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Have we made ourselves (too) clear?—Performance effects of the incentive explicitness in CEO compensation

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ABSTRACT

The design of chief executive officer (CEO) compensation arrangements represents an important mechanism for aligning the goals of firms' shareholders with those of their managers. The explicitness of such goals (incentive explicitness) plays a vital role in this regard. We define incentive explicitness as the degree of CEOs' ex-ante knowledge of the exact performance conditions set out in their compensation arrangements. We argue that incentive explicitness has an inverted U-shaped effect on firm performance. Extending agency theory arguments concerning goal incongruence, we claim that this effect stems from two latent mechanisms. On the one hand, incentive explicitness offers benefits derived from the clear performance-reward links that direct CEOs' actions in such a way as desired by shareholders. On the other hand, in the case of over-explicit incentives, benefits intertwine with the costs that materialize in the form of reduced motivation on the part of CEOs. When incentives are over-explicit, successful strategies are attributed to shareholders' foresight rather than to CEOs' managerial capabilities.

Introduction

Performance-based compensation is intended to focus executives' attention on shareholders' goals and to align them with their own goals, as well as to avoid potential opportunistic behavior on the part of executives (Boyd et al., 2011; Capezio et al., 2011; Devers et al., 2007). Hence, almost all firms include performance-based components in their compensation contracts.¹ However, even when performance-based compensation is in place, many cases can be observed in which managers behave differently to the expectations of shareholders. Executives can destroy shareholder value by making opportunistic decisions. Such decisions led, for instance, to Merrill Lynch's contribution to the subprime mortgage crisis and to Anheuser-Busch-InBev's decision to sell their subsidiary, South Korean Oriental Breweries, in 2009 and then to buy it back for approximately triple the value in 2014. This anecdotal evidence is in line with research observations. Several studies have shown a considerable lack of performance sensitivity to be reflected in chief executive officers' (CEOs') pay, which suggests that performance-based CEO compensation is not able to direct CEOs' behavior in a manner that is consistent with firms' goals (Bebchuk and Fried, 2003; Boyd, 1994; Harris and Bromiley, 2007; Jensen and Murphy, 1990). In fact, many performance-based compensation arrangements seem to induce either no specific managerial action (Chng et al., 2012) or action that is associated with undesirable outcomes. Instances of the latter are manifold, for example,

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¹ As our data indicate, among the S&P 100 firms, only Google Inc. does not use performance-based compensation, since CEO Eric Schmidt (and, since 2011, Larry Page) declined to participate in the executive bonus program.

fraudulent earnings reporting (Harris and Bromiley, 2007; O'Connor et al., 2006; Zhang et al., 2008), product safety problems (Wowak et al., 2015), or the neglect of long-term investment in, for instance, research and development projects (Gibbons and Murphy, 1992).

When more closely considering the CEO compensation arrangements of the two companies mentioned in the examples above, we can see that they differ in terms of the explicitness of the link between outcomes and rewards. On the one hand, Merrill Lynch's CEO bonus arrangement in 2008 left the conditions for receiving the reward rather vague, simply saying that the bonus was "discretionary based on performance" (Merrill Lynch, 2008). Consequently, the link between managerial actions and rewards remained unclear, and the compensation arrangement was thus barely able to direct the incumbent CEO's efforts. On the other hand, the executive compensation arrangement of Anheuser-Busch-InBev in 2009 explicitly stated that reducing the company's debt-earnings ratio to below a certain pre-determined threshold would result in an attractive extra bonus for top executives (Anheuser-Busch InBev, 2009). Anheuser-Busch-InBev's top management team achieved that goal by selling the previously mentioned subsidiary (The Economist, 2014). Interestingly, when repurchasing the very same company in 2014 for approximately triple the value, the company's executive compensation was tied to growth and earnings measures (Anheuser-Busch InBev, 2014). These two anecdotal examples illustrate the extreme ends of a scale: at the one end, a performance-based compensation arrangement without any explicit guidance regarding specific target measures and, at the other end, a performance-based compensation arrangement that is very explicit with regard to such measures. Hence, we expect that this explicitness in the guidance (which will subsequently be termed *incentive explicitness*) concerning compensation arrangements will enable us to shed further light on the relationship between principals and agents. We define incentive explicitness as the degree to which CEOs have ex-ante knowledge regarding the exact performance conditions set out in their compensation arrangements. Incentive explicitness covers all the variable compensation components (cash and equity), and it considers all the outcome measures (financial and non-financial) that are mentioned as being success factors associated with variable compensation components. It comprises CEOs' information about target measures and the weighting of the particular measures that determine their compensation.

We draw on agency theory, which suggests performance-based compensation to be a major mechanism of the alignment of CEOs' and shareholders' goals (Eisenhardt, 1989; Jensen and Murphy, 1990), thereby creating benefits for both firms and their owners (e.g., Gerhart et al., 2009). However, our study challenges agency theory's assumptions about principals' and agents' goal structures, whereby the former optimizes shareholder value while the latter optimizes the monetary reward. We include the idea of allowing for pluralistic "roads to the goals," meaning that shareholders (principals) exhibit heterogeneous preferences for specific strategic directions, while managers (agents) also care about their reputation and future career opportunities, which might improve if they are able to signal their clear responsibility for the firm's strategic direction. We test this idea based on the explicitness of the stated strategic directions within the compensation arrangement. More specifically, we question whether it is beneficial for the firm that the principals explicitly anchor their specific strategic preferences in the CEO's compensation arrangement.

Our study provides several important contributions to the literature. First, we connect to the prior research suggesting that performance-based CEO compensation is a potentially powerful governance tool, although the incentive compensation design determines its influence. In other words, *the devil is in the detail*, at least when it comes to the effectiveness of CEO compensation arrangements (Bebchuk and Fried, 2003; Lim, 2017; McGuire et al., 2017). Second, we contribute to recent developments in the corporate governance literature that are grounded in agency theory (e.g., Cuevas-Rodríguez et al., 2012; Tosi et al., 1997). Our major theoretical setup is inspired by one of the general ideas that inform behavioral agency models (McGuire et al., 2017; Wiseman and Gomez-Mejia, 1998), namely the intention to integrate agency theory and behavioral concepts. However, whereas recent behavioral agency studies have primarily focused on CEOs' behavior and challenged agency theory's assumption of strictly risk-averse agents, our study includes additional assumptions about principals' (shareholders') behavior. We use the classical agency theory argument of goal incongruence (see, e.g., Eisenhardt, 1989) as a starting point. Yet, agency theory does not tell us much about the specific goals of either agents or principals. Shareholders usually have more specific goals for their investments than purely seeking to maximize value: they have specific time horizons and risk preferences, and they assign different priorities to stakeholder relations and strategic directions (Benner and Ranganathan, 2013; Connelly et al., 2010b). Agents usually pursue goals beyond the maximization of their rewards, such as striving for reputation, honor, and future career opportunities (Wiseman et al., 2012). Incentive explicitness represents a means by which shareholders can articulate and anchor their strategic preferences. However, when shareholders express their preferred strategic directions too explicitly, the costs overshadow the benefits of incentive explicitness. Managers pursue additional goals, such as building their reputations, which also enables them to successfully shape their future careers. When the compensation arrangements become too explicit, managers may well fear that successful strategic decisions will not be attributed to their managerial ability. The public might instead consider the over-explicit shareholders and their strategic foresight to be responsible for the firm's success, which reduces the CEO's overall motivation to engage with the firm and, in consequence, reduces the firm's performance.

Theory and hypothesis

Agency theory and CEO compensation

In the principal-agent context, the goals of shareholders and CEOs diverge due to the separation of ownership and control (Berle and Means, 1968; Jensen and Meckling, 1976). Financial incentives are hence needed to induce CEOs to align their actions with shareholders' interests (Jensen and Murphy, 1990; Nyberg et al., 2010). Accordingly, prior studies have promoted performance-based compensation as an important means of directing CEOs' actions in order to overcome the agency problem (Gerhart et al., 2009;

Wowak and Hambrick, 2010). The stronger the relationship between performance and pay, the more CEOs are expected to align their efforts with shareholders' interests (Nyberg et al., 2010). Researchers have found that compensation arrangements can motivate CEOs to act in the best interests of shareholders with regard to increased risk taking and investment activity (Hoskisson et al., 1993), which can serve to ameliorate firm performance (Brown et al., 2003; Gerhart and Milkovich, 1990; Nyberg et al., 2010). Compensation policies are consequently regarded as a powerful tool with which firms can direct their CEOs' actions according to their shareholders' aspirations (Eisenhardt, 1988; Gerhart and Milkovich, 1990). The underlying theoretical rationale behind these positive incentive effects is that the principal has a clear goal, while the agent knows how to achieve that goal, although he/she will refrain from pursuing it if it is not congruent with his/her personal interests. Compensation contracts that are based on the principal's goal connect shareholders' aspirations to agents' rewards and, therefore, foster the desired goal congruence.

However, recent research has indicated that the relationship between principals and agents, and consequently the compensation effect, might not really be that simple. Financial incentives can backfire and motivate CEOs' behavior in such a way that is not in the shareholders' interests (Gerhart et al., 2009). In fact, such incentives could induce CEOs to engage in excessive risk taking (Sanders and Hambrick, 2007) as well as in fraudulent reporting (Harris and Bromiley, 2007; O'Connor et al., 2006; Zhang et al., 2008). We tackle this paradox of unexpected compensation effects by challenging agency theory's silence regarding the "roads to the goals." We claim that shareholders have an interest in how managers run their business due to the need to avoid scandals and misconduct as well as to indicate their desired strategic roadmap. Hence, shareholders can care about a wide range of firm-level measures. The design of a compensation package allows shareholders to articulate their strategic preferences. Yet, the more explicitly the goals are stated in the compensation contract, the more dominate the shareholders' role in the firm's strategy is, which could lead to additional costs for the firm.

The following section will explain why incentive explicitness is an important design parameter with regard to compensation contracts. We claim that under a condition of excessive incentive explicitness, the costs outweigh the benefits. Hence, we expect that the relationship between incentive explicitness and firm performance has an inverted U shape.

Incentive explicitness and firm performance

Incentive explicitness, which refers to the explicitness of the link between outcome conditions and the compensation awarded, can be a key instrument in terms of communicating shareholders' strategic preferences to CEOs and guiding them in the desired strategic direction. Without neglecting the shareholder value as the principals' overarching goal, we propose that shareholders also have preferences with respect to strategic directions in order to achieve an optimal profit (following, e.g., Benner and Ranganathan, 2013). For instance, institutional investors become increasingly interested in firm decisions, and they try to actively shape firms' strategy and governance (Connelly et al., 2010a; Kochhar and David, 1996). Furthermore, different types of owners pursue different goals with respect to the time horizon, preference for risk, and strategies (Aguilera and Jackson, 2010; George et al., 2005).

Compensation can serve as a signal for managers (van Veen and Wittek, 2016), and the design of the compensation arrangement enables shareholders to guide CEOs toward their specific strategic preferences. The outcome measures included in compensation arrangements represent a suitable mechanism for aligning CEOs' behavior with organizational strategy and rendering compensation arrangements more effective (Balkin and Gomez-Mejia, 1990). An explicit compensation arrangement provides shareholder with the opportunity to communicate their desired strategic roadmap more explicitly. For instance, they could emphasize growth or efficiency goals, and they could signal the clear priorities of those goals based on the weights they assign to the respective outcome measures in the contract. Hence, benefits stem from the capacity of incentive explicitness to direct CEOs' effort.

From the perspective of CEOs, this means that, with an explicit compensation contract, they have a clearer understanding of the shareholders' strategic preferences. As a consequence, they can also more clearly determine which corporate actions will lead to a higher reward. The clearer the link that CEOs perceive between performance outcomes and rewards, the more the underlying incentive system is able to direct the CEOs' actions accordingly (Cadsby and Tapon, 2007; Gerhart and Milkovich, 1990). Explicit performance conditions thus serve as guidelines to let CEOs know about the dimensions of their success and how they will pay off (e.g., Kerr, 1975). Psychologists agree that specific and challenging goals have a positive effect on CEOs' motivation (Locke and Latham, 2002). Assuming that CEOs do what is necessary to maximize their rewards, they are incentivized to orient their efforts according to the target structure that is explicitly determined by the firm in the shape of the performance conditions set out in their compensation arrangement (Gerhart and Milkovich, 1990). This alignment of interests between owners and CEOs is associated with organizational benefits (Cadsby and Tapon, 2007; Nyberg et al., 2010; Zajac and Westphal, 1995), which explains the positive effect on performance of incentive explicitness.

Despite the above-mentioned benefits of incentive explicitness, we suggest a curvilinear relationship between incentive explicitness and firm performance, since we claim that explicitness has certain costs for firms that can outweigh the benefits when the explicitness is excessive. Incentive explicitness causes costs because excessive explicitness reduces CEOs' motivation, since their perceived managerial discretion (latitude of actions available to CEOs - for a literature review of the concept compare, e.g., Wangrow et al., 2015) is lower and any corporate success is not attributed to their managerial capabilities.

Thus, an over-explicit compensation arrangement is not in line with the agent's additional goals beyond the monetary reward, such as his/her reputation and future career opportunities. In the case of over-explicit compensation, business success is attributed to owners who explicitly spelled out the desired strategy rather than to managers, which can reduce CEOs' motivation to take on responsibility for the firms' general strategy. Opportunistic CEOs might choose to optimize other goals, such as increases in leisure time, when the incentives are over-explicit. By sticking with the strategic frame proposed in the over-explicit compensation contract, they can save time by not challenging the strategic status quo and inducing disruptive changes.

Yet, even for non-opportunistic CEOs, incentive explicitness can result in costs. In line with the approach of Wiseman et al. (2012), we assume that agents have multiple goals that go beyond mere monetary rewards, including reputation, personal satisfaction, and certain career goals. Goals such as reputation and future career perspectives depend on stakeholders' evaluation of CEOs' performance. Stakeholders not only evaluate the firm performance, but also the causal attribution (Crossland and Chen, 2013; Halebian and Rajagopalan, 2006). This means that they make an assessment as to who they believe is responsible for a given strategic decision. When shareholders forecast and dictate the entire strategy, CEOs might perceive their managerial discretion as reduced. Since CEOs then cannot use the managerial discretion to actively push beneficial strategic initiatives (compare, e.g., Sandhu and Kulik, 2018), good firm performance might be attributed to the shareholders rather than to the CEO, and hence CEOs do not have the chance to build their reputation and achieve additional career goals. During the drafting of compensation contracts, shareholders need to consider both the opportunistic reward maximizing and the reputation and career achievement seeking of CEOs. However, due to the inherent information asymmetries, the shareholders will not be aware of the CEOs' true motives (Cruz et al., 2010).

In summary, we argue that as explicitness increases, the effects of demotivation on CEOs who strive for opportunistic reward maximization and/or reputation and further career achievements become increasingly pronounced. Hence, we argue that under a condition of excessive incentive explicitness, such costs outweigh the corresponding benefits of explicitness.

Summarizing the benefit and cost arguments, we suggest that at moderate levels of explicitness, CEOs are conscious of shareholders' target structure, although they are not yet demotivated by explicitness beyond a certain tipping point. They are informed about, as well as incentivized by, the shareholders' general strategic roadmap and they can act within the established boundaries. At the same time, the moderately explicit contract leaves CEOs with sufficient freedom to not be demotivated by such a contract. We argue, therefore, that at moderate levels of explicitness, the incentive effect of compensation will be ideal with respect to the overall firm performance. We hypothesize:

H1. There exists an inverted U-shaped relationship between the degree of incentive explicitness and firm performance.

Methods

Sample and data

Our sample included non-financial firms listed in the S&P 100 index. We selected large U.S. firms as a valid basis for assessing and analyzing the incentive explicitness of performance-based CEO compensation, since such firms are obliged to disclose detailed information regarding the performance conditions of their CEOs' pay in a standardized manner (Conyon and Murphy, 2000; U.S. Securities and Exchange Commission, 2016).

We extracted comprehensive information concerning the firms' CEO compensation arrangements from the firms' proxy statements for the years 2006–2011. In line with previous research (e.g., Oehmichen et al., 2017), we argue that such a sample period, covering as it does both pre-crisis and post-crisis years, increases the potential generalizability of our study. Furthermore, we excluded firms that did not grant any performance-based compensation to their CEO during the relevant period.² Thomson Reuters' Datastream provided firm- and industry-level data, while variables concerning the ownership characteristics were collected from Thomson One Banker. Moreover, the board- and CEO-related variables were obtained from BoardEx. After merging and matching the data retrieved from these different sources, we obtained an unbalanced panel dataset of 438 observations concerning 80 firms.

Measures

Incentive explicitness. To measure the degree of incentive explicitness of the performance-based CEO compensation arrangements, we built an index that captures the two basic elements of incentive compensation arrangements that we consider to be drivers of the overall incentive explicitness: (1) the explicitness of the outcome measures named as success factors for the granting of CEOs' variable compensation (both cash and equity) and (2) the explicitness of the measures' weightings.³ Performance measures and their respective weightings are central elements of the incentive function of compensation (Baker et al., 1994; O'Connell and O'Sullivan, 2014). The performance measures tied to CEOs' pay packages highlight the dimensions of performance that firms intend to reward. The specified performance measures influence CEOs' actions in such a way that the reward expectancy will encourage the CEOs to act in a manner that will maximize their rewards. The weighting of the performance measures serves as their prioritization (O'Connell and O'Sullivan, 2014). Hence, CEOs gain knowledge as to which actions will pay off and to what extent, which influences their

² This was the case for only one company, namely Google Inc., whose CEO Eric Schmidt (and, since 2011, Larry Page) declined to participate in the executive bonus program every year throughout the covered period.

³ We want to emphasize that explicitness represents an important parameter for all performance-based pay components, including those components with financial and non-financial goals. The following examples show that even equity pay, which initially appears to have a purely financial goal, can actually be tied to several more or less explicit financial and non-financial outcome conditions. The equity components of Colgate Palmolive's CEO compensation agreement in 2007 depended on the EPS, CAGR, and additional judgement by the board concerning, for example, "continued employment." The equity pay of Avon Products' CEO in 2011 depended on the revenue, economic profit, and operating margin. Schlumberger even tied its 2009 equity compensation arrangement to the following list of performance conditions: (1) the company's financial and operating performance, (2) the achievement of non-financial goals, and (3) the executive officer's contribution to the company's success. Finally, Walt Disney's CEO was offered a bonus in 2008 if he managed to establish a social responsibility agenda.

agendas. Therefore, the weighting of performance measures represents a means of aligning CEOs' priorities with those of shareholders.

Performance measures can refer to a variety of quantitative and qualitative factors. Depending on the nature of a given measure, the outcome is more or less explicitly defined. By definition, the less explicit a measure is, the more room there is for interpretation. The existence of target values is in line with the nature of the measure. A lack of target values leads to a lack of reference points for success (Wiseman and Gomez-Mejia, 1998). We argue that, when there is a lack of target values, CEOs cannot develop sufficient understanding of the targeted performance level. This leads to a low incentive effect, since the CEOs might know what type of performance is to be rewarded, but not what level of performance has to be attained. We argue, therefore, that a lack of target values renders even completely explicit measures vague. In other words, target values complement the explicitness of measures, while measures that initially seem non-explicit may become explicit when a target value is applied. For example, *safety improvement* is not an explicit measure per se; however, when attached to a certain number of work-related accidents that must not be exceeded, it would be considered explicit. We argue that, since measures cannot be judged separately from their target values, they should be considered as a whole when assessing their explicitness.

A clear definition in terms of the fixed weighting of the performance measures associated with a compensation component serves to create an explicit valuation system. This can indicate the impact that a particular measure will have on the amounts included in a given compensation package. If a weighting is assigned, CEOs are made aware of the importance of the performance measures with respect to their pay package.

To calculate the explicitness index, we analyzed all the proxy statements of the sample firms during the sample period. That is, we analyzed every variable compensation component, both cash and equity, with respect to their underlying success factors and the weightings of those success factors. As the first step, we coded the performance measures according to their explicitness, whereby explicit measures were coded as 1 and non-explicit measures were coded as 0. In the second step, we calculated the average measure explicitness for every compensation component. For example, for a compensation component with two explicit measures and one non-explicit measure, we calculated a measure explicitness score of $(1 + 1 + 0)/3 = 0.66$. As the third step, we analyzed the weightings of the performance measures. Based on the consecutive logic of the explicitness index, the weighting explicitness of a given compensation component was coded as 1 if a weighting was assigned to the performance measures. If there was no weighting assigned, or if the weighting was incomplete due to an unspecified amount of discretion, the weighting explicitness was coded as 0. The score for the weighting component of the explicitness index was then added to the average of the measure explicitness component so that each performance-based compensation component had an index with continuous values between 0 and 2. Values close or equal to 2 indicated high incentive explicitness, while values close or equal to 0 indicated low incentive explicitness. In the last step, we calculated the average of all the compensation components to obtain the average degree of explicitness for the firm's compensation system during a particular year. Two independent coders analyzed the compensation and benefit sections of the proxy statements to obtain both the measure explicitness and the weighting explicitness. In case of doubt or disagreement, a third coder was consulted. All the coders have a master's degree in business administration. The inter-coder agreement was 94%. The index for the incentive explicitness can be summarized using the following formula:

$$IE = \sum_{j=1}^J \frac{\sum_{i=1}^I ME_{ij}}{i} + WE_j \quad (1)$$

where IE is the incentive explicitness, j is the number of compensation components, i is the number of measures tied to the jth compensation component, ME is the measure explicitness, and WE is the weighting explicitness.

We lagged the incentive explicitness to account for the delayed effects of CEOs' compensation arrangement design on firm performance (Perry and Zenner, 2001).

Performance. This study analyzes the performance effect of the degree of explicitness in performance-based CEO compensation, which represents an internal governance mechanism. We followed the approach of prior corporate governance studies and captured the firm performance using the return on assets (ROA) (Castañer and Kavadis, 2013; He and Huang, 2011).

Control variables. We controlled for the firm characteristics and the properties of the compensation design, as well as for the CEO, board, and ownership characteristics that could be associated with both incentive explicitness and firm performance. First, we controlled for the firm size using the logarithm of the firm's *total assets*. To include the disciplinary effect of debt, we also controlled for the firm's *leverage*, which is calculated as total debt divided by the total assets. We address the influence of diversification by following the approach of prior research and using the entropy index of diversification (Palepu, 1985), which is calculated as $diversification_i = \sum_{j=1}^J P_{ij} \ln(1/P_{ij})$, where P_i is the proportion of firm i 's sales in its j th business segment. As both the level of compensation and the amount of long-term compensation have been found to be related to firm performance (Brown et al., 2003; Carpenter and Sanders, 2002), we controlled for the *total CEO compensation* (total amount of salary, bonuses, and equity granted in a given year) and the percentage of *equity-based compensation*. Furthermore, to rule out the possibility that our results were driven by the number of objectives determined in the compensation arrangement, we controlled for the *total number of performance measures* tied to the performance-based compensation components. To deal with the possible effects of the ownership characteristics, we added *institutional ownership (%)* into the model. Considering the crucial role played by CEO power in the context of executive compensation, we also controlled for *CEO tenure* and *CEO duality*. Additionally, to control for the level of *managerial discretion*, we included free cash flow (scaled by total assets) as a financial figure approximation of discretion in the model (Picone et al., 2014). The board influence on setting CEO compensation and monitoring CEOs' performance was controlled for using the *board size* for the proportion of *outside directors* and the *board busyness* (number of directors with at least five directorships). To control for industry effects, we

included the industry average ROA in the analyses (He and Huang, 2011). In line with prior studies that conducted performance regressions, we lagged the control variables (Wade et al., 2006).

Estimation methods

In our hypothesis, we addressed a time-variant organizational mechanism likely to be influenced by cross-firm heterogeneity. To account for these parameters, we used a panel dataset for our research design (Wooldridge, 2001). The dataset included 80 firms repeatedly observed during the 2006–2011 study period, and the dependent variable, namely the ROA, was continuous. To avoid biased and inconsistent results due to heteroscedasticity and autocorrelation in the ordinary least squares (OLS) regressions based on panel data, we had to calculate random- or fixed-effects models (Certo and Semadeni, 2006). We followed the approach of prior compensation research to determine whether to use random- or fixed-effects models, and we conducted a Hausman test (Devers et al., 2008; Martin et al., 2013). We used fixed-effects models rather than random-effects models based on the results of the Hausman test (Hausman, 1978) ($\chi^2 = 82.07, p < 0.001$). Accordingly, the analyses were estimated with the *xtreg* command specifying the fixed-effects option in Stata. Furthermore, we used Huber-White robust standard errors (White, 1980).

Results

Table 1 presents the descriptive statistics and correlations of the variables used in our regressions.

Table 2 shows the results of our regression analyses. Our hypothesis predicted an inverted U-shaped relationship between incentive explicitness and firm performance. To test this relationship, we included the linear and the quadratic terms of the incentive-explicitness index in the equation. Following the approach of Haans, Pieters, and He (2016), we did not mean-center or standardize incentive explicitness prior to calculating its square to avoid confusion when interpreting the results. We also ran supplementary regressions using mean-centered versions of incentive explicitness. The checks revealed that the results remained unchanged. In the interests of brevity, we do not report those results.

The coefficient for the incentive explicitness quadratic term (incentive explicitness squared) was negative and significant ($p < 0.01$) (model 1). This negative and significant quadratic term of the explanatory variable supports our hypothesis of an inverted U-shaped relationship (Haans et al., 2016; Zhang and Bartol, 2010). To further test the curvilinearity of the relationship between incentive explicitness and firm performance, we employed Lind and Mehlum's test for U-shaped relationships (Haans et al., 2016; Lind and Mehlum, 2010). The test calculates the assumption that the focal relationship has an inverted U shape against the null hypothesis that it is a monotone shape. If the shape of the curve is significantly different from a monotone shape, then the null hypothesis is rejected (Lind and Mehlum, 2010). Using the *utest* command in Stata 12, we found that the shape of the curve was significantly different from a monotone shape ($p < 0.01$), which further supported our assumption of a U-shaped relationship between incentive explicitness and firm performance. The *utest* command calculated a turning point at an explicitness value of 1.03, which is close to median (1.07) and mean (1.11) of incentive explicitness. By calculating the turning point, we ensure that it is located well within the data range (Haans et al., 2016). In addition to the statistical testing of the presence of an inverted U shape, we plotted the results in Fig. 1 to depict the shape of the curve graphically. The plot provided further support for the existence of an inverted U-shaped relationship between incentive explicitness and firm performance.

Robustness checks

We performed checks to validate both the quality and the robustness of our results. We calculated the variance inflation factors (VIF) to ensure that multicollinearity among the control variables was not biasing our results. All the control variable VIF were significantly lower than 10, which is the established threshold that would signal multicollinearity problems (compare, e.g., Hair et al., 2006).

We used a rolling three-year average ROA as an alternative dependent variable. This alternative approach offered the advantage of smoothed yearly fluctuations in performance as well as an expanded timeframe for the analysis (Carpenter and Sanders, 2002; Messersmith et al., 2014). As depicted in Table 3, the results remained unchanged.

To ensure that our results were not driven by the specific way in which we constructed the index used to measure incentive explicitness, we also tested different index specifications (see Table 4). First, rather than equally weighting the explicitness of the different compensation components, we weighted the components according to their proportion within the total performance-based compensation granted (model 1). The following formula summarizes this alternative incentive-explicitness index:

$$\sum_{j=1}^J c_j \left(\frac{\sum_{i=1}^I ME_{ij}}{i} + WE_j \right) \quad (2)$$

As another alternative, we used a three-point logic to code the measure explicitness, target explicitness, and weighting explicitness separately for each performance condition tied to a given performance-based compensation component (model 2). Every explicit measure was coded as 1, as was every explicit target attached to that measure and every explicit weighting. Consequently, every performance condition had a score between 0 (not explicit) and 3 (fully explicit). Then, we calculated the average incentive explicitness of all the performance conditions. This approach to calculating the explicitness index is summarized by the following formula:

Table 1
Means, standard deviations, and correlations.

Variables	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Return on assets ^a	8.39	7.06															
2. Incentive explicitness	1.11	0.45	−0.18														
3. Median industry performance ^a	7.02	2.45	0.42	−0.10													
4. Total assets ^{ab}	17.09	1.00	−0.19	−0.13	−0.03												
5. Leverage ^a	0.26	0.14	−0.29	0.33	−0.17	−0.10											
6. Institutional ownership (%)	0.65	0.17	−0.14	0.08	−0.07	−0.31	0.01										
7. Total CEO compensation ^a	143.03	67.16	0.00	0.06	0.13	0.46	−0.09	−0.17									
8. Equity compensation (%)	0.57	0.20	−0.08	0.17	−0.02	0.05	0.00	−0.06	0.24								
9. No. of performance measures	8.40	4.84	−0.04	0.00	0.03	0.06	0.10	−0.02	0.00	−0.02							
10. CEO tenure	4.97	4.86	0.08	−0.13	0.05	−0.09	0.02	−0.01	0.03	−0.13	−0.05						
11. CEO duality	0.75	0.43	0.01	0.07	0.03	−0.04	−0.15	0.07	−0.13	0.09	0.02	0.08					
12. Managerial discretion ^a	0.12	0.05	0.52	−0.24	0.30	−0.12	−0.34	−0.17	−0.01	−0.03	−0.05	0.06	−0.05				
13. Outside directors	0.87	0.10	−0.07	−0.07	−0.05	−0.04	−0.06	0.10	−0.08	−0.01	0.09	0.09	0.00	−0.14			
14. Board busyness	0.06	0.08	−0.02	0.07	0.20	0.03	0.05	0.01	0.05	−0.06	−0.06	−0.02	0.04	−0.03	0.03		
15. Board size	10.61	1.95	−0.17	−0.01	−0.02	0.33	0.22	−0.19	0.15	0.07	0.13	−0.04	0.00	−0.24	0.06	−0.07	
16. Diversification	0.91	0.54	−0.04	−0.25	−0.01	0.04	−0.11	−0.04	0.05	−0.10	−0.19	0.15	−0.05	−0.10	0.14	0.09	−0.04

Note. N = 438, correlations higher than 0.09 are significant at the 5%-level, ^a winsorized at the 5% and 95% levels, ^b Log transformed (natural log).

Table 2
Fixed-effects analysis of the effect of incentive explicitness on firm performance.

Independent variables	Return on assets		
	Model 1		
Constant	141.59	***	(21.76)
Median industry performance	0.60	***	(0.17)
Total assets	−7.57	***	(1.20)
Leverage	−6.33	*	(3.16)
Institutional ownership (%)	−3.58	*	(1.54)
Total CEO compensation	0.00		(0.00)
Equity compensation (%)	−0.22		(1.58)
Total number of performance measures	0.03		(0.06)
CEO tenure	0.08	+	(0.04)
CEO duality	−1.28	+	(0.72)
Managerial discretion	−6.54		(4.99)
Outside directors	−3.12		(3.75)
Board busyness	1.35		(3.13)
Board size	−0.33	*	(0.15)
Incentive explicitness	5.81	**	(2.03)
Incentive explicitness squared	−2.81	**	(0.82)
Diversification	1.67	+	(0.84)
R ²	0.29		

Note. N = 438, heteroscedasticity consistent standard errors in parentheses, year dummies included but not reported, + p < 0.10,

*p < 0.05, **p < 0.01, ***p < 0.001.

Fig. 1. Relationship between incentive explicitness and firm performance.

$$IE_3 = \sum_{j=1}^J \frac{\sum_{i=1}^I ME_{ij} + TE_{ij} + WE_{ij}}{i j} \quad (3)$$

We found that the inverted U-shaped effect of incentive explicitness on firm performance was not affected by the alternative index specification, since the coefficient of the quadratic term was negative and significant throughout all the models.

Furthermore, we conducted supplementary analyses to control for endogeneity. Our explanatory variable, namely incentive explicitness, was likely to be endogenous. Arguably, executive compensation represents a strategic choice that firms purposely make based on their characteristics and capabilities (Shaver, 1998). For quadratic relationships in particular, researchers have called for the increased use of robustness checks in terms of endogeneity, when X is a variable that is subject to strategic choice and Y is a form of firm performance (Haans et al., 2016). Hence, to further mitigate any reverse causality concerns, we implemented a generalized method of moments (GMM) estimation. The GMM estimation uses instrumental variable estimates to provide an additional indication that the issue of reverse causality or simultaneity does not affect the model by retrieving instruments from the lagged values within the panel itself (Firk et al., 2016; Wintoki et al., 2012). In our analyses, we employed the two-step GMM estimator using the *xtabond2* module in Stata. The results of the GMM estimations can be seen in Table 5. They remained unchanged.

Furthermore, to exclude potential biases due to correlations with control variables we calculated a regression without control variables and our results were supported (see Table 6).

Lastly, we conducted additional tests to further challenge our U-shape assumption. First, we tested for linear and cubic effects and did not find indication for them. Second, we estimated two separate regressions to test whether we see significant upward and downward slopes on the two sides of the turning point. Whereas the downward slope in the sample of incentive explicitness above 1.03 is very significant, we do not find a significant upward slope (p = 0.285). However, we are still confident about our results since

Table 3

Results of the robustness check with three-year rolling return on assets as the alternative dependent variable.

Independent variables	Rolling three-year return on assets		
	Model 1		
Constant	112.78	***	(16.38)
Median industry performance	0.27	*	(0.11)
Total assets	−6.07	***	(0.94)
Leverage	−7.18	***	(1.95)
Institutional ownership (%)	−0.98		(0.96)
Total CEO compensation	0.01	**	(0.00)
Equity compensation (%)	−0.11		(0.94)
Total number of performance measures	−0.04		(0.06)
CEO tenure	0.07	+	(0.04)
CEO duality	−0.48		(0.58)
Managerial discretion	−3.36		(3.36)
Outside directors	−1.86		(2.82)
Board busyness	1.96		(2.22)
Board size	0.00		(0.12)
Incentive explicitness	3.77	*	(1.70)
Incentive explicitness squared	−1.83	*	(0.70)
Diversification	0.40		(0.50)
R ²	0.34		

Note. N = 428, heteroscedasticity consistent standard errors in parentheses, year dummies included but not reported, + p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.

Table 4

Results of the robustness check with alternative incentive explicitness measures.

Independent variables	Return on assets		
	Model 1		
Constant	141.19	***	(20.32)
Median industry performance	0.62	***	(0.17)
Total assets	−7.44	***	(1.14)
Leverage	−6.30	+	(3.27)
Institutional ownership (%)	−3.64	*	(1.62)
Total CEO Compensation	0.00		(0.00)
Equity compensation (%)	−1.06		(1.64)
Total number of performance measures	0.01		(0.07)
CEO tenure	0.06		(0.05)
CEO duality	−1.60	*	(0.72)
Outside directors	−3.19		(3.84)
Board busyness	0.36		(2.95)
Board size	−0.29	+	(0.16)
Incentive explicitness	2.23		(1.78)
Incentive explicitness squared	−1.66	+	(0.83)
Diversification	1.88	*	(0.86)
R ²	0.28		

Note. N = 438, heteroscedasticity consistent standard errors in parentheses, year dummies included but not reported, + p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.

the insignificance might be partly driven by the rather small sample size of 203 observations and the sample split that might destroy the panel structure of the data and lead to even fewer within effects that matter for our fixed effects design.

Additional analyses

We based our cost arguments concerning over-explicit incentives on the decreasing motivation of CEOs as they fear the reduced attribution of firm success to their abilities when compensation arrangements are too explicit. Our empirical results confirmed the negative performance effect of over-explicit compensation arrangements. An additional analysis was performed to further test the theorized underlying mechanisms.

We argue that the threat of success not being attributed to CEOs is greater when the CEOs are new to their position. CEOs who are relatively new to their role do not have a long list of prior achievements that they can build their reputation on. Hence, the attribution of firm success is even more important to them. We expected, therefore, that the effects of demotivation become relevant with even lower levels of explicitness. We tested this idea based on the moderating effect of CEO tenure, and we expected that optimum

Table 5
Results of the GMM analyses.

Independent variables	Return on assets		
	Model 1		
Constant	−1.36		(28.32)
Median industry performance	0.99	***	(0.18)
Total assets	0.74		(1.59)
Leverage	3.69		(8.46)
Institutional ownership (%)	−3.09		(2.53)
Total CEO compensation	0.01		(0.01)
Equity compensation (%)	−7.41	**	(2.39)
Total number of performance measures	−0.15		(0.13)
CEO tenure	−0.08		(0.10)
CEO duality	0.95		(1.32)
Board busyness	−0.59		(7.61)
Board size	−0.44	+	(0.23)
Outside directors	−4.58		(10.00)
Incentive explicitness	7.83	*	(3.84)
Incentive explicitness squared	−3.70	*	(1.63)
Diversification	0.35		(1.54)
Wald χ^2 statistic ^a	237.42 (20)		
Arellano-Bond test (Π_1) ^b	−3.28 [0.001]		
Arellano-Bond test (Π_2) ^b	−1.45 [0.146]		
Hansen J-statistic ^b	65.26 [0.961]		

Note. N = 438, heteroscedasticity consistent standard errors in parentheses, year dummies included but not reported, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ^a degrees of freedom in parentheses, ^b p-values in brackets.

Table 6
Results from Robustness Check excluding control variables.

Independent variables	Return on Assets		
	Model 1		
Constant	3.51	*	(1.66)
Incentive explicitness	6.54	*	(2.59)
Incentive explicitness squared	−2.39	*	(0.99)
R ²	0.09		

Note. N = 438; heteroscedasticity consistent standard errors in parentheses; year dummies included, but not reported; + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

performance occurs at lower levels of incentive explicitness as the CEO tenure decreases.

Following the recommendation of Aiken and West (1993), we mean-centered the explicitness index and the CEO tenure before constructing the interaction term to avoid multicollinearity and to aid in interpretation. We argue that the moderation is due to the decreased benefits of incentive explicitness in situations of higher diversification and lower tenure. Consequently, the form of the hypothesized interaction involves a curvilinear X relationship, a linear Z relationship, and a linear by linear XZ interaction, as depicted in the following equation: $Y = b_1X + b_2X^2 + b_3Z + b_4XZ + b_0$ (Aiken and West, 1993; Haans et al., 2016; Zhang and Bartol, 2010). The results are presented in Table 7.

The coefficient of the interaction term *incentive explicitness* $\times$ *CEO tenure* had a significant positive sign ($p = 0.046$), which indicated support for the moderating effect of CEO tenure. To enhance our understanding of the slope of the curve at particular levels of the moderating variable, we plotted the respective results (Aiken and West, 1993), which are shown in Fig. 2. We chose one standard deviation above and below the mean CEO tenure to model the high and low levels of CEO tenure, respectively. As depicted, at low levels of CEO tenure, a lower amount of explicitness in compensation is optimal, as compared to medium and high levels of CEO tenure. This finding is in line with our prediction.

Discussion and conclusions

Our study is motivated by a desire to shed light on the challenges involved in designing CEO compensation arrangements. We highlight the role played by incentive explicitness as a way for shareholders to articulate their strategic preferences and to incentivize managers to act in line with those preferences, but also as a design characteristic that can result in costs such as CEO demotivation when used excessively. We find empirical support for our hypothesis that the degree of incentive explicitness has an inverted U-shaped relationship with firm performance. Furthermore, our additional analyses provide evidence of the moderating role played by CEO tenure, a proxy for CEO priorities in terms of reputation and future career goals. The CEO tenure moderates the U-shaped

Table 7

Additional analyses with moderating effects of CEO tenure.

Independent variables	Return on assets					
	Model 1			Model 2		
Constant	141.85	***	(22.16)	141.95	***	(22.27)
Median industry performance	0.62	***	(0.17)	0.62	***	(0.17)
Total assets	-7.61	***	(1.22)	-7.66	***	(1.22)
Leverage	-6.35	*	(3.11)	-6.55	*	(3.11)
Institutional ownership (%)	-3.67	*	(1.54)	-3.58	*	(1.56)
Total CEO compensation	0.00		(0.00)	0.00		(0.00)
Equity compensation (%)	-0.31		(1.57)	-0.39		(1.56)
Total number of performance measures	0.03		(0.06)	0.03		(0.06)
CEO tenure	0.07	+	(0.04)	0.03		(0.05)
CEO duality	-1.19		(0.73)	-1.17		(0.72)
Managerial discretion	-7.14		(4.97)	-7.02		(4.99)
Outside directors	-3.02		(3.76)	-2.46		(3.81)
Board busyness	0.62		(3.13)	0.63		(3.13)
Board size	-0.31		(0.15)	-0.32	*	(0.15)
Diversification	1.56	+	(0.85)	1.55	+	(0.87)
Incentive explicitness	5.27	*	(2.10)	5.94	*	(2.26)
Incentive explicitness squared	-2.64	**	(0.84)	-2.89	**	(0.91)
Incentive explicitness x CEO tenure	0.11	*	(0.05)	0.09	+	(0.05)
Incentive explicitness squared x CEO tenure				0.11		(0.08)
R ²	0.29			0.29		

Note. N = 438; heteroscedasticity consistent standard errors in parentheses; year dummies included, but not reported; + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Fig. 2. Moderating effect of CEO tenure.

relationship between incentive explicitness and firm performance in such a way that the lower the CEO tenure is, the lower are the optimal levels of incentive explicitness. The results support our theoretical arguments regarding the costs of excessive explicitness that stem from reduced CEO motivation. The threat of success not being attributed to CEOs with explicit compensation arrangements is greater when the CEOs are new to their position.

Our study makes three key contributions to the corporate governance research. First, the results enhance our understanding of how incentive effects arise. We consider the prevailing challenges involved in designing performance-based CEO compensation arrangements. While previous studies have offered valuable insights into the potential hazards of performance-based CEO compensation (Harris and Bromiley, 2007; Sanders and Hambrick, 2007), they have left open the question of how performance-based compensation arrangements should be designed in order to increase their incentive effect. We suggest focusing on the incentive explicitness of performance-based CEO compensation as a way of achieving goal alignment in compensation arrangements. Our

results confirm the importance of moderate incentive explicitness for firm performance.

Second, this study suggests a way to study agency-based phenomena by including behavioral arguments regarding principal and agent goal diversity. Combining agency theory with the idea that agents and principals can have a number of preference and goals enables a deeper understanding of the incentive effects of CEO compensation. Hitherto, the agency-based research concerning CEO compensation has provided valuable insights into the necessity of goal alignment between CEOs and shareholders, as well as the potential contribution made by variable CEO compensation (Chng et al., 2012; Eisenhardt, 1989; Nyberg et al., 2010). However, agency theory does not address the question of how such dysfunctionalities occur and how they affect the incentive effect of compensation arrangements. Complementary theoretical constructs, such as the manifoldness of agent and principal goals, represent a means of developing deeper insights into how performance-based CEO compensation influences CEOs' efforts. In our study, we build on the basic assumptions of agency theory and complement it with specific ideas about the goals of agents and principals. We offer arguments that explain how explicitly stating their strategic preferences helps shareholders to guide agents and to align them with several heterogeneous goals. However, we also rationalize CEOs' behavior. Due to striving to build a reputation and to access additional career opportunities, CEOs with over-explicit incentives appear tired of dedicating their efforts to the firm, since the stakeholders will not consider them to be responsible for the strategic decision making. Using incentive explicitness, we hence enlarge the agency theory perspective concerning the incentive effectiveness of CEO compensation arrangements.

Third, through our additional analyses, we also build on the prior research that highlights how the design of incentive compensation arrangements has to be adapted to firm-specific contingency factors if it is to be successful (e.g., Barkema and Gomez-Mejia, 1998; Finkelstein and Boyd, 1998). More specifically, our results provide valuable insights into how to foster an appropriate fit between compensation design and CEO characteristics. Characteristics such as their tenure can have an impact on CEOs' goals and priorities. To be effective, compensation arrangements should consider this accordingly. These insights are in line with the behavioral theory's general notion of considering a richer set of agent preferences than simply risk aversion. With tenure, our study proposes a CEO characteristic that could serve as an example of these richer preferences.

Our results also have important managerial implications. If firms wanted to follow our recommendations to choose moderate levels of incentive explicitness and to adjust the level of explicitness to the tenure of the CEO, doing so would have the following consequences. To reach a certain level of explicitness, the board members who actually decided on the compensation contract would have to invest some time and effort in understanding the overarching strategy of the firm. Using off-the-shelf contracts based on brief benchmarking investigations will no longer suffice. Furthermore, the fact that contracts are not fully explicit will also require a certain degree of settlement between the CEO and the board members at the end of the fiscal year. Determining the levels of bonuses that were not explicitly agreed upon in the ex-post contracts could cause conflicts and, therefore, requires a certain degree of independence and assertiveness on the part of board members. Nevertheless, such changes could also offer additional benefits for the firm. These more tailor-made compensation contracts are more flexible, and they are easier to adapt to changes in the firm environment. Hence, the high quality of compensation contracts can be more easily assured.

Despite its potential valuable contributions, our study is not without limitations. First, it only provides an initial indication of how the design of a beneficial compensation arrangement actually depends on CEO-specific factors. Several additional personal characteristics, as well as the attitudes of individual CEOs, have been shown to play a potentially crucial role in how compensation arrangements affect executives' actions (Wowak and Hambrick, 2010). For instance, CEOs' degree of organizational identification influences the decoupling of CEO compensation from firm performance (Boivie et al., 2011). While we control for power-related CEO characteristics in the shape of CEO tenure and duality, as well as for managerial discretion, we do not include controls for CEOs' personal characteristics or attitudes. Therefore, we can only draw conclusions based on the *average CEO*. However, while CEOs vary in terms of their distinct personalities, there do exist certain parallels among the members of the upper business echelon (Acharya and Pollock, 2013). Hence, we are confident that, while this limitation is valid, our results still provide a valuable contribution to understanding the incentive effects of CEO compensation. Future studies might want to investigate whether the manifestation of the costs and benefits of incentive explicitness is dependent on CEOs' personalities and attitudes. For instance, a feasible working hypothesis to start with could be that in the case of narcissistic CEOs, the costs of explicitness are higher, since such CEOs place an even stronger emphasis on the attribution of business success to their own abilities.

Second, although our additional test of the moderating effect of CEO tenure indicates that the mechanisms underlying our observed effect are indeed based on CEO behavior, which changes with the level of incentive explicitness, we cannot rule out additional alternative explanations and mechanisms. For instance, the costs (negative performance effects) occurring with over-explicit incentive can also be caused by the fact that it is too costly for shareholders to specify the long list of performance criteria. This is in line with the theory of incomplete contracts which, among others, claims that when designing a contract it also involves costs to come up with the list of all relevant particular rights covered by the contract, especially when the list is long due to a complex context (compare, e.g., Grossman and Hart, 1986). Future research might want to extend our research and have a closer look at the process of compensation contract design to find out whether certain contract designs indeed imply higher costs. Furthermore, these costs of over-explicit contracts might even increase in dynamic environments. Changing environments might require flexible and adaptable goal systems, but CEOs with over-explicit contracts might strictly stick to the guidance of shareholders last-year strategic goals that are mentioned in the contract. Nevertheless, this effect would either be based on the assumption that CEOs opportunistically optimize their own compensation or the assumption that the CEOs do not have to capability to recognize the need for adaptations in strategic directions. Hence, future research could examine, how disruptions in certain industries such as a wave of digitalization moderate our observed explicitness-performance relation and how this moderating effect depends on CEO characteristics such as opportunism and expertise.

Third, with compensation explicitness, our study's primary focus was on just one corporate governance mechanism. Hence, we

cannot make any statements regarding the interdependencies that exist with other corporate governance characteristics, such as the board or top management team (TMT) structure, or other compensation parameters. For instance, with respect to the TMT structure, our study does not consider in detail the interdependencies of CEO compensation and the compensation of the rest of the TMT. From previous research we know, for instance, that characteristics of the CEO TMT interface such as CEO-TMT socio-demographic similarity can have significant effects on firm level outcomes (Georgakakis et al., 2017). One could expect similar effects in relation to compensation contracts, which means that having more similar contracts across the CEO and TMT members increases the compensation effectiveness. However, a diversity of contracts (and their respective explicitness) could also prove enriching in terms of the diversity of the goals that a company has to achieve and, consequently, improve firm-level outcomes such as ambidexterity. Furthermore, this sort of diversity might create a tournament situation that increases the competition within the TMT and, in consequence, eventually also increases the TMT members' efforts. From a theoretical point of view, this would mean translating the concept of explicitness into a social comparison and tournament theory framework (connecting to, e.g., O'Reilly III et al., 1988). This could be an interesting avenue for future research. Examples of the compensation parameters that could influence the effects of incentive explicitness include the level of compensation, the percentage of stock-based compensation, the level and development of target levels (Kim and Shin, 2017), and the duration of compensation contracts (e.g., Gopalan et al., 2014; McGuire et al., 2017). We are confident that our study offers an important contribution to the literature by enhancing our understanding of the underlying mechanisms of one compensation design parameter. We are also convinced that this design parameter enables us to learn a lot about the relationship between principals and agents. Nevertheless, we do see the potential to further extend our understanding of compensation effects by looking at more complex models that capture the interdependencies between design characteristics. A number of studies have demonstrated the usefulness of configurational studies, such as fsQCA, for learning more about the interdependencies of corporate governance characteristics (e.g., Bell et al., 2014; Misangyi and Acharya, 2014), and compensation studies could follow a similar path. An interesting research question could consider whether certain compensation design characteristics are able to provide such strong incentive effects that they could substitute for parts of the overall level of pay. Furthermore, configurational studies could examine whether a more pronounced focus on specific target measures within compensation contracts could serve to reduce the increased risk-taking that can be associated with stock-based compensation.

Forth, due to the potential interdependencies that exist between incentive explicitness and other corporate governance mechanisms, we are unable to claim the exogeneity of our incentive explicitness measure. From an empirical perspective, we did our best to show a certain causal relationship between explicitness and firm performance; however, these fixed-effects and GMM models only provide an indication and never proof of causal directions. From a conceptual perspective, we are fully convinced that incentive explicitness is not exogenous, but rather is influenced by several other corporate governance mechanisms. For instance, the executives' characteristics, ownership structure, and the board power might both play a role. However, the relationships between these corporate governance characteristics and incentive explicitness might be highly complex and, hence, worthy of additional research. With respect to executives themselves, CEO succession might play a role. New CEOs might receive higher levels of explicitness in their compensation arrangements since shareholder and boards sense that these new CEOs might need more guidance. This effect might even be stronger, when the new CEO is an outsider to the firm and differs from the predecessors, for instance, in demographics such as gender. This is generally in line with results from CEO succession literature, which found that CEO changes can be critical turning-point for organizations (Berns and Klarner, 2017), that hiring outsider CEOs can cause costs and benefits (Georgakakis and Ruigrok, 2017), and that gender difference between new and predecessor CEOs matter for the success factors of CEO succession (Dwivedi et al., 2018). With respect to owners, on the one hand, one could argue that a dominant and active institutional investor has sufficient knowledge and power to write a nearly perfect contract. On the other hand, due to the power and information, such active institutional investors are able to reduce the transaction costs of direct control to such a level that they no longer require effective compensation contracts to control the behavior of managers. Future studies might want to pick up on this idea and model the antecedents of incentive explicitness from the perspective of transaction cost economics (e.g., Williamson, 1979).

Fifth, there are several context factors and boundary conditions that we were not able to capture with our study. Empirically, our study is based on large listed U.S. based firms. However, from previous literature we know that the country context plays a role for compensation arrangements and their effectiveness (compare, e.g., Greckhamer, 2016; Hüttenbrink et al., 2014). Consequently, the size of the firms and the institutional environment could be relevant context factors for our results. A working hypothesis for future research could be that especially CEOs of large and visible firms in countries with a high power distance are concerned about the fact that firm success would not be attributed to their own efforts, when incentive explicitness is too high. Another context limitation of our study is that we only limitedly control for how strictly performance-based pay arrangements are enforced. Prior studies have shown that the agreed upon conditions of pay can be rigged by powerful CEOs or compromised boards (Bebchuk and Fried, 2003; Morse et al., 2011). As our analyses refer to only granted compensation packages, we cannot determine whether boards and/or CEOs have abided by the conditions initially agreed upon or whether renegotiations have changed the rules of the game. Indeed, prior studies have pointed out that the final use of performance-based CEO compensation arrangements can deviate from their initial design (Westphal and Zajac, 1994; Zajac and Westphal, 1995). CEOs who anticipate the possibility of renegotiating or rigging their compensation arrangements could be more prone to ignoring the promised incentives, since they may be confident that they will find a way to secure their desired level of compensation. We control for CEO power and board independence in order to account for the influence of board-CEO dynamics in relation to such self-serving behavior. However, we cannot directly observe the enforcement of performance-based CEO compensation arrangements.

To summarize, in this study we investigated a fundamental aspect of the design of performance-based CEO compensation arrangements, and we found that the effectiveness of such arrangements is shaped by how explicitly the performance conditions associated with the compensation are formulated. Our results offer further insight into the fit between compensation and strategy by

showing that firms' environmental heterogeneity in the form of firm diversification can influence the effect of incentive explicitness. We hope that our study can serve as a stepping stone for future studies designed to systematically explore the underlying incentive mechanisms that guide CEOs' actions.

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