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Public Opinion and Executive Compensation*

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Abstract

We inquire whether public opinion influences executive compensation. During 1992-2008 the negativity of press coverage of CEO pay varied significantly, with stock options being the most discussed pay component. We find that after more negative press coverage of CEO pay firms reduce option grants and increase other compensation including stock awards, overall reducing pay-to-performance sensitivity. The reduction in option pay after increased press negativity is more pronounced when firms and CEOs have stronger reputation concerns. Our within-firm, within-year identification shows the results cannot be explained by annual changes in accounting rules regarding executive compensation, stock market conditions, or pay mean-reversion.

JEL Classifications: G34, M52, J33

Keywords: executive compensation, public opinion, social norms, media coverage

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1 Introduction

Public opinion, as channelled by the press, can potentially serve as a disciplining device for corporate decisions (Zingales (2000)). Recent empirical studies show that the press can detect corporate fraud (Miller (2006)) and shape aspects of corporate governance such as the treatment of minority shareholders (Dyck & Zingales (2002), Dyck, Volchkova, & Zingales (2008)) or board independence (Joe, Louis, & Robinson (2009)). Nevertheless, it is still unclear whether public opinion has influence over the setting of executive compensation. The existence of a public outrage constraint that could limit the level of CEO pay has been assumed in the managerial power view of executive compensation proposed by Bebchuk, Fried, & Walker (2002) and Bebchuk & Fried (2004). Also, Weisbach (2007) argues that firms may camouflage executive compensation by having it take forms that are typically not discussed in the press, so as not to attract public attention.

In this paper we provide empirical evidence that firms take public opinion into account when deciding the composition of CEO pay and that this effect is driven by reputation concerns. Firms value reputation, as it is a signal about the underlying quality of their products (Milgrom & Roberts (1982)) and a determinant of financial performance (Michalisin, Kline, & Smith (2000), Roberts & Dowling (2002)). Managers seek to maximize their personal reputation in order to succeed in later career moves (Fama (1980)) and to avoid the stigma of being perceived as "bad guys" (Dyck & Zingales (2002)). Firms and managers may therefore want to protect their reputation and public image by setting pay in a way that does not upset the public. Avoiding negative public opinion also has the added benefit of reducing the odds of populist political interventions that can put further constraints on CEO pay (Jensen & Murphy (1990)). For example, during the period we study there were two important changes in regulation that followed such public outrage (in 1993 and 2004), whose intent was to limit executive pay by either

capping the tax-deductible amount of cash compensation or by requesting the expensing of executive stock options.[1]

Two extant papers provide mixed results regarding the existence of a causal effect of public opinion on executive pay. On the one hand, Johnson, Porter, & Shackell (1997) find that after a negatively-toned article about a specific firm in leading U.S. newspapers there is a smaller subsequent increase in the pay of that firm's CEO. On the other hand, Core, Guay, & Larcker (2008) document that while CEOs that draw negative media attention after receiving excessive compensation are more likely to experience mean-reversion in pay later, the relation between media coverage and subsequent pay is not causal. Controlling for a firm's lagged CEO pay, Core et al. (2008) show that the amount of negative publicity regarding that firm does not predict the value of the CEO's future compensation. Therefore, it is possible that firm-level press coverage may not influence the level of CEO pay, at least for those firms with the most egregious executive compensation.

Nevertheless, it is possible that widespread public concerns about CEO pay may change executive compensation, as stronger waves of public opinion may be needed for boards to change CEO pay and not just a handful of newspaper articles about one firm or another. Moreover, the firms with the most egregious pay could be those that have the worst governance and therefore may be the least likely to respond to negative press coverage regarding their own misbehavior. Finally, as suggested by Weisbach (2007), firms

[1]Starting in January 1994, Section 162(m) of the Internal Revenue Code (IRS par. 9001B, sec. 1.162) limited the corporate tax deduction for compensation paid to the CEO and each of the next four highest-paid executive officers to $1 million each, effective for compensation paid in tax years beginning on or after January 1, 1994. This new rule was part of the Omnibus Budget Reconciliation Act of 1993 (OBRA 1993), signed in August 1993. Also, in December 2004 the FASB issued the Statement of Financial Accounting Standards No. 123 (Revised 2004), or FAS 123(R), indicating that public companies will have to start expensing options beginning with their first annual reporting period after June 15, 2005. While CEO pay packages continued to increase in size, their composition changed in order to avoid the costs imposed by the new regulation (Rose & Wolfram (2002), Carter, Lynch, & Tuna (2007)).

may react to public opinion by changing the type of compensation offered to executives, and not necessarily the levels of pay.

Anecdotal evidence suggests that widespread public opinion regarding CEO compensation (particularly stock options) has in fact shaped executive pay since the 1990s, as it has influenced boards of directors, CEOs as well as compensation consulting companies that make executive pay recommendations. For example, Pearl Meyer & Partners, a New York-based executive compensation consultancy, stated in 2003 that "stock options have been absolutely crucified by the corporate governance gurus.[...]Everybody says they're the root of all evil.[...]If stocks are falling and options growing less valuable, how is it that CEOs are making more money? For some, old-fashioned salary increases did the trick. In tough times, though, pay increases are difficult to defend, so boards have been ratcheting up compensation in the form of restricted stock."[2] In 2004 in an article focused on compensation practices at Californian firms Pearl Meyer consultants noted an increase that year in restricted stock and decline in option grants, and suggested these changes were driven by the public perception that "options are bad".[3] In 2009 an article in the Wall Street Journal quoted compensation experts from the law firm Jones Day saying that the public anger has "given boards the backbone to write stricter standards on pay.[...]People talk about how angry their own friends and families are.[...]Boards are thinking: Try to get your act together before the government is there to help you."[4] CEOs concerned with public opinion in fact chose to decline some or all of their promised option grants – for example Bradbury Anderson at Best Buy in 2003, W. Alan McCollough at Circuit City in 2004, or James Wells at SunTrust Banks in 2008.[5] Recently Goldman Sachs acknowl-

[2]See the article "The next outrage in CEO pay?", CNN Money, April 24, 2003, by Gordon T. Anderson. http://money.cnn.com/2003/04/23/pf/investing/CEOs_nextoutrage/.

[3]See the article "Share grants spur debate", Los Angeles Business Journal, by Kate Berry, July 12, 2004, http://www.allbusiness.com/human-resources/employee-development-leadership/186360-1.html

[4]See the article "Executive Salaries Remain Under Pressure in '09", The Wall Street Journal, April 3, 2009, By Phred Dvorak, http://online.wsj.com/article/SB123871034320684235.html

[5]See the articles "A Few Share the Wealth", The Wall Street Journal, by Joann S. Lublin, December

edged that public anger about high executive compensation constrained the pay of its top five executives in 2009.[6]

In this paper we seek to understand whether indeed widespread public opinion has a causal influence on CEO pay. Further, as suggested by the prior theoretical work on reputation, we posit that this influence may differ in the cross-section depending on the firms' perceived value of acting to avoid the public's wrath. Therefore we test whether firms and managers with stronger reputation concerns will respond more to public opinion.

We first document that the negativity of coverage of executive compensation in the American press during our sample period (1992-2008) varies substantially over time, and the pay component that is discussed most are stock options. We then show that CEO pay responds to press negativity by shifting away from options to other types of compensation, including restricted stock, that receive much less media attention. We further document that while overall levels of pay do not change with public opinion, the strength of incentives does, with lower pay-to-performance sensitivity (PPS) following increases in press negativity. Consistent with reputation concerns driving this response, the reaction of pay composition to press negativity is stronger for firms that are more in the public eye (i.e., larger firms, those with more analyst coverage, and those with more recent product safety concerns), and for firms that have less entrenched and younger CEOs, who have stronger career concerns (e.g., Gibbons & Murphy (1992), Bebchuk & Fried (2004)). Our results suggest that public opinion may change the CEOs' incentives and ultimately may shape firm outcomes.

We measure public opinion by analyzing the text of all newspaper articles published

12 2005 and "CEO Pay Plunged In 2008", The Huffington Post, May 1 2009, by Rachel Beck and Matthew Fordahl, http://www.huffingtonpost.com/2009/05/01/ceo-pay-plunged-in-2008_n_194374.html.

[6]See the article "Public anger to rein in top Goldman bonuses", the Financial Times, October 15 2009, by Greg Farrell, http://www.ft.com/cms/s/0/46916a36-b9d4-11de-a747-00144feab49a.html?SID=google.

in the U.S.A. during 1990-2010 using linguistic analysis software as previously done by Tetlock (2007), Tetlock, Saar-Tsechansky, & Macskassy (2008) and Loughran & McDonald (2010). We quantify the tone of each article by measuring the frequency of occurrence of words that belong in a dictionary of terms with negative connotation in the context of CEO pay (e.g., "lavish" or "excess") that we construct after reading a sub-sample of such articles. We also use the default negativity dictionary in the linguistic software program, as well as that developed by Loughran & McDonald (2010) in their textual analysis of 10-K filings. We develop our own negativity dictionary specific to the CEO pay context because, as Loughran & McDonald (2010) find, many of the words identified as negative in standard dictionaries (e.g., "tax" or "foreign") do not have negative meaning in a financial context.[7]

We start by using annual compensation data from Execucomp for the period 1992-2008 (the entire dataset available at the time this paper is written) and show that higher negativity of CEO coverage in the press is followed in the next year by a decrease in options pay and an increase in salary, bonus, restricted stock and other forms of pay. Consistent with the results in Core et al. (2008), the total value of compensation does not react to public negativity. However, our results indicate that the composition of pay does react, in a way that suggests that firms prefer to avoid public outrage. Our results hold when we allow for dynamic endogeneity in the determination of pay and press coverage and isolate the causal effect of prior press negativity on subsequent pay by estimating a system GMM model. The results are robust to including firm fixed effects, lagged values of pay, controls for overall economic conditions (e.g., the S&P 500 return,

[7]As noted in Loughran & McDonald (2010), while this method of classifying the tone of text based on a specific dictionary (or "bag of words") is the most frequently used in the literature, it is not the only available technique. For instance, Li (2009) uses a Naive Bayesian machine learning algorithm to classify the tone of statements in 10-K and 10-Q filings. Tetlock (2007) discusses the drawbacks of this type of approach – two of the most important being that the results produced are difficult to replicate and that the techique requires subjective classification by the econometrician of the tone of the text used as training data for the machine learning algorithm.

NBER recession indicator), an indicator for whether firms faced shareholder proposals, as well as other firm-year controls typically used in prior research on executive compensation such as firm size and managerial entrenchment.

Nevertheless, it is still possible that other year-specific factors omitted here drive both the prior year's negativity of press coverage and the values of different type of pay. As noted earlier, several changes were instituted during our sample period regarding the taxation of various components of pay and the disclosure and expensing requirements regarding executive compensation. Importantly, as shown by Carter et al. (2007), Walker (2009) and Hayes, Lemmon, & Qiu (2010), the change in accounting rules that required the expensing of stock options starting in 2006 is likely to have contributed to the shift from option to stock awards. Therefore it is critical to control for year fixed effects that could drive our results in the annual Execucomp data, in order to account for the influence of these accounting modifications on CEO pay.[8] We are able to run such an analysis by using data from the Thomson Reuters Insider Filings database that provides the number of options as well as the number of shares of stock granted to executives in any given year during 1996-2008 and the exact date of each grant. This fine data allows us to test within firm whether within-year differences in the negativity of CEO coverage in the press in the months prior to the grant in fact influence the value of the grant. Consistent with the results using annual data, we find that firms award lower-valued options grants and higher-valued stock grants after increased public outrage about CEO pay in the three to six months prior to the time of the grant.

One remaining concern is that the timing of these awards is not fully exogenous. Yermack (1997) finds that some stock option awards are made before favorable news announcements and Heron & Lie (2007) show that it is likely some corporations engaged

[8]For instance, Carter et al. (2007) examine changes in CEO compensation in firms that begin to expense options in 2002 and 2003 and find that these firms reduce the use of options and increase the use of restricted stock after they start expensing options.

in backdating options, that is, they selected ex-post grant dates that followed periods of large decreases in the firm's share price. Aside from firms timing option grants as a function of firm-specific performance, it can also be the case that companies may choose to either delay giving out options or to give out smaller grants at times when there is much public outrage against this type of compensation. This, however, is exactly our hypothesis that firms take public opinion into account when deciding how to pay CEOs. A problem can arise, however, if there is an omitted variable that drives both public opinion and the firm's decision regarding the time and size of option awards. This omitted variable has to be market-wide, not firm specific, as our public negativity measure refers to CEO pay in general and not to each firm individually. For instance, it could be that bad stock market performance drives both public negativity and the size or timing of subsequent option awards, for all firms. We have two arguments against this hypothesis. First, in our Execucomp annual regressions we control for prior year stock market performance and observe that prior year negativity still changes the composition of subsequent CEO pay. Second, in our Thomson monthly analysis we identify grants given at exogenous, pre-specified times, that is, at times which are solely determined by each firm's fiscal year end. A clear pattern in the data is that most grants are made two months after the fiscal year end. For example, for firms whose fiscal year end is in December, most option or stock grants are made in February, whereas for firms whose fiscal year ends in May, most grants are made in July. We refer to these as the firms' modal grant months.[9] We therefore repeat our analysis using only the option grants given during each firm's modal month, which we view as grants made by boards during regularly scheduled meetings, whose timing is exogenous to the events happening concurrently in the environment. In this sub-sample of exogenously-timed grants, we observe a similar effect as in the main

[9]Klein & Maug (2009) find that there are peaks in the hazard rate of CEOs exercising options that occur at annual intervals from the vesting date, consistent with our finding that each firm makes these grants around similar times each year.

sample: higher negativity in the prior three or six months reduces the value of options granted. In fact, the effect of negativity is stronger in this sub-sample of grants than in the overall sample.

After showing that public negativity leads to a shift away from the most publicly-debated component (i.e., options), we then document that as a result of the pay composition change following public outrage firms in fact decrease the CEOs' pay-to-performance sensitivity. As suggested by Jensen & Murphy (1990), Yermack (1995) and Hartzell & Starks (2003), lowering PPS may be detrimental to firm value. We then test whether firms where reputation concerns are more important are more likely to change the composition of executive pay following public outrage. The evidence we find supports this prediction, as the firms that are most sensitive to media coverage of CEO pay are those with higher market value, higher analyst coverage, or those with recently exposed product safety issues, as well as those with less entrenched and younger CEOs who have stronger career concerns (Gibbons & Murphy (1992)), which can be affected by their response to public outrage.

This paper contributes to two strands of the literature. First, we contribute to the small but growing literature on the impact of media and public opinion on corporate decisions (e.g., Dyck & Zingales (2002), Core et al. (2008), Dyck et al. (2008), Joe et al. (2009)) by being the first to analyze the effect of widespread public opinion on the composition of CEO pay. Second, we contribute to the large literature on executive compensation and corporate governance (e.g. Murphy (1999), Core, Holthausen, & Larcker (1999), Holmstrom & Kaplan (2003), Bebchuk & Fried (2004), Kuhnen & Zwiebel (2007)) by providing evidence that public outrage can change the composition of executive compensation and therefore may alter CEOs' incentives and behavior.

The paper proceeds as follows: Section 2 describes the data, including our press negativity measures, Section 3 presents the results, and Section 4 concludes.

2 Data

There are several components in the data used in this paper: public opinion measures, CEO pay variables, as well as firm characteristics. We describe each below and briefly summarize each data item in Table 1.

— Please insert Table 1 approximately here —

We measure widespread public opinion regarding CEO pay by quantifying the tone of articles on executive compensation published during 1990-2010 in all American newspapers.[10] These are articles that contain at least one of the following keywords: "CEO compensation", "CEO salary", "CEO pay", "executive compensation", "executive salary" or "executive pay". Our primary source for downloading these articles is the Factiva news database. However, there is some variation in the total number of articles in our sample period for newspapers published in certain states, caused by changes in Factiva's contracts with the press agencies that provide this content. This leads to variation over time in the sources included in the Factiva database.[11] To address this problem, for states with a large variation in Factiva coverage over time we supplemented the data set by consulting the LexisNexis database and the online archives of individual local newspapers. Our search yielded 26,123 articles on executive compensation.

Each article related to CEO pay was downloaded and classified by source, date, state in which the newspaper was published and whether it was a national or local publication. We classified newspapers as national based on their inclusion as a national newspaper in the US Department of Interior's Pro Quest Database. Specifically, we labeled the New York Times, USA Today, the Wall Street Journal, the Financial Times, the Washington

[10] For 2010 the available articles at the time this paper was written were those published between January and April.

[11] The states for which there is more variation in coverage over time are AL, AR, IA, ID, IN, KS, KY, MD, MN, NH, OR, RI, WV.

Post and Barron's as national publications. All others were classified as local. Of all articles, 6982 are classified as national and 19141 as local, depending on the type of newspaper in which they appeared.

To quantify the tone of each article we used the Pennebaker, Both, & Francis (2007) LIWC computer linguistic program, following the approach of prior papers in the finance literature concerned with textual analysis (Tetlock (2007), Tetlock et al. (2008) and Loughran & McDonald (2010)). The program automatically processes text files and analyzes their content based on an internal dictionary. The program's default dictionary contains a category consisting of 499 words to measure negative emotions in general text. These words, however, might not suitably capture the tone of articles covering executive compensation, as the wording of such articles is more specialized than that of general readings. For example, words such as "lavish" or "backdating" have a negative connotation in the context of a discussion of CEO pay, but are not included in LIWC's default internal dictionary of negative words. We therefore use two alternative dictionaries to measure negativity towards CEO pay. First, we constructed our own dictionary for characterizing the tone of newspaper articles on CEO compensation. We randomly drew 160 such articles, read them independently and manually identified keywords (listed in Appendix A) reflecting emotions towards executive compensation. Our negativity dictionary contains these keywords as well as their grammatical variations such as singular and plural. Second, we use the dictionary developed by Loughran & McDonald (2010) to quantify the negativity of text in 10-Ks filings, as it is also explicitly designed for characterizing the tone of financial text.[12]

For each newspaper article we measured the negativity with respect to executive compensation as the percentage of words in the article that are among those that belong

[12]We thank Campbell Harvey for suggesting this alternative dictionary of negative words present in financial documents.

to each of the three negativity dictionaries. We find that the average negativity in a CEO-pay related article measured in either national or local newspapers is around 1.5% using our CEO pay-specific dictionary and about 1.85% using the dictionary in Loughran & McDonald (2010) (see the summary statistics in Table 2). There is a significant positive correlation (0.47, $p < 0.01$) between an article's negativity defined using the default dictionary of the linguistic program, and its negativity according to our own. The correlation between an article's negativity defined using the negative word list in Loughran & McDonald (2010) and its negativity according to our own dictionary is 0.63 ($p < 0.01$). Therefore, while articles on executive compensation have a slightly different wording than typical narratives, their tone is characterized in a similar way by our negativity measure as well as the negativity measure based on the dictionary in Loughran & McDonald (2010).

— Please insert Table 2 approximately here —

In the analysis our main measure of attitudes towards CEO pay is captured by the variable $National\ Negativity_t$ and is defined as the average value of the negativity of each article published in national newspapers during the time period t, using our own negativity dictionary. The time period is either a calendar year when we use the annual pay data from Execucomp, or a three- or six-month window prior to each month when CEOs in the sample receive stock or option grants according to the Thomson Reuters Insider Filings database. We also define in a similar manner the average negativity of CEO pay press coverage in local, state-specific newspapers and label this variable $Local\ Negativity_t$. In addition, we compute the values of these aggregate negativity measures using LIWC's default dictionary, and the dictionary developed by Loughran & McDonald (2010). Since these measures are highly correlated, and have similar effects in the empirical analysis, we will mostly focus on the role of national-level negativity

measured using our own dictionary that is specific to compensation-related text.

We also calculate how often various components of executive pay are mentioned in these articles, by calculating the percentage of words in each article that refer specifically to each component (see Appendix B for the relevant key words). For instance, to calculate the frequency with which options are mentioned, we counted how many times the words "option" or "backdating" and their grammatical variations appeared in the article (for instance, in word sequences such as "option awards", "stock options", etc.), then divided that count number by the number of total words in the article.

CEO compensation data is obtained from two sources: Execucomp and Thomson Reuters Insiders Filings databases. We use both databases as they each have advantages and disadvantages for answering our research question. Execucomp has information about all types of pay during 1992-2008, but only at annual frequency, which makes it difficult to parse the effect of annual press negativity from that of other year-specific events, such as the change in the accounting treatment of options that took effect in 2006. Thomson only covers option and stock compensation, but has grant-level data and therefore we have multiple observations of grants for the same firm occurring in the same year but facing different public negativity. Hence we are able to control for annual modifications in accounting rules or any other changes specific to the year that can drive both negativity and pay, by estimating our effects within firm and within year. From Execucomp we get annual values for the period 1992-2008 for the total pay awarded to CEOs of firms included in the S&P 1500, as well as the value of each type of pay (ie., salary, bonus, option grants, stock grants and other pay not included in the prior four components). The salary and bonus (variables $Salary_t$ and $Bonus_t$) are given by Execucomp data items *salary* and *bonus*. The aggregate value of the stock options granted to the executive during the year ($Options_t$) is computed using the S&P Black Scholes methodology and provided by data item *blk_valu* (or its post-2006 equivalent,

option_awards_fv). As noted by Walker (2009), to obtain the values of the remaining pay variables we need to make certain adjustments to account for the fact that in 2006 Execucomp changed the way total compensation and the value of stock grants are reported. Specifically, before 2006 the data item *tdc*1 was supposed to capture the total compensation given to the CEO that year, but in fact it did not include the value of performance shares, which are a type of stock award that is contingent on the firm achieving certain performance targets in the short to medium term. Similarly, the pre-2006 data item *rstkgrnt* (i.e., restricted stock) indicated the value of stock awards that were non-performance contingent but not that of performance shares. For the period 2006-2008 a different data item, $stock\_Awards\_fv$, measures all stock awards (i.e., restricted stock plus performance shares). Therefore we follow the procedure in Walker (2009) and construct a comparable variable for the pre-2006 period by multiplying the target number of performance share granted (data item *shrtarg*) by the granting company's year-end share value and summing this with the value of data item *rstkgrnt*. We make a similar adjustment for the pre-2006 period to obtain the variable $TotalCompensation_t$ by adding the value of performance shares to the value of data item *tdc*1. Finally, the value of other types of compensation granted that year ($OtherPay_t$) includes items such as perquisites, personal benefits, deferred compensation and tax reimbursements and is calculated as $TotalCompensation_t - Salary_t - Bonus_t - Options_t - Stock_t$. Our Execucomp-based data set consists of 20,031 firm-year observations during 1992 to 2008 and covers 3,081 unique firms.

From the Thomson Insiders Filings database we obtain the number of shares or options granted, the options' expiration date, and the dates when these grants were made, for CEOs of publicly-traded companies (including those covered in Execucomp) during 1992-2008. We calculate the ex-ante value (i.e., at the grant date) of option grants using the Black-Scholes formula, where as inputs for dividend yield and volatility we use the data

items *optdr* and *optvol* from Compustat. The dataset contains 107,751 individual option and stock grants given during 1996-2008 to CEOs of the firms covered in Execucomp, of which 92,536 are option awards and 15,215 are stock awards.

Lastly, we use CRSP/Compustat for firm characteristics such as stock return or return on assets, IBES for the degree of analyst coverage, and KLD Research & Analytics for measures of concerns regarding each firm's corporate governance (e.g., whether the board allows excessive CEO compensation or the accounting standards at the firm are controversial), concerns regarding the relations between management and employees (e.g., whether the management ignores employee safety issues or has poor relations with the unionized workforce), and the existence of recent product safety concerns. CEO age is obtained from Execucomp, and when it is missing there (i.e, in about 10% of cases) we find it by reading news reports about the specific executive, using the Factiva database.

3 Results

3.1 Negativity of CEO pay coverage in the press

Figure 1 shows the time series of multiple measures of negativity during 1990-2010 based on coverage in either national or local newspapers, and using either our own dictionary, the one developed by Loughran & McDonald (2010), or the default one in the LIWC software. The patterns in the figure show that the annual, aggregate values of each of these negativity measures are highly correlated, in line with the high correlations among article-level negativity measures that we documented earlier. By any measure the negativity of CEO pay coverage is highest in years 1991-1992, 1996, 2002-2003 and 2008. For instance, in 2003 the *National Negativity* (according to our dictionary) is 1.73%, more than one standard deviation higher than the sample mean of 1.53%.

The data also show that in these articles the frequency of occurrence differs significantly across the various types of executive pay, as seen in Figure 2. The most discussed component are stock options, which account on average for 0.24% of the words in CEO pay articles in national newspapers. Salary and bonus terms each represent 0.16% of the article words, while stock awards account for 0.20%. Two-sample mean comparison tests show that the frequency of coverage of options is significantly higher than that of these other three pay components ($p < 0.001$).

The time series of coverage shown in Figure 2 indicate that options have been more in the public eye than any other type of pay until 2008, that is, until the end of our executive compensation data. Interestingly, starting in 2009 bonuses become the most covered component of pay, and options the least covered. This suggests that once compensation data for years 2009 and 2010 become available, there may be a shift away from bonus to other types of pay, akin to the shift away from options that we document for the period 1992-2008. We later show evidence supporting this conjecture using the small sample of firms for which compensation data for 2009 was available at the time this paper was written.

3.2 Annual data results & robustness checks

We use annual pay data from Execucomp to inquire whether the negativity in the press regarding CEO pay in a particular year can help predict CEO compensation in the following year. The main results are presented in Table 3. We examine total CEO compensation, as well as the value of each pay component: salary, bonus, options, stock and the residual category, ie., other pay, as well as the excess value of pay defined as in Core et al. (2008).[13] In the main analysis we use log values of pay, as done in most

[13]We follow Core et al. (2008) and compute excess pay for the CEO of firm i in year t as the actual compensation minus expected compensation, which is equal to the predicted value from the regression of

prior papers on executive compensation.[14] This reduces the likelihood that outliers in the pay distribution (mainly caused by data entry errors in Execucomp) drive the results. Nevertheless, we also conduct our analysis using dollar values after dropping the top 1% of pay observations to eliminate the potential effect of these outliers, and obtain similar results, as shown in Table 4 among other robustness checks.

When predicting compensation in year t we include controls for firm-specific and market-wide variables measured as of time $t-1$ that may influence CEO pay. We include several measures of lagged firm performance, namely stock return, return on assets (ROA) and sales growth in year $t-1$, since better performing managers will be better remunerated. We also control for the lagged firm sales, which has been used as a measure for firm size and complexity (e.g., Baker, Jensen, & Murphy (1988)), and for the lagged market value, which is a proxy for the present value of the firm's growth opportunities, since all these firm characteristics have been shown to influence CEO compensation (e.g., Murphy (1999)).[15] We control for the Bebchuk, Cohen, & Ferrell (2009) entrenchment index since powerful CEOs may extract more pay, as well as for the firm's stock volatility as it can mechanically drive the value of compensation, particularly the value of option grants.[16] We include the lagged stock market return to control for the impact of changes in economic conditions on CEO pay. For instance, when the stock market is experiencing high returns, this increases the firms' share prices and therefore

$Ln(Pay_{i,t})$ on $Ln(Sales_{i,t-1})$, $S\&P500_{t-1}$, $Book-to-market_{i,t-1}$, $StockRet_{i,t}$, $StockRet_{i,t-1}$, $ROA_{i,t}$, $ROA_{i,t-1}$, $CEO\ Age_{i,t}$, and industry fixed effects. Due to data limitations we use CEO age instead of CEO tenure as a control variable.

[14] We calculate the natural logarithm of $(1+pay)$, to account for the fact that for some firm-years the value of one or more of the pay components may be zero (e.g., not all firms give out option grants to their CEOs each year).

[15] Alternatively we used Tobin's Q as a control instead of the market value of equity and the effects and R^2 of our regressions remained virtually the same.

[16] The Bebchuk et al. (2009) entrenchment index is based on six measures that indicate how protected the top management is from shareholder actions or take-over attemps (e.g., whether there exist executive golden parachutes or poison pills.) Higher values of the index indicate weaker governance. We also repeated our analysis using the Gompers, Ishii, & Metrick (2003) corporate governance index and found similar results.

the value of CEOs' stock or option awards. We also include an indicator variable equal to one if the CEO of the firm is younger than 60 years to control for age-dependent heterogeneity in the executives' outside options and career concerns (Gibbons & Murphy (1992)), and a year trend variable to account for the possibility that overall CEO pay or its individual components increased over time.[17] As Core et al. (2008) show that there exist a strong relationship between current and lagged CEO pay, we include in all of our annual regressions the lagged value of total compensation or the lagged value of the specific pay component that serves as the left-hand side variable.

In the first column in Table 3 we present the results of a pooled OLS model with fixed effects for the firms' Fama French 48 industry codes and for the state where the firms' headquarters are located, to account for sector and geographic differences in compensation. In the second column we estimate the model including firm fixed effects, which improves the fit relative to the pooled OLS specification. The standard errors presented in Table 3 are corrected for heteroskedasticity and clustered by firm.[18] While in the pooled OLS and firm fixed effects specifications we use prior year measures of public attitudes to predict current CEO pay, this approach per se does not allow us to make any strong causal statements regarding the observed links between these two variables. It is possible that public outrage about CEO pay not only changes future CEO compensation but is also a result of excessive CEO pay in prior years (Core et al. (2008)). We partly mitigate this concern by also including on the right-hand side of these regressions the lagged value of the CEO's pay. Nevertheless, to better account for dynamic endogeneity of pay and public opinion, in the third column of Table 3 we estimate a system GMM model designed specifically to capture such effects in panel data (Arellano & Bover (1995), Blundell & Bond (1998)). Other empirical corporate finance papers that use dynamic panel GMM

[17] Our results are robust to the inclusion of a quadratic time trend to account for exponential growth of CEO pay over time. We thank an anonymous referee for suggesting this additional control variable.

[18] Clustering by year does not change the significance of the results.

estimation include Lemmon, Roberts, & Zender (2008) who study the determination of firm leverage, Asker & Ljungqvist (2010) who focus on the role of shared underwriters on firms' investment decisions, and Wintoki, Linck, & Netter (2010) who investigate the relationship between board structure and firm performance.

— Please insert Table 3 approximately here —

The estimation of a system GMM is done in two steps. First we specify the model in first difference form to eliminate any firm-level unobserved heterogeneity.

$$\begin{aligned} \Delta CEOComp_{i,t} &= \alpha + \kappa_p \sum_p \Delta CEOComp_{i,t-p} + \beta_1 \cdot \Delta Negativity_t + \\ &+ \delta \cdot \Delta X_{i,t} + \gamma \cdot \Delta Z_{i,t} + \Delta \epsilon_{i,t}. \end{aligned} \tag{1}$$

We are primarily interested in the effect of coefficient β_1. The symbol $X_{i,t}$ denotes the set of control variables (the same as in the pooled OLS and firm fixed effects models in Table 3) and $Z_{i,t}$ denotes the set of instruments. The idea of system GMM is to model dynamic endogeneity by using lagged explanatory variables as instruments for current explanatory variables. In our case, we use lagged values of CEO compensation, negativity, and other firm-specific variables as instruments for current changes in these variables.[19] We then estimate the level and difference equations simultaneously:[20]

[19]Dynamic completeness of the equation is ensured by including all significant lags p of the dependent variable into the equation. This yields the following orthogonality conditions:

$$E(X_{i,t-s}\epsilon_{i,t}) = E(Z_{i,t-s}\epsilon_{i,t}) = E(y_{i,t-s}\epsilon_{i,t}) = 0; \qquad \forall s > p$$

[20]Note, that the level equations still include unobserved heterogeneity. We follow Wintoki et al. (2010) and assume that the correlation between negativity and control variables is constant over time. This assumption leads to another set of orthogonality conditions: $E[\Delta X_{i,t-s}(\eta_i + \epsilon_{i,t})] = E[\Delta Z_{i,t-s}(\eta_i + \epsilon_{i,t})] = E[\Delta y_{i,t-s}\epsilon_{i,t})] = 0; \forall s > p$

$$\begin{bmatrix} CEOComp_{i,t} \\ \Delta CEOComp_{i,t} \end{bmatrix} = \alpha + \kappa \begin{bmatrix} \sum_p CEOComp_{i,t-p} \\ \sum_p \Delta CEOComp_{i,t-p} \end{bmatrix} + \beta_1 \begin{bmatrix} Negativity_t \\ \Delta Negativity_t \end{bmatrix} \quad (2)$$
$$+ \delta \begin{bmatrix} X_{i,t} \\ \Delta X_{i,t} \end{bmatrix} + \gamma \begin{bmatrix} Z_{i,t} \\ \Delta Z_{i,t} \end{bmatrix} + \epsilon_{i,t}.$$

$CEOComp_{i,t}$ and $\Delta CEOComp_{i,t}$ denote the level and year to year change (from $t-1$ to t) in either total pay or individual pay components (e.g., options) for firm i. The level and change in mean press negativity are captured by $Negativity_{t-1}$ and $\Delta Negativity_{t-1}$. The validity of instruments $Z_{i,t}$ is analyzed with serial correlation tests as well as the Hansen test of over-identification (Arellano & Bond (1991)) and shown by the test statistics in Table 3.[21] The results of the serial correlation tests show that the assumptions of our specifications are valid: the residuals in first differences (*AR(1)*) are significantly correlated, but there is no serial correlation in second differences (*AR(2)*). Furthermore, the Hansen test reveals insignificant p-values in all specifications. This means that the null hypothesis that our instruments are valid can not be rejected. Finally, the difference-in-Hansen test reveals that the subset of instruments used in the levels equations is also exogenous for all specifications.

As the results in Table 3 indicate, the effects of the prior year's negativity of CEO pay coverage on compensation in the current year are similar in terms of economic magnitude and statistical significance across the pooled OLS, firm fixed effects and system GMM specifications, yielding support for a causal influence of public opinion over the firms' decision regarding the composition, but not the level, of executive pay. The results in Panels A and F show that negativity does not significantly change the log value of

[21] For a more detailed description of the system GMM model as well as the STATA commands typically used to estimate such models please see Wintoki et al. (2010).

total or excess compensation, consistent with the finding in Core et al. (2008) that firm-specific negative press coverage does not influence total pay, nor excess (or unpredicted) compensation at that firm. Importantly, however, we observe that press negativity has a significant effect on the composition of CEO compensation. In particular, the results in Panels B, C, D and E show that higher negativity in the prior year leads to a decrease in the log value of option grants awarded and an increase in the log value of salary, bonus, stock awards and other pay. To make the magnitude of the log-based results easier to grasp, we report below the effect of changes in press negativity on the percentage change in the dollar value of each pay component.[22]. All the effects reported here are statistically significant at conventional levels.

An increase of one standard deviation (see Table 2 for summary statistics) in the negativity of national press coverage towards CEO compensation is followed by a decrease of 8% in the value of options compensation, and an increase of 5% in salary and bonus, 8% in stock awards and 4% in other compensation. In the robustness checks in Table 4 we estimate the same models using dollar value of pay instead of log values, and the effects are also economically and statistically significant. Increasing negativity by one standard deviation leads to a \$0.23 million decrease in options compensation, a \$0.06 million increase in salary and bonus, and a \$0.03 million increase in stock awards. These effects are economically significant, since in our sample the mean value of options, salary and bonus, and stock awards received by a CEO in a given year are \$1.9 million, \$1.3 million, and \$0.7 million, respectively. Unlike in our main specification, in the dollar value specification we also observe statistically significant effects of negativity on total, as well as excess compensation, both of which decrease after increased press negativity. Across these different regressions, including our press negativity variable as a predictor

[22]That is, we report the value of $\frac{\Delta Pay}{Pay} = e^{(\Delta Negativity * \beta_{Negativity})} - 1$, where Δ *Negativity* refers to one-standard deviation change in *National Negativity* and $\beta_{Negativity}$ is the coefficient estimated in Table 3 using log values of compensation.

of options and other components of CEO pay increases the adjusted R^2 by about 1%. For instance, in the firm fixed effects specification in Panel B of Table 3, the inclusion of negativity increases the adjusted R^2 from 36% to 37%, an effect stronger than that of other right-hand side variables, such as the CEO age.

The coefficients on our control variables have the expected sign. CEOs get paid more after better firm performance measured by stock returns, ROA and sales growth, if the company has increased sales or market value or if the prior year's stock market return is higher. They also get paid more in firms with weaker corporate governance as measured by the Bebchuk et al. (2009) index. In addition, we observe that CEOs younger than 60 years get significantly more options and stock-based compensation and lower other compensation as compared to CEOs above that age threshold. Also, consistent with earlier research (Murphy (1999), Bebchuk & Fried (2004)), we find a strong positive time trend in total compensation, as well as excess compensation.

To test the robustness of our results we run additional analyses where we use different measures of press negativity regarding CEO pay, different measures of compensation (i.e., dollar values, as well as excess values computed as in Core et al. (2008)), additional controls to address omitted variable concerns, and test the model in different data subsamples. The results, based on regressions with firm fixed-effects, are presented in Table 4 and show that the effects of negativity on the composition of CEO pay continue to be significant and similar to those documented in the main analysis in Table 3.

— Please insert Table 4 approximately here —

In Panel A we use the negativity measure based on the dictionary in Loughran & McDonald (2010). In Panel B we use the negativity of local newspaper articles (i.e., those published in the state where the firm's headquarters are located) using our own dictionary. In Panel C we use dollar values of compensation instead of log amounts. In

Panel G we compute the excess value of each pay component following the procedure that Core et al. (2008) used to calculate the excess value of total compensation and show that press negativity influences these excess values also. That is, high prior press negativity is followed by lower excess options pay and increased excess salary, bonus, stock and other pay. In Panel D we include an NBER recession indicator to account for the possibility that macroeconomic conditions unrelated to stock market valuations may drive both public opinion and CEO compensation and could therefore lead to a spurious link between the two. For instance, press negativity may be more prevalent in bad economic times, which are the same times when CEO pay may also be lower. In Panel E we include firm-year level shareholder proposals as they may drive both press negativity and CEO compensation, since firms that are targets of shareholder proposals regarding CEO pay do not increases compensation as fast as other firms in the following year (Thomas & Martin (1998)).[23] In Panel F we exclude pay data from the year 2006 because of the change from the prior year in the accounting of stock options and in the reporting of pay variables by Execucomp. Our results based on annual compensation data survive these robustness checks and suggest that firms adjust CEO pay by lowering the type of compensation that is highly contentious, i.e., stock options, while at the same time increasing other types of pay that are less visible in the press, such as stock awards.

3.3 Grant-level results & robustness checks

While the results in the prior section altogether suggest that CEO pay composition shifts in response to public opinion, it is still possible that in spite of using numerous controls and estimating a dynamic GMM model to address endogeneity concerns, the link between negativity and pay is not in fact causal. For instance, unobservable events in a particular

[23]We are grateful to Ernst Maug for sharing with us his shareholder proposal data for the period 1992 to 2005.

year omitted so far in the analysis can drive both press negativity and subsequent annual pay. Therefore, to further strengthen our identification strategy we take advantage by the data provided by Thomson Reuters Insiders Filings database, which allows us to observe the time and size of all option and stock awards given to CEOs of publicly traded companies during 1996-2008. As we noted earlier, this allows us to use within-year variation in negativity as well as in the size and timing of these awards. Therefore this analysis addresses the concern that certain events – such as changes in accounting rules related to CEO pay or unknown omitted variables – that occur in some of the years in the sample drive the relationship between negativity and pay. Moreover, to further test the robustness of our results, we examine whether grants made at times determined exogenously (i.e., two months after the firm's fiscal year end) respond to public negativity in the prior three to six months.

For this identification strategy to work, there needs to be variation within year and within firm in the dates of grant awards. This is indeed the case, as grants are made in every single calendar month. For instance, 15% of option grants in the sample are made in February, 8% in each of April and May, 11% in December and the rest are spread out relatively evenly among the remaining months. Moreover, while each firm tends to concentrate its grants in a particular calendar month (typically two months after the end of the fiscal year), 46% of the firms' grants are made during other calendar months.

— Please insert Table 5 approximately here —

Therefore the Thomson grant-level analysis allows us to address omitted variable concerns by exploiting within-year variation in negativity and the timing of grants. We estimate the impact of press negativity on options and stock pay using regression models that include firm fixed effects, year fixed effects, calendar month fixed effects, as well as time-variant firm controls such as performance and size. Calendar year fixed effects

capture any within-year patterns

XXX

As shown in the results in Table 5 option grants decrease in value if press negativity is higher in the recent months before the grant date. We use either the three or the six months prior to the grant date as the window during which we measure average negativity in national newspaper articles about CEO pay. We also use log, as well as dollar values of option grants. Either way, the result remains that higher negativity leads to lower valued option grants in the following months, therefore suggesting that firms respond to within year variation in public opinion when choosing the structure of CEO compensation.[24] An increase of one standard deviation in the prior three-month negativity corresponds to a decrease of 4%, or $36,182, in the value of individual option grants awarded. Importantly, we find as in the annual data that negativity does not influence all pay components in the same direction. As can be seen in the regressions in Table 6, increasing the prior three-month negativity by one standard deviation leads to an increase of 5%, or $13,482, in the value of individual stock grants awarded to CEOs. The effect of negativity on stock grants is consistently positive, whether we use the prior three- or prior six-month negativity, or we use log or dollar values for these grants. The effects on grant composition are in fact stronger if we measure average negativity over the prior six months instead of the prior three months: if the prior six-month negativity increases by one standard deviation, the value of options grants falls by 6% and the value of stock grants increases by 9%. This result indicates that if the public outrage is longer lasting, it has a more powerful impact on the firms' executive pay decisions.

— Please insert Table 6 approximately here —

[24] In unreported regressions omitted for space reasons we also find that negativity decreases options pay in all firms covered in Thomson Reuters, not just those overlapping with Execucomp. The results are also present in both pre- and post- 2005 sub-samples, hence they do not depend on the change in the accounting treatment of options that took effect in 2006.

To alleviate concerns regarding possible endogeneity in the timing of option grants, we restrict the sample to grants made at times exogenous to public opinion, which are fully driven by the firm's fiscal year end, a characteristic determined early in the life of the firm and independent of the tone of coverage of CEO pay in the press at a particular point in time.[25] The end of the fiscal year naturally drives the timing of board meetings during the calendar year and therefore the timing of various compensation decisions. As shown by the summary statistics in Table 7, for firms with a specific fiscal year end month (FYEM) the majority of option grants are given in one particular calendar month, which we will refer to as the "modal" month for the firm. This typically occurs two months after FYEM. For example, among firms with FYEM in December, 54.95% of option grants are awarded during each firm's modal month, and the most frequently occurring modal month across these firms is February.

— Please insert Table 7 approximately here —

We therefore use the sub-sample of grants made during each firm's modal month, that is, at times exogenously determined by the firm's fiscal year end, to test whether recent press negativity leads firms to avoid the much contested option grants when remunerating their CEOs. We use the same regression models as in Table 5 in this sub-sample of grants, and find even stronger effects of negativity, as can be seen in Table 8. For instance, in the log specification in the first column, we find that a one-standard deviation increase in negativity in the three months before the grant date leads to a 7% drop in options pay in the sample of exogenously-timed grants, whereas in the entire sample used in Table 5 the drop was only 4%.

— Please insert Table 8 approximately here —

[25] Identification based on fiscal year end months has previously been used by Oyer (1998) to study the effect of non-linear incentives on effort in firms.

3.4 Public negativity and pay-to-performance sensitivity

Since public opinion can change CEO pay composition, it is possible that it will influence the strength of incentives faced by CEOs. We test this conjecture by analyzing whether prior press negativity is related to subsequent pay-to-performance sensitivity (PPS). We use annual compensation data from Execucomp, since the individual grant-level PPS that we could get from the Thomson data does not capture the overall steepness of incentives faced by a CEO at a particular point in time. Following Yermack (1995) and Hartzell & Starks (2003), we measure the PPS of option awards as the Black-Scholes option δ multiplied by the number of shares specified in the grant, and divided by the number of shares outstanding. We measure the PPS of stock awards as the number of shares in the grant divided by the number of shares outstanding. We then calculate the overall PPS as the sum of the PPS of options and stock grants, as in Babenko (2009).

— Please insert Table 9 approximately here —

We estimate the effect of press negativity on subsequent PPS using Tobit specifications as in Yermack (1995) and Hartzell & Starks (2003) in order to account for the truncated distribution of stock and option PPS values caused by the large number of zero-valued observations. We include the same firm, year, and market controls as in the main analysis in Table 3, control for the existing ownership of the CEO in the firm, and add lagged values of PPS to capture possible mean-reversion effects similar to those documented by Core et al. (2008) for the level of total pay. The results are shown in Table 9. We find that increasing negativity by one standard deviation decreases the PPS of option awards by 17%, and increases that of stock awards by 14%, while decreasing overall PPS by 15% ($p < 0.01$ for each of these effects). Therefore it is possible that by changing strength of incentives faced by CEOs public opinion can affect managerial decisions regarding project or financing choice.

3.5 Cross-sectional differences

We now turn to investigating whether reputation concerns are the driver of our result that firms change CEO pay composition in response to press negativity regarding executive compensation. The reputation hypothesis implies that firms or managers that face higher reputational costs if they attract the public's wrath will decrease more significantly the type of pay that is most discussed in the press. We present here results using the Thomson data, which allows us to have a stricter identification strategy than annual data, as discussed earlier, but similar results are obtained using Execucomp.

We split our sample first by firm visibility, as proxied by the firm size, analyst coverage, or the existence of recent product safety concerns publicized in the media. Analyst coverage data is obtained from IBES and it is calculated annually as the number of EPS analyst forecasts for each firm. The KLD database identifies each year whether a firm has recently been involved in controversy due to product safety concerns. It is likely that such firms are more visible to the public when this controversy is taking place. A recent event provides evidence in this regard. On January 21^{st} 2010 Toyota Motor Company issued a recall for 2.3 million vehicles due to gas pedal malfunctions in certain car models. In the following ten days 704 articles in U.S. newspapers mentioned the firm. During the same ten days a year earlier, when no recalls had recently occurred, only 486 articles referred to Toyota. Hence, the January 2010 recall was followed by a 45% increase in the press coverage of the company, which indicates the firm was more under public scrutiny as a result of this product safety issue. The results of our visibility analysis are shown in Panel A of Table 10. We find as predicted that the firms where CEO pay is most sensitive to public negativity (i.e., that have the highest decrease in in option compensation) are those that are larger, have more analyst coverage or have recently been involved in controversies regarding the safety of their products. These firms

are more publicly scrutinized and therefore have a higher chance of generating negative publicity if they select a CEO pay package that the public deems inappropriate at the time.

We then split the sample by the strength of the CEOs' reputation concerns. We measure this using the Bebchuk et al. (2009) entrenchment index, the number of corporate governance concerns recorded in the KLD database, the number of employee relations concerns, also obtained from KLD, and by the CEO age, as executives younger than the retirement age have stronger career concerns than older CEOs (Gibbons & Murphy (1992)). We use 60 years as the retirement age, as previously done in Parrino (1997). The results are shown in Panel B of Table 10. We find that the sensitivity of option compensation to public negativity regarding executive pay is indeed higher for firms where the management is less entrenched according to either the Bebchuk et al. (2009) index, the KLD corporate governance concerns measure, and the KLD employee relations measure, as well as for firms with CEOs younger than the retirement age. Therefore these results indicate that the effect of public opinion on executive compensation is indeed stronger for firms and executives with stronger reputation concerns, either due to increased public visibility, stronger career concerns or weaker managerial entrenchment.

3.6 What to expect next?

At the time this paper is written Execucomp provides pay data for the 2009 fiscal year only for a small number of firms (i.e., 59). For these firms we find that relative to 2008, in 2009 the average salary, option grants and stock grants received by CEOs increased by 3%, 4% and 6%, respectively, whereas the average bonus decreased by 11%. As discussed earlier and indicated by the time series of press coverage of individual pay components shown in Figure 2, in 2009 bonuses become the most covered type of CEO pay, while

options become the least covered. Therefore, the results in this sample of 2009 pay data are consistent with our hypothesis that firms shift compensation away from the type that is most visible to the public – specifically, options until 2008, and bonuses afterwards.

4 Conclusion

This paper investigates whether public opinion influences executive pay. Our multi-pronged empirical identification strategy suggests that widespread public opinion has a causal impact on CEO pay composition. Specifically, after increased press negativity about CEO pay, firms lower the type of pay that is most discussed in the press and increase other types of compensation, with the net effect of lowering pay-to-performance sensitivity. The avoidance of the most controversial pay type (i.e., options during 1992-2008) is more pronounced when firms or CEOs have stronger reputation concerns. The effects we document here provide a lower bound on the influence of public opinion on CEO compensation. Neither Execucomp nor Thomson Reuters Insider Filings capture the entire compensation received by CEOs, since a non-trivial part of this compensation is provided in hidden forms such as perquisites (Yermack (2006a)) and severance pay (Yermack (2006b)). It is likely that compensation can be shifted from types of pay the public disapproves to one of these hidden types with little public awareness, but due to data limitations we can not identify such transfers.

The results suggest that firms perceive that taking actions leading to public outrage can have large reputational costs and can increase the chance of more regulatory restrictions on executive pay. Public opinion can therefore serve as a governance mechanism. By changing the incentives faced by managers, public attitudes can influence executive decisions about project or financing choice, and ultimately can influence company value.

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Appendix A

Our dictionary of words with negative connotation in newspaper articles covering executive pay (grammatical variations not included for brevity).

abuse	cry	handsome	outcried	shock
acrimonious	curb	hard	outcry	sizeable
aggressive	cut	heftier	outlandish	skyrocket
aggrieve	cynicism	hide	outpace	slash
alarm	debate	high	outrage	slashing
anger	defend	huge	outsize	snag
angry	demand	hurt	overhead	soar
arrogant	dent	illegal	overpaid	sock
astounding	deserve	improper	pamper	spiral
attack	destroy	indecent	pay-cutting	stagger
avarice	devastate	indefensible	payday	stupefying
backdate	disconnect	inept	penalize	suffer
balloon	discontent	inflationary	perk	suit
battle	disgruntle	infuriate	perquisite	super-size
bestow	dispute	irate	phony	surge
betrayal	disregard	irksome	pocket	swell
big	dizzy	irresponsible	porker	tenuous
bigbucks	dole	issue	pressure	threat
bigmoney	doubt	justifiable	probe	too
bigpackages	dubious	lag	problem	trial
bigpay	egregious	lavish	protest	trouble
bigpaychecks	embarrass	lawsuit	pull	turn
bigsalary	enjoy	layoff	pump	turndown
bloat	enrich	legal	question	unconscionable
bonanza	entitle	lie	rage	undeserve
boom	entrench	litigation	record	uneven
boost	equitable	loath	reduce	unfair
breathing	escalate	loot	reform	unhappy
camouflage	ethical	loss-ridden	refuse	unjustifiable
chide	exaggerate	lucrative	repulsive	unthinkable
colossal	excess	lying	resist	unusual
compensation-inflation	extravagance	mad	restrain	uproar
complain	failure	manipulate	revolution	vocal
concern	fair	massive	rich	weaken
conflict	fat	me-first	robber	whack
controversial	fat-cat	mercenarily	rock	whopper
cost	fire	mislead	rubber	windfall
court	flunk	moral	run	wring
cried	fodder	murky	sacrifice	wrong
criminal	generous	negative	scandal	
crises	gigantic	nervous	scrutiny	
crisis	greed	odious	shame	
criticism	gross	opposition	sharp	

Appendix B

Words used to calculate the frequency of mentions of individual components of executive compensation (grammatical variations not included for brevity).

Pay component	keywords
Salary	salary
Bonus	bonus
Options	option
	backdating
Stock	share
	restricted stock
	stock grant
	preferred stock
	stock award
	stock bonus

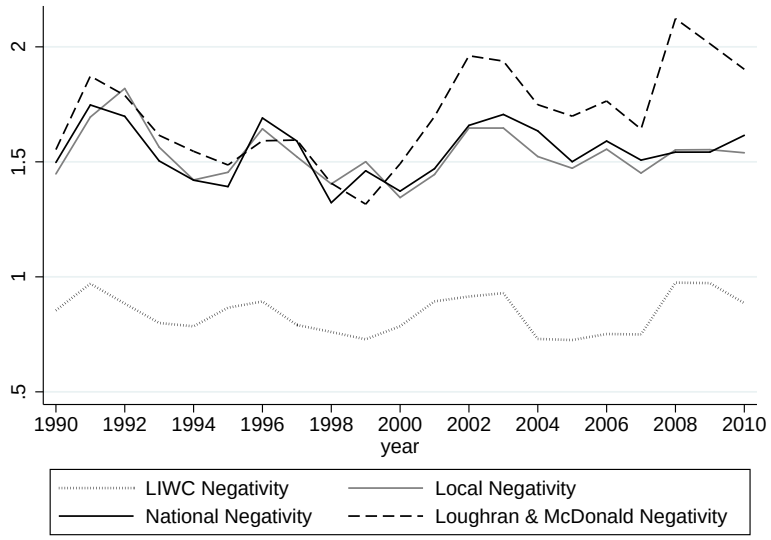

Figure 1: Mean negativity in newspaper articles discussing CEO compensation. *National Negativity* and *Local Negativity* denote mean negativity in national and local newspapers, respectively, measured using our own negative word list (see Appendix A). *Loughran&McDonald Negativity* and *LIWC Negativity* denote mean negativity in national newspaper articles measured using the negative word list in Loughran & McDonald (2010) and the default negative word list used by the LIWC linguistic software program, respectively.

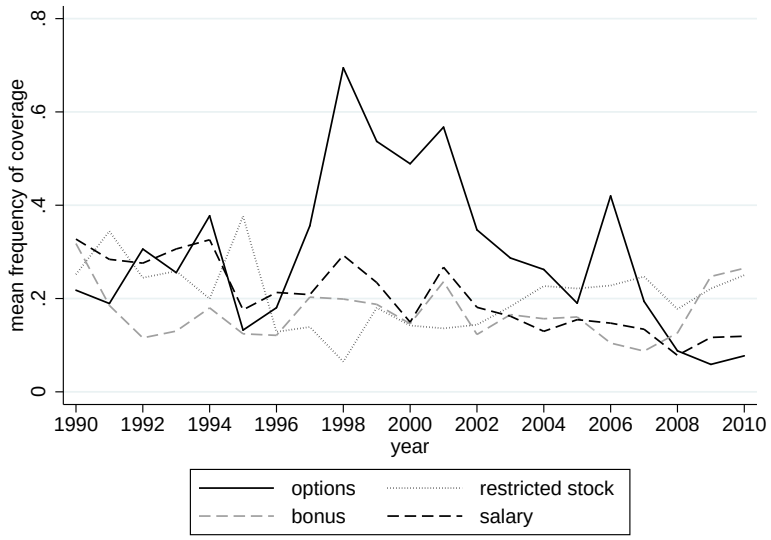

Figure 2: Mean frequency of coverage of various components of CEO compensation in national newspapers. The values on the y-axis represent the average % of words in CEO pay-related articles that refer to each pay component. For example, in 1998 on average 0.7% of words in such articles in national newspapers referred to option pay (that is, they matched one of the keywords "option" or "backdating" listed in Appendix B, or their grammatical variations).

Table 1: Description of Variables

Variable	Definition
$AnalystCoverage_t$	Number of analyst forecasts of earnings per share. Source: IBES
$CEOIsUnder60_t$	Dummy variable equal to one if CEO's age < 60 years and zero otherwise. Sources: Execucomp, Factiva.
$GovernanceConcerns_t$	Number of corporate governance concerns. Source: KLD (item *cgov_con_num*)
$EIndex_t$	Bebchuk et al. (2009) entrenchment index based on six shareholder rights measures. High values indicate weak governance.
$EmployeeConcerns_t$	Number of employee relation concerns. Source: KLD (item *emp_con_num*)
$ExcessPay_t$	Excess total compensation in $ computed as in Core et al. (2008)
$LM\ Negativity_t$	Defined as $National\ Negativity_t$ but using the dictionary in Loughran & McDonald (2010)
$Local\ Negativity_t$	Defined as $National\ Negativity_t$ but using local newspapers.
$MarketValue_t$	Market value of firm in $millions. Source: CRSP/Compustat
$NBER\_Recession_t$	Dummy variable equal to one if economy in recession and zero otherwise. Source: NBER
$National\ Negativity_t$	Average negativity in coverage of CEO pay in national newspapers in period t. Source: Factiva/LexisNexis, using LIWC 2007 and our own dictionary in Appendix A.
$National\ Negativity_{m-3,m-1}$	Average of $National\ Negativity$ during the three months prior to the date of each option grant. Source: Thomson Reuters Insider Filings.
$National\ Negativity_{m-6,m-1}$	Defined similar to $National\ Negativity_{m-3,m-1}$ but over the six months prior to the grant date.
$Options_t$	Black-Scholes value of options granted in year t (thousand $'s) Source: Execucomp (items *blk_valu* & *option_awards_fv*)
$Options_m$	Black-Scholes value of individual option grants used in monthly analysis. Source: Thomson Reuters Insider Filings
$OptionSensitivity$	Performance sensitivity of options computed as in Yermack (1995)
$OptStockSensitivity_t$	Sum of $OptionSensitivity_t$ and $StockSensitivity_t$ (Babenko (2009))
$OtherPay_t$	$TotalCompensation_t$ - $Salary - Bonus_t$ - $Options_t$ - $Stock_t$
$Ownership_t$	Shares owned by CEO divided by shares outstanding. Source: Execucomp (item *shrown_excl_opts*)/Compustat (item *csho*)
$PayTypeCoverage$ (*e.g.*, $OptionsCoverage$)	Fraction of words in an article that refer to the specific type of pay. Source: Factiva/LIWC 2007, keywords in Appendix B.
$ProductSafetyConcerns_t$	Number of product safety concerns. Source: KLD (item *pro_con_a*)
ROA_t	Return on assets of firm. Source: Execucomp (item *roa*)
$Salary + Bonus_t$	Salary and bonus in year t (thousand $'s). Source: Execucomp (items *salary* and *bonus*).
$Sales_t$	Firm sales in millions. Source: CRSP/Compustat
$SalesGrowth_t$	Sales growth of firm (%). Source: Execucomp (item *salechg*)
$ShareholderProposal_t$	Dummy variable equal to one if shareholder proposal submitted to firm in year t and zero otherwise. Source: IRRC
$SP500RET_t$	Annual S&P 500 return. Source: CRSP/Compustat
$StockRet_t$	Annual stock return of firm. Source: CRSP/Compustat
$Stock_t$	Value of stock grants in year t (thousand $'s). Source: Execucomp, using Walker (2009) adjustment.
$Stock_m$	Value of individual stock grants used in monthly analysis. Source: Thomson Reuters Insiders Filings.
$StockSensitivity_t$	Performance sensitivity of stock awards, as in Babenko (2009)
$TotalCompensation_t$	Total pay in year t (thousand $'s). Source: Execucomp (item *tdc1*)
$Volatility_t$	Annualized firm stock return standard deviation. Source: CRSP

Table 2: Summary Statistics

Variable	Mean	St. Dev.	Median	Observations
$TotalCompensation_t$ ($thousand\$s$)	4462.42	5651.40	2489.41	19589
$Options_t$ ($thousand\$s$)	1870.98	3837.62	596.82	19697
$Salary + Bonus_t$ ($thousand\$s$)	1347.92	1621.62	948.16	20028
$Stock_t$ ($thousand\$s$)	702.54	1730.26	0	19810
$OtherPay_t$ ($thousand\$s$)	360.99	1347.91	59.76	19812
$ExcessPay_t$ ($thousand\$s$)	53.33	10875.33	-986.59	16324
$Ln(TotalCompensation_t)$	7.85	1.17	7.83	19764
$Ln(Options_t)$	5.07	3.38	6.40	19774
$Ln(Salary + Bonus_t)$	6.84	0.98	6.85	20031
$Ln(OtherPay_t)$	4.01	2.05	4.11	19815
$Ln(Stock_t)$	2.56	3.44	0	20016
$Ln(ExcessPay_t)$	0.03	0.89	0.06	16324
$Options_m$ ($\$s$)	498534	1739716	79959	92536
$Ln(Options_m)$ ($\$s$)	11.27	2.07	11.29	92536
$Stock_m$	550053	803720	183715	15215
$Ln(Stock_m)$	11.31	2.76	12.12	15215
$StockRet_t$	0.19	0.52	0.12	20031
ROA_t	0.04	0.10	0.04	20031
$SalesGrowth_t$	0.12	0.24	0.09	20031
$Sales_t$ ($million\$s$)	3657.18	6810.35	1161.83	20031
$MarketValue_t$ ($million\$s$)	4829.04	10479.29	1345.31	20031
$Ln(Sales_t)$	7.20	1.54	7.10	20031
$Ln(MarketValue_t)$	7.42	1.57	7.30	20031
$Volatility_t$	0.40	0.22	0.35	20031
$EIndex_t$	2.46	1.32	2.50	20031
$SP500RET_t$	0.10	0.17	0.09	20031
$CEOIsUnder60_t$	0.70	0.46	1.00	20031
$NBER\_Recession_t$	0.19	0.39	0	20031
$OptionSensitivity_t$	1.17	3.15	0.01	19106
$StockSensitivity_t$	0.43	3.78	0.00	19106
$OptStockSens_t$	1.60	5.00	0.18	19106
$Ownership_t$	0.05	0.08	0.01	19106
$ShareholderProposal_t$	0.09	0.29	0.00	14398
$Governance\ Concerns_t$	0.54	0.62	0	68449
$Employee\ Concerns_t$	0.47	0.65	0	68449
$Product\ Safety\ Concerns_t$	0.04	0.19	0	68449
$AnalystCoverage_t$	56.59	52.95	42	88463
$National\ Negativity_t$ (%)	1.53	0.11	1.51	20031
$LocalNegativity_t$ (%)	1.51	0.10	1.50	20031
$LM\ Negativity_t$ (%)	1.85	0.22	1.91	20031
$National\ Negativity_{m-3,m-1}$ (%)	1.57	0.15	1.58	92536
$National\ Negativity_{m-6,m-1}$ (%)	1.57	0.13	1.56	92536
$OptionsCoverage$ (%)	0.24	0.57	0.00	6982
$SalaryCoverage$ (%)	0.16	0.32	0.00	6982
$BonusCoverage$ (%)	0.16	0.35	0.00	6982
$StockCoverage$ (%)	0.20	0.45	0.00	6982

Table 3: CEO compensation and national attitudes

The table presents the estimated effects on executive compensation of the negativity of national press coverage of CEO pay. Executive compensation is measured in log-values. Fama French 48 industry codes fixed effects and firm headquarters state fixed effects are included in the first specification (pooled OLS). The second specification includes firm fixed effects. The third specification is a system GMM model (Arellano & Bond (1991), Blundell & Bond (1998)) estimated as in equation 2. Standard errors are corrected for heteroskedasticity and clustered at the firm level. All variables are described in Table 1. ($^{*}p < .10, ^{**}p < .05, ^{***}p < .01$).

	Static Models		Dynamic Model
Table 3: Panel A	Pooled	Firm Fixed	System
$Ln(TotalCompensation_t)$	OLS	Effects	GMM
$Negativity\_National_{t-1}$	–0.00	–0.08	–0.08
	(–0.07)	(–1.74)*	(–0.30)
$StockRet_{t-1}$	0.07	0.09	0.32
	(4.53)***	(5.28)***	(1.42)
ROA_{t-1}	–0.18	0.22	2.04
	(–2.19)**	(1.85)*	(1.26)
$SalesGrowth_{t-1}$	0.37	0.38	1.23
	(13.11)***	(10.10)***	(2.72)***
$Ln(Sales_{t-1})$	0.13	0.18	0.06
	(13.31)***	(5.69)***	(0.31)
$Ln(MarketValue_{t-1})$	0.11	0.13	0.00
	(7.56)***	(4.77)***	(0.01)
$Volatility_{t-1}$	0.18	0.15	0.25
	(4.00)***	(1.49)	(0.82)
$Eindex_{t-1}$	0.03	0.02	0.09
	(6.05)***	(1.30)	(0.75)
$SP500RET_{t-1}$	0.17	0.09	–0.03
	(5.56)***	(2.59)***	(–0.16)
$CEOIsUnder60_t$	0.04	0.04	0.05
	(3.16)***	(2.02)**	(2.13)**
$Year_t$	0.01	0.04	0.00
	(5.83)***	(11.62)***	(0.35)
$Ln(TotalCompensation_{t-1})$	0.54	0.19	0.38
	(20.14)***	(5.68)***	(1.34)
$Ln(TotalCompensation_{t-2})$			0.07
			(0.31)
$Ln(TotalCompensation_{t-3})$			0.02
			(0.11)
$Ln(TotalCompensation_{t-4})$			0.06
			(1.44)
$Adj.R^2$	0.60	0.67	n/a
Observations	19658	19764	12801
AR(1) test (p-value)			(0.03)
AR(2) test (p-value)			(0.95)
Hansen test of over-identification (p-value)			(0.63)
Diff-in-Hansen test of exogeneity (p-value)			(0.88)

Table 3: Panel B $Ln(Options_t)$	Pooled OLS	Firm Fixed Effects	System GMM
$Negativity\_National_{t-1}$	–0.74	–0.73	–1.17
	(–4.57)***	(–4.13)***	(–1.91)*
$StockRet_{t-1}$	0.07	0.04	0.44
	(1.48)	(0.82)	(0.61)
ROA_{t-1}	–0.57	–0.03	3.92
	(–2.08)**	(–0.08)	(0.73)
$SalesGrowth_{t-1}$	0.19	0.28	0.49
	(1.92)*	(2.36)**	(0.42)
$Ln(Sales_{t-1})$	0.05	0.09	–1.93
	(1.53)	(0.93)	(–2.57)**
$Ln(MarketValue_{t-1})$	0.44	0.52	1.88
	(12.27)***	(7.84)***	(3.02)***
$Volatility_{t-1}$	0.71	0.88	1.26
	(5.29)***	(3.49)***	(1.14)
$Eindex_{t-1}$	0.14	0.09	0.53
	(7.22)***	(1.81)*	(1.48)
$SP500RET_{t-1}$	0.20	–0.06	–0.80
	(1.66)*	(–0.44)	(–1.08)
$CEOIsUnder60_t$	0.48	0.51	0.58
	(9.66)***	(7.07)***	(5.00)***
$Year_t$	–0.06	–0.05	–0.26
	(–10.62)***	(–4.47)***	(–5.18)***
$Ln(Options_{t-1})$	0.41	0.16	-0.14
	(37.07)***	(12.41)***	(-0.83)
$Ln(Options_{t-2})$			-0.12
			(-0.89)
$Ln(Options_{t-3})$			0.27
			(2.25)**
$Ln(Options_{t-4})$			0.06
			(1.65)**
$Ln(Options_{t-5})$			0.01
			(0.37)
$Adj.R^2$	0.30	0.37	n/a
Observations	19668	19774	10921
AR(1) test (p-value)			(0.04)
AR(2) test (p-value)			(0.57)
Hansen test of over-identification (p-value)			(0.54)
Diff-in-Hansen test of exogeneity (p-value)			(0.38)

Table 3: Panel C $Ln(Salary_t + Bonus_t)$	Pooled OLS	Firm Fixed Effects	System GMM
$Negativity\_National_{t-1}$	0.41	0.42	2.43
	(11.57)***	(11.11)***	(5.60)***
$StockRet_{t-1}$	–0.01	0.03	0.60
	(–1.13)	(2.56)**	(1.08)
ROA_{t-1}	–0.39	–0.30	3.79
	(–6.13)***	(–3.12)***	(1.46)
$SalesGrowth_{t-1}$	0.30	0.35	–4.63
	(13.77)***	(11.87)***	(–2.15)**
$Ln(Sales_{t-1})$	0.07	0.15	–0.16
	(8.69)***	(5.49)***	(–0.39)
$Ln(MarketValue_{t-1})$	–0.00	–0.04	0.20
	(–0.02)	(–2.18)**	(0.53)
$Volatility_{t-1}$	0.05	0.18	1.00
	(1.53)	(2.64)***	(1.06)
$Eindex_{t-1}$	0.01	0.02	0.09
	(2.12)**	(1.42)	(0.51)
$SP500RET_{t-1}$	0.02	0.04	0.08
	(0.67)	(1.35)	(0.11)
$CEOIsUnder60_t$	–0.01	–0.01	–0.02
	(–1.35)	(–0.61)	(–0.44)
$Year_t$	–0.01	–0.01	–0.06
	(–14.62)***	(–3.09)***	(–3.53)***
$Ln(Salary_{t-1} + Bonus_{t-1})$	0.73	0.48	0.68
	(34.06)***	(15.30)***	(1.36)
$Ln(Salary_{t-2} + Bonus_{t-2})$			–0.49
			(–1.02)
$Adj.R^2$	0.64	0.67	n/a
Observations	19923	20031	17583
AR(1) test (p-value)			(0.00)
AR(2) test (p-value)			(0.15)
Hansen test of over-identification (p-value)			(0.87)
Diff-in-Hansen test of exogeneity (p-value)			(0.68)

Table 3: Panel D $Ln(Stock_t)$	Pooled OLS	Firm Fixed Effects	System GMM
$Negativity\_National_{t-1}$	0.74	0.59	1.25
	(5.05)***	(3.69)***	(2.76)***
$StockRet_{t-1}$	–0.12	–0.02	–0.71
	(–3.34)***	(–0.44)	(–2.45)**
ROA_{t-1}	–0.45	0.86	1.66
	(–2.03)**	(2.74)***	(0.88)
$SalesGrowth_{t-1}$	0.45	0.54	0.11
	(5.54)***	(5.21)***	(0.14)
$Ln(Sales_{t-1})$	0.31	0.29	0.14
	(10.80)***	(3.29)***	(0.52)
$Ln(MarketValue_{t-1})$	0.02	–0.15	–0.15
	(0.80)	(–2.58)***	(–0.62)
$Volatility_{t-1}$	–0.13	–0.65	–0.99
	(–0.92)	(–2.36)**	(–1.51)
$Eindex_{t-1}$	0.15	0.15	0.15
	(8.22)***	(3.32)***	(1.24)
$SP500RET_{t-1}$	0.36	0.48	0.97
	(3.23)***	(3.81)***	(3.06)***
$CEOIsUnder60_t$	0.22	0.29	0.44
	(4.96)***	(4.15)***	(5.44)***
$Year_t$	0.11	0.22	0.19
	(19.53)***	(19.28)***	(6.63)***
$Ln(Stock_{t-1})$	0.50	0.22	0.32
	(48.49)***	(21.05)***	(9.05)***
$Ln(Stock_{t-2})$			0.10
			(2.74)***
$Ln(Stock_{t-3})$			–0.02
			(–0.43)
$Ln(Stock_{t-4})$			–0.16
			(–1.94)*
$Ln(Stock_{t-4})$			0.44
			(1.94)*
$Adj.R^2$	0.40	0.46	n/a
Observations	19908	20016	11300
AR(1) test (p-value)			(0.00)
AR(2) test (p-value)			(0.73)
Hansen test of over-identification (p-value)			(0.34)
Diff-in-Hansen test of exogeneity (p-value)			(0.21)

Table 3: Panel E $Ln(OtherPay_t)$	Pooled OLS	Firm Fixed Effects	System GMM
$Negativity\_National_{t-1}$	0.39	0.34	1.32
	(4.95)***	(4.08)***	(4.04)***
$StockRet_{t-1}$	0.04	0.07	0.42
	(2.19)**	(3.18)***	(1.54)
ROA_{t-1}	–0.12	0.09	1.06
	(–0.91)	(0.50)	(0.46)
$SalesGrowth_{t-1}$	0.24	0.29	–0.39
	(5.51)***	(5.43)***	(–0.54)
$Ln(Sales_{t-1})$	0.20	0.31	1.21
	(12.91)***	(6.66)***	(3.53)***
$Ln(MarketValue_{t-1})$	–0.00	–0.04	–0.76
	(–0.11)	(–1.18)	(–2.98)***
$Volatility_{t-1}$	–0.20	–0.19	0.03
	(–3.37)***	(–1.95)*	(0.08)
$Eindex_{t-1}$	0.06	0.02	–0.09
	(6.46)***	(0.72)	(–0.98)
$SP500RET_{t-1}$	0.00	0.02	–0.17
	(0.03)	(0.28)	(–0.49)
$CEOIsUnder60_t$	–0.10	–0.16	–0.13
	(–4.40)***	(–4.68)***	(–2.71)***
$Year_t$	0.00	0.03	–0.01
	(0.13)	(5.61)***	(–0.90)
$Ln(OtherPay_{t-1})$	0.65	0.32	0.43
	(68.60)***	(22.50)***	(3.02)***
$Ln(OtherPay_{t-2})$			0.38
			(2.43)***
$Ln(OtherPay_{t-3})$			0.16
			(0.74)
$Ln(OtherPay_{t-4})$			–0.08
			(–0.87)
$Ln(OtherPay_{t-5})$			–0.04
			(–1.24)
$Adj.R^2$	0.61	0.67	n/a
Observations	19709	19815	10926
AR(1) test (p-value)			(0.02)
AR(2) test (p-value)			(0.40)
Hansen test of over-identification (p-value)			(0.53)
Diff-in-Hansen test of exogeneity (p-value)			(0.65)

Table 3: Panel F $Ln(ExcessPay_t)$	Pooled OLS	Firm Fixed Effects	System GMM
$Negativity\_National_{t-1}$	–0.01	–0.07	–0.06
	(–0.14)	(–1.46)	(–0.19)
$StockRet_{t-1}$	–0.11	–0.11	–0.31
	(–6.35)***	(–6.00)***	(–0.69)
ROA_{t-1}	–0.02	0.41	–1.65
	(–0.24)	(3.49)***	(–1.03)
$SalesGrowth_{t-1}$	0.28	0.29	0.08
	(8.89)***	(6.38)***	(0.10)
$Ln(Sales_{t-1})$	–0.05	–0.17	–0.06
	(–4.31)***	(–4.39)***	(–0.20)
$Ln(MarketValue_{t-1})$	0.07	0.10	0.06
	(5.53)***	(2.96)***	(0.26)
$Volatility_{t-1}$	0.19	0.15	0.41
	(4.65)***	(1.53)	(0.56)
$Eindex_{t-1}$	0.04	0.04	–0.03
	(7.23)***	(2.95)***	(–0.38)
$SP500RET_{t-1}$	0.33	0.23	0.44
	(10.24)***	(6.30)***	(0.99)
$CEOIsUnder60_t$	0.00	–0.02	–0.01
	(0.05)	(–0.88)	(–0.41)
$Year_t$	0.01	0.04	0.02
	(4.72)***	(8.89)***	(0.87)
$Excess\_Pay_{t-1}$	0.56	0.17	0.60
	(20.07)***	(6.02)***	(2.15)***
$Ln(ExcessPay_{t-2})$			–0.18
			(–0.60)
$Ln(ExcessPay_{t-3})$			–0.17
			(–0.55)
$Ln(ExcessPay_{t-4})$			0.01
			(0.06)
$Adj.R^2$	0.38	0.49	n/a
Observations	16324	16324	8844
AR(1) test (p-value)			(0.02)
AR(2) test (p-value)			(0.73)
Hansen test of over-identification (p-value)			(0.79)
Diff-in-Hansen test of exogeneity (p-value)			(0.60)

Notes:

1. AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null of no serial correlation.

2. Hansen test of over-identification is under the null that all instruments are valid.

3. Diff-in-Hansen test of exogeneity is under the null that instruments used for the equations in levels are exogenous.

Table 4: Robustness: CEO compensation and national attitudes

The table presents robustness checks for the estimated effects on annual executive compensation of the prior year's negativity of press coverage of CEO pay. All regression models include firm fixed effects and the same firm characteristics as in Table 3. Excess values of pay components in Panel G are calculated following the same procedure used by Core et al. (2008) to calculate excess total pay. Standard errors are corrected for heteroskedasticity and clustered at the firm level. All variables are described in Table 1. ($^{*}p < .10, ^{**}p < .05, ^{***}p < .01$).

	$Total\ Compensation_t$	$Options_t$	$Salary+ +Bonus_t$	$Other\ Pay_t$	$Stock_t$	$Excess\ Pay_t$
Panel A			Loughran & McDonald (2010) Negativity			
$LM\ Negativity_{t-1}$	–0.14	–1.19	0.25	0.24	0.89	–0.15
	(–3.44)***	(–8.40)***	(7.46)***	(3.56)***	(6.98)***	(–3.36)***
$Adj.R^2$	0.67	0.37	0.67	0.67	0.47	0.49
Observations	19764	19774	20031	19815	20016	16324
Panel B			Local negativity			
$Local\ Negativity_{t-1}$	–0.14	–1.19	0.37	0.30	0.68	–0.06
	(–2.52)**	(–5.82)***	(8.69)***	(3.07)***	(3.63)***	(–0.96)
$Adj.R^2$	0.67	0.37	0.67	0.67	0.46	0.49
Observations	19764	19774	20031	19815	20016	16324
Panel C			Using $ values of pay (Top1% excl.)			
$National\ Negativity_{t-1}$	–1023.73	–2111.47	551.90	52.61	235.26	–1533.12
	(–3.51)***	(–8.88)***	(7.62)***	(0.49)	(2.63)***	(–1.87)*
$Adj.R2$	0.53	0.34	0.58	0.15	0.36	0.13
Observations	19285	19377	19692	19477	19501	16039
Panel D			Including NBER recession indicator			
$National\ Negativity_{t-1}$	–0.14	–0.75	0.35	0.28	0.64	–0.11
	(–2.94)***	(–4.06)***	(8.82)***	(3.27)***	(3.83)***	(–2.12)**
$NBER\_Recession_t$	–0.06	–0.02	–0.09	–0.07	0.05	–0.03
	(–3.72)***	(–0.28)	(–4.91)***	(–2.45)**	(0.75)	(–1.90)*
$Adj.R^2$	0.67	0.37	0.67	0.67	0.46	0.49
Observations	19764	19774	20031	19815	20016	16324
Panel E			Controlling for Shareholder Proposals			
$National\ Negativity_{t-1}$	–0.16	–1.35	0.20	0.24	0.94	–0.20
	(–2.86)***	(–6.58)***	(4.51)***	(2.53)**	(5.29)***	(–3.49)***
$ShareholderProposal_{t-1}$	–0.03	–0.08	–0.01	–0.03	–0.12	–0.02
	(–1.28)	(–0.62)	(–0.30)	(–0.55)	(–1.03)	(–0.86)
$Adj.R^2$	0.67	0.38	0.70	0.70	0.47	0.49
Observations	14398	14398	14537	14397	14537	12383
Panel F			Excluding year 2006			
$National\ Negativity_{t-1}$	–0.10	–1.13	0.30	0.29	0.78	–0.10
	(–2.03)**	(–6.27)***	(7.75)***	(3.51)***	(4.89)***	(–1.89)*
$Adj.R2$	0.67	0.37	0.69	0.68	0.48	0.49
Observations	18348	18355	18591	18385	18581	15076
Panel G	$ExcessTotal\ Compensation_t$	$Excess\ Options_t$	$Excess\ Salary_t$	$Excess\ Bonus_t$	$Excess\ OtherPay_t$	$Excess\ Stock_t$
$National\ Negativity_{t-1}$	–0.07	–0.36	0.12	3.04	0.37	0.54
	(–1.46)	(–1.75)*	(3.98)***	(17.79)***	(3.99)***	(2.89)***
$Adj.R^2$	0.49	0.29	0.69	0.32	0.57	0.39
Observations	16324	16269	16400	16400	16290	16391

Table 5: Option grants, monthly data

The dependent variable is either the log or the dollar value of each option grant made to CEOs of firms covered in Execucomp, as recorded in the Thomson Reuters Insider Filings database during 1996-2008. All regression models include firm fixed effects, year fixed effects, calendar month fixed effects, as well as time-variant firm characteristics (e.g., performance and size). Standard errors are corrected for heteroskedasticity and clustered at the firm-month level. All variables are described in Table 1. ($^{*}p < .10$,$^{**}p < .05$,$^{***}p < .01$).

	$Ln(Options_m)$	$Ln(Options_m)$	$\$Options_m$	$\$Options_m$
$National\ Negativity_{[m-3,m-1]}$	–0.24		–241,213.38	
	(–1.84)*		(–2.35)**	
$National\ Negativity_{[m-6,m-1]}$		–0.46		–367,918.84
		(–2.44)**		(–2.15)**
$StockRet_{t-1}$	0.00	0.00	–13.84	–14.08
	(0.74)	(0.69)	(–0.78)	(–0.79)
ROA_{t-1}	–0.00	–0.00	257.98	283.31
	(–0.29)	(–0.25)	(1.06)	(1.13)
$SalesGrowth_{t-1}$	0.00	0.00	509.29	500.88
	(1.71)*	(1.68)*	(2.99)***	(2.92)***
$Ln(MarketValue_{t-1})$	0.37	0.37		
	(11.64)***	(11.72)***		
$MarketValue_{t-1}$			10.70	10.66
			(3.20)***	(3.19)***
Firm fixed effects	YES	YES	YES	YES
Calendar month fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
R^2	0.65	0.65	0.29	0.29
Observations	92536	92536	92536	92536

Table 6: Stock grants, monthly data

The dependent variable is either the log or the dollar value of each stock grant made to CEOs of firms covered in Execucomp, as recorded in the Thomson Reuters Insider Filings database during 1996-2008. All regression models include firm fixed effects, year fixed effects, calendar month fixed effects, as well as time-variant firm characteristics (e.g., performance and size). Standard errors are corrected for heteroskedasticity and clustered at the firm-month level. All variables are described in Table 1. ($^{*}p < .10$,$^{**}p < .05$,$^{***}p < .01$).

	$Ln(Stock_m)$	$Ln(Stock_m)$	$\$Stock_m$	$\$Stock_m$
$National\ Negativity_{[m-3,m-1]}$	0.33		103,711.28	
	$(2.18)^{**}$		$(2.49)^{**}$	
$National\ Negativity_{[m-6,m-1]}$		0.64		172,132.66
		$(2.91)^{***}$		$(2.69)^{***}$
$StockRet_{t-1}$	0.00	0.00	72.62	72.38
	$(1.77)^{*}$	$(1.77)^{*}$	$(4.73)^{***}$	$(4.76)^{***}$
ROA_{t-1}	0.00	0.00	1,973.18	1,974.23
	(0.13)	(0.15)	$(2.46)^{**}$	$(2.46)^{**}$
$SalesGrowth_{t-1}$	0.00	0.00	–94.01	–93.38
	(0.76)	(0.76)	(–0.43)	(–0.43)
$Ln(MarketValue_{t-1})$	0.17	0.17		
	$(4.03)^{***}$	$(4.00)^{***}$		
$MarketValue_{t-1}$			3.03	3.03
			$(2.26)^{**}$	$(2.27)^{**}$
Firm fixed effects	YES	YES	YES	YES
Calendar month fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
R^2	0.62	0.62	0.49	0.49
Observations	15215	15215	15215	15215

Table 7: The time of option awards as function of the firms' fiscal year end month
For firms with a specific fiscal year end month (FYEM) this table shows the majority of option grants are given in one particular calendar month, i.e., the "modal" month for the firm, which typically is two months after FYEM. For example, among firms with FYEM in December, 54.95% of option grants are awarded to CEOs in the modal month, and the most frequently occurring modal month across these firms is February.

Fiscal year end month (FYEM)	Unique firms (6-dig CUSIP)	# Option grants	Most frequent modal calendar month for firms with this FYEM	% grants made in modal calendar month
January	126	4,723	March	53.65%
February	41	1,253	April	51.32%
March	120	7,068	May	53.18%
April	35	1,283	June	57.13%
May	44	1,579	July	49.15%
June	159	5,607	August	50.65%
July	32	1,140	September	54.47%
August	46	1,624	October	64.96%
September	171	6,826	November	58.38%
October	59	2,860	December	53.11%
November	25	3,344	December	45.57%
December	1,506	55,229	February	54.95%

Table 8: Option grants, monthly data, modal month grants only
The dependent variable is either the log or the dollar value of each option grant made to CEOs of firms covered in Execucomp during the modal month of each firm (defined in Table 7) as recorded in the Thomson Reuters Insider Filings database during 1996-2008. All regression models include firm fixed effects, year fixed effects, calendar month fixed effects, as well as time-variant firm characteristics (e.g., performance and size) as in Table 5. Standard errors are corrected for heteroskedasticity and clustered at the firm-month level. All variables are described in Table 1. ($^{*}p < .10, ^{**}p < .05, ^{***}p < .01$).

	$Ln(Options_m)$	$Ln(Options_m)$	$\$Options_m$	$\$Options_m$
$National\ Negativity_{[m-3,m-1]}$	–0.45		–332,236.38	
	(–2.64)***		(–2.22)**	
$National\ Negativity_{[m-6,m-1]}$		–0.80		–404,430.08
		(–3.26)***		(–1.64)
$StockRet_{t-1}$	0.00	0.00	13.18	13.10
	(3.29)***	(3.26)***	(1.39)	(1.40)
ROA_{t-1}	–0.00	–0.00	–368.80	–249.17
	(–0.73)	(–0.67)	(–0.77)	(–0.54)
$SalesGrowth_{t-1}$	0.00	0.00	430.70	427.23
	(2.09)**	(2.04)**	(1.90)*	(1.90)*
$Ln(MarketValue_{t-1})$	0.36	0.36		
	(7.12)***	(7.10)***		
$MarketValue_{t-1}$			10.13	10.10
			(2.66)***	(2.65)***
Firm fixed effects	YES	YES	YES	YES
Calendar month fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
R^2	0.72	0.72	0.41	0.41
Observations	50315	50315	50315	50315

Table 9: Change in incentives

The first column contains results from a tobit regression of options performance sensitivity ($Option\ \delta \cdot \frac{SharesInOptionAward}{SharesOutstanding}$, see Yermack (1995)) on negativity. The second column contains results from a tobit regression of granted stock PPS ($\frac{Stock_t}{MarketValue_t}$) on negativity. The third column contains results from a tobit regression of PPS of both option and stock awards, ($Option\ \delta \cdot \frac{SharesInOptionAward}{SharesOutstanding} + \frac{Stock_t}{MarketValue_t}$, see Babenko (2009)) on negativity. Fama French 48 industry codes fixed effects and firm headquarters state fixed effects are included. Standard errors are corrected for heteroskedasticity and clustered at the firm level. All variables are described in Table 1. ($^{*}p < .10, ^{**}p < .05, ^{***}p < .01$.)

	Option Sensitivity	*Stock Sensitivity*	*OptStock Sensitivity*
$National\ Negativity_{t-1}$	–1.50	1.28	–1.38
	(–4.90)***	(23.39)***	(–3.47)***
$Sensitivity_{t-1}$	0.23	0.25	0.16
	(9.51)***	(46.54)***	(5.55)***
$Ownership_{t-1}$	–0.01	–0.01	–0.01
	(–4.66)***	(–12.32)***	(–4.57)***
$StockRet_{t-1}$	0.27	–0.23	0.15
	(3.01)***	(–7.43)***	(1.54)
ROA_{t-1}	0.07	–3.57	–2.77
	(0.11)	(–17.53)***	(–2.48)**
$SalesGrowth_{t-1}$	0.77	0.14	0.61
	(3.90)***	(1.46)	(2.13)**
$Sales_{t-1}$	–0.42	0.97	–0.01
	(–5.82)***	(102.79)***	(–0.07)
$MarketValue_{t-1}$	–0.48	–0.48	–0.51
	(–6.85)***	(–52.75)***	(–5.65)***
$Volatility_{t-1}$	2.68	–1.09	2.39
	(7.12)***	(–6.11)***	(6.58)***
$Eindex_{t-1}$	0.11	0.46	0.19
	(2.80)***	(25.48)***	(3.24)***
$SP500RET_{t-1}$	0.26	1.20	0.70
	(1.22)	(7.75)***	(2.23)**
$CEOIsUnder60_t$	0.68	0.39	0.83
	(7.18)***	(5.89)***	(6.05)***
$Year_t$	–0.06	0.35	0.09
	(–5.66)***	(7901.34)***	(5.34)***
$PseudoR^2$	0.08	0.04	0.02
Observations	19106	19106	19106

Table 10: Option and stock grants, monthly data, cross sectional analysis

The dependent variable is the log value of each option grant made to CEOs of firms covered in Execucomp, as recorded in the Thomson Reuters Insider Filings database during 1996-2008, for various sub-samples of the data formed based on the degree of public scrutiny and reputation concerns faced by firms (Panel A) and managerial reputation concerns (Panel B). All regression models include firm fixed effects, year fixed effects, calendar month fixed effects, as well as time-variant firm characteristics (e.g., performance and size) as in Table 5. Standard errors are corrected for heteroskedasticity and clustered at the firm-month level. All variables are described in Table 1. ($^{*}p < .10, ^{**}p < .05, ^{***}p < .01$).

Panel A: Cross-sectional analysis by firm reputation concerns

	Large Firms	Small Firms	High Analyst Coverage	Low Analyst Coverage	Product Safety Concerns	No Product Safety Concerns
$National\ Negativity_{[m-3,m-1]}$	–0.57	0.00	–0.55	–0.01	–0.76	–0.41
	(–3.38)***	(0.00)	(–2.67)***	(–0.07)	(–2.47)**	(–2.22)**
Firm fixed effects	YES	YES	YES	YES	YES	YES
Month fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
R^2	0.59	0.62	0.64	0.67	0.62	0.65
Observations	42642	49894	43756	44707	2475	65974

Panel B: Cross-sectional analysis by managerial reputation concerns

	Low EIndex	High EIndex	No Corp Governance Concerns	Corp Governance Concerns	No Employee Relations Concerns	Employee Relations Concerns	CEO Age <= 60	CEO Age > 60
$National\ Negativity_{[m-3,m-1]}$	–0.46	0.05	–0.41	–0.32	–0.61	0.05	–0.33	0.12
	(–2.27)**	(0.38)	(–1.74)*	(–1.37)	(–2.99)***	(0.17)	(2.15)**	(0.62)
Firm fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Month fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
R^2	0.64	0.67	0.69	0.67	0.66	0.71	0.65	0.75
Observations	47265	41909	35330	33119	41429	27020	63724	15460

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2006

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2005

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2004

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