

Honoring One's Word: CEO Integrity and Accruals Quality

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Abstract

Integrity has been forwarded as an important CEO characteristic, but is difficult to operationalize empirically. We define integrity as honoring one's word, and propose a linguistic-based measure of integrity based on CEOs' use of causation words. We utilize a propriety survey given to both CEOs and their employees, whereby CEOs respond to open-ended questions and employees rate CEO integrity. We document a negative association between (1) the extent of causation words in CEO survey responses; and (2) employees' perceptions of the extent to which their CEOs honor their word, suggesting the linguistic-based score captures the latent integrity construct. We then derive CEO linguistic-based integrity scores for a large archival sample by measuring the unexpected usage of causation words in the annual CEO shareholder letter. To obtain a standard representation of a CEO's word, we exploit the fact that accounting accruals are placeholders for cash flows, thereby representing numerically a CEO's word regarding the firm's cash flows. Assuming accruals quality indicates how well accruals map into realized cash flows, we hypothesize, and find, that financial reports of firms with high-integrity CEOs exhibit better accruals quality. Given the detrimental cost of capital effects of poor accruals quality, we also find that more governance mechanisms to monitor CEOs are put in place for low integrity CEOs.

*“Integrity is a matter of a person’s word – nothing more and nothing less.”
Jensen (2009)*

1. Introduction

An emerging literature beginning with Bertrand and Schoar (2003) has suggested personal characteristics of managers play an important role in firm policies. The common empirical specification to establish the importance of individual manager attributes is to include manager fixed effects into standard determinant models of, for example, compensation (Graham et al. 2012), and corporate disclosure (Bamber et al., 2010). Such a specification is by nature silent on the particular attribute that matters, and as a result researchers have also investigated the effects of various manager specific traits ranging from education background, to military experience, to the CEOs network, to risk preferences (Malmendier and Tate 2005, Benmelech and Frydman 2012, Engelberg et al. 2013, Bouwens and van Lent 2010). Despite progress in understanding why CEOs matter, Bertrand (2009) notes “a lot remains to be learned” about CEOs and the roles they play in their organizations.

We advance the literature on understanding CEOs by investigating a CEO trait forwarded by Erhard et al. (2009) as a necessary condition for maximum firm performance: integrity. A recent IBM survey of over 1,500 CEOs in 60 countries and 33 industries indicates that CEOs themselves see integrity as the most essential leadership quality (Carr, 2010; IBM, 2010), second only to creativity.¹ While conceptually an important characteristic, measuring a CEO’s integrity is an extremely difficult task. The purpose of this study is to first develop a measure of integrity that can be implemented in large samples, and then to examine whether firm outcomes and governance structures that should be influenced by integrity behave in a manner consistent with

¹ 60% of all respondents chose creativity as a top quality, and 52% chose integrity. Of the remaining qualities chosen, none received more than 35%, indicating integrity’s importance. Interestingly, integrity seems to be even more important among North American CEOs. 65% of them chose integrity as a top quality, while only 29-48% of CEOs in other territories did.

our measure capturing variation in integrity across CEOs.

To formulate our integrity proxy, we focus on the key feature of integrity forwarded in a series of studies starting with Erhard et al. (2009), then Jensen (2009) and most recently Erhard and Jensen (2012), called “honoring one’s word.” One’s word is honored in one of two ways. First, one does what one says they will do by the time they say they will do it. Second, if one cannot do what one says they will do by the time they said they would do it, one immediately informs all parties involved and “cleans up any mess” that they may have caused. Erhard et al. (2009) go on to describe actions of a person with low integrity. “Faced with the messes resulting from out-of-integrity behavior, people and organizations regularly avoid confronting the role of their out-of-integrity behavior as cause in the matter. Instead, *they supply explanations, rationalizations, justifications and excuses that masquerade as causes* for the messes actually created by out-of-integrity behavior” (emphasis added).

Given this definition and explanation of how one might identify a low integrity individual, we propose a text-based empirical measure of CEO integrity: the percentage of causation words used in CEOs’ prose.² The theoretical argument for this proxy is that causation words are used to make excuses and provide explanations, which are more necessary when one’s word has not been honored. Thus, we forward that relatively higher (lower) usage of causation words proxies for relatively lower (higher) CEO integrity.

To validate this proposed integrity proxy, we make use of survey data from a consulting company that assesses CEO integrity directly for 56 CEOs. In the survey, a group of each CEO’s top-level employees (ranging from 5 to 131 employees) numerically rate how well the CEO honors his or her word. We aggregate these employee responses, which serve as an independent

² Examples of causation words include: because, effect, hence, affect, attributed, based, consequence, since, and therefore.

assessment of the CEOs integrity. In addition, each sample CEO also responds to 24 open-ended questions. We find that the percentage of causation words in the CEOs' open-ended responses to these questions is negatively associated with their employees' integrity perceptions. We interpret this association as evidence that causation word frequencies are legitimately linked to the construct of CEO integrity.

After demonstrating the validity of the textual measure of integrity within the survey data sample, we then build a text-based integrity proxy in a broader archival setting. Because the integrity measure requires the analysis of CEO-specific prose, we calculate CEO integrity by measuring the proportion of causation words in a sample of over 17,000 CEOs' shareholder letters from annual reports. Since some causation words used by a CEO likely stem naturally from the economic conditions the firm faces, we also consider the proportion of causation words in the Manager Discussion and Analysis (MD&A) portion from the firm's annual 10-K filing. The MD&A causation word proportion is a firm and year specific control variable, which in addition to other firm characteristics, serve as independent variables in a regression model that establishes the expected level of causation words in the shareholder letter based on economic conditions. The residual from this model, which captures abnormal levels of causation words, serves as our integrity metric.

We then examine the association between CEO integrity and one particular firm outcome that by its nature should be impacted by the extent to which the CEO honors his or her word: accruals quality. Accruals are placeholders in financial statements for cash flows, and as such represent a numeric representation of the CEOs word regarding the firm's cash flows. We hypothesize that CEO integrity will manifest in the financial statements via high quality accruals, and in turn expect the association between CEO integrity and accruals quality to be positive. We find evidence consistent with this hypothesis.

Given the negative ramifications of poor accrual quality on the cost of debt and equity capital (Francis et al. 2005), one might question why a board of directors would ever hire a low integrity CEO. CEOs are certainly a bundle of many attributes, including but not limited to their integrity level. Rational boards presumably consider the complete bundle of CEO attributes when making hiring decisions, and put mechanisms in place to supplement deficiencies in character traits. If a CEO lacks integrity, we expect owners to establish governance mechanisms so as to minimize the fallout from low integrity CEO behavior. Empirically, we find that low integrity CEOs face more meetings with boards comprised of more independent directors, consistent with owners rationally responding to CEO integrity.

Collectively, this paper contributes to the extant literature in two main areas. First, we forward and provide validity tests for an empirical measure of CEO integrity based on causation words in CEO prose. By linking our empirical proxy to survey data and showing that it is significantly related to accruals quality in the predicted direction, we provide support for a measure of integrity, which can be readily applied to large samples. Second, we contribute to the growing literature on the role of specific manager traits in the analysis of firm outcomes. That CEOs who honor their word exhibit improved mappings of accruals into cash flows suggests integrity can impact corporate outcomes. Whether and to what extent integrity matters for other firm outcomes remains an important area of inquiry for future research.

Our examination also has several limitations. First, as a study of association, it is possible that an unspecified but omitted factor is responsible for our results. Second, the integrity of an individual is unobservable and as such our proxy for integrity may capture other personality traits beyond integrity. Finally, our study is silent on whether integrity is a completely innate or transient characteristic. We find that CEO fixed effects explains 69.3% of identified variation (i.e. 46.1% out of a total R^2 of 66.5%) in a determinant model of our integrity

measure, suggesting a substantial portion of CEO integrity is innate. How and when time-varying integrity influences firm outcomes is something our empirical assessment cannot currently address.

This paper is organized as follows. Section 2 summarizes prior literature and our hypothesis development. Section 3 describes our empirical measure of CEO integrity and its construct validity. Section 4 outlines the research design and explains the data used to test the effect of CEO integrity in a large archival sample on accruals quality. Section 5 investigates whether governance mechanisms vary based on CEO integrity. Section 6 examines the extent to which CEO integrity is a fixed versus variable CEO characteristic, and Section 7 concludes.

2. Prior Work and Hypothesis Development

In this section, we briefly review prior work establishing that managerial traits have economic consequences and suggesting that integrity in particular is a managerial trait deserving attention. Applying the intuition from this prior work to our setting, we then develop the study's primary hypothesis.

2.1 The Effects of Managerial Traits

Prior studies have documented the effects of individual managerial traits on the economic outcomes of the firms they manage. The literature has developed along three distinct streams. First, beginning with studies such as Bertrand and Schoar (2003), prior work has found that managerial fixed effects, in general, affect economic outcomes, investment policy, financial policy, and firm strategy. Graham, Li and Qui (2012) also find that managerial fixed effects are sizable in explaining the variation in executive pay. In a financial reporting context, Bamber et al. (2010) find that individual manager traits play a significant role in their firms' voluntary disclosure decisions. Ge et al. (2011) also show how fixed effects associated with chief financial officers systematically matter in the choice of accounting practices.

While this first stream of work typically finds significant managerial fixed effects, the reasons why the managerial fixed effects matter are often left unresolved. As a result, a second stream of literature has evolved that investigates why managerial fixed effects matter. For example, prior work documents the economic effects on financial disclosures, earnings management, and economic outcomes of transparent screening traits such as educational background, prior performance accomplishments, military experience, age and a CEO's network (e.g., Chevalier and Ellison 1999; Bamber et al. 2010, Malmendier and Tate 2009; Engelberg et al. 2013). Less transparent traits such as CEO narcissism, reputation, and overconfidence, have been documented to affect extreme performance and firm-level strategies (Chatterjee and Hambrick 2007), accruals quality (Francis et al. 2008), and accounting fraud (Schrand and Zechman 2011), respectively. Other individual traits that relate to managerial preferences (e.g., risk aversion) have also been shown to be related to choices of control systems and managerial practices (Bouwens and van Lent 2010).

2.2 *The Direct Effects of CEO Integrity*

While the studies discussed above suggest a role for a wide variety of CEO characteristics to impact firm outcomes, recent work has focused theoretically on the particular importance of integrity and forwards an implementable framework for operationalizing the concept of integrity. The framework comes from Erhard and Jensen (2012), Erhard et al. (2009), and Jensen (2009). This work relies heavily on a definition of integrity as “honoring one’s word,” which implies that an individual does what he or she says they will do by the time they say they will do it, or, if not, the individual informs all parties involved immediately and resolves any problems that may subsequently arise.

Most importantly for our purposes, Erhard et al. (2009) further describe actions of an individual with low integrity. “Faced with the messes resulting from out-of-integrity behavior,

people and organizations regularly avoid confronting the role of their out-of-integrity behavior as cause in the matter. Instead, *they supply explanations, rationalizations, justifications and excuses that masquerade as causes* for the messes actually created by out-of-integrity behavior” (emphasis added). A key reason why this definition is important is that it is implementable empirically. Advances in the textual analysis literature (for a summary see Li 2011) suggest that we can measure the supply of words that correspond to the explanations, rationalizations, justifications, and excuses proposed by Erhard et al. (2009), which we develop in Section 3.

2.3 Hypothesis Development

Taken together, the aforementioned studies provide three key insights that are relevant to the hypothesis development in our study. First, CEO fixed effects associated with behavioral traits matter in decisions that affect firm outcomes, policies, and strategies. Second, the literature currently demonstrates how a variety of CEO traits might explain the fixed effect findings; however, much of the choice and, in particular, the operationalization of these variables, are often not clearly linked to theoretical constructs. Third, research forwarding the positive theory of integrity (e.g. Erhard and Jensen 2012), in addition to suggesting the need for research on this important characteristics, also provides a basis for operationalizing the integrity construct through “honoring one’s word.”

For our hypothesis development, we focus specifically on the association of CEO integrity one particular firm outcome: accruals quality. Our focus on accruals quality is twofold. First, accruals quality is a particular outcome that should a function of how much a CEO honors his or her word. Accounting accruals can be described as “placeholders for cash flows” (Wahlen et al. 2010, p. 114). A manager’s reporting of an accrual, then, can be viewed as the CEO’s word regarding the amount of cash that will remove the accrual from the financial statements. We view an accrual that is not appropriately replaced with cash as an illustration of a CEO not

honoring his or her word. Of course we could consider other statements made by managers and examine whether such statements come to fruition, but the accounting system offers a standardized and regularly recurrent numeric “statement” that facilitates systematic analysis empirically.

Second, Erhard and Jensen (2012) specifically argue that CEOs who honor their word are less likely to engage in financial statement manipulation. Poor quality accruals in financial statements are costly in terms of cost of debt and equity (Francis et al. 2005), and are an established precursor for extreme negative outcomes like financial restatements and class action lawsuits, which stem from purposeful managerial misrepresentations of financial information (Ecker et al. 2006).

High-integrity (low-integrity) CEOs should therefore report accruals that are more (less) representative of the cash flows whose places the accruals are holding. This implies that accruals quality, defined as the mapping of accruals into cash flows in the Dechow and Dichev (2002) sense, should be higher for high-integrity CEOs (i.e., those CEOs who are more likely to honor their word) relative to low-integrity CEOs. Stated formally:

H1: Accruals quality is increasing in CEO integrity defined as honoring one’s word.

3. Measuring CEO Integrity

CEO integrity is ultimately unobservable; hence, the ability of our empirical tests (described in Section 4) to accurately detect an effect of CEO integrity on accruals quality depends on the use of a valid empirical proxy for integrity. Relying on a definition of integrity as “honoring one’s word” (Erhard and Jensen 2012; Erhard et al. 2009; and Jensen 2009) we assume that statements made by CEOs of relatively low and high integrity will be fundamentally different. If low-integrity CEOs honor their word less than high-integrity CEOs, then we assume low-integrity CEOs will offer relatively more excuses for why certain actions were (or were not)

taken, or will offer explanations for why stated objectives were not achieved. Erhard et al. (2009) suggest that excessive excuses are a marker of low integrity.

3.1 CEO Integrity Variable Measurement

In developing a measure of excuses to operationalize honoring one's word, we rely on recent work that shows significant relations between economic outcomes and constructs formed from the textual analysis of corporate reports (for a summary, see Li 2011). To apply this approach, we require a text source. Arguably the most commonly studied text corpus is the mandatory MD&A disclosure in annual SEC filings (Li 2011). However, because the MD&A is subject to regulatory oversight, corporate lawyers play a role in the word choices (Choudhary et al. 2012). Because we intend to measure CEO integrity, we require text that is most likely written directly by the CEO. To meet this criterion, we use the annual shareholder letter, which is signed by the CEO and less regulated than other narratives such as the MD&A (Abrahamson and Amir 1996).

Personal conversations with a former corporate attorney have indicated that while firms' legal teams are heavily involved in writing other sections of the annual report that are regulated by the SEC such as the MD&A, attorneys "almost never even comment on the shareholder's letter." Using the annual shareholder letter offers a distinct advantage in our archival tests – it summarizes the same economic period as the MD&A. As the MD&A is a mandatory disclosure, it can serve as a benchmark for establishing the amount of causal words that corporate lawyers believe is necessary to describe the unique economics facing each firm. This allows us to make inferences about CEO integrity by comparing CEOs' own use of causation words to the MD&A benchmark.

To calculate CAUSE, our measure of CEO integrity, we use Linguistic Inquiry and Word Count (LIWC) textual analysis software to calculate the percentage of causation words in CEOs'

shareholder letters. The causation words category is defined according to LIWC's 2007 internal dictionary and consists of 108 words.³ CAUSE is defined as $\ln(1 + \text{percentage of causation words})$. Because higher values of CAUSE indicate relatively higher levels of excuses and explanations, higher values proxy for lower values of CEO integrity.

3.2 Validation of CAUSE as the Empirical Proxy for CEO Integrity

Before proceeding to implement CAUSE as our integrity proxy, we first examine the construct validity of CAUSE by using a unique survey dataset that we interpret as capturing a direct and relatively precise measure of CEO integrity, as conceptualized in this study.⁴ The survey data come from the KRW Research Institute's CEO Beliefs Research Project, the overall intent of which is to assess executives' beliefs, attitudes, and characteristics (Kiel and Lennick, 2012). Fifty-six CEOs responded to all of the questions in the survey; they come from small, large, public, and private firms in various industries.⁵ The survey consists of 154 questions in several categories, as well as 61 open-ended interview questions on various subjects.⁶ Each of the 56 firms provided a sample of top-level employees to complete the survey questions about the CEO from the employee's perspective, from five employees in the smallest firm up to 131

³ The 108 cause words (and derivatives) are as follows: activat* affect affected affecting affects aggravat* allow* attribut* based bases basis because boss* caus* change changed changes changing compel* compliance complie* comply* conclud* consequen* control* cos coz create* creati* cuz deduc* depend depended depending depends effect* elicit* experiment force* foundation* founded founder* generate* generating generator* hence how hows how's ignit* implica* implic* imply* inact* independ* induc* infer inferr* infers influenc* intend* intent* justif* launch* lead* led made make maker* makes making manipul* misle* motiv* obedien* obey* origin originat* origins outcome* permit* pick produc* provoc* provok* purpose* rational* react* reason* response result* root* since solution* solve solved solves solving source* stimul* therefor* thus trigger* use used uses using why.

⁴ The only paper we are aware of that utilizes the LIWC causation dictionary is Li (2008), who, as part of an exploratory analysis, finds that the extent of causation words in the MD&A section is associated with lower earnings persistence. In our analysis, we purge our causation scores derived from shareholder letters of the causation scores from the MD&A, which helps ensure that our observation that higher causation scores in the shareholder letter is not simply an indirect repackaging of the Li (2008) results.

⁵ While 58 CEOs originally agreed to complete the survey, two CEOs did not answer all of the questions and in particular, only partially answered the open interview questions, which is essential to the development of our CAUSE score. These two CEOs observations were dropped from the analysis.

⁶ The survey categories are: CEO role, fears, family life, human nature, CEO behavior, compassion, forgiveness, integrity, responsibility, organization life, the world and purpose.

employees in the largest firm.

The KRW survey data has two critical aspects that allow for an assessment of construct validity. First, a group of each executive's employees jointly respond to a set of survey questions related to integrity that are scored on a numeric scale.⁷ We expect that using subordinate responses provide a less biased assessment of CEO integrity relative to CEO self-reported scores.⁸ Second, the CEOs respond to a set of open-ended questions, which provides a rich source of text from which we can measure their use of causation words.

Although the KRW survey is extensive, for purposes of this study we focus on three questions that address directly this study's definition of integrity that is based on honoring one's word (Jensen 2009; Erhard et al. 2009; Erhard and Jensen 2012). We list these three integrity questions in Appendix A. We construct the integrity score for each CEO by first calculating the mean employee response for each of the three integrity questions. Table 1 provides descriptive statistics on three questions, labeled Q1, Q2, and Q3. Higher scores imply higher levels of integrity. Answers to the three questions exhibit high degrees of intercorrelation as noted in Table 2. As such, we construct a factor score labeled FACTOR, which represents the first principal component factor of Q1, Q2, and Q3. Only one factor with an eigenvalue greater than one emerges from these three questions (the eigenvalue equals 2.52), consistent with the intent of each question to assess the nature to which the manager honors his or her word. We use FACTOR as our summary statistic for CEO integrity, and proceed to examine its association with the use of causation words.

To measure causation words, we require a source of textual data attributed directly to the CEO survey respondents. As mentioned above, in addition to the survey questions, KRW asks

⁷Table 1 shows descriptive statistics on the per-CEO number of employees responding to the survey questions. The mean (median) is 42 (40) employees per CEO.

⁸ In untabulated analysis, we find that CEOs self-report statistically significantly higher levels of integrity than their employees report about them.

the CEO respondents a series of open-ended questions. These questions consider a variety of subjects, and we focus on 24 questions that relate to business contexts and those that give the CEOs an opportunity to express opinions and make subjective assessments.⁹ The responses to these 24 questions were combined into one text file per CEO to ensure a sufficient amount of text was available for analysis in the LIWC software.¹⁰ Table 1 shows that the mean (median) number of words analyzed for each KRW-sample CEO is 776 (744).

3.3 Statistical Relations between CAUSE and Integrity Benchmarks

The correlation matrix in Table 2 shows that CAUSE exhibits a negative Pearson (Spearman) correlation with FACTOR, with a coefficient of -0.2529 and p-value of 0.0601 (coefficient of -0.2411 and p-value of 0.0734). This indicates that, on average, CEOs who use more causation words are assessed by employees as having relatively lower integrity. CAUSE is also significantly negatively related to Q1 ($p < .08$) and Q3 ($p < .02$), respectively, consistent with the interpretation of the relation between CAUSE and FACTOR. On the other hand, CAUSE is negatively but not significantly correlated with Q2 ($p < .30$), highlighting the advantage of combining the responses to different questions to reflect a more complete proxy of honoring one's word. Taken together, the results shown in Table 2 provide support for the use of CAUSE as an empirical proxy for CEO integrity, where higher (lower) values indicate less (more) integrity.

⁹ See Appendix B for a list of the 24 interview questions. In all, the interview portion of the KRW survey contains 61 open-ended questions. We drop questions that were only asked to some CEOs or questions that do not give the CEOs opportunity to express opinions or assessments. Examples of dropped questions include "What two or three adjectives best describe your family and home life when you were growing up?" and "What did your father do occupationally?"

¹⁰ We do not use shareholder letters for the KRW survey CEOs because only ten of the CEOs have shareholder letters from the survey year, representing an 82% loss in sample size, which in turn severely undermines the power of our tests.

4. Empirical-archival Research Design and Data Sources

4.1 Research Design

In our large-sample archival analysis, we will assess the extent of causation words used in the annual shareholder letter, which we denote as SL_CAUSE , under the assumption that higher levels of causation words proxy for more excuses by the CEO. Because it is likely the case that not all uses of causation words are due to excuses, we decompose SL_CAUSE into (1) the portion of causation words stemming from firm-specific economic factors and the role of corporate counsel, and therefore likely not representing excuses; and (2) a residual, which is purged of these factors. To execute this decomposition, we estimate the following determinant model of SL_CAUSE via ordinary least squares for firm j in year t :

$$SL_CAUSE_{j,t} = \beta_0 + \beta_1 MDA_CAUSE_{j,t} + \beta_2 SIZE_{j,t} + \beta_3 MTB_{j,t} + \beta_4 stdCFO_{j,t} + \beta_5 stdSALES_{j,t} + \beta_6 OPCYC_{j,t} + \beta_7 NEGEARN_{j,t} + \beta_8 ROA_{j,t} + \beta_9 FIRMAGE_{j,t} + \beta_{10} FIRMAGESQ_{j,t} + \beta_{11} SL_WC_{j,t} + \text{Year Fixed Effects} + \text{Two Digit Industry Fixed Effects} + \varepsilon_{j,t} \quad (1)$$

where SL_CAUSE (MDA_CAUSE) equals $\ln(1+\text{number of causation words})$ in the annual shareholder letter (MD&A section of the 10-K filing); $SIZE$ is the natural log of total assets; MTB is the market value of equity divided by the book value of equity; $stdCFO$ is the standard deviation of cash from operations over the years $t-1$ to $t-5$; $stdSALES$ is the standard deviation of sales over the years $t-1$ to $t-5$; $OPCYC$ is the natural log of the average operating cycle over the years $t-1$ to $t-5$; $NEGEARN$ is the proportion of years from $t-1$ to $t-5$ in which income before extraordinary items is negative; ROA is income before extraordinary items; $FIRMAGE$ is the number of years the firm has been listed on Compustat as of the fiscal year end; $FIRMAGESQ$ is the square of $FIRMAGE$ to capture diminishing marginal effects; and SL_WC is the natural logarithm of the number of words in the shareholder letter.

In equation (1) we expect a positive coefficient on β_1 , since both the shareholder letter

and the MD&A should describe the same fiscal period for the same firm. Additionally, larger and in turn more complex firms, firms with higher growth options, more volatile operations, longer operating cycles, poor performance and younger firms likely face higher demand for information from investors. If managers meet this demand, in part through the shareholder letter, we expect $\beta_{2-7} > 0$ and $\beta_{8,9} < 0$. Diminishing marginal effects of FIRMAGE implies an opposite sign to the main effect; thus we expect $\beta_{10} > 0$. We control for the length of the shareholder letter as an additional control to capture informational demand effects not sufficiently captured by the other regression variables, under the assumption that longer letters provide more information. This implies $\beta_{11} > 0$.

To test our proposed hypothesis, we model accruals quality following Francis et al. (2005) and Francis et al. (2008), and add our proxy for CEO integrity (SL_CAUSE_RES). Specifically, we estimate the following equation for firm j in year t :

$$\text{ACCR_QUAL}_{j,t} = \beta_0 + \beta_1 \text{SL_CAUSE_RES}_{j,t} + \beta_2 \text{SIZE}_{j,t} + \beta_3 \text{MTB}_{j,t} + \beta_4 \text{stdCFO}_{j,t} + \beta_5 \text{stdSALES}_{j,t} + \beta_6 \text{OPCYC}_{j,t} + \beta_7 \text{NEGEARN}_{j,t} + \text{Year Fixed Effects} + \text{Two Digit Industry Fixed Effects} + \varepsilon_{j,t} \quad (2)$$

where all variables are as defined previously, SL_CAUSE_RES is the residual from equation (1), and ACCR_QUAL is one of two proxies for accruals quality, i.e., the non-market based measure, accruals quality (AQ) or market perceptions of accruals quality (ELOAD).

AQ is based on the McNichols' (2002) variation of Dechow and Dichev's (2002) annual industry cross-sectional regression specification:

$$\text{TCA}_{j,t} = \varphi_0 + \varphi_1 \text{CFO}_{j,t-1} + \varphi_2 \text{CFO}_{j,t} + \varphi_3 \text{CFO}_{j,t+1} + \varphi_4 \Delta \text{REV}_{j,t} + \varphi_5 \text{PPE}_{j,t} + \varepsilon_{j,t} \quad (3)$$

Equation (3) is estimated in annual industry cross-sections based on the 48 Fama and French (1997) industries, with at least 20 firms available in each industry-year. This estimation procedure results in firm-year residuals, whereby $\text{AQ}_{j,t}$ equals the standard deviation of these residuals over years $t-1$ through $t-5$.

ELOAD is a market-based measure that represents investor perceptions of the firm's accruals quality exposure in a given year (Ecker et al. 2006). To calculate ELOAD, we follow Ecker et al. (2006) by estimating the following equation for each firm-year in the sample, where d indexes trading days in year T for firm j :

$$R_{j,d} - R_{F,d} = \alpha_{j,T} + \beta_{j,T} (R_{M,d} - R_{F,d}) + s_{j,T} \text{SMB}_d + h_{j,T} \text{HML}_d + e_{j,T} \text{AQfactor}_d + v_{j,d} \quad (4)$$

Firm j 's measure of accruals quality in year T is $\text{ELOAD}_{j,T}$, which equals the estimated value of $e_{j,T}$. The variables SMB , HML , AQfactor , R_M , and R_F come from Frank Ecker's website, and the firm-specific daily returns $R_{j,t}$ come from CRSP.

Both AQ and ELOAD are measured such that higher (lower) values indicate worse (better) accruals quality. SL_CAUSE_RES is measured similarly, with higher (lower) values indicating more (fewer) excuses, and in turn lower (higher) values of CEO integrity. We therefore expect β_1 to be positive under H1 in equation (2). The remaining control variables are standard determinants of accruals quality in the literature (Francis et al. 2005; Francis et al. 2008), and are examined only to ensure that our sample depicts the standard associations between AQ and innate factors that drive accruals quality.

4.2 Sample and Data

To construct a sample to estimate equations (1) and (2), we first extract shareholder letters and related MD&A from 188 monthly Compact Disclosure database discs from 1989 to 2006 available from the Wharton Library at the University of Pennsylvania. We utilize Compact Disclosure as our source for text because the discs contain both the shareholder letter and MD&A in machine readable formats, which is necessary for our measurement of causation words with the LIWC software. Each disc contains historical reports of prior periods up to and through the monthly disc, and with diminishing coverage of firms as the database approached phase out to discontinuation in 2006. Due to data restrictions for the necessary dependent and

control variables in Equations (1) and (2), the final sample size is 17,339 firm year observations, representing 3,625 firms over fiscal years 1987 to 2002.

Table 3 presents descriptive statistics on the sample variables, where all variables are winsorized at the 1% and 99% levels to help ensure our results are not outlier driven. The median length of the shareholder letter (MD&A) is 1,014 (2,316) words and contains 2.4% (2.5%) causation words. Table 4 provides correlations for the variables used to estimate Equations (1) and (2). Shareholder letter causation words (SL_CAUSE) are positively correlated with both AQ and ELOAD, consistent with H1. However, MDA_CAUSE is also correlated in a similar fashion with AQ and ELOAD, and also positively correlated with SL_CAUSE. Moreover, innate firm characteristics like size, growth options, cash flow volatility, profitability, operating cycle and firm age exhibit correlations in the same direction with SL_CAUSE as with AQ and ELOAD. To draw more definitive insights, we turn to our multiple regression analysis.

4.3 Determinant Model Estimation and Results of Hypothesis Test

In Table 5, we estimate the equation (1) determinant model of shareholder letter causation words. In Column 1 of Table 5, we stepwise introduce the first determinant, MDA_CAUSE, and note that this variable exhibits a positive and significant association with SL_CAUSE (coefficient = 0.441, $p < .01$), and explains 13% of the variance in SL_CAUSE. The fully specified model in Column 2 explains 26.3% of the variance in SL_CAUSE, and the variables that provide incremental explanatory power over MDA_CAUSE include operating cycle, profitability, firm age, and the length of the shareholder letter. Longer operating cycles result in more causal statements (coefficient on OPCYC = 0.001, $p < .001$). Shareholder letters contain more causal statements when performance is poor (coefficient on ROA = -0.003, $p < .001$), consistent with increased demand for information when performance is poor. Younger firms provide more causal statements (coefficient on FIRMAGE = -0.0002, $p < .001$), but there

exists a diminished marginal effect as evidenced by the positive and significant coefficient on FIRMAGESQ.

We note that including MDA_CAUSE and SL_WC in a determinant model of SL_CAUSE may be conservative. Although we believe the annual shareholder letter better captures language usage by the CEO than the MD&A, if the MD&A reflects a sufficient portion of CEO language, this specification will work against the residual from equation (1) capturing CEO causal statements and bias against finding results consistent with H1. Additionally, longer shareholder letters have more causal words. To the extent that longer letters simply have more excuses as opposed to representing the meeting of genuine investor demand for causal statements, important integrity-based variation in the residual will be removed and bias against finding hypothesized results.

Turning to determinants of accruals quality, in Column 1 of Table 6, we provide a benchmark model of AQ and note that innate AQ determinants exhibit the standard associations with AQ in our sample (Francis et al. 2004; Francis et al. 2005; Francis et al. 2008). That is, SIZE (MTB, stdCFO, stdSALES, OPCYC, NEGEARN) exhibits negative (positive) and statistically significant associations with AQ. Turning to our formal hypothesis test, in Column 2, we introduce the unexpected amount of causation words, and note that the coefficient on SL_CAUSE_RES is positive and statistically significant (coefficient = 0.103, $p < 0.01$). This result suggests that the financial reports of firms with low-integrity CEOs, who offer excessive excuses, exhibit lower accruals quality. The remaining coefficients are identical to Column 1 by construction, as SL_CAUSE_RES is already orthogonal to standard AQ determinants as a result of estimating equation (1).

Because our variable of interest, CEO integrity, is constructed based upon patterns in word usage that might capture an overall linguistic style, in column (3) we introduce control

variables for the following linguistic based variables studied in the extant literature: the relative use of first-person pronouns to second-and third-person pronouns, the relative use of exclusive to inclusive words, the general prediction equation for deception, and extreme positive emotion words. These variables have been used primarily in the accounting literature as predictors of firm performance, properties of earnings, deception and financial fraud (see Li, 2008; Newman et al. 2003; and Larcker and Zakolyukina, 2011, respectively).¹¹ We note that controlling for these linguistic features does little to the coefficient on SL_CAUSE_RES, which remains positive and statistically significant (coefficient = 0.086, $p < 0.05$) at levels similar to column (2).

In column (4) we add, in addition to linguistic controls, a control for managerial ability, which has been shown to be increasing in accrual quality (Demerjian et al. 2012). This ability measure captures the efficiency with which managers use their firm's resources, and including this control variable has virtually no impact on the point estimate for our variable of interest, SL_CAUSE_RES.

A limitation of the analysis in columns (1) to (4) is that construction of the dependent variable requires a 5 year time series of data (from years $t-1$ to $t-5$), and we cannot be sure the same CEO writing the annual report in year t was employed during each of these years. If a different CEO was employed during the estimation of accrual quality, it should bias against

¹¹ In terms of formal definitions for these four classes of linguistic variables, SL_IVSU captures the use of first-person pronouns relative to the use of second-and third-person pronouns: $SL_IVSU = \ln((1 + \text{Self}) / (1 + \text{You} + \text{Other}))$, where Self, You, and Other are the LIWC percentages of first-, second-, and third-person pronouns, respectively. Similarly, SL_EVSI captures the relative use of exclusive and inclusive words: $SL_EVSI = \ln((1 + \text{Excl}) / (1 + \text{Incl}))$, where Excl and Incl are the LIWC percentages of exclusive and inclusive words, respectively. SL_IVSU and SL_EVSI are used by Li (2008) in his examination of MD&A content's relation to firm performance and earnings persistence. SL_GPE comes directly from Newman et al. (2003) and is a general prediction equation for deception based on textual analysis. $SL_GPE = (0.26 \times \text{Self}) + (0.25 \times \text{Other}) - (0.217 \times \text{NegEmo}) + (0.419 \times \text{Excl}) - (0.259 \times \text{Motion})$. Self, Other, and Excl are defined as above; NegEmo and Motion are the LIWC percentages of negative emotion words and motion verbs, respectively. SL_POSEMO is based on a word category from Larcker and Zakolyukina (2011), who find that the use of extreme positive emotion words is associated with deception in earnings conference calls. As with the other textual variables, we use the LIWC software to calculate SL_POSEMO, but the word list comes directly from Larcker and Zakolyukina (2011) instead of from LIWC's internal dictionary. $SL_POSEMO = \ln(1 + \text{percentage of extreme positive emotion words})$.

finding an association with CEO integrity. An alternative specification is to replace the dependent variable with market based perceptions of accrual quality (ELOAD). While the measurement of ELOAD corresponds to the same year in which the CEO writing the shareholder letter is employed, it reflects perceptions derived from stock prices, which makes its estimation noisier than AQ. In columns (5) – (8) we replicate the analysis from columns (1) – (4) but simply replace AQ with ELOAD. We find our inferences are unchanged, in that we observe a positive and statistically significant association with CEO integrity, although the significance levels are lower than the specifications using AQ as the dependent variable.

As a collection, the results in Table 6 are consistent with our hypothesis that higher integrity CEOs report accruals that better represent a firm's cash flows after removing standard business condition determinants of accrual quality, and other potential correlated factors. This finding adds to the literature suggesting an explicit link between integrity and earnings quality may exist (Hunton et al. 2011; Feng et al. 2011; Johnson et al. 2011), although no study operationalizes integrity explicitly.

5. Governance Mechanisms and CEO Integrity

Poor quality accruals are costly in terms of the cost of debt and equity capital (Francis et al. 2005). More generally, firms should face more adverse selection costs if CEOs do not honor their word. Given such costs, why would a board of directors ever hire a low integrity CEO? CEOs are ultimately a bundle of attributes, including but not limited to their integrity level. Presumably, boards decide based on the complete bundle of attributes to hire a given CEO, and to the extent the CEO has certain character traits that may be costly to the firm, the board implements governance structures that minimize the related costs.

To test this conjecture, we examine whether low-integrity CEOs face a heightened level of corporate governance. We estimate the following pooled-cross sectional model:

$$\text{CORP_GOV}_{j,t} = \beta_0 + \beta_1 \text{SL_CAUSE_RES}_{j,t} + \text{CONTROLS} + \varepsilon_{j,t} \quad (5)$$

where CORP_GOV is a set of governance mechanisms including the number of board meetings held (NUMMEET), the percentage of independent directors on the board (%INDEP), the percentage of the firm's stock held by firm directors excluding the CEO if the CEO is on the board (BHOLDING), an indicator variable for whether the CEO is also the Chairman of the board (CHAIR), the size of the board of directors (BSIZE) and the percentage of independent board members who hold a significant fraction of outside directorships (%OUTSIDEDIR). Governance variables are derived from IRRC and are only available for a subsample of the firm-years we examine, which is available from 1996 to 2005. CONTROLS are the same set of firm characteristics used in other specifications, in addition to controls for the age of the firm, and CEO age and tenure (Dikolli et al. In press).

We expect the coefficient on our CEO integrity proxy (SL_CAUSE_RES) to be positive when NUMMEET, %INDEP and BHOLDING serve as the dependent variable. More board meetings imply more monitoring, which we conjecture would minimize the damage of a CEO not honoring his or her word. Additionally, we conjecture that independent board members and board members with more equity holdings will offer higher quality monitoring of the CEO. Results generally support these expectations. Table 7 reveals that as CEOs who offer excessive causation words (i.e. low integrity) are subjected to more board meetings (coefficient = 2.011, $p < 0.05$) and their boards contain more independent members (coefficient = 1.592, $p < 0.01$). We observe that board members hold less of the firm's shares, not more as we expected, although this association is not significant in a one-tailed test.

In addition, we expect boards to extend less power to a low integrity CEO, which suggests that CEOs who offer excessive causation words will be granted less of the firm's shares and or be appointed chairman of the board. This implies a negative coefficient on HOLDING

and CHAIR. We observe a marginally negative coefficient on HOLDING (coefficient -39.280, $p < .10$ in a one tailed test) and observe no statistically significant association between CEO integrity and CHAIR.

Finally, we also consider board size and how “busy” independent directors are. We are unable to sign our predictions and consider these governance metrics for completeness. Larger boards may provide better monitoring due to their scale. On the other hand as boards increase in size, board monitoring become less effective due to free riding problems (Boone et al. 2007). With respect to how engaged independent board members are on other boards, such engagement may assist in CEO monitoring if it generates important information flow (e.g., Ferris et al. 2003, Carpenter and Westphal 2001). On the other hand, independent board members involved with many other boards may not be able to dedicate the required time to effectively monitor (Fich and Shivdasani 2006, Fracassi and Tate 2012). Empirically, we find that low integrity CEOs are governed by smaller boards (coefficient -14.200, $p < 0.05$) whose independent directors are not as busy (coefficient -0.625, $p < 0.05$).

Notwithstanding the difficulty in measuring governance mechanisms, the results in Table 7 collectively suggest that low integrity CEOs face heightened scrutiny via more meetings from smaller boards with more independent directors who are less distracted by other duties pertaining to other firms. These imply rational responses by firm owners to minimize the potential costs a firm may face from a CEO who does not honor his or her word.

6. To what extent is CEO integrity fixed versus fleeting?

Our final analysis investigates the extent to which CEO integrity is an innate, unchanging feature of management. That is, do CEOs with high integrity always behave with high integrity, or do circumstances dictate when a generally high-integrity CEO will *not* honor his or her word? We cannot easily specify empirically the *ex ante* set of conditions that might trigger high or low

integrity behavior; however, can decompose the variation CEO integrity following Graham et al. (2012) in order to ascertain the contribution of CEO fixed effects in explaining integrity, thereby uncovering the extent to which integrity is an innate CEO trait.

Graham et al. (2012) begin by examining the explanatory power of a standard compensation determinant model when firm fixed effects, manager fixed effects, and firm-manager fixed effects (i.e. a “spell” fixed effect) are individually introduced. Significant explanatory power from CEO fixed effects and “spell” fixed effects indicate the importance of CEO personal characteristics. We execute the same analysis by estimating the following three specifications:

$$SL_CAUSE_RES_{j,t} = \lambda_0 + \text{FIRM FIXED EFFECTS} + \mu_{j,t} \quad (6a)$$

$$SL_CAUSE_RES_{j,t} = \gamma_0 + \text{CEO FIXED EFFECTS} + \varphi_{j,t} \quad (6b)$$

$$SL_CAUSE_RES_{j,t} = \eta_0 + \text{FIRM-CEO FIXED EFFECTS} + \nu_{j,t} \quad (6c)$$

Since our CEO integrity proxy, SL_CAUSE_RES , is already orthogonal to time varying firm effects and year fixed effects, we do not include them in the above specifications. Panel B of Table 8 reveals the estimation of equation (6a), (6b), and (6c) in columns (1), (2) and (3), respectively. The adjusted R^2 is 27.8% from model (6a), 31.3% from model (6b) and 31.9% from model (6c). This suggests that both unobservable static firm and manager effects play an important role in explaining CEO integrity. That CEO fixed effects provides substantial explanatory power is not surprising given our theory that integrity is itself a CEO level characteristic. However, the explanatory power of firm fixed effects is of similar magnitude to CEO fixed effects and to firm-CEO fixed effects. To more precisely disentangle the magnitude of the firm effect from the CEO effect requires a decomposition of the explanatory power of the spell method R^2 , following Abowd, Kramarz and Margolis (1999, hereafter the AKM method).

To execute this decomposition, we first condition the sample in Panel B down to a “connectedness” sample, which represents all available sample firm year observations where a firm hired a CEO that moved within the sample. Panel A of Table 8 reveals that 97% of sample CEOs are “nonmovers” and only worked for one sample firm, similar in magnitude to the 95% documented in Graham et al. (2012). The remaining 3% of CEOs are movers who worked as a CEO in more than one company in the sample. There are 210 sample firms who employed a “mover” CEO. These firms correspond to 875 firm-year observations, which comprises the “connectedness” sample, as discussed in Graham et al. (2012). Isolating the “connectedness” sample allows for application of the AKM method.

In Panel C, we replicate Panel B, but use only the “connectedness” sample. The magnitude of the explanatory power in terms of adjusted R^2 is similar to Panel B, suggesting the “connectedness” sample is similar in nature to the full sample. Of interest in Panel C is the overall R^2 from the firm-CEO fixed effects model of 66.5% in column (3), which can be decomposed via the AKM method. Panel D provides the decomposition, and reveals that the 66.5% is comprised of 20.4% firm fixed effect and 46.1% CEO fixed effect, with the remaining 33.5% residual effect pertaining to unspecified time varying firm and CEO effects. This estimation reveals that the largest fraction of explanatory power for CEO integrity comes from innate CEO effects. That is, 69.3% ($.461/.665 = .693$) of identified variance comes from CEO fixed effects. We conclude from this analysis that a substantial fraction of measurable CEO integrity is an innate CEO trait. Understanding the time-varying CEO and firm-specific factors is beyond the scope of this analysis, but is an important area of inquiry for future research.

8. Conclusion

Recent research has shown advances in measuring individual traits or characteristics of CEOs that once were regarded as too difficult to measure. In particular, researchers have

documented ways in which CEO innate ability, physical characteristics, cognitive biases and innate preferences might be approximated to address conceptual questions about whether CEO traits have any effect on firm outcomes. Many of the measures being developed in the literature are now approximated using publicly-available data sources, and increasingly exploit linguistic tools to generate empirical proxies that more plausibly map into theoretical constructs.

In this study, we extend this line of enquiry by developing an individual measure of CEO integrity, using textual analysis of publicly available sources. Our measure is grounded in the theoretical conjectures of Erhard and Jensen (2012), Erhard et al. (2009), and Jensen (2009), who define integrity to be linked to honoring one's word and that failure to do so results in the use of excuses. We develop a measure of excuses by counting causation words in CEO prose. We first validate the measure in a small proprietary sample by showing a significant negative correlation between the use of causation words and employee perceptions of their CEO's integrity. We then show that when a CEO uses an unexpectedly high level of causation words the actual and perceived mapping of accruals into cash flows is of lower quality when compared to firms with CEOs that honor their word.

In research that operationalizes an unobservable construct like integrity, inferences critically hinge on how well the proxy measures the construct of interest. It is possible that some unmodeled factor influences both the unexpected number of causation words and accruals quality. However, we believe our use of causation words from the MD&A as a firm-specific control helps mitigate the potential for such a correlated omitted factor. With this caveat in mind, this study provides initial evidence on the importance of CEO integrity in the context of financial reporting.

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Appendix A: Integrity Survey Questions Pertaining to “Honoring One’s Word”

Question ID	Question
Q1	If I agree to do something, I follow through.
Q2*	When I agree to do something, I don’t follow through, especially if I agreed under pressure or agreed in order to get out of a tight spot.
Q3*	I believe that sophisticated people know that not all promises are meant to be kept.
<i>* indicates questions for which the responses have been normalized so that higher scores indicate higher integrity for all three questions</i>	

Appendix B: Open Response Survey Questions

Number	Question
1.	Tell us in a few words how well you think your company performs compared to the best of your competitors.
2.	Tell us in a few words what it feels like to work in your company.
3.	What words or phrases best describe your current corporate culture?
4.	Would you have described your culture any differently two to five years ago? Five to ten years ago? If so, why?
5.	Would you have described your culture differently 2 to 5 years ago?
6.	Would you have described your culture differently 5 to 10 years ago?
7.	Has the culture helped your firm’s performance over the past few years? Or hurt it? Or both? Or Neither? How has it helped or hurt?
8.	If part of the culture helped or hurt the firm’s performance, how did the culture get to be this way?
9.	What are the one or two things the board could do to increase its overall effectiveness?
10.	What's stopping the board from taking these steps to increase their overall effectiveness?
11.	How did your father relate to you?
12.	How did your mother relate to you?
13.	How did your parents discipline you? Were you ever spanked or physically punished?
14.	What’s the best thing that happened to you while growing up?
15.	What’s the worst thing that happened to you while growing up?
16.	Comment on your religious background.
17.	Do you believe that a strong religious faith confers an advantage in business transactions? That is, do people who bring their personal religious beliefs to the office enjoy an edge?
18.	How were you taught to show compassion to other people?
19.	How were you taught to be a person of integrity?
20.	How were you taught to be forgiving to others? To yourself?
21.	How were you taught to be responsible for your personal choices?
22.	Any other experiences you’d like to tell me about?
23.	Any other comments?
24.	What was your first part-time job? How old were you? Did you have continuous employment?

Table 1
Descriptive Statistics for KRW Survey Sample

Variable	N	Mean	Std. Dev	Min	25%	Median	75%	Max
WC	56	776	309	309	590	744	893	1930
N_EMP	56	42	22	5	27	40	57	131
CAUSE	56	0.018	0.006	0.008	0.014	0.017	0.021	0.030
Q1	56	7.606	0.502	6.340	7.312	7.612	8.024	8.615
Q2	56	7.385	0.564	6.207	7.022	7.414	7.771	8.440
Q3	56	7.255	0.705	5.273	6.738	7.279	7.875	8.520
FACTOR	56	0.000	1.000	-2.463	-0.591	0.135	0.722	2.066

Variable definitions: WC = per-CEO total number of words in the answers given to open response survey questions listed in Appendix B. N_EMP = per-CEO number of employees responding to integrity survey questions in Appendix A. CAUSE = $\ln(1+(\text{percentage of causation words}))$ in the answers given to open response survey questions listed in Appendix B. Q1 = average employee responses to integrity question #1 listed in Appendix A. Q2 = average employee responses to integrity question #2 listed in Appendix A. Q3 = average employee responses to integrity question #3 listed in Appendix A. FACTOR = first principal component factor of Q1, Q2 and Q3. Only one factor emerges from these three questions with an eigenvalue greater than 1.0 (the eigenvalue is 2.52).

Table 2
Correlation Matrix for KRW Survey Sample

	WC	N_EMP	CAUSE	Q1	Q2	Q3	FACTOR
WC		-0.0802 0.5567	0.0373 0.7848	-0.0584 0.6688	-0.0161 0.9062	-0.0061 0.9645	-0.0361 0.7915
N_EMP	-0.0419 0.7593		0.0103 0.9397	0.0913 0.5031	0.1523 0.2623	0.0259 0.8500	0.0777 0.5691
CAUSE	-0.0209 0.8783	-0.0437 0.7491		-0.2433 0.0708	-0.1325 0.3302	-0.2846 0.0335	-0.2411 0.0734
Q1	-0.0715 0.6006	0.0970 0.4771	-0.2364 0.0794		0.8943 0.0000	0.6537 0.0000	0.9429 0.0000
Q2	-0.0634 0.6426	0.1441 0.2892	-0.1444 0.2885	0.9098 0.0000		0.6200 0.0000	0.9467 0.0000
Q3	-0.0524 0.7011	0.0968 0.4778	-0.3246 0.0146	0.6852 0.0000	0.6733 0.0000		0.7966 0.0000
FACTOR	-0.0685 0.6161	0.1234 0.3650	-0.2529 0.0601	0.9501 0.0000	0.9460 0.0000	0.8486 0.0000	

Spearman (Pearson) correlation coefficients are reported above (below) the diagonal. Two-tailed p -values are presented below the correlation coefficients. See Table 1 for variable definitions.

Table 3
Descriptive Statistics for Shareholder Letter Sample

Variable	N	Mean	Std. Dev	Min	25%	Median	75%	Max
AQ	17309	0.047	0.036	0.005	0.022	0.037	0.060	0.190
ELOAD	17309	0.078	0.460	-0.978	-0.184	0.009	0.260	1.883
SL_CAUSE	17309	0.024	0.008	0.007	0.019	0.024	0.030	0.046
MDA_CAUSE	17309	0.026	0.007	0.012	0.021	0.025	0.030	0.044
SL_WC	17309	6.902	0.550	5.489	6.558	6.923	7.258	8.273
MDA_WC	17309	7.754	0.648	6.207	7.288	7.749	8.259	9.251
SIZE	17309	5.444	2.040	1.251	3.934	5.332	6.864	10.286
MTB	17309	2.435	2.435	0.310	1.079	1.700	2.803	15.851
stdCFO	17309	0.069	0.074	0.007	0.027	0.045	0.079	0.474
stdSALES	17309	0.214	0.193	0.013	0.090	0.160	0.265	1.110
OPCYC	17309	4.773	0.641	2.561	4.435	4.841	5.199	6.130
NEGEARN	17309	0.195	0.275	0.000	0.000	0.000	0.400	1.000
ROA	17309	0.087	0.122	-0.401	0.038	0.091	0.148	0.425
FIRMAGE	17309	22.270	12.384	7.000	11.000	20.000	31.000	51.000

Variable definitions: AQ = the standard deviation of residuals over years $t-1$ through $t-5$ from equation (3). Equation (3) is the McNichols' (2002) variation of Dechow and Dichev's (2002) annual industry cross-sectional regression specification: $TCA_{j,t} = \varphi_{0,i,t} + \varphi_{1,i,t}CFO_{j,t-1} + \varphi_{2,i,t}CFO_{j,t} + \varphi_{3,i,t}CFO_{j,t+1} + \varphi_{4,i,t}\Delta REV_{j,t} + \varphi_{5,i,t}PPE_{j,t} + \varepsilon_{j,t}$, which is estimated in annual industry cross-sections based on the 48 Fama and French (1997) industries, i , with at least 20 firms available in each industry-year. ELOAD = AQfactor loading from Ecker et al. (2006). SL_CAUSE = $\ln(1+(\text{percentage of causation words in annual shareholder letter}))$. MDA_CAUSE = $\ln(1+(\text{percentage of causation words in annual 10-K MD\&A}))$. SL_WC = $\ln(\text{number of words in annual shareholder letter})$. MDA_WC = $\ln(\text{number of words in annual 10-K MD\&A})$. SIZE = $\ln(\text{total assets})$. MTB = $(CSHO*PRCC_F)/SEQ$. stdCFO = standard deviation of cash from operations for the years $t-1$ to $t-5$. stdSALES = standard deviation of sales for the years $t-1$ to $t-5$. OPCYC = $\ln(\text{average operating cycle for the years } t-1 \text{ to } t-5)$, where operating cycle is defined as the sum of days receivables and days inventory. NEGEARN = percentage of years from $t-1$ to $t-5$ where income before extraordinary items is negative. ROA = earnings before interest and taxes (EBIT) divided by beginning of period total assets (AT). FIRMAGE = number of years since the firm first appeared on the Compustat database. All variables are winsorized at 1% and 99% levels in the pooled sample.

Table 4
Correlation Matrix for Shareholder Letter Sample

Variable	AQ	ELOAD	SL CAUSE	MDA CAUSE	SIZE	MTB	stdCFO	stdSALES	OPCYC	NEGEARN	ROA	FIRMAGE	SL WC
AQ		0.255 0.000	0.121 0.000	0.058 0.000	-0.442 0.000	0.012 0.123	0.624 0.000	0.381 0.000	0.250 0.000	0.431 0.000	-0.149 0.000	-0.316 0.000	-0.157 0.000
ELOAD	0.271 0.000		0.057 0.000	0.024 0.002	-0.253 0.000	-0.083 0.000	0.223 0.000	0.117 0.000	0.111 0.000	0.239 0.000	-0.188 0.000	-0.144 0.000	-0.099 0.000
SL_CAUSE	0.099 0.000	0.061 0.000		0.359 0.000	-0.047 0.000	0.036 0.000	0.083 0.000	-0.006 0.428	0.278 0.000	0.074 0.000	-0.040 0.000	-0.036 0.000	0.117 0.000
MDA_CAUSE	0.041 0.000	0.025 0.001	0.361 0.000		-0.022 0.004	0.034 0.000	0.037 0.000	-0.011 0.159	0.211 0.000	0.002 0.833	0.013 0.090	-0.020 0.008	0.030 0.000
SIZE	-0.411 0.000	-0.263 0.000	-0.053 0.000	-0.029 0.000		0.198 0.000	-0.466 0.000	-0.266 0.000	-0.201 0.000	-0.360 0.000	0.219 0.000	0.464 0.000	0.411 0.000
MTB	0.138 0.000	0.001 0.921	0.045 0.000	0.028 0.000	0.070 0.000		-0.096 0.000	-0.024 0.002	-0.032 0.000	-0.107 0.000	0.465 0.000	-0.005 0.475	0.157 0.000
stdCFO	0.565 0.000	0.263 0.000	0.051 0.000	0.010 0.201	-0.390 0.000	0.075 0.000		0.358 0.000	0.225 0.000	0.480 0.000	-0.263 0.000	-0.239 0.000	-0.182 0.000
stdSALES	0.349 0.000	0.149 0.000	-0.031 0.000	-0.035 0.000	-0.245 0.000	0.008 0.287	0.417 0.000		-0.027 0.001	0.097 0.000	0.015 0.047	-0.234 0.000	-0.134 0.000
OPCYC	0.198 0.000	0.109 0.000	0.277 0.000	0.221 0.000	-0.158 0.000	0.010 0.182	0.165 0.000	-0.081 0.000		0.151 0.000	-0.092 0.000	-0.058 0.000	-0.061 0.000
NEGEARN	0.429 0.000	0.273 0.000	0.063 0.000	-0.002 0.789	-0.366 0.000	0.107 0.000	0.481 0.000	0.139 0.000	0.132 0.000		-0.435 0.000	-0.225 0.000	-0.120 0.000
ROA	-0.199 0.000	-0.225 0.000	-0.055 0.000	0.002 0.771	0.236 0.000	0.142 0.000	-0.345 0.000	-0.076 0.000	-0.100 0.000	-0.476 0.000		0.085 0.000	0.066 0.000
FIRMAGE	-0.286 0.000	-0.161 0.000	-0.036 0.000	-0.032 0.000	0.517 0.000	-0.026 0.001	-0.195 0.000	-0.189 0.000	-0.028 0.000	-0.227 0.000	0.101 0.000		0.202 0.000
SL_WC	-0.145 0.000	-0.100 0.000	0.111 0.000	0.024 0.001	0.405 0.000	0.102 0.000	-0.164 0.000	-0.124 0.000	-0.044 0.000	-0.120 0.000	0.060 0.000	0.214 0.000	

Spearman (Pearson) correlation coefficients are presented above (below) the diagonal. Two-tailed p -values are presented below the correlation coefficients. Correlations are based on 17,309 observations. See Table 3 for variable definitions. All variables are winsorized at 1% and 99% levels in the pooled sample.

Table 5
Determinants of Causation Statements in Annual Shareholder Letters

Variable	Predicted Sign	SL_CAUSE (1)	SL_CAUSE (2)
MDA_CAUSE	+	0.440*** (32.908)	0.279*** (20.843)
SIZE	+		-0.000 (-0.107)
MTB	+		-0.000 (-0.008)
stdCFO	+		0.001 (0.816)
stdSALES	+		-0.001 (-1.670)
OPCYC	+		0.001*** (3.860)
NEGEARN	+		0.000 (1.142)
ROA	-		-0.003*** (-4.742)
FIRMAGE	-		-0.000*** (-5.639)
FIRMAGESQ	+		0.000*** (4.665)
SL_WC	+		0.002*** (11.584)
Intercept		0.013*** (37.094)	0.005* (1.668)
Industry Fixed Effects		No	Yes
Year Fixed Effects		No	Yes
Observations		17309	17309
Adj. R^2		0.130	0.262

This table presents pooled OLS regressions of cross-sectional determinants of causation statements in annual shareholder letters. The dependent variable is SL_CAUSE. All variables are defined in Table 3. ***, **, and * represent significance levels, respectively, at the 1%, 5%, and 10% levels (one-tailed for variables with predicted signs, two-tailed otherwise). Robust standard errors, clustered by firm, are used to compute t -statistics, which are reported in parentheses. All variables are winsorized at 1% and 99% levels in the pooled sample.

Table 6
The Association Between CEO Integrity and Accruals Quality

Variable	Predicted Sign	AQ (1)	AQ (2)	AQ (3)	AQ (4)	ELOAD (5)	ELOAD (6)	ELOAD (7)	ELOAD (8)
SL_CAUSE_RES	+		0.103*** (2.554)	0.086** (2.113)	0.085** (2.004)		0.934** (1.807)	0.869** (1.677)	0.773* (1.435)
SIZE	-	-0.003*** (-13.723)	-0.003*** (-13.727)	-0.003*** (-14.010)	-0.003*** (-13.902)	-0.034*** (-14.050)	-0.034*** (-14.058)	-0.035*** (-14.005)	-0.036*** (-13.944)
MTB	+	0.001*** (6.619)	0.001*** (6.621)	0.001*** (6.616)	0.001*** (5.936)	-0.005*** (-2.670)	-0.005*** (-2.672)	-0.005*** (-2.618)	-0.004* (-1.900)
stdCFO	+	0.162*** (17.922)	0.162*** (17.929)	0.162*** (18.000)	0.161*** (17.583)	0.637*** (6.739)	0.637*** (6.742)	0.637*** (6.737)	0.601*** (6.239)
stdSALES	+	0.023*** (8.897)	0.023*** (8.896)	0.023*** (8.839)	0.021*** (7.927)	0.120*** (4.400)	0.120*** (4.399)	0.120*** (4.394)	0.138*** (4.900)
OPCYC	+	0.005*** (5.853)	0.005*** (5.853)	0.005*** (5.755)	0.006*** (6.053)	0.033*** (3.680)	0.033*** (3.679)	0.032*** (3.556)	0.030*** (3.248)
NEGEARN	+	0.020*** (11.266)	0.020*** (11.277)	0.020*** (11.281)	0.021*** (11.510)	0.256*** (13.181)	0.256*** (13.189)	0.253*** (13.042)	0.243*** (11.962)
Intercept		0.000 (0.019)	0.000 (0.019)	-0.004 (-0.657)	-0.007 (-1.068)	-0.076 (-1.063)	-0.076 (-1.066)	-0.092 (-1.249)	-0.098 (-1.304)
Industry Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Linguistic Controls		No	No	Yes	Yes	No	No	Yes	Yes
Ability Control		No	No	No	Yes	No	No	No	Yes
Observations		17309	17309	17309	16094	17309	17309	17309	16094
Adj. R^2		0.444	0.445	0.445	0.427	0.129	0.129	0.129	0.126

This table presents pooled OLS regressions of cross-sectional determinants of accruals quality. The dependent variables are AQ and ELOAD, respectively. The main independent variable of interest is SL_CAUSE_RES, the residual from the cross-sectional determinants of causation statements in annual shareholder letters. The linguistic control variables are: SL_IVSU = $\ln((1+Self)/(1+You+Other))$; SL_EVSI = $\ln((1+Excl)/(1+Incl))$; SL_GPE = $(0.26*(Self)+(0.25*(Other))-(0.217*NegEmo)+(0.419*Excl) - (0.259*Motion))$; and SL_POSEMO = $\ln(1+(\text{percentage of extreme positive emotion words}))$. The ability control is from Demerjian et al. (2012). All other variables are defined in Table 3. All variables (except for SL_CAUSE_RES) are winsorized at 1% and 99% in the pooled sample. ***, **, and * represent significance levels, respectively, at the 1%, 5%, and 10% levels (one-tailed for variables with predicted signs, two-tailed otherwise). Robust standard errors, clustered by firm, are used to compute t -statistics, which are reported in parentheses.

Table 7
The Association Between CEO Integrity and Corporate Governance

	Predicted Sign	NUMMEET (1)	%INDEP (2)	BHOLDING (3)	Predicted Sign	HOLDING (5)	CHAIR (6)	Predicted Sign	BSize (7)	%OUTSIDIR (4)
SL_CAUSE_RES	+	2.011** (1.889)	1.592*** (2.941)	-116.260 (-1.994)	-	-39.280* (-1.503)	3.993 (0.532)	?	-14.200** (-2.191)	-0.625** (-2.083)
TENURE		-0.019*** (-2.768)	-0.002 (-0.524)	-0.531 (-1.541)		1.363*** (6.688)	0.527*** (9.333)		-0.101** (-2.084)	-0.004* (-1.842)
AGE		-0.088 (-1.257)	-0.045 (-1.194)	-0.223 (-0.060)		2.757 (1.185)	1.799*** (3.319)		0.795* (1.669)	0.027 (1.253)
FIRIMAGE		0.001 (1.469)	0.002*** (5.495)	-0.049 (-1.180)		-0.028 (-1.400)	0.014** (2.370)		0.029*** (6.137)	0.000* (1.866)
SIZE		0.066*** (8.969)	0.014*** (3.350)	-0.776* (-1.828)		-0.973*** (-4.961)	0.277*** (4.734)		0.796*** (15.474)	0.023*** (8.595)
MTB		-0.006** (-2.045)	-0.001 (-0.857)	-0.040 (-0.252)		-0.123* (-1.914)	-0.006 (-0.285)		0.002 (0.108)	0.001 (1.168)
stdCFO		0.345* (1.674)	0.023 (0.257)	6.855 (0.538)		-3.616 (-0.947)	0.110 (0.074)		-0.647 (-0.489)	0.104 (1.263)
stdSALES		-0.065 (-1.017)	-0.045 (-1.252)	-2.405 (-0.798)		1.347 (0.859)	0.643 (1.506)		-0.839** (-2.163)	-0.019 (-1.012)
OPCYC		0.027 (1.337)	-0.000 (-0.010)	-1.292 (-1.018)		0.055 (0.097)	0.275* (1.675)		0.069 (0.474)	-0.008 (-1.291)
NEGEARN		0.217*** (4.681)	0.085*** (3.215)	-4.694** (-2.070)		-2.981*** (-3.077)	0.734** (2.016)		-0.026 (-0.085)	0.041** (2.497)
INTERCEPT		1.109*** (3.606)	0.736*** (4.188)	15.729 (1.015)		-4.313 (-0.483)	0.551 (0.211)		5.058** (2.509)	-0.317*** (-3.351)
Industry and Year Fixed Effects		Yes	Yes	Yes		Yes	Yes		Yes	Yes
Observations		3240	3121	2749		2740	3116		3121	3010
Adj. R^2		0.171	0.204	0.067		0.220			0.454	0.220
Pseudo R^2							0.140			

This table presents pooled OLS regressions of cross-sectional determinants of corporate governance levels. The dependent variables are a set of governance variables defined as follows: NUMMEET = Number of meetings held by the board of directors during the fiscal year, %INDEP = The percentage of independent directors on the firm's board, BHOLDING = Percent of the firm's stock held by the firm's directors, excluding the CEO if the CEO is on the board, calculated from IRRC data, where holdings of any individual less than 1% are coded by IRRC as zero percent held, HOLDING = Percent of the firm's stock held by the CEO, calculated from IRRC data, where holdings less than 1% are coded as zero percent held, CHAIR = indicator variable that equals 1 if CEO is also the Chairman of the board and 0 otherwise, BSIZE = Number of directors on the firm's board of directors, %OUTSIDEDIR = Percent of the independent board of directors who hold either (i) three or more outside directorships, if the director is employed full-time, or (ii) six or more outside directorships, if the director is retired. The main independent variable of interest is SL_CAUSE_RES, the residual from the cross-sectional determinants of causation statements in annual shareholder letters. TENURE = $\ln(\text{CEO tenure, as of fiscal year end})$. AGE = $\ln(\text{CEO age, in years, as of fiscal year end})$. FIRMAGE = $\ln(\text{number of years since the firm's first appearance on Compustat at fiscal year-end})$. All other variables are defined in Table 3. All variables (except for SL_CAUSE_RES) are winsorized at 1% and 99% in the pooled sample. ***, **, and * represent significance levels, respectively, at the 1%, 5%, and 10% levels (one-tailed for the predicted relations with SL_CAUSE_RES, two-tailed otherwise). Robust standard errors, clustered by firm, are used to compute t -statistics, which are reported in parentheses.

Table 8
The Extent to Which Integrity is a CEO Fixed Effect

Panel A: Descriptive statistics on movers

Mover managers	Number of firms per manager	Number of managers	Percent
No	1	4,000	97.37
	2	106	2.58
Yes	3	1	0.02
	4	1	0.02
Total		4,108	100.00

Firms with movers	Number of movers per firm	Number of firms	Percent
No	0	2,762	92.93
	1-5	188	6.33
Yes	6-10	20	0.67
	11-20	2	0.07
Total		2,972	100.00

Panel B: Fixed effect regressions on entire subsample

	SL_CAUSE_RES (1)	SL_CAUSE_RES (2)	(Spell Method) SL_CAUSE_RES (3)
Firm fixed effects	Yes	No	Yes
Manager fixed effects	No	Yes	Yes
Observations	10976	10976	10976
R^2	0.474	0.570	0.581
Adj. R^2	0.278	0.313	0.319

Panel C: Fixed effect regressions on connectedness subsample

	SL_CAUSE_RES (1)	SL_CAUSE_RES (2)	(Spell Method) SL_CAUSE_RES (3)
Firm fixed effects	Yes	No	Yes
Manager fixed effects	No	Yes	Yes
Observations	875	875	875
R^2	0.420	0.502	0.665
Adj. R^2	0.238	0.267	0.394

Panel D: Relative importance of firm and manager fixed effects in determining SL_CAUSE_RES

	$\frac{Cov(SL_CAUSE_RES, component)}{Var(SL_CAUSE_RES)}$	% of model R^2 from component
Firm fixed effects	0.2038	30.7
Manager fixed effects	0.4611	69.3
Residuals	0.3351	0
Model R^2	0.6649	

This table presents analyses of the association between CEO integrity and both manager and firm fixed effects. The analyses are performed on the subsample of observations for which the shareholder letter is authored by one individual. The descriptive statistics and general approach for the regressions follow Graham et al. (2012). Panels B and C employ the “spell method” from Graham et al. (2012) to simultaneously estimate both the manager and firm fixed effects. In Panel D, the AKW method detailed in Graham et al. (2012) is used to distinguish the manager and firm fixed effects.