know that the CFO-ranked companies are perceived by the *Wall Street Journal* analysis staff as being among the best twenty-five CFOs in industry, while the potential rankings of the quality of CFOs of other companies is not revealed in the *Best CFO* announcement. The reaction of unsophisticated investors may be more pronounced if they view the *WSJ* analysis staff to be exceptionally competent, since the ambiguity aversion bias is further enhanced if the source of the bias is viewed to be highly qualified (Fox and Tversky, 1995).

Less-sophisticated investors may also be influenced by *robust control bias*, which is the tendency for a decision maker to incorrectly specify the probability of avoiding a worst-case outcome (Epstein and Wang, 1994; and Anderson, Hansen, and Sargent, 1998). Some investors may view achievement of the CFO ranking as an indication that the chance of inferior shareholder returns is diminished.

A behavioral influence that would support a sustained increase in trading volume is *anchoring bias*, which refers to excessive emphasis placed on events that are recent and visible (Kahneman and Tversky, 1974). A persistent increase in trading volume of CFO-ranked companies would be consistent with the tendency of less-sophisticated investors to adhere to the importance of the CFO rankings and fail to incorporate subsequent changes in the fundamental characteristics of the ranked companies into the valuation analysis.

The current study does not attempt to discriminate among the different types of behavioral biases in the analysis. Since all of the cited behavioral biases support a unilateral direction of change in trading volume (i.e., an increase in trading volume), the focus of the study is to empirically examine the response in trading volume surrounding the public release of the CFO rankings.

Conventional Financial Theory: The issue of the impact of new information disclosure on trading volume is also explored in the conventional financial literature. The subtext is that security trades evolve from differences in valuations among investors. Any event that results in more disperse stock valuations by investors results in increased trading volume. Conversely, if

all investors arrive at the same assessed value for a given security, no trading in that security will occur.

Theoretical models suggest that the influence of new information on shareholder liquidity can be divided into various drivers (Karpoff, 1986; Varian, 1989; and Holthausen and Verrecchia, 1990). One driver, the *differential interpretation theory*, addresses the variation in how new information is interpreted by market analysts, inferring that greater variation in the interpretation of new information should result in higher trading volume. Another driver, the *consensus effect theory*, implies that a greater divergence in the subsequent valuations applied by analysts will be accompanied by increased trading volume. The *differential interpretation effect* and the *consensus effect* are shown to be separate and distinct influences on trading volume surrounding the disclosure of new information (Atiase, Ajinkya, Dontoh, and Gift, 2011). Both drivers imply that a greater change in investor beliefs produces increased trading volume as investors engage in a greater revision of their market positions, and conversely, a greater congruence in investor beliefs produces decreased trading volume. Empirical support is found in other studies supporting these reaction drivers (Karpoff, 1986; Varian, 1989; and Holthausen and Verrecchia, 1990). In the present study, we posit that the interpretation of the achievement of the *Best CFOs* ranking should only be subject to a negligible variation in interpretation, and as a result, have only a negligible effect on the dispersion of stock valuations. Consequently, we assume the *differential interpretation* and *consensus effect* drivers are materially insignificant in the current study.

Other studies address the influence of other factors on the drivers. The degree of the surprise around earnings announcements may magnify the effect of the drivers (Beaver, 1968; Kim and Verrecchia, 1991; and Atiase and Bamber, 1994). The degree to which investors revise their beliefs about asset values may impact the effect of new information on trading volume (Karpoff, 1986; and Varian, 1989). Although, trading costs may diminish the impact of the consensus effect (Barron and Karpoff, 2004). A positive association between EPS forecast dispersion and trading volume is observed in one study that fails to control for the effects of differential interpretation of information and the consensus effect (Ajinkya, Atiase, and Gift, 1991). Even when stock prices do not react to the public announcement, the presence of the differential interpretation effect may be observed (Kandel and Pearson, 1995). The combined effect of the correlation between analysts' relative positions and the change in earnings dispersion may also influence trading volume surrounding earnings announcements (Bamber, Barron, and Stober, 1997), and the presence of

speculative traders increases the ability of informed traders to veil their trades when they interpret information differently. Rational models, however, may fail to differentiate between pre-announcement information and event-period information (Kim and Verrecchia, 1997). Also, the informational content of a public announcement increases with greater prior price dispersion (Dontoh and Ronen, 1993). In the present study, we address the issue of earnings surprises by also examining a subset of the sample comprised of companies not releasing earnings announcement dates within the period of observed change for the sample as a whole.

The addition of a stock to the SP500 index is also associated with increased trading volume (Lin, 2010), and overconfidence is found to be positively related to trading volume, although more common among private investors than institutional investors (Yung, Sun, and Rahman, 2011). Stock return may also impact trading volume in both bear and bull markets (Chen, 2012). The index membership issue is irrelevant in the current study since the index membership status of the sample companies is unchanged over the estimation and observation periods. Returns of the ranked companies are observed to experience no sustained change in return surrounding the Best CFOs CFO disclosure event.¹

SAMPLE

The study sample is comprised of the twenty-five corporations represented by CFOs making the inaugural *Best CFOs* list published by the *Wall Street Journal* on July 31, 2012. The *Wall Street Journal* submits that its CFO rankings are achieved through an exhaustive analysis of qualitative and quantitative factors, and extensive interviews with finance recruiters and market analysts. The *Journal* offers its goal to be to identify those financial managers who excel at financial management and significant contributors to setting their company's corporate strategy. The Wall Street Journal CFO rankings were restricted to companies with a market capitalization of at least \$5 billion, and those with a CFO resident in the position for at least three years.

The chief financial executives (CFOs) included in the *Best CFOs* list and their respective companies are presented in Table 1. It is noteworthy that some of the cited companies likewise appear in other rankings of high-performing executives.² Also listed are the industrial-sector-matched

¹ Daily returns are modeled after the Fama-French (1996) three-factor model and the Carhart (1997) momentum factor, and reflect an increase in shareholder returns only on the announcement date that is reversed one day later (not reported).

²See: <https://www.iiresearch.net/customerService/VoterGiveBack/2012All-AmericaExecutiveTeamLeadersTable.pdf>

iShares employed as a control for trading volume trends within each company's industrial sectors. Descriptive characteristics of the sample companies and matched iShares appear in Table 2.

METHODOLOGY

A trading volume index is determined for each company by scaling each day's trading volume to the mean trading volume for the 120-day estimation period beginning twenty trading days prior to the public announcement of the *Best CFOs*.

$$VI_{it} = (V_{it})/\bar{V}_i \quad (1)$$

where VI_{it} is the trading volume index of company i for period t ,

V_{it} is the daily trading volume of company i in period t , and

\bar{V}_i is the average trading volume of company i during the estimation period ($t=-140, -20$) where $t=0$ is the public announcement date of the Best CFOs list.

A similar trading volume index is determined for each respective iShare corresponding to the company's industrial sector.³

The increment between the trading volume index for each company i and its corresponding paired iShare is determined for each trading day i :

$$\Delta VI_{it} = VI(company)_{it} - VI(iShare)_{it} \quad (2)$$

where ΔVI_{ij} is the incremental trading volume index for company i for observation period t relative to its paired iShare.

The mean incremental trading volume index for each company i is determined for the 120-day estimation period ($t=-140, -21$):

$$\overline{Pre\Delta VI}_i = [(\sum_{t=-140}^{-21} \Delta VI_{it})/120] \quad (2)$$

where $\overline{Pre\Delta VI}_i$ is the mean value of the incremental trading volume index for company i relative to its paired iShare for the 120-day trading period ending 21 trading days prior to the public announcement of the *Wall Street Journal* rankings, and;

³ The trading volume in iShares for each company's industrial sector serves as a proxy for trading volume in that industrial sector.

$i=0$ is the date of the public announcement of the *Wall Street Journal's BEST CFOs CFOs*.

The twenty trading-day period preceding the *Best CFOs* announcement initiates observation windows with a starting point equivalent to one calendar month prior to the public announcement date. Initial analysis of different possible estimation and observation periods reveals a market response to the announcement occurring over two weeks prior to the public disclosure of the *Best CFOs CFO* rankings. Another argument in support of an extended pre-announcement window is the fact that the *Best CFOs CFO* rankings do not constitute inside information, and are therefore not subject to such an extreme level of guarded scrutiny.

In a similar fashion, the mean value of the incremental trading volume index for each company i relative to its paired iShare is determined for various observation windows beginning twenty days prior to the public announcement date:⁴

$$\overline{Post\Delta VI_{ij}} = [(\sum_{t=-20}^T \Delta VI_{it}) / (T + 21)] \quad (3)$$

where $\overline{Post\Delta VI_{ij}}$ is the mean value of the incremental trading volume index for company i relative to its paired iShare for observation period j beginning with $t=-20$ and extending to $t=T$

The difference between the mean incremental trading volume index for each observation period j for company i and the mean incremental trading volume index for the estimation period for each company i is determined:

$$\delta VI_{ij} = \overline{Post\Delta VI_{ij}} - \overline{Pre\Delta VI_i} \quad (4)$$

where δVI_{ij} is the change in the incremental average trading volume index for company i between the estimation period and the observation period j .

The t -statistic employed to determine the statistical significance of the change in the cumulative trading volume index for the sample is based on the Boehmer, Musumeci, and Poulsen (1991) measure that appears in

⁴ For example, the average incremental trading volume index for the $t=-20,-15$ window is found by summing the six days of incremental trading volume index values and dividing by 6: $\overline{Post\Delta VI_{i6}} = [(\sum_{t=-20}^{T-15} \Delta VI_{it}) / (-15 + 21)]$

return models, modified by the adjustment for the cross-correlation of the common event date prescribed by Kolari and Pynnönen (2010):⁵

$$t_{\delta VI_j} = \frac{\overline{\delta VI_j}}{s_{n_j} / \sqrt{n-1}} \sqrt{\frac{1-\bar{r}}{1+(n-1)\bar{r}}} \quad (5)$$

Where $\overline{\delta VI_j}$ is the mean change in the incremental trading volume index for the sample for observation period j ,

s_{n_j} is the sample standard deviation of the mean change in the incremental trading volume index for observation period j ,

\bar{r} is the average of the correlations of the incremental trading volume index values among the sample companies over the estimation period⁶, and

n is the number of companies in the sample ($n=25$).

ANALYSIS OF RESULTS

If the *Wall Street Journal* rankings announcement is viewed by investors as a heuristic signal of an increase in the quality of management, this may be evidenced by an increase in the trading volume surrounding the announcement. Findings for the change in the mean incremental trading volume index ($\overline{\delta VI_i}$) are displayed in Table 3. Results are generated for various observation windows, all beginning twenty days preceding the announcement of the *Wall Street Journal Best CFO* rankings.

The findings are presented in Table 3, and show a significant increase in the incremental trading volume index initiated thirteen trading days prior to the Wall Street Journal publication of its *Best CFOs* list and their corresponding companies, and the increase is essentially sustained up to and including the announcement date, then becomes statistically insignificant thereafter.⁷ The increase in the trading volume of the ranked companies is consistent with the concept that some investors view

⁵ The importance of correcting for cross-correlation in event studies with clustered or common event dates is well documented (Gonedes and Dopuch, 1974; Collins and Dent, 1984; Salinger, 1992; Karpoff, 1986; Varian, 1989; Holthausen and Verrecchia, 1990; and Bernard, 1987).

⁶ This measure (\bar{r}) is calculated as the average bivariate Pearson correlation of incremental trading volume index values for the estimation period for all possible unique pairs of ranked companies. The mean correlation of indexed volume for all possible pairs (\bar{r}) for the estimation period is 0.108. For the restricted sample of ten companies with no earnings announcements between July 18 and July 31 (the Best CFOs announcement date) is 0.082.

⁷ The change in trading volume remains insignificant for a full year following the *Best CFOs* announcement date.

achievement of the rankings as a positive heuristic signal of the quality of the management of the ranked companies, a pattern which is consistent with the influence of behavioral biases associated with *base rate*, *ambiguity aversion*, and *robust control*. The expiration of the change in trading volume after the announcement date suggests that the influences of the aforementioned biases are short-lived, and inconsistent with the *anchoring* bias.

Conventional financial theory suggests that changes in trading volume can also be influenced by earnings announcements. The possible presence of the influence of earnings announcements on the current findings is examined by isolating those companies without earnings announcements near the *Best CFO* disclosure date and examining their trading pattern. Marginally significant increases in the incremental trading volume index for the full sample first appear at $t=-13$ (where $t=0$ is the public announcement of the *Best CFOs*). The possible confounding influence of earnings surprises is controlled by isolating the ten companies not releasing earnings announcements between $t=-14$ and $t=0$. These results are also presented in Table 3, and the findings reveal a fairly similar pattern, although shorter-lived. Based on the comparable pattern in the change in relative trading volume observed, we conclude that the pattern in trading volume observed for the full sample is not driven by the effect of earnings announcement surprises.

CONCLUSIONS

This study examines the role of heuristic signals to investors and trading volume. Specifically, we examine the change in the pattern of trading volume surrounding the release of the inaugural list of *Wall Street Journal* rankings of the *Best CFOs* on July 31, 2012. We view the *WSJ* ranking as a positive heuristic signal to investors concerning the quality of management of these companies. Behavioral literature suggests that biases associated with *base rate*, *ambiguity aversion*, *robust control* and *anchoring* may entice investors to use the ranking announcement as a short-cut in stock selection decisions. We predict that the presence of a positive heuristic signal concerning the value of a stock may enhance investor interest in ownership, resulting in increased trading volume. This paradigm should be especially true for less sophisticated investors, who are more prone to seek short-cut methods of valuation.

After controlling for trends in the overall market's trading volume and influences from earnings announcement surprises, we observe a significant increase in the trading volume of the ranked companies initiated thirteen days prior to the public announcement, but which expires after the

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announcement date. The findings are consistent with behavioral biases associated with *base rate*, *ambiguity aversion*, and *robust control*. The lack of a sustained change in relative trading volume, however, fails to support *anchoring* as a potential behavioral bias associated with shareholder liquidity.

Table 1 :Best CFOs*

Rank	Name	Company	Industrial Sector (<i>iShares</i> Ticker)
1	Mark Loughridge	IBM	U.S. Technology (IYW)
2	Carol Tome	Home Depot	U.S. Home Construction (ITB)
3	Karen Hoguet	Macy's	U.S. Consumer Goods (IYK)
4	Stacy Smith	Intel	U.S. Technology (IYW)
5	Paul Clancy	Biogen Idec	U.S. Healthcare (IYH)
6	Kim Foster	FMC	U.S. Basic Materials (IYM)
7	James Sawyer	Praxair	Global Industrials (EXI)
8	Daniel Comas	Danaher	Global Industrials (EXI)
9	Dan Florness	Fastenal	U.S. Basic Materials (IYM)
10	Richard Galanti	Costco Wholesale	U.S. Consumer Goods (IYK)
11	Neil Williams	Intuit	U.S. Technology (IYW)
12	Jack Hartung	Chipotle Mexican Grill	U.S. Consumer Services (IYC)
13	Jeff Edwards	Allergan	U.S. Healthcare (IYH)
14	Patricia Yarrington	Chevron	U.S. Oil&Gas Explor & Prodrtn (IEO)
15	Rob Knight	Union Pacific	Transportation Average (IYT)
16	Ann Marie Petach	BlackRock	U.S. Financial Services (IYG)
17	Byron Pollitt	Visa	U.S. Financial Services (IYG)
18	Bill Giles	AutoZone	U.S. Consumer Goods (IYK)
19	James Bloem	Humana	U.S. Healthcare Providers (IHF)
20	Ted Crandall	Rockwell Automation	Global Industrials (EXI)
21	Judy Brown	Perrigo	U.S. Healthcare (IYH)
22	Patricia Bedient	Weyerhaeuser	U.S. Basic Materials (IYM)
23	David Wajsgas	Raytheon	U.S. Aerospace & Defense (ITA)
24	David Goulden	EMC	U.S. Technology (IYW)
25	Mark Dentinger	KLA-Tencor	U.S. Technology (IYW)

*Source: *Wall Street Journal*, July 31, 2012.

Table 2 :Sample Characteristics

Average daily trading volume

Paired
Industrial

Company	Mean ^a	Standard Deviation ^a	Sector iShare (Ticker)	Mean ^b	Standard Deviation ^b
IBM	4.030	1.408	IYW	1.934	1.244
HomeDepot	10.662	3.868	ITB	20.248	9.885
Macy's	6.238	2.540	IYK	0.321	0.438
Intel	37.486	11.822	IYW	1.934	1.244
Biogen	1.260	0.422	IYH	0.493	0.654
FMC	1.071	0.384	IYM	2.718	2.338
Praxair	1.144	0.349	EXI	0.223	0.431
Danaher	2.913	0.997	EXI	0.223	0.431
Fastenal	2.475	1.200	IYM	2.718	2.338
Costco	2.238	0.773	IYK	0.321	0.438
Intuit	2.114	1.383	IYW	1.934	1.244
Chipotle	0.569	0.305	IYC	0.336	0.343
Allergan	1.587	0.785	IYH	0.493	0.654
Chevron	6.803	2.073	IEO	1.796	1.117
UnionPacific	2.873	1.200	IYT	5.996	4.768
Blackrock	1.037	2.097	IYG	0.869	0.985
Visa	3.702	1.584	IYG	0.869	0.985
Autozone	0.443	0.297	IYK	0.321	0.438
Humana	1.869	1.014	IHF	0.724	1.172
Rockwell	1.304	0.518	EXI	0.223	0.431
Perrigo	0.780	0.489	IYH	0.493	0.654
Weyhaeuser	4.446	1.260	IYM	2.718	2.338
Raytheon	2.309	0.719	ITA	0.099	0.105
EMC	19.398	7.839	IYW	1.934	1.244
KLA-Tencor	2.486	0.944	IYW	1.934	1.244

^a Multiples of one million shares.

^b Multiples of one hundred thousand shares.

Table 3 : Observation Period Results

Mean / (t-value)

Event Window	Full Sample (n=25)			Restricted Sample (n=10) ⁸				
	ΔVI_j	(S_{VI_j})	t-value	ΔVI_j	$(S_{\Delta VI_j})$	t-value		
$t=-20,-20$	-0.268	0.887	-0.739	0.726	-1.808	-1.313		
$t=-20,-19$	-0.078	0.481	-0.396	0.726	-1.313	-0.953		
$t=-20,-18$	-0.018	0.377	-0.116	0.726	-0.850	-0.618		
$t=-20,-17$	-0.008	0.291	-0.068	0.726	-1.064	-0.773		
$t=-20,-16$	0.103	0.275	0.913	0.726	-0.157	-0.114		
$t=-20,-15$	0.159	0.250	1.557	0.726	0.408	0.296		
$t=-20,-14$	0.173	0.257	1.644	0.726	0.886	0.644		
$t=-20,-13$	0.211	0.283	1.825	#	0.726	1.471	1.068	
$t=-20,-12$	0.228	0.275	2.023	#	0.726	1.526	1.108	
$t=-20,-11$	0.249	0.274	2.224	*	0.726	1.753	1.273	
$t=-20,-10$	0.440	0.437	2.459	*	0.726	1.761	1.279	
$t=-20,-9$	0.432	0.571	1.849	#	0.726	1.506	1.094	
$t=-20,-8$	0.496	0.549	2.211	*	0.726	2.006	1.457	
$t=-20,-7$	0.690	0.975	1.729	#	0.726	2.896	2.103	*
$t=-20,-6$	0.601	0.908	1.617		0.726	2.729	1.982	#
$t=-20,-5$	0.616	0.839	1.793	#	0.726	2.931	2.129	*
$t=-20,-4$	0.572	0.770	1.817	#	0.726	2.248	1.633	
$t=-20,-3$	0.512	0.712	1.758	#	0.726	2.261	1.642	
$t=-20,-2$	0.511	0.678	1.843	#	0.726	2.283	1.658	
$t=-20,-1$	0.461	0.642	1.755	#	0.726	2.173	1.578	
$t=-20, 0$	0.496	0.620	1.956	#	0.726	2.193	1.593	
$t=-20,+1$	0.280	0.709	0.965		0.726	2.017	1.465	
$t=-20,+2$	0.269	0.666	0.989		0.726	2.069	1.503	
$t=-20,+3$	0.262	0.649	0.986		0.726	1.776	1.290	

**p<.01 *p<.05 #p<.10

¹ The restricted sample consists of the ten companies with no earnings announcements beginning with $t=-13$ and include: Home Depot, Macy's, Fastenal, Costco, Intuit, Allergan, Union Pacific, Autozone, Humana, and Perrigo.

In Table 3, we provide the mean incremental trading volume index between *Best CFO* companies and their paired industrial-sector-matched iShares (ΔVI_j) for selected observation periods beginning 20 days prior to the public

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