



The power of the pen reconsidered: The media, CEO human capital, and corporate governance



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ABSTRACT

By examining the post-retirement outside board seats held by former CEOs of S&P 1500 firms, we find that CEOs' post-retirement outside board memberships are influenced by the level and the tone of media coverage given to the CEOs' firms while the CEOs were "on the job." These results provide evidence of a direct economic link between media coverage of CEOs' performance today and CEOs' future opportunity sets. These results lend support to the proposition that the media can play a role in corporate governance by influencing the value of CEOs' human capital.

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1. Introduction

This study addresses the question of whether there is a direct link between CEOs' opportunity sets in the future and the level and the tone of media coverage of the CEOs' performance today. The early returns on that question are not encouraging. Specifically, [Core et al. \(2008\)](#) study the tone of media coverage given to CEOs' compensation. They find no significant relation between the tone of the coverage given to CEOs' current compensation and their following year's compensation and no significant relation between the tone of the coverage and future turnover in the CEO position. An implication that follows is that media coverage of a CEO today has no influence on the CEO's future opportunity set.

The significance of this question derives from [Zingales \(2000\)](#) who proposes that the media can play a role in corporate governance. [Dyck et al. \(2008\)](#) expand upon that proposition by setting forth a model in which the media influence managers' actions by influencing the value of their human capital. By influenc-

ing managers' actions, the media can play a role in corporate governance.

In the finance literature, the idea that managers have human capital at risk in making corporate decisions is customarily traced to [Fama \(1980\)](#) and [Fama and Jensen \(1983\)](#). In this framework, the manager's human capital is the present value of his future opportunity set. To the extent that the manager's actions today influence his future opportunity set, those actions influence the value of his human capital.

[Dyck et al. \(2008\)](#) propose that the media can influence a manager's human capital by disseminating information about his actions and by shaping perceptions of those actions. In an empirical analysis of certain corporate decisions that the authors presume to be adverse to (outside) shareholders' interests, the authors find that corporate executives are more likely to reverse those decisions, the greater the press coverage given to them.

[Liu and McConnell \(2013\)](#) extend that analysis by considering both the level and the tone of media coverage given to corporate acquisition attempts that are greeted with a negative stock price reaction for the acquirer. They report that such value-reducing takeover attempts are more likely to be abandoned the more negative (or less positive) is the tone and the broader is the media coverage of such proposed takeovers. Their interpretation of the evidence is that the media influence managers by affecting the value of their human capital.

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The critical presumption underlying that interpretation is that broader media coverage coupled with a more negative (or less positive) tone is associated with a diminution of the manager's human capital and, as a consequence, the manager reverses his prior decision with the hope of recouping his loss. However, the evidence is indirect. That is, their study (and the study by [Dyck et al., 2008](#)) presumes rather than shows that a more negative (or less positive) tone and a greater level of coverage today reduce the value of the manager's human capital.

As we noted, [Core et al. \(2008\)](#) find no significant relation between the tone of media coverage given to CEOs' compensation and their subsequent year's compensation or turnover. Their results, thus, undermine the presumption that the media influence CEOs by influencing their human capital and, thereby, break the economic link between media coverage and corporate governance.

In this study, we consider another component of a CEO's future income-producing opportunity set. Specifically, we examine the relation between the number of board seats held by retired CEOs and the media coverage given to their firms when the CEOs were "on the job."² The question at issue is whether the tone and the level of media coverage given to the firms of former CEOs affect the likelihood that the CEO will be appointed as a director of other firms following his tenure as CEO.

Our choice of outside board seats as the laboratory for this investigation stems from [Core et al. \(2008\)](#) who suggest that one possible explanation for their finding of no connection between media coverage of CEOs' compensation and next year's CEO compensation is that boards may, in essence, be captured by CEOs and are, therefore, unable or unwilling to be responsive to media coverage. To wit: "[o]ne possibility is that firms with large excess [CEO] pay are poorly governed and poorly governed firms do not respond to external pressure." By considering board memberships in other firms, as do we, we are addressing one explanation for the [Core et al.](#) finding. That is, a board is unlikely to be captured by the CEO of a different firm. Further, we choose to examine post-retirement board memberships (as opposed to on-the-job memberships) to address the concern noted by [Booth and Deli \(1996\)](#) and [Brickley et al. \(1999\)](#) that currently-sitting CEOs may spurn outside board appointments so as to be able to focus on the problems and opportunities confronting their own firms.

To conduct the investigation, we identify CEOs of S&P 1500 firms that departed their positions over the interval of 1996–2009. We classify each departure as a retirement and track the number of board seats of other S&P 1500 firms held by each departing CEO during the second year following his retirement.³ We then investigate whether the number of post-retirement board seats is related to the level and the tone of media coverage given to the CEO's firm during his tenure as CEO.⁴

Underlying our analysis is the idea that the media can affect a manager's opportunity set in two ways. First, the media disseminate news about firms (and, by implication, their CEOs) and, thereby, increase the degree to which participants in the market for directors know of the firms' performance (and their CEOs' abil-

ities). Second, the media characterize a firm's performance and, as a result, help to shape perceptions of its CEO's abilities. If so, a manager's post-retirement opportunities as a board member are expanded when the media attention paid to his firm is broader and embraces a more positive (or less negative) tone while he is on the job. Further, the effect of the tone of the coverage is more pronounced the broader the coverage.

This framework predicts that (a) the greater the level of media attention given to a CEO's firm during his career, the greater the number of outside board seats he will hold post retirement; (b) the more positive the tone of media coverage given to a CEO's firm during his career, the greater the number of outside board seats he will hold post retirement, and (c) the number of post-retirement board seats held will be even greater when his firm receives a more positive tone of media coverage coupled with a greater level of media attention prior to his retirement.

An interesting implication of these predictions is that broader media coverage coupled with a less positive (or more negative) tone actually reduces the number of the former CEO's outside board seats. That is, in contrast to the old show business adage that there is no such thing as bad publicity, at least for former CEOs, more media attention, when it is bad, is bad for having (or acquiring) board seats.

We find that the level and the tone of media coverage given to a former CEO's firm during the last four years of his tenure are significantly correlated with the number of the CEO's post-retirement outside board seats.⁵ To put the magnitude of this effect in context, for example, a one standard increase (decrease) in the level (tone) of media coverage is associated with a 0.16 (0.13) increase in the number of outside boards that the CEO serves on post retirement. Given that the average number of board seats on which a former CEO serves is 0.46, an increase of 0.16 (0.13) represents a 35% (28%) increase.

We further find that the negative correlation between the tone of media coverage and the CEO's post-retirement board seats is more pronounced when there is greater media attention given to his firm. More precisely, given a one standard deviation increase in media attention, a one standard decrease in the tone of media coverage is associated with a 0.61 increase in the number of outside boards on which the CEO serves. Thus media attention amplifies the effect of media tone. On the flip side, given a one standard deviation increase in media attention, a one standard deviation increase in media tone is associated with a 0.51 decrease in the number of a CEO's outside board seats. That is, bad press, and more of it, is associated with a reduction in CEOs' board seats.

We interpret the results to imply that the media, by disseminating information and by shaping perceptions of CEOs' firms, can and do have an influence on at least one potential source of CEOs' future opportunity sets. These results can be viewed as the missing link, or at least part of the missing link, between media coverage and managers' human capital. As such, these results are convergent with the interpretation of the evidence in [Dyck et al. \(2008\)](#) and [Liu and McConnell \(2013\)](#) that the media can and do influence managers' human capital and, through that channel, influence managers' decisions. The implication is that the media can and do play a role in corporate governance as initially proposed by [Zingales \(2000\)](#).

One potential concern with the analysis of this study is that our primary results are due to endogenous relationships between the likelihood of post-retirement outside board seats and media coverage. We address this particular concern using instrumental vari-

² Such opportunities bring with them cash compensation, reported by [Green and Suzuki \(2013\)](#) to average \$251,000 for the year 2012 for a board member of an S&P 500 firm, along with certain benefits and perquisites including travel, pension plans, and insurance coverage.

³ We repeat all empirical procedures based on board seats held one year or three years after retirement. The estimated coefficients of the key independent variables have the same signs and continue to be statistically significant with p -values < 0.05. These results are discussed in [Section 4.6](#).

⁴ We use the number of news articles covering the firm in the *Wall Street Journal*, the *New York Times*, and the *Dow Jones News Service* as a proxy for media attention. We use the fraction of negative words in these articles as a proxy for the tone of media coverage where a smaller fraction of negative words implies a more positive tone.

⁵ We repeat all empirical procedures measuring media attention and media tone over three-year, two-year, and one-year periods. The estimated coefficients of the key independent variables have the same signs and continue to be statistically significant with p -values < 0.05. We discuss these results in [Section 4.6](#).

ables and conducting various other analyses. These results are consistent with the results of our primary analysis.

The remainder of the paper is organized as follows. The next section describes the sample and gives the sources of the data. Section 3 presents our primary empirical results. Section 4 presents the results of certain robustness tests including the instrumental variable analysis. Section 5 comments on our findings and concludes.

2. Sources of data and descriptive statistics

2.1. Retiring CEOs

The data required for this undertaking include the names of former CEOs, the dates of their departures as CEOs, the names of their firms, measures of the stock price and accounting performance of the firms, the board seats held by the CEOs, and measures of the media attention and the tone of media coverage given to the firms during the CEOs' tenures.

Our set of former CEOs and their board memberships are taken from the *Execucomp* and the *IRRC/Riskmetrics* databases, respectively. Both databases cover the S&P 1500 firms. The *IRRC/Riskmetrics* database (and, therefore, our data on board seats) begins with 1996. For that reason, we identify CEOs (from *Execucomp*) who left office beginning with 1996. We identify CEO departures through the end of 2009. Thus, our initial set of former CEOs includes those who departed their positions during the 14-year interval of 1996–2009. From this set we drop those for whom the "Date Left As CEO" is missing and the reason cited for their departures from office is death ("Reason Left Company" is recorded as "Deceased" in *Execucomp*). Based on these criteria, we identify 1335 former CEOs.

Control variables used in certain of our analyses include the CEO's age at the time of his departure from office and the years of his tenure as CEO. When these data are missing from *Execucomp* we search the company's proxy on *EDGAR*, *Thompson Onebanker*, and *Factiva*. If we cannot determine the CEO's age or his tenure in office from any of these sources, the CEO is dropped from the sample. This requirement leads to the deletion of 50 CEOs.

We also use stock returns and accounting measures as control variables. Stock returns are from the *Center for Research in Security Prices (CRSP)* database and accounting data are from *COMPUSTAT* for each firm. These data are used to measure corporate performance in the years prior to the CEO's departure. Ninety CEOs served for less than one year. Most of these were designated as "interim" CEOs (on average, these CEOs served in office for 97 Days). Because we require at least one year of data to measure the firm's stock price and accounting performance during the CEO's tenure, these 90 CEOs are also dropped from the analysis. These procedures leave us with 1195 former CEOs representing 933 firms.

For each CEO, excluding his own firm, we use the *IRRC/Riskmetrics* database to identify each board seat of an S&P 1500 firm that he held as of the year-end prior to the final year of his tenure as CEO (year $t-1$) and at each year-end thereafter through the end of 2015 (Brickley et al., 1999; Fahlenbrach et al., 2011; Harford and Schonlau, 2013). In our primary analyses, we follow the precedent of prior studies and focus on board seats held as of the end of the second year (year $t+2$) following the CEO's departure from office. We do, however, also conduct and report tests using board seats held over other post-retirement intervals. Year 0 is the year in which the CEO departed his position.

We also use these data to construct a board interlock variable. A board interlock occurs in each instance where a board member serves on the board of another S&P 1500 firm. For each departing CEO, the board interlock variable is calculated as the number of instances over the four years prior to the CEO's departure, or the

CEO's entire tenure, whichever is less, during which a board member of his firm serves on the board of another S&P 1500 firm.⁶

Table 1 gives the time series of the former CEOs and the primary industry of their firms. Panel A reports the distribution of CEOs' departures by year; Panel B gives the distribution by industries. As shown in column 2, the largest number of departures was 116 in 2006 and the fewest was 55 in 1996. As shown in column 3, the retiring CEOs come from 60 different two-digit SIC industries. A comparison of the sample distribution in column 2 with the distribution of the full set of S&P 1500 firms given in column 3 indicates that the sample is representative of the S&P 1500 firms.

2.2. Media attention and tone

Our key independent variables are the level of media coverage given to a former CEO's firm during 48 months prior to the month his departure (*media attention*) and the tone of media coverage given to his firm (*media tone*) over the same time period.

To generate our measures of media attention and tone, we collect firm-specific news stories about CEOs' firms from three sources using the *Factiva* database. Two of the sources are influential daily newspapers with nationwide (and, indeed, international) circulation: the *Wall Street Journal (WSJ)* and the *New York Times (NYT)*. With daily hard copy circulation of three million plus additional online subscribers, these two newspapers are estimated to account for approximately 3% of total daily newspaper circulation in the U.S. as of March 11, 2011.⁷ The third source is the *Dow Jones News Service (DJNS)*. The *DJNS* is an online news service that independently initiates business news stories. As of July 2011, the *DJNS* reports having more than 600,000 subscribers including brokers, traders, analysts, world leaders, finance officials, and fund managers, plus many libraries.⁸ Thus, the coverage in these three news outlets is likely to be representative of most of the coverage of the corporate sector.

We search for firm-specific articles using both the firm's formal name (including the firm's organization type, such as "Inc.," "Corp.," or "Ltd.") and its popular name (its formal name excluding its organization type). To qualify as a firm-specific news story, an article must meet certain criteria. As do Tetlock et al. (2008), we impose certain criteria to eliminate stories in which the firm is merely set forth as part of a table or list, but provide no qualitative information about the firm. To begin, we require that the story contain at least 50 words. We further require that the story contain the firm's formal name at least once within the first 25 words, including the headline, and the popular name at least twice within the full article.

To capture the tone of the stories, we use Loughran and McDonald (2011) "alternative negative word list in financial text." To measure the tone of the stories, we count the number of negative words in the stories over the four-year period beginning one month prior to the CEO's departure. As our measure of *media tone* we use the fraction of negative words to total words in the stories. Thus, a lower measure of *media tone* implies more positive (or less negative) coverage of the CEO's firm. In our initial tests, we do not consider positive words in our measure of media tone. We adopt

⁶ We include board interlocks as a control variable based on the findings of Bizjak et al. (2009) and Collins et al. (2009) who show that interlocking boards are associated with a higher likelihood of firm scandals that could dampen the CEO's post-retirement opportunity set.

⁷ Audit Bureau of Circulations. <http://abcas3.accessabc.com/ecirc/newstitlesearchus.asp>.

⁸ As reported by Wikipedia: According to the *DJNS* 10K "[DJNW] publishes, on average, over 16,000 news items in 13 languages each day, which are distributed via terminals, trading platforms and websites reaching hundreds of thousands of financial professionals. This content also reaches millions of individual investors via customer portals and the intranets of brokerage and trading firms, as well as digital media publishers."

Table 1

Sample distribution.

This table gives the distribution, by year and industry, of our sample of CEO departures from S&P 1500 firms during the period 1996–2009. There are 1195 such CEOs. The sample is assembled using the *Execucomp* database. Industry is identified by two-digit Standard Industrial Classification (SIC) Codes.

Panel A. CEO departures by year				
Year		Number	Percent of sample	
1996		55	4.6	
1997		74	6.2	
1998		76	6.4	
1999		105	8.8	
2000		107	9.0	
2001		71	5.9	
2002		83	6.9	
2003		73	6.1	
2004		77	6.4	
2005		105	8.8	
2006		116	9.7	
2007		92	7.7	
2008		93	7.8	
2009		68	5.7	
Total		1195	100.0	

Panel B. CEOs' departures by industries				
2-digit SIC	Description	Number	Percent of sample	Percent of S&P1500
73	Business services	122	10.2	9.4
36	Electronic and other electric equipment	99	8.3	7.5
35	Industrial machinery and equipment	86	7.2	5.8
28	Chemicals and allied products	82	6.9	6.9
38	Instruments and related products	61	5.1	4.9
49	Electric, gas and sanitary services	60	5.0	5.7
60	Depository institutions	52	4.4	5.7
63	Insurance carriers	47	3.9	3.9
33	Primary metal industries	28	2.3	1.8
20	Food and kindred products	26	2.2	2.5
37	Transportation equipment	26	2.2	2.6
50	Wholesale trade durable goods	26	2.2	2.1
56	Apparel and accessory stores	26	2.2	1.7
13	Oil and gas extraction	25	2.1	3.1
87	Engineering and management services	24	2.0	1.3
62	Security and commodity brokers	24	2.0	1.6
59	Miscellaneous retail	22	1.8	1.7
48	Communications	20	1.7	2.4
Other		339	28.4	29.4

this metric because prior studies find little incremental information in positive words in financial contexts (e.g., [Tetlock, 2007](#) and [Kothari et al., 2009](#)).⁹

We measure *media attention* as the natural logarithm of 1 plus the number of news stories about each CEO's firm over the 48 months prior to the month of the CEO's departure as CEO or over the CEO's tenure, whichever is less. For 161 departures, we find no news stories in the three sources over the relevant time period. So as to preserve the full range of *media attention* (starting with zero) for these 161 departures we use the sample average *media tone* as the *media tone* for these CEO departures (and set *media attention* to zero). The use of the mean *media tone* as the tone when there is no *media attention* implies that the tone is neutral when there is no coverage.

2.3. Summary statistics

[Table 2](#) presents summary statistics of the variables used in our analysis. As shown in Panel A, as of the year-end prior to his departure, 30.1% of the CEO's held at least one board seat of another S&P 1500 firm. At the end of two years following his departure,

⁹ We assume that all negative words in the list are equally informative and that other words are uninformative. These assumptions are consistent with prior literature in psychology which argues that across a wide range of contexts, negative information has more impact than other information ([Baumeister et al., 2001](#) and [Rozin and Royzman, 2001](#)).

28.2% held at least one such seat. This apparently static statistic masks substantial movement among board seat holders. As shown in Panel B, 137 (or nearly 40%) of the 359 former CEOs who held outside board seats as of one year prior to their retirements experience a *net* decline in board memberships. These net losses in board memberships are nearly compensated for by the 117 retired CEOs who, on net, gain board seats.¹⁰

As shown in Panel C, of the 337 CEOs who hold board seats of an S&P 1500 firm two years after their retirements, most, i.e., 201, hold a single board seat while 14 hold four or more board seats.

Panel D of [Table 2](#) gives summary statistics of the independent variables used in the analysis. As shown in the top row of the panel, the average *media tone* is 4.72%. Thus, on average, over the final 48 months of the CEOs' tenures, 4.72% of the words in the news articles about his firm are negative in a financial context. The 95th percentile of *media tone* is 7.33% while the 5th percentile is 2.27%.

The second row of Panel D gives the number of articles about the firm over the final 48 months of the CEO's tenure. These have a mean of 153 with a minimum of zero and a maximum of 5215. To mitigate the effect of extreme observations of the raw number

¹⁰ We emphasize that these are net changes in board memberships. In certain instances, the former CEO gains one board seat but loses another. We treat such instances as no net changes.

Table 2

Summary statistics.

This table gives summary statistics for variables related to the 1195 CEOs who retired during 1996–2009 and their firms. The pre-retirement period encompasses the 48 months (i.e., four years) beginning one month prior to the CEO's departure or the CEO's tenure, whichever is less. The post-retirement period encompasses the two calendar years following the year of the CEO's departure. *Media attention* is the natural logarithm of the number of firm-specific news stories about the CEO's firm in the *Wall Street Journal*, the *New York Times*, and the *Dow Jones News Service* over the four-year period beginning one month prior to the CEO's departure. *Media tone* is the fraction of negative words in these news stories where the negative words are defined in Loughran and McDonald (2011). *Pre-retirement board seats* is the number of outside board seats that the CEO holds in the year end prior to the year of his departure. *CEO age* is the CEO's age at the year of his departure. *CEO tenure* is the number of years the CEO has served as the CEO of the firm as of the end the year of his departure. *Industry-adjusted ROA* is the firm's average ROA over the pre-retirement period net of the median industry ROA, using the two-digit SIC code to identify industries. *Abnormal stock return* is the compound average annual stock return over the pre-retirement period net of the CRSP value-weighted index. *Total assets* is the total assets of the CEO's firm at the fiscal year end prior to the year of his departure. *ROA* is net income before tax divided by beginning of year total assets. *Board interlocks* is calculated as the number of instances over the pre-retirement period in which a board member of the CEO's firm serves on the board of another S&P 1500 firm.

	Sample				
	Number	Percent			
<i>Panel A: Number of outside board seats across time</i>					
Outside board seats ($t-1$)	359	30.1%			
Outside board seats ($t+2$)	337	28.2%			
<i>Panel B: Net change in the number of outside board seats from ($t-1$) to ($t+2$)</i>					
Net decrease	137	11.5%			
No net change	941	78.7%			
Net increase	117	9.8%			
Total	1195				
<i>Panel C: Number of outside board seats ($t+2$)</i>					
0	858	71.8%			
1	201	16.8%			
2	84	7.0%			
3	38	3.2%			
4 +	14	1.2%			
<i>Panel D. Summary statistics</i>					
Variables	Sample				
	Mean	St. dev.	5th percentile	50th percentile	95th percentile
Number of news articles	153	353	0	64	563
Media attention	3.81	1.90	0.00	4.17	6.34
Media tone (%)	4.72	2.97	2.27	4.70	7.33
Pre-retirement board seats	0.46	0.85	0.00	0.00	2
CEO age (in years)	58.00	8.16	44.00	58.00	70.00
CEO tenure (in years)	7.63	7.50	1.00	5.00	23.00
Industry-adjusted ROA (%)	1.52	17.99	-15.88	1.77	21.18
Abnormal stock returns (%)	-3.72	44.40	-57.23	-5.02	48.52
Total assets (in \$ billions)	19.92	124.48	0.10	1.51	45.88
Board interlocks	0.07	0.50	0.00	0.00	3.00

of news articles on the empirical tests, we use as our measure of *media attention* the natural logarithm of one plus the number of news articles. Statistics for this variable are given in the third row of Panel D.

The remainder of Panel D gives summary statistics for the control variables used in our empirical analysis. These include the CEO's pre-retirement board seats, the CEO's age, the CEO's tenure, the industry-adjusted ROA over the four years prior to the CEO's retirement, the firm's abnormal stock returns over the same period, the total assets of the CEO's firm at the end of the year prior to his departure, and the number of board interlocks. The way in which the variables are calculated is described in the header of Table 2.

3. Empirical results

3.1. Univariate analysis of media attention and tone

The four panels of Table 3 present simple comparisons of the number of outside board seats held by former CEOs according to the attention and tone of the media coverage given to their firms

during the CEO's tenure. To a large extent, these simple statistics tell the tale: former CEOs whose firms garner a more positive media tone and broader media coverage also garner more board seats and each of these components has a separate effect, but the interaction of the two has the most powerful effect.

To generate the statistics in rows 1, 2 and 3 of Panel A, we classify former CEOs according to the *media attention* given to their former firms during the last four years of their tenures, or during their entire tenures, whichever is less. Those firms with above median *media attention* are classified as having "high" *media attention* and those with below median *media attention* are classified as having "low" *media attention*.

Row 1 gives the number of board seats held by former CEOs. For those whose firms received high *media attention*, the average number of board seats is 0.61; for those whose firms received low *media attention*, the average number is 0.31. The p -value for the difference is less than 0.01. As shown in row 2, 12.9% of former CEOs whose firms received high *media attention* just prior to their departures experience a net increase in their board seats post retirement. In comparison, 6.7% of former CEOs whose firms had low

Table 3

CEOs' post-retirement outside board seats: univariate analysis.

This table reports retiring CEOs' average number of outside board seats at year $t+2$, the percentage of retiring CEOs experiencing a net increase in outside board seats from year $t-1$ to $t+2$, and the percentage of retiring CEOs experiencing a net decrease in outside board seats from year $t-1$ to $t+2$, where year t is the CEO's last year as CEO at the firm. CEOs with *media attention* greater than the median of the full sample of retiring CEOs are defined as CEOs with high *media attention*. All others are defined as CEOs with low *media attention*. CEOs with *media tone* smaller than the median of the full sample are defined as CEOs with positive *media tone*. All others are defined as CEOs with negative *media tone*. All other variables are as defined in Table 2. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Panel A. Retiring CEOs' outside board seats			
Board seats	Media attention		
	High	Low	High-Low
Number of outside board seats	0.61	0.31	0.30*** (5.82)
Net increase in outside board seats	12.85%	6.72%	6.13%*** (3.58)
Net decrease in outside board seats	10.33%	12.61%	-1.84% (-1.23)
Board seats	Media tone		
	Positive	Negative	Positive-Negative
Number of outside board seats	0.59	0.33	0.26*** (5.06)
Net increase in outside board seats	12.54%	7.05%	5.49%*** (3.20)
Net decrease in outside board seats	8.53%	14.41%	-5.88%*** (3.20)
Panel B. Retiring CEOs' average number of outside board seats at year $t + 2$			
Media tone	Media attention		
	High	Low	High-Low
Positive	0.76	0.31	0.45*** (4.83)
Negative	0.19	0.29	-0.10** (-1.95)
Positive-Negative	0.57*** (3.97)	0.02 (0.35)	
Panel C. Percentage of retiring CEOs who experience a net increase in outside board seats from year $t-1$ to $t + 2$			
Media tone	Media Attention		
	High	Low	High-Low
Positive	16.10%	7.08%	9.02%*** (3.17)
Negative	3.70%	5.64%	-1.94% (1.42)
Positive-Negative	12.40%*** (2.52)	1.44% (0.69)	
Panel D. Percentage of retiring CEOs who experience a net decrease in outside board seats from year $t-1$ to $t + 2$			
Media tone	Media Attention		
	High	Low	High-Low
Positive	8.44%	8.70%	-0.26% (3.17)
Negative	13.88%	14.69%	-0.81% (-0.27) (-0.27)
Positive-Negative	-5.44%** (2.09)	-5.99% (2.10)	

media attention experience a net increase in their board seats post retirement. The *p*-value for the difference is less than 0.01. Finally, as shown in row 3, 10.3% of CEOs whose firms received high *media attention* prior to their retirements experience a net decrease in board seats while 12.6% of CEOs whose firms received low *media attention* experience a net decrease in board seats. However, with a *p*-value of 0.23, this difference is not statistically significant at traditionally acceptable levels.

In sum, unconditionally, greater *media attention* is associated with more board seats and a greater increase in board seats post retirement and less *media attention* is associated with fewer board seats and, arguably, a greater reduction in board seats post retirement.

To generate the statistics in rows 4, 5, and 6 of Panel A, we classify former CEOs according to the tone of media coverage given to their former firms. Keeping in mind that *media tone* is measured as the fraction of negative words-to-total words, which, thereby, cap-

tures the “negativity” of the tone of media coverage. Those firms receiving a below median *media tone* are classified as having a “positive” tone; those with above median *media tone* are classified as having a “negative” tone. Row 4 gives the number of board seats held. Row 5 gives the percentage of CEOs in that subset who experience a net increase in the number of their post-retirement board seats. Row 6 gives the percentage of CEOs who experience a net decrease in their number of post-retirement board seats.

As shown in row 4, the number of board seats held by former CEOs whose firms received a positive tone of media coverage is 0.59. In comparison, the number of seats held by those whose firms received a negative tone is 0.33. The difference between the two is statistically significant with a *p*-value of less than 0.01. As reported in row 5, 12.5% of CEOs whose firms had a positive *media tone* experience a net increase in board seats post retirement vs. 7.1% of those whose firms are classified as having a negative *media tone* (*p*-value for the difference < 0.01). As shown in row 6, 8.5% of CEOs whose firms had a positive *media tone* experience a net decrease in board seats. In contrast, 14.4% of CEOs whose firms had a negative *media tone* experience a net decrease in board seats (*p*-value for the difference < 0.01).

In short, a more positive *media tone* in the coverage given to a former CEO's firm just prior to his retirement is associated with his having more board seats post retirement and a greater likelihood of him increasing his net board seats post retirement. Contrarily, a more negative tone of the media coverage pre-retirement is associated with fewer post-retirement board seats and a greater likelihood of him experiencing a net decrease in his board seats post retirement.

3.2. Bivariate analysis of media attention and tone

In Panels B of Table 3 we consider the potentially more interesting joint relations among *media attention* and *media tone* and the number of post-retirement board seats held. To do this, we classify former CEOs into four groups according to the *media attention* and *media tone* given to their firms in the four years prior to the CEOs' retirements. Those with below median *media tone* and above median *media attention* are grouped together. Henceforth, this is the “positive tone/high attention” group. Other CEOs are grouped similarly with, for example, the negative tone/low attention group being those with above median *media tone* and below median *media attention*. The remaining two groups are positive tone/low attention and negative tone/high attention groups.

The statistics in Panel B evidence a clear interaction effect between *media attention* and *media tone*. Consider the difference between the positive tone/high attention group and the negative tone/high attention group in comparison with the positive tone/low attention and negative tone/low attention groups. The average number of board seats for the positive tone/high attention group is 0.76 while it is 0.19 for the negative tone/high attention group for a difference of 0.57. With a *p*-value of less than 0.01 this difference is highly statistically significant. In contrast, the average number of board seats for the positive tone/low attention group is 0.31 while it is 0.29 for the negative tone/low attention group for a difference of 0.02. With a *p*-value of 0.35 this difference is far from statistically significant at conventional levels. Thus, the association between *media tone* and CEOs' post-retirement board seats is more pronounced for CEOs whose firms receive greater media coverage. That is, tone matters and it matters a lot more when coverage is greater. Or to put it slightly differently, tone matters little when attention is slight.

This inference is also apparent in row 2 of Panel B, wherein the average number of board seats for the negative tone/high attention group is 0.19 while the average number of seats for the negative tone/low attention group is 0.29. The *p*-value for the difference

between the two is 0.05. Thus, broader coverage with a negative tone is associated with fewer board seats than is narrower coverage with a negative tone. The implication is that greater media coverage when the tone is negative is worse than no coverage at all.

Panels C and D, respectively, consider the interaction effect between *media attention* and *media tone* with respect to net increases and decreases in the CEOs' post-retirement board seats.

With respect to net increases in post-retirement board seats, the results in Panel C show a strong interaction effect. Consider the difference between the positive tone/high attention group and the negative tone/high attention group vs. the difference between the positive tone/low attention group and the negative tone/low attention group. The former is 12.4% (i.e., 16.1–3.7%) with a *p*-value less than 0.01 and the latter is 1.4% (i.e., 7.1–5.6%) with a *p*-value of 0.51. This comparison indicates that the association between *media tone* and the likelihood of CEOs experiencing a net increase in board seats post retirement is more pronounced when their firms receive greater *media attention* while they are on the job. That is, as with the number of board seats held, with respect to increases in board seats, tone matters but it matters more when attention is greater.

With respect to decreases in board seats post retirement, as shown in Panel D, the evidence in support of an interaction effect of *media attention* and *media tone* is less compelling. The association between *media tone* and the likelihood of the former CEO experiencing a decrease in board seats is strong but there appears to be no differential in this likelihood with respect to *media attention*. In particular, approximately 8.5% of CEOs whose firms experience positive *media tone* experience a decrease in board seats while approximately 14% of CEOs with a negative *media tone* experience a reduction in board seats and the difference between the two is statistically significant (*p*-values < 0.05). But the effect is the same regardless of the level of *media attention*. Thus, at least in this simple analysis, losses of board seats are not connected to the level of media coverage, but the tone of media coverage matters.

3.3. Ordinary least square models of CEOs' post-retirement outside directorships

We now turn to the more formal statistical analyses of our predictions by estimating ordinary least square regression models in which we control for other factors that might influence the relation between *media attention*, *media tone*, and the number of CEO post-retirement outside board seats. The results of these estimations are presented in Table 4.

Column 1 considers the relation between the number of outside board seats and *media attention*; column 2 considers the relation between the number of board seats and both *media attention* and *media tone*; column 3 considers the interaction of *media attention* and *media tone*. In these estimations, the dependent variable is a CEO's outside board seats post-retirement.

The control variables include the number of pre-retirement board seats, the CEO's age, the length of the CEO's tenure, the firm's industry-adjusted return on assets, the firm's market-adjusted stock returns, and the natural log of the firm's assets, the number of board interlocks, along with year and firm fixed effects. Fuller descriptions of control variables are given in the header of Table 2.

As shown in column 1, the coefficient of *media attention* is positive and statistically significant (*p*-value < 0.01) indicating that, after controlling for various other factors, the level of the media coverage given to a former CEO's firm while he is on the job is positively related to the number of his post-departure board seats. To give some indication of the economic magnitude of the relation,

Table 4

Ordinary least square models of CEOs' outside board seats post retirement.

This table reports coefficient estimates of OLS models where the dependent variable is the number of outside board seats of S&P 1500 firms at the end of the second year after the CEO left office. All other variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of the constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Variables	(1)	(2)	(3)
Media attention	0.084*** (2.85)	0.066** (2.15)	0.375*** (5.54)
Media tone		-0.043** (-1.97)	0.234 (0.99)
Media attention × media tone			-0.074*** (-5.07)
Pre-retirement board seats	0.776*** (14.84)	0.776*** (14.94)	0.779*** (15.75)
CEO age	-0.001 (-0.17)	-0.000 (-0.08)	-0.002 (-0.41)
CEO tenure	-0.003 (-0.56)	-0.004 (-0.66)	-0.003 (-0.46)
Industry-adjusted ROA	0.185 (0.95)	0.158 (0.82)	0.051 (0.28)
Abnormal stock returns	-0.022 (-0.33)	-0.023 (-0.34)	-0.015 (-0.23)
Log of assets	0.017** (2.21)	0.028** (2.34)	0.035** (2.46)
Board interlocks	0.005 (0.06)	0.000 (0.00)	0.058 (0.71)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
Number of observations	1195	1195	1195
Adj. <i>R</i> ²	0.701	0.705	0.733

a one standard increase in *media attention* is associated with a 0.16 increase in the CEO's outside board seats post retirement.

In column 2, the coefficient *media tone* controlling for *media attention* is negative and statistically significant (p -value < 0.05). Specifically, a one standard deviation increase in *media tone* is associated with a 0.13 decrease in the CEO's outside board seats post retirement. Thus, after controlling for other factors, a CEO holds fewer board seats post retirement when his firm, while he is on the job, receives a more negative tone of media coverage.

In column 3, the coefficient of the interaction of *media attention* and *media tone* is negative and statistically significant (p -value < 0.01). Specifically, given a one standard deviation increase in *media attention*, a one standard deviation decrease in *media tone* is associated with a 0.61 increase in the CEO' outside board seats post retirement. Thus, after controlling for other factors, a CEO holds even more board seats post retirement when his firm, while he is on the job, receives a more positive tone of media coverage in combination with wider media coverage.

As also shown in column 3, the coefficient of *media attention* alone is positive and statistically significant (p -value < 0.01). Interpretation of this coefficient is nuanced. Specifically, the effect of this variable must be considered in combination with the coefficient of the interaction term of *media attention* and *media tone*. For example, given a one standard deviation increase in *media attention*, a one standard deviation increase in *media tone* is associated with a 0.51 decrease in the CEO' outside board seats post retirement. This finding indicates that broader media coverage coupled with a more positive tone increases a CEO's outside board seats post retirement and, even more interestingly, broader media coverage coupled with a more negative tone actually reduces a CEO's outside board seats.

Reassuringly, in column 3, after taking into account the interaction of *media attention* and *media tone*, the coefficient of *media tone*

alone is not statistically significant. The implication is that when media coverage is minimal, *media tone* matters little. That is, indeed, reassuring.

Finally, the coefficients of two of the control variables are statistically significant and both are positive. They are firm size and number of pre-retirement board seats. Prior studies by Booth and Deli (1996), Brickley et al. (1999), Lee (2011), and Harford and Schonlau (2013) also report that size is positively correlated with the number of post-retirement directorships. Harford and Schonlau is the only one of these prior studies to include the number of pre-retirement board seats. As do we, they report that the number of pre-retirement board seats is significantly positively correlated with post-retirement board seats. Of these studies, only Brickley et al. report a positive and statistically significant relationship between pre-retirement accounting performance and post-retirement board seats. None report a significant relationship between stock returns and post-retirement board seats. In short, with respect to control variables our results are much in line with prior studies.

3.4. Summation

Both the simple comparisons in Table 3 and the regression analysis of Table 4 document statistically significant relationships between the number of CEOs' post-retirement outside board seats and the level and the tone of the media coverage given to the former CEOs' firms prior to their departures. The analyses also demonstrate that the impact of the tone is more pronounced the greater the level of media attention given to the former CEOs' firms prior to their departures. These relationships are also economically significant. The results are consistent with media coverage of the CEO's firm influencing the CEO's post-retirement opportunity set and, thereby, influencing the value of the CEO's human capital. The results support the presumption set forth elsewhere that the media can influence corporate governance by influencing the value of CEO's human capital.¹¹

4. Robustness tests

4.1. Causality

As with many studies in corporate finance, ours must address a concern with causality (Roberts and Whited, 2012). In this instance, one category of concern is that the observed empirical association between CEO post-retirement board seats and media coverage is the spurious result of a causal relation between corporate performance and outside board seats and a causal relation between corporate performance and *media attention* and *media tone*. That is, corporate performance causes both media coverage and outside board seats and we happen to observe only the correlation between media coverage and outside board seats.

Prior studies that find no significant correlation between outside board seats and certain measures of observable performance along with our inclusion of some measures of performance in the regression models should alleviate this concern to some extent. We also include firm fixed effect in all our specifications to control for unobservable time-invariant omitted variables. To further address this concern, we estimate the models of Table 4 using other observable measures of corporate performance including return on equity (ROE), growth in sales, growth in assets, and Fama-French-25-portfolio-benchmark-adjusted measures of stock price performance. We use various lags of the performance measures and measure them over various time intervals prior to the CEO's departure.

¹¹ See, for example, Zingales (2000), Dyck et al. (2008), Joe et al. (2009), and Liu and McConnell (2013).

Regardless of the way in which performance is measured, the key results of Table 4 remain.

Of course, the observable measures of performance that we use may not be the measures of performance that give rise to the observed empirical correlations. To further address that concern, we use instrumental variables. As an instrument for *media attention*, we use the natural logarithm of the number of articles given to the industry in which a CEO's firm operates prior to the CEO's departure (*industry media attention*). In particular, we search the *Factiva* database for the number of industry-specific news articles in the *Wall Street Journal*, the *New York Times*, and the *Dow Jones News Service* during the four-year period prior to a CEO's departure, or his entire tenure, whichever is less. Industry-specific news articles are defined as articles containing the 2-digit SIC code industry key words and excluding news articles that mention the CEO's firm prior to the CEO's departure.

For *media tone*, we use an instrument along the lines proposed by Gurun (2012) and implemented by Liu and McConnell (2013). Specifically, we use a dummy variable, *media expert*, that is assigned the value of one if the firm has a media expert on its board during any year over the four years prior to the CEO's departure, or the CEO's entire tenure, whichever is less. We identify directors who are media experts by searching the proxy statements of CEOs' former firms over the four years prior to the CEO's departure, or the CEO's tenure, whichever is less. We classify a director as a media expert if the director's biography states that the director is or ever has been an employee of a television, radio, or newspaper company (with three-digit SIC code = 271, 272, or 483). In cases where the biography does not indicate the industry of the director's employer or prior employers, we search online to determine the company's industry. Of the firms in our sample, 19% are classified as having a media expert on their boards. Lastly, we use the interaction of *industry media attention* with *media expert* as our instrument for the interaction term of *media attention* with *media tone*.

The results of the first-stage pooled OLS regression in which *media attention*, *media tone* and the interaction of *media attention* and *media tone* are the dependent variable are given in columns 1–3 of Table 5. The results indicate that our instruments satisfy the relevance restriction required of a valid instrument. In addition, the values of the F-test statistics of the first-stage regression are 14.44, 14.43, and 13.22, respectively, indicating that our instruments are unlikely to be weak instruments (Staiger and Stock, 1997).

The results of the second stage regressions are given in columns 4–6 of Table 5. The setup of the columns parallels the setup in columns 1–3 of Table 4 except that the predicted values of *media attention*, *media tone*, and the interaction of *media attention* with *media tone* from the first-stage regression replace the actual values. The results of the regression also parallel the results in Table 4. With regard to the number of CEO outside board seats, as shown in column 4, the coefficient of *media attention* is positive and statistically significant (p -value < 0.00). As shown in column 5, the coefficient of *media tone* is negative and statistically significant (p -value < 0.00). In column 6, the coefficient of *media tone* is positive but not statistically significant (p -value = 0.83), the coefficient of *media attention* is positive and statistically significant (p -value < 0.05), and the coefficient of the interaction term of *media tone* and *media attention* is positive and statistically significant (p -value < 0.00).

We have cast up this discussion of causality in terms of an unobserved relation between corporate performance and CEOs' outside directorships post retirement. However, the instrumental variable analysis goes beyond concerns with performance and addresses concerns with other unobservable firm and CEO characteristics that could be causally connected with both media coverage and CEO board seats. In sum, the results of the instrumental vari-

able analysis reported in Table 5 echo the results of our main analysis in Table 4 and support the proposition that the results of our main analysis are not the outcome of spurious correlations among media coverage and CEOs' post-retirement outside directorships.

As a post script to this analysis, a concern with the choice of *media expert* as an instrument is that *media expert* may actually reflect a social connection such that CEOs with media experts on their board are chosen as members of other boards not because of the tone or level of media coverage but because media experts serve on many boards and it is through this connection that CEOs are identified as board candidates. As with every instrument, theories as to why *media expert* is not appropriate as an instrument can be constructed. As one check on this particular explanation, by searching *IRRC/RiskMetrics*, we investigated whether media experts in our sample serve on other S&P 1500 boards on which the retired CEOs serve. We found none.

A further concern with *media expert* as an instrument is that the choice of a media expert as a board member is in the hands of the CEO. The concern is that savvy CEOs choose media experts to serve on their boards, savvy CEOs' firms experience better performance, the firms of savvy CEOs receive a more positive tone in their media coverage, and savvy CEOs are also chosen to serve on other boards. Thus, the observed correlation between *media expert* and outside board seats is actually picking up an unobserved CEO characteristic – CEO "savviness." We cannot completely rule out such a possibility. However, in unreported analyses, we find no statistically significant correlation between the presence of a media expert on the firm's board of directors and various measures of corporate performance measured over various time intervals including ROA, ROE, sales growth, asset growth, and various benchmark adjusted stock returns (all p -values > 0.50). Assuming that the corporate performance measures that we employ capture CEO savviness, the lack of correlation between the presence of a media expert and any of the measures of corporate performance should mitigate this particular concern.

A second category of concern regarding causality is simultaneity, or reverse causality, in which outside board seats cause media coverage rather than the other way around. Such a possibility could come about if outside board seats cause concurrent media coverage and pre-retirement outside board seats are a predictor of post-retirement outside board seats. In that case, outside board seats could cause both pre-retirement media coverage and post-retirement outside board seats. Our analyses have addressed this concern in two ways. First, we include the number of pre-retirement outside board seats as a control variable. Second, we conduct our analysis using post-retirement outside board seats. Presumably post-retirement board seats do not cause pre-retirement media coverage. Thus, the key results of Table 4 are unlikely to be borne of reverse causality.

A third area of concern along these lines is that of a selection bias in which we observe only former CEOs who are interested in being board members. Arguably such CEOs self-select into post-retirement board memberships. Arguably, these same former CEOs, while on the job, seek to curry favor with the media (including having a media expert on their own boards) so as to create a favorable persona which, in turn, abets their likelihoods of being asked to serve on boards post retirement. On the other side, CEOs who have no interest in post-retirement board seats ignore the media and, consequently, are less likely to be asked to serve on boards. If that is the case, however, such a train of events actually works to support the point that media tone and attention influence the likelihood of being appointed as an outside board member post retirement which, in turn, implies that the media can influence CEO actions and can influence corporate governance. As a related consideration of this point, and in the wake of Harford and Schonlau (2013), we include CEOs' "pre-retirement

Table 5

Instrumental variable analysis of CEOs' post-retirement outside board seats.

This table reports 2SLS regression estimates of instrumental variable analysis. Columns 1–3 report coefficient estimates of first stage OLS models where the dependent variables are *media attention*, *media tone*, and *media attention × media tone*, respectively. *Media expert* is assigned the value of one when the CEO's former firm has a media expert on its board of directors during the pre-retirement period. A media expert is defined as a board member who is or has ever been an employee of a television, radio, or newspaper company (with three-digit SIC = 271, 272, or 483). *Industry media attention* is the natural logarithm of the number of articles given to the industry in which a CEO's firm operates during the four-year period prior to a CEO's departure, or his tenure, whichever is less. Industry-specific news articles are defined as articles containing the 2-digit SIC code industry key words and excluding news articles that mention the CEO's firm prior to the CEO's departure. Columns 4–6 report coefficient estimates of second stage OLS models where the dependent variable is the CEO's outside board seats post retirement. In columns 4–6, the independent variables *media attention*, *media tone*, and *media attention × media tone* are the predicted values from the first-stage regression in columns 1–3. All other variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of the constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Variables	First-stage			Second-stage		
	(1)	(2)	(3)	(4)	(5)	(6)
Industry media attention	0.388*** (5.84)	-0.058 (-0.58)	1.483** (1.98)			
Media expert	-0.404 (-0.72)	-0.369** (-5.08)	5.457 (1.52)			
Industry media attention × media expert	0.210* (1.79)	0.884 (1.05)	-1.499*** (-3.47)			
Media attention				0.092*** (3.16)	0.187*** (2.60)	0.266** (1.98)
Media tone					-0.465*** (-5.07)	0.071 (0.22)
Media attention × media tone						-0.099** (-2.68)
Pre-retirement board seats	0.055 (0.53)	-0.035 (-0.23)	0.115 (0.17)	0.776*** (33.01)	0.782*** (20.96)	0.787*** (27.15)
CEO age	0.002 (0.19)	0.008 (0.59)	0.021 (0.38)	-0.001 (-0.41)	0.004 (1.22)	0.001 (0.41)
CEO tenure	0.003 (0.22)	-0.020 (-1.09)	-0.060 (-0.76)	-0.003 (-1.23)	-0.011** (-2.28)	-0.007 (-1.56)
Industry-adjusted ROA	-0.855** (-2.24)	-0.365 (-0.63)	-6.789*** (-2.76)	0.193** (2.13)	-0.174 (-1.09)	-0.241* (-1.85)
Abnormal stock returns	0.114 (0.86)	-0.070 (-0.35)	0.358 (0.42)	-0.024 (-0.77)	-0.016 (-0.32)	0.002 (0.05)
Log of assets	0.089 (0.56)	-0.210 (-0.87)	-0.363 (-0.35)	0.018 (0.50)	0.120** (1.96)	0.087* (1.70)
Board interlocks	-0.315* (-1.88)	0.044 (0.17)	-1.853* (-1.72)	0.008 (0.20)	0.079 (1.22)	0.146** (2.28)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1195	1195	1195	1195	1195	1195
Adj. R ²	0.738	0.755	0.843	0.701	0.244	0.547

board seats" as a proxy for CEOs' willingness to serve on outside boards.

4.2. Dollar value of board compensation

We have conducted our analysis in terms of the number of post-retirement board seats held by former CEOs as a measure of their human capital linked to media coverage. Arguably, and perhaps desirably given the framework of our arguments, our analysis would consider board compensation rather than number of board seats. Unfortunately, prior to 2006, firms were not required to report total board compensation on a director-by-director basis. Rather firms were required only to report directors' "annual retainer." This was interpreted to be the annual cash compensation paid to each director excluding any additional cash compensation paid for committee chairmanships and any additional cash compensation paid for special board meetings. As of 2006, the SEC mandated that firms report total director compensation on a director-by-director basis including all cash, stock options, restricted shares and other forms of compensation.

These data limitations are problematic. Nevertheless the data can be useful as a check on the results using the number of board

seats. To do so, we collect board compensation data for the S&P 1500 firms for the years 1998–2011 from *Execucomp*. We use only the cash portion of each directors' compensation as the dependent variable in a regression encompassing the full time period of 1998–2011.

To give some indication of the value of an S&P 1500 board seat, over the period of 1998–2005, the average "annual retainer" (stated in 2011 dollars) across all S&P 1500 directors was \$33,210. For the former CEOs in our sample, that figure for the same period was \$31,230. In comparison, during the period of 2006–2011, average total compensation for an S&P 1500 board seat was \$193,410 and for the former CEOs in our sample that figure was \$184,000. Finally, over the interval of 2006–2011, the average cash-only portion of the annual directors' compensation across all S&P 1500 firms was \$76,110 while it was \$72,940 for our sample of former CEOs. These data deserve a bit of commentary.

First, as seen by a comparison of pre- and post-2006 data, total compensation is much greater than the annual retainer. Second, the cash-only component of compensation post-2006 is substantially greater than the annual cash retainer pre-2006. The difference, at least in part, is explained by the fact that the post-2006 cash component includes cash payments for committee chair posi-

Table 6

Ordinary least square models of CEOs' outside directorship compensation post retirement.

This table reports coefficient estimates of ordinary least square (OLS) models where the dependent variable is the total annual cash compensation (in thousands) of a CEO's outside board seats of S&P 1500 firms at the end of the second year after the CEO left office in columns 1–3 and the change in total annual cash compensation (in thousands) of a CEO's outside board seats of S&P 1500 firms between the end of the second year after the CEO left office and the end of the year the CEO left office in columns 4–6. All other variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of the constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

	Cash compensation			ΔCash compensation		
	(1)	(2)	(3)	(4)	(5)	(6)
Media attention	3.618*	3.460**	20.446***	2.168**	1.083**	11.443**
	(1.65)	(2.50)	(3.91)	(2.06)	(2.51)	(2.33)
Media tone		−0.378**	14.850		−2.602*	6.688
		(−2.23)	(1.28)		(−1.70)	(1.57)
Media attention × media tone			−4.080***			−2.488**
			(−3.60)			(−2.34)
Pre-retirement board seats	25.463***	25.464***	25.623***	−4.779	−4.772	−4.675
	(6.52)	(6.51)	(6.71)	(−1.32)	(−1.32)	(−1.30)
CEO age	0.012	0.015	−0.058	0.112	0.133	0.089
	(0.04)	(0.05)	(−0.18)	(0.37)	(0.45)	(0.30)
CEO tenure	−0.141	−0.147	−0.071	−0.519	−0.555	−0.509
	(−0.31)	(−0.32)	(−0.16)	(−1.21)	(−1.29)	(−1.20)
Industry-adjusted ROA	1.733	1.497	−4.384	4.260	2.643	−0.944
	(0.12)	(0.10)	(−0.31)	(0.32)	(0.20)	(−0.07)
Abnormal stock returns	−0.119	−0.123	0.332	−3.230	−3.261	−2.983
	(−0.02)	(−0.02)	(0.07)	(−0.68)	(−0.69)	(−0.64)
Log of assets	9.277	9.187	8.782	10.476*	9.858*	9.611*
	(1.54)	(1.52)	(1.48)	(1.86)	(1.76)	(1.73)
Board interlocks	0.238	0.191	2.993	1.204	0.880	1.062
	(0.04)	(0.03)	(0.47)	(0.20)	(0.15)	(0.18)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1195	1195	1195	1195	1195	1195
Adj. <i>R</i> ²	0.384	0.381	0.411	0.037	0.028	0.010

tions and special meetings in addition to the annual cash retainer. Third, we have calculated the correlation between post-2006 cash compensation and total compensation. That correlation is 55% with a *p*-value < 0.01.

The first two of these observations point to weaknesses in the use of the cash component compensation post-2006 along with the annual retainer pre-2006 as a proxy for total composition. Offsetting those deficiencies is the third observation that provides some assurance that the use of cash only is a reasonable proxy for total compensation.

In any event, we estimate OLS regressions that parallel the estimations of Table 4 except that the dependent variables are the level and the change in total annual cash compensation of a CEO's outside directorships of S&P 1500 firms. The results of these estimations are reported in Table 6. The signs of the coefficients of *media attention*, *media tone*, and the interaction of *media attention* with *media tone* are the same as in Table 4 and the statistical significance of the coefficients is similar. These results indicate that, if such data were available for a sufficiently long period of time on a consistent basis, board compensation would yield the same implications as does number of boards as the measure of CEOs' human capital linked to media coverage.

4.3. Reasons for departure

Our sample is likely to include some CEOs who left their firms for reasons other than retirement. Indeed, for 77% of the CEOs in our sample, the “Reason Left Company” is missing or recorded as “Unknown” in *Execucomp*. To help assure that our results are not due to such misclassified CEO departures, we undertake several analyses. First, we check to make sure that none of the departing CEOs re-enter the database as a CEO of another S&P 1500 firm.

None do. Second, we re-estimate the OLS models in columns 1–3 of Table 4 including only CEOs whose age at departure is greater than 60. Third, we re-estimate the models including only CEOs whose “Reason Left Company” is recorded as “Retired” in *Execucomp*. These latter two restrictions reduce the sample size by more than half but may help to better identify retiring CEOs.

The results are reported in Table 7. The signs of the coefficients of *media attention* and *media tone*, and the interaction of *media attention* and *media tone* are the same as in Table 4 and the statistical significance of the relevant coefficients is greater with the more refined samples. Further, the magnitudes of the relevant coefficients are also greater. Thus, arguably, more precise identification of news stories regarding retiring CEOs leads to results that are both statistically and economically stronger than those using the full sample of CEO departures.

4.4. CEO media coverage

Our measures of media attention and tone include all firm-specific news stories about the CEOs' firms. Such measures presume that all firm-related news stories have an impact on the CEO's human capital. One could argue that such a presumption is inappropriate because such a presumption holds the CEO responsible for all the events covered by these firm-specific news stories. For example, news coverage of an alleged fraud that involves the firm's CFO may not affect the human capital of the CEO.

To address this concern, we measure *CEO media attention* and *CEO media tone*. These measures are similar to our measures of *media attention* and *media tone* except that we include only firm-specific news articles that contain the CEO's full name at least once when constructing our measures. Of the firm-specific news stories, 10.7% include the name of the CEO. The results are re-

Table 7

CEOs' outside board seats post retirement: subsample analysis.

This table reports coefficient estimates of OLS models where the dependent variable is the number of outside board seats of S&P 1500 firms at the end of the second year after the CEO left office. Columns 1–3 include retiring CEOs whose ages at their retirements are greater than 60. Columns 4–6 include only retiring CEOs whose “Reason Left Company” is recorded as “Retired” in *Execucomp*. All variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Variables	Age >= 60			Retired		
	(1)	(2)	(3)	(4)	(5)	(6)
Media attention	0.198* (1.68)	0.141** (2.12)	0.642*** (2.92)	0.279*** (3.70)	0.252*** (3.47)	0.194* (1.83)
Media tone		−0.110** (−2.22)	0.433 (1.57)		−0.124** (−2.52)	−0.444 (−1.51)
Media tone × media attention			−0.140** (−2.65)			−0.094** (−1.97)
Pre-retirement board seats	0.498*** (3.51)	0.547*** (3.74)	0.655*** (4.78)	0.711*** (6.04)	0.649*** (5.54)	0.787*** (6.42)
CEO age	0.050* (1.77)	0.048 (1.71)	0.039 (1.51)	0.031 (1.11)	0.020 (0.76)	0.020 (0.86)
CEO tenure	0.036 (1.52)	0.046* (1.85)	0.035 (1.54)	0.000 (0.01)	0.016 (0.67)	−0.004 (−0.18)
Industry-adjusted ROA	2.305 (0.78)	3.464 (1.13)	4.834* (1.73)	−7.372* (−2.02)	−5.823 (−1.64)	−5.684 (−1.86)
Abnormal stock returns	0.260 (0.53)	0.046 (0.09)	−0.531 (−1.04)	−0.463* (−2.02)	−0.439* (−2.05)	−0.387* (−2.09)
Log of assets	0.836* (1.82)	0.809* (1.78)	0.603 (1.46)	0.047 (0.11)	0.085 (0.20)	0.031 (0.08)
Board interlocks	0.119 (0.67)	0.063 (0.35)	0.217 (1.12)	0.238* (1.76)	0.254** (2.00)	0.332** (2.86)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	534	534	534	313	313	313
Adj. <i>R</i> ²	0.688	0.694	0.755	0.907	0.919	0.941

ported in Table 8. The signs of the coefficients of *CEO media attention*, *CEO media tone* and the interaction of *CEO media attention* with *CEO media tone* are the same as those of *media attention*, *media tone*, and the interaction of *media attention* with *media tone* in Table 4 and the statistical significance of the coefficients is similar. Thus, the results indicate that the correlation between CEO post-retirement board seats and media coverage is unlikely to be due to firm-specific news articles that do not also create an impression of the firm's CEO.

4.5. Duration of post-retirement directorships

Another concern with our measure of CEO human capital is that the number of outside board seats does not take into account the duration of each board directorship. Presumably, five board seats each with a one-year term is not as “valuable” as one ten-year board seat. To address this concern, we collect data on the duration (i.e., the number of years served) of each directorship from the *IRRC/Riskmetrics* database. Duration is truncated at the end of 2015. Thus, for some directors this measure does not capture the term that they will have eventually served. The mean duration of the CEOs' post-retirement outside board seats is 5.4 years with a minimum of three years and a maximum of 16 years. We then estimate OLS regressions that parallel the estimations of Table 4 by replacing the dependent variable with the sum of the years that the CEO served as an outside director of all S&P 1500 firms starting from the second year after the CEO left office. The results of these estimations are reported in Table 9. The signs of the coefficients of *media attention*, *media tone*, and the interaction of *media attention* with *media tone* are the same as in Table 4 and the statistical significance of the coefficients is similar.

Table 8

CEOs' outside board seats post-retirement: news coverage on CEOs.

This table reports coefficient estimates of OLS models where the dependent variable is the number of outside board seats of S&P 1500 firms at the end of the second year after the CEO left office. *CEO Media attention* is the natural logarithm of the number of CEO-specific news stories in the *Wall Street Journal*, the *New York Times*, and the *Dow Jones News Service* over the pre-retirement period. *CEO Media tone* is the fraction of negative words in these news stories. All variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Variables	(1)	(2)	(3)
CEO media attention	0.106** (2.50)	0.300** (2.09)	0.392*** (5.17)
CEO media tone		−0.122*** (−5.23)	0.092 (1.09)
CEO media attention × CEO media tone			−0.090*** (−5.60)
Pre-retirement board seats	0.781*** (14.69)	0.757*** (14.96)	0.758*** (15.89)
CEO age	0.000 (0.07)	0.001 (0.28)	0.000 (0.08)
CEO tenure	−0.004 (−0.71)	−0.006 (−1.04)	−0.007 (−1.16)
Industry-adjusted ROA	0.119 (0.61)	0.037 (0.20)	0.029 (0.16)
Abnormal stock returns	−0.013 (−0.19)	−0.011 (−0.16)	−0.016 (−0.25)
Log of assets	0.011 (0.14)	0.018 (0.23)	0.002 (0.03)
Board interlocks	0.028 (0.33)	0.045 (0.54)	0.048 (0.62)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
Number of observations	1195	1195	1195
Adj. <i>R</i> ²	0.692	0.722	0.753

Table 9

Duration of CEOs' outside board seats post retirement.

This table reports coefficient estimates of OLS models where the dependent variable is the sum of total years (duration) that the CEO served as a director of an S&P 1500 firm from two years after the end of his tenure as CEO through the end of the directorship, or 2015, whichever is earlier. All variables are as defined in Table 2. All models control for year and firm fixed effects. The coefficients of constant, year, and firm dummies are omitted for brevity. ***, **, and * indicate significance at 1%, 5%, and 10%, respectively. *T*-statistics are reported in parentheses.

Variables	(1)	(2)	(3)
Media attention	0.386** (2.19)	0.272** (2.49)	1.550*** (3.73)
Media tone		-0.272** (-2.07)	0.873 (1.43)
Media attention × media tone			-0.307*** (-3.41)
Pre-retirement board seats	3.647*** (11.67)	3.647*** (11.75)	3.659*** (12.05)
CEO age	0.037 (1.45)	0.040 (1.54)	0.034 (1.36)
CEO tenure	-0.028 (-0.75)	-0.031 (-0.85)	-0.026 (-0.71)
Industry-adjusted ROA	0.839 (0.72)	0.670 (0.58)	0.228 (0.20)
Abnormal stock returns	-0.007 (-0.02)	-0.010 (-0.03)	0.024 (0.06)
Log of assets	0.195 (0.40)	0.260 (0.54)	0.290 (0.62)
Board interlocks	0.082 (0.16)	0.116 (0.23)	0.356 (0.71)
Year fixed effect	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes
Number of observations	1195	1195	1195
Adj. <i>R</i> ²	0.604	0.609	0.625

4.6. Alternative time interval to measure media coverage and board seats

In choosing to examine post-retirement board seats, we followed the convention established in prior studies by Brickley et al. (1999), Fahlenbrach et al. (2011), Harford and Schonlau (2013), among others. Such a choice is, of course, arbitrary. An argument can be made that a more natural choice would be one-year post-retirement seats. To some extent, the use of “duration” as the measure of board service encompasses all longevities. As a further test of the sensitivity of board service, we repeat all our empirical procedures using board seats held one year or three years post retirement. We also repeat all our empirical procedures measuring *media attention* and *media tone* over three-year, two-year, or one-year periods prior to a CEO's departure. The estimated coefficients of the key independent variables have the same signs as in the parallel models of Table 4 as well as similar statistical significance. These results are not reported here but are available in an online Appendix.

4.7. Firms with no media attention

For 161 of the CEOs' firms, we found no news stories over the 48 months prior to the CEO's departure. For these, in our primary tests, we set *media attention* to zero and *media tone* to the sample average *media tone*. As a consideration of whether this procedure influences the results, we omit these 161 CEO departures and re-estimate the models in Table 4. The estimated coefficients of the key independent variables have the same signs and the same levels of statistical significance as in the parallel models of Table 4. These results are available in an online Appendix.

4.8. Positive words in media coverage

Throughout the study, we use the fraction of negative words to total words in the stories as our measure of media tone. Our omission of positive words is based on prior studies that find little incremental information in positive words (Tetlock, 2007 and Kothari et al., 2009). We have, however, also constructed a measure of *media tone* that uses both negative and positive words “in financial text” from Loughran and McDonald (2011). This measure is the difference between the number of positive words and the number of negative words in the article divided by the sum of the number of positive words and the number of negative words. We use this measure of media tone and re-estimate the models reported in Table 4. The estimated coefficients of the key independent variables have the same signs and similar levels of statistical significance. We do not present the results here, but they are available in an online Appendix.

4.9. Extreme observations

To address the concern that the observed empirical associations are the spurious result of extreme observations in our sample we winsorize *media tone* and *media attention* at the 1st and 99th percentile and at the 5th and 95th percentile and re-estimate the models reported in Table 4. The coefficients of the key independent variables continue to have the same signs and the same levels of statistical significance as in Table 4.

4.10. Board data

A further reasonable concern is that the *IRRC/Riskmetrics* database covers only board memberships for S&P 1500 firms. And that these are, by construction, elite publicly traded firms that represent only a fraction of all publicly traded firms of which there are roughly 6000 at any point in time over the period of our study. There are also many prestigious privately-held firms not included in the database. Undoubtedly, some (perhaps many) retired CEOs are invited to, and do accept invitations to, join the boards of some (perhaps many) of these firms. It is possible that including these observations would overturn the results of our analysis. They could, of course, just as reasonably strengthen and buttress those results. We do not know. At this point we can only carefully point out the shortcoming and note that the S&P 1500 firms do represent roughly 90% of the market value of all publicly traded U.S. firms. Given that our fundamental question is whether the media can influence the allocation of capital by the CEO's of such firms, we have addressed that question for the vast bulk of U.S. firms by market value of capital.

5. Commentary and conclusion

This study can be thought of as a search for the missing link between the value of managers' human capital and media coverage of the manager's current performance. Such a link has been presumed to motivate managerial actions in prior studies by Dyck et al. (2008) and Liu and McConnell (2013). However, in an examination of CEOs' current year's compensation and the tone of media commentary about the managers' prior year's compensation, Core et al. (2008) find no significant relation. One interpretation of their evidence is that the media have no influence on top managers' future opportunity sets.

That evidence is consequential because it potentially undermines the presumption that managers are sensitive to the media in making corporate decisions and that, as a consequence, the media can and do play a role in corporate governance. As the authors put it: “[o]ur results do not corroborate recent evidence that

the media exert an important influence on corporate governance choices.” However, they do leave open the possibility that their finding is due to boards of firms with weak corporate governance being unable or unwilling to respond to negative media attention such that, for these firms, excess CEO compensation is a manifestation of weak corporate governance which, in turn, are the very firms that receive the most negative tone in their media coverage.

This study seeks a way around the dilemma cited by Core et al. (2008) by examining the relation between the tone and level of media attention given to CEOs' firms while they are on the job and the frequency with which the CEOs' are elected as directors to other firms' boards post-retirement. The opportunity to serve on boards is one potential component of a current CEO's future opportunity set.

We document a positive relation between the level and tone of media coverage given to CEOs' firms while the CEOs are “on the job” and the number of outside board seats held by the CEOs following their departures as CEOs. Prior studies report a significant relation between the level and tone of media coverage and decisions made by sitting CEOs. The prior studies presume (but do not show) that the relation occurs because the media influence CEOs' future opportunity sets (i.e., CEOs' human capital). This study reports a direct link between media coverage and one component of CEOs' human capital.

We do not claim that the only connection between media coverage and CEOs' human capital is through the media's influence on CEOs' opportunities to serve as outside directors post retirement. Undoubtedly there are others. Equally undoubtedly, other studies will explore those.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jbankfin.2016.12.004](https://doi.org/10.1016/j.jbankfin.2016.12.004).

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