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**HOW MUCH INFLUENCE DO CEOS HAVE ON COMPANY ACTIONS AND
OUTCOMES? THE EXAMPLE OF CORPORATE SOCIAL RESPONSIBILITY**

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HOW MUCH INFLUENCE DO CEOS HAVE ON COMPANY ACTIONS AND OUTCOMES? THE EXAMPLE OF CORPORATE SOCIAL RESPONSIBILITY

ABSTRACT

How much influence do CEOs have on corporate social responsibility (CSR)? To answer this question, we apply the CEO in context (CiC) variance partitioning technique to estimate the CEO effect—the amount of the total variance in an outcome measure that can be attributed to CEOs—on CSR. Estimated across the two most widely used datasets of CSR in empirical research, namely KLD and Asset4, we find that CEOs explain about 30 percent of the total variance in CSR. The CEO effect is also remarkably stable when it is estimated individually across different subcategories of CSR or on a sample of exogenous CEO transitions. The CiC technique is unique in terms of how it distinguishes between contextual determinants and CEO-related determinants of firm outcomes. We therefore also provide estimates of the CEO effect that we derived from applying other commonly used forms of variance partition methodology (VPM) to the two datasets of CSR. We discuss the implications of our findings for the literatures on upper echelons, CSR, institutional theory, VPM, and research on CEOs' bearing on company actions and outcomes in general.

INTRODUCTION

A central question in management research that has fascinated scholars for decades is whether and how much CEOs matter for company actions and outcomes. Several perspectives have evolved. Strategic leadership researchers and upper echelon scholars envision that CEOs hold considerable sway—for good and for ill—over firms’ actions and outcomes (Child, 1972; Hambrick & Mason, 1984; Rumelt, 2011). Meanwhile, institutional theorists and population ecologists have long argued that inertial and isomorphic pressures constrain CEOs’ ability to implement their preferred decisions (DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Haveman, 1993). Others, in an effort to reconcile the opposing views on executives’ ability to influence firm outcomes, have suggested that the extent to which CEOs matter is proportional to the latitude that they have to influence firms’ actions (Finkelstein & Boyd, 1998; Hambrick & Finkelstein, 1987). In contributing to this debate, scholars have gone to great lengths to quantify just how much bearing CEOs have on company outcomes, and especially on firm financial outcomes (Bertrand & Schoar, 2003; Hambrick & Quigley, 2014; Lieberman & O’Connor, 1972; Mackey, 2008).

However, some scholars argue that firm performance is too distal of an outcome, given that it can be influenced by CEOs’ actions as well as by many factors beyond a CEO’s control, including chance events (Fitzg, 2017; Hannan & Freeman, 1977; Lieberman & O’Connor, 1972). The role potentially played by such factors might make it difficult to clearly attribute a firm’s performance to a given CEO. Therefore, in this article we shift the focus to a comparably more proximal variable, namely corporate social responsibility (CSR), and we estimate the “CEO effect”—that is, the amount of the total variance in CSR attributable to CEOs—as well as the effect of contextual factors that influence CSR. The degree to which a firm engages in CSR is

not affected by chance; it is the outcome of a deliberate decision taken by the firm. Hence, while it might be difficult to estimate how much CEOs differ in their ability to affect company performance, we can capture how much they vary in their actions using the example of CSR.

CSR broadly captures the *voluntary* organizational policies and actions that go beyond that which is obligated by law, generating benefits not only to the firm's owners but to other stakeholders as well (McWilliams & Siegel, 2001). Because of its voluntary nature, researchers have argued that CEOs enjoy considerable leeway over their firms' CSR profiles (Margolis & Walsh, 2003; Waldman & Siegel, 2008). Evidence from large surveys also indicates that in many firms, CSR is in the realm of CEOs' direct responsibilities. For example, in the 2007 *UN Global Compact Annual Review*, 71 percent of the firms surveyed name the CEO as the level in charge of managing and developing CSR strategies (United Nations, 2007). Firms also spend significant financial resources on CSR-related activities. For example in 2018, Fortune 500 Global firms spent 20 billion US dollar on CSR (Dattani, Still, & Pota, 2015). Taken together, as a proximate measure of firms' deliberate actions over which CEOs have significant discretion and responsibility and to which firms annually allocate a significant level of financial resources, CSR seems a highly suitable variable to estimate how much influence CEOs have over firms' actions and outcomes.

The relevance of grasping how much CEOs matter for CSR is not confined to the many studies that take a direct interest in the CEO effect; it extends to the vibrant scholarship on firms' social responsibility. CSR has been studied based on a diverse set of theoretical perspectives for many decades, and an impressive body of research about it has arisen (for overviews, see Aguinis and Glavas (2012) and Wang, Tong, Takeuchi, and George (2016)). For a long time, the prevailing view in this literature was that contextual factors such as industry and firm attributes

or the general institutional environment are the primary determinants of firms' CSR (e.g., Aguilera, Rupp, Williams, & Ganapathi, 2007; Chiu & Sharfman, 2011; Ioannou & Serafeim, 2012; Matten & Moon, 2008; Rusinova & Wernicke, 2016). Only recently have researchers devoted much attention to the idea that individual CEOs can be either CSR-prone or CSR-averse (e.g., Chin, Hambrick, & Treviño, 2013; Tang, Qian, Chen, & Shen, 2015). To bridge the different perspectives on the antecedents of firms' CSR profiles, having an estimate of the CEO effect on CSR is imperative.

To quantify the CEO effect, we apply the CEO in context (CiC) technique to a large panel dataset of U.S. firms and CEOs. The CiC technique is a form of the variance partition methodology (VPM) that was recently suggested by Hambrick and Quigley (2014) and applied to estimate the CEO effect on accounting performance and to compare the CEO effect in privately held versus publicly traded firms (Quigley, Bau, & Chiraco, 2020). The CiC technique differs from other forms of VPM in that it more completely distinguishes between contextual determinants and CEO-related determinants of firm outcomes. (We explain the CiC technique in detail in the "Measuring the CEO Effect on Company Outcomes" section.) We estimate the CEO effect for the most widely used dataset of CSR: the Kinder, Lydenberg, and Domini (KLD) social rating database (Mattingly, 2017; Perrault & Quinn, 2016). We then also assess the sensitivity of our estimates to differences in how social rating agencies measure CSR (Chatterji, Durand, Levine, & Touboul, 2016; Delmas, Nairn-Birch, & Lim, 2015) and calculate the CEO effect for the Asset4 database, which has recently become popular among CSR researchers (e.g., Hawn & Ioannou, 2016; Ioannou & Serafeim, 2012).

Through our study, we extend research that studies the relative importance of industry and firm factors as well as of macroinfluences on CSR. To date, such research has largely been

silent about the influence of CEOs (Mazzei, Gangloff, & Shook, 2015; Moura-Leite, Padgett, & Galan, 2012; O'Shaughnessy, Gedajlovic, & Reinmoeller, 2007; Orlitzky, Louche, Gond, & Chapple, 2017; Short, McKenny, Ketchen, Snow, & Hult, 2016). Our main contribution to this literature is to provide an estimate of the overall CEO effect, which we find to be substantial and oftentimes larger than a quarter of the total variance. The magnitude of the CEO effect strongly suggests that CEOs are an important source of variation in CSR profiles across firms and within firms over time and, therefore, that further research on idiosyncratic CEO characteristics such as values and motives is central for a better understanding of the various antecedents of CSR.

We additionally address two important points that are raised in empirical research on CSR and which are also relevant when estimating the CEO-effect on CSR. First, some scholars who are critical of coarse-grained conceptualizations of CSR (e.g., Hillman & Keim, 2001) focus on finer-grained measures of specific types of social activities aimed at particular stakeholder groups (Abebe & Cha, 2018; Lewis, Walls, & Dowell, 2014), or they suggest separating socially responsible activities from irresponsible activities (Mattingly & Berman, 2006; Strike, Gao, & Bansal, 2006). We therefore disaggregate the composite measure of CSR and separately calculate the CEO effect for six stakeholder categories (i.e., community, diversity, environment, employees, product, and human rights). Interestingly, the CEO effect is remarkably stable across the different CSR categories, whereas firm, industry, and temporal influences vary considerably. When we split the CSR measure into socially responsible and irresponsible activities, we find that the CEO effect is larger for responsible activities than it is for socially irresponsible ones. With these additional analyses, we provide a fine-grained understanding of the CEO effect on CSR for different stakeholders.

Second, scholars have applied different forms of VPM to isolate how much variance in an outcome variable is due to CEOs as opposed to other factors. Forms of VPM differ in how the relative contribution to the variance in an organizational outcome measure is attributed to different categories (industries, firms, macroinfluences, and CEOs), as well as in which part of the variance is used to compute the CEO effect. We describe the differences and compare estimates of the CEO effect obtained using the CiC technique to those obtained using the following forms of VPM: analysis of variance (ANOVA), multilevel modeling (MLM), the mover dummy variable (MDV) approach and the extended mover dummy variable approach (eMDV). This systematic comparison allows one to evaluate the sensitivity of findings to the VPM applied and to obtain a more robust insight into the amount of variance in CSR explained by CEOs and by other factors.

By performing all these sensitivity and robustness analyses, this paper provides a comprehensive understanding of the sources of the overall variation in CSR and its subcategories, which is imperative for future empirical and theoretical work on the drivers of this important organizational outcome.

Measuring the CEO Effect on Company Outcomes

VPM is the accepted method to gauge how much of the variance in a company outcome measure is due to CEOs as opposed to other factors (Hambrick & Quigley, 2014). Among the different forms of VPM scholars have deployed in their quest to quantify the CEO effect, ANOVA and MLM are the most commonly used, at least in management research (Bowman & Helfat, 2001; Hambrick & Quigley, 2014; Quigley & Graffin, 2017). ANOVA and MLM differ primarily in terms of how shared variance among predictors is treated and of their assumptions about fixed and random effects (these issues are summarized in Bowman & Helfat, 2001; McGahan &

Porter, 2002; Vanneste, 2017). Both forms of VPM are alike in that nominal indicators (dummy or random intercepts) are used to measure the industry and firm effect, which is the backdrop against which Hambrick and Quigley (2014) recently developed the CiC technique.

Lieberson and O'Connor (1972) initiated the use of sequential ANOVA to quantify the CEO effect. In ANOVA, the variance in an outcome measure is partitioned to different predictor categories using dummy variables. The standard predictor classes are calendar year, industry, firm, and the CEO. These fixed or stable effects reflect differences in the general macroeconomic conditions and persistent differences between industries, firms, and CEOs in the average of each year's, industry's, firm's, and CEO's annual performance over the time period of a study. In sequential ANOVA, any covariance between two predictors is attributed to whichever is entered earlier. And because of this, the order in which predictors are added to the model affects how much variance is attributed to each predictor (Bowman & Helfat, 2001; Brush, Bromiley, & Hendrickx, 1999). One typically first estimates year effects, then industry effects, then firm effects, and then finally the CEO effects, with any remaining variance deemed unexplained.

In simultaneous ANOVA, predictors are entered concurrently, and because the shared variance between predictors is assigned to a separate shared category, effect sizes reflect the variance uniquely explained by each predictor (Crossland & Hambrick, 2007; McGahan & Porter, 2002). The order of predictors in the model still matters when a later predictor is fully nested in an earlier predictor category—for example, CEOs being nested in firms and firms being nested in industries, which is often the case in organizational settings (Crossland & Hambrick, 2007; McGahan & Porter, 2002). Researchers, therefore, started to explicitly model the nested structure of explanatory variables using MLM (Crossland & Hambrick, 2011; Quigley & Graffin, 2017). Akin to sequential ANOVA, MLM also relies on nominal indicators of all

predictors to decompose variance, but it achieves this by simultaneously estimating random intercepts of calendar years, industries, firms, and CEOs (Misangyi, Elms, Greckhamer, & Lepine, 2006).

In the CiC technique, as in ANOVA and MLM, dummy variables reflect the year and CEO effects. However, the CiC technique differs in how the industry and firm effects are measured. Hambrick and Quigley (2014) voice two concerns about the use of nominal indicators to measure the industry effect. First, the industry dummy variables reflect the *average* performance—that is, the average performance of the firms included in the sample that are part of the focal industry over the time period of a study.¹ But because samples used in research on the CEO effect typically span 15 to 20 years (see Hambrick & Quigley, 2014, Table 1), the average industry performance over such a long period might not be a good proxy for contemporaneous industry conditions, especially for industries that have changed significantly. Second, as a firm’s own performance contributes to the average performance of its industry, and because a CEO affects her firm’s performance, CEOs contribute to their firms’ industry average performance too.

In the CiC technique, nominal indicators for the industry are replaced with a measure of the annual industry performance. This measure reflects changes in contemporaneous industry conditions more closely. The calculation of the annual industry performance is based on all firms in an industry instead of on the firms included in the data sample only. However, the calculation *excludes* the focal firm itself, as doing so ensures that the firm’s own contribution to its industry’s average performance and the distinctive impact of the firm’s CEO to this average are not measured as part of the industry effect.

¹ We use the term *dummy variables* to increase readability. In the case of MLM analysis, the correct term would be *entity averages from within the sample*.

Hambrick and Quigley (2014) have three concerns about the use of firm dummy variables. First, firm dummy variables reflect the *average* firm performance across the entire data panel—that is, the firm’s annual performance averaged over the yearly performance of all the firm’s CEOs over the time period of a study. A CEO’s performance is judged against this measure to estimate the CEO effect. A firm’s average performance over the entire data panel, though, might only poorly reflect the contemporaneous condition of a firm, especially since datasets used by researchers to quantify the CEO effect cover comparably long time periods. Using the average annual performance means, for example, that the performance of a CEO whose tenure started at a time when a firm was in financial distress is judged against the same average value as the performance of a CEO whose tenure has begun when the firm was at an all-time performance high. Second, using the average value of firm performance to judge a CEO’s contribution to an outcome measure implies that a CEO’s performance is judged not only against the firm’s prior CEOs but also against the performance of subsequent CEOs, which is not a reasonable comparison to evaluate a focal CEO’s contribution to contemporaneous performance. The third concern about using firm dummy variables is that each CEO’s own performance contributes to her own firm’s average performance. Hence, traditional forms of VPM compare CEOs’ deviation from firms’ grand average performance—that is, firms’ average performance over an entire data panel—but do not necessarily capture the actual change initiated by the individual CEO.

Firm nominal indicators are replaced in the CiC technique with two sets of covariates that reflect firm characteristics in the years *prior* to the beginning of a CEO’s tenure: the presuccession value of the firm-outcome measure of interest and presuccession firm health. These “inherited” firm-level variables are included as constants and are unique to each CEO. The

inclusion of the presuccession value of the firm-outcome measure means that a CEO's distinctive contribution is judged relative to the performance of the CEO's direct predecessor and not, as is the case when using dummy variables, against the average performance of all CEOs, including the focal CEO's own performance and that of her successors. The presuccession firm-health measure allows researchers to take into account the proximal contextual conditions at the time when a CEO's tenure starts.

The differences in how forms of VPM measure CEOs' contributions to a company outcome variable are best illustrated with an example (which we will limit to one firm in one industry to keep it as simple as possible). Assume a hypothetical firm with three successive CEOs, each of whom is observed for the same number of years. Over the entire time period spanning all three CEOs' tenures, the first CEO was associated with a score in a firm-outcome measure of 5, the second CEO recorded a score of 10, and the third CEO obtained a score of 12. In a traditional form of VPM with nominal indicators, the contribution of the second CEO to the amount of the total variance in an outcome measure attributed to CEOs is the difference between the second CEO's score and the firm-average score, which in our example is 1 ($1 = 10 - [5 + 10 + 12] / 3$).²

By contrast, in the CiC technique, the inclusion of the presuccession value of the firm-outcome measure of interest means an executive is assessed relative to her predecessor's score (and not relative to the average score of all three CEOs). In the example that we have just introduced above, this means that the performance of the second CEO, which was 10, is judged

² The same logic applies at the industry level, since scores associated with all past, present, and future CEOs/firms operating in the same industry contribute to the grand industry average as captured by nominal indicators. In contrast, Hambrick and Quigley (2014) propose assessing CEOs' contributions only relative to how much CEOs deviate from their industry peers in a given year.

against the performance of the first CEO, who had a score of 5 (assuming the predecessor's performance was 5 in the proximal years before leaving the office). Therefore, in our example, the contribution of the second CEO to the firm performance with the CiC technique is 5. The additional measure for the presuccession firm health further allows accounting for the proximal conditions present at the beginning of a new CEO's tenure

Hambrick and Quigley (2014) used the CiC technique to gauge the CEO effect on annual returns on assets (ROA). To reflect contemporaneous industry conditions, the authors included the size-weighted mean ROA measured as the sum of all firms' profits divided by the sum of all firms' assets for each industry. The classification of industries was based on four-digit SIC industry classifications; all calculations were based on all firms contained in the Compustat database, and they excluded the focal firm. Two indicators reflected the contextual firm condition at the moment when each CEO started his or her tenure. The first was inherited profitability, measured as the firm's mean ROA for the two years prior to the start of a new CEO's tenure. The second measure reflects the company's health and was computed as the market-to-book ratio scaled by the industry median market-to-book ratio, excluding the focal firm, in the fiscal year before a new CEO's tenure started.

The differences in how industry and firm effects are estimated using the CiC technique result in larger CEO effects and smaller industry and firm effects than those obtained from customary forms of VPM that use nominal indicators for the industry and firm. In the CiC technique, part of the variance that customary forms of VPM attribute to the industry and firm is instead assigned to CEOs. Indeed, for ROA, Hambrick and Quigley (2014) estimate a CEO effect of 38.5, which is considerably larger than the CEO effect obtained using ANOVA or MLM on the same dataset. Interestingly, the amount of the unexplained variance is the smallest

with the CiC technique. In the remainder of the paper, we build on the CiC technique to quantify the CEO effect on CSR.

METHODS

Sample

In this study, we used two CSR indexes—KLD and Asset4—and therefore have two samples. Both our datasets cover a large number of firms, thereby ensuring that we have enough information to conduct meaningful analysis. KLD is an independent investment firm that has been providing an annual dataset of environmental, social, and governance ratings of publicly traded U.S. companies since 1991. Although some researchers have discussed the limitations of KLD ratings (e.g., Entine, 2003) several others have regarded KLD ratings as the most comprehensive dataset for gauging CSR (Choi & Wang, 2009; Kacperczyk, 2009) and also as having greater objectivity and generalizability in comparison to alternative CSR measures (Hillman & Keim, 2001; Hull & Rothenberg, 2008). Most importantly, because the purpose of our study is to provide implications for a broad audience, KLD is an appropriate choice on the basis that to date it has been the most widely used source for empirical research on CSR (Mattingly, 2017; Perrault & Quinn, 2016).

To test how robust our findings are to variations in the ways in which different data providers measure CSR (Chatterji et al., 2016), we used a second CSR database: Thomson Reuters's Asset4. Since 2002, this database has provided systematic environmental, social, and governance information to professional investors who manage “more than 2.5 trillion in assets” (Cheng, Ioannou, & Serafeim, 2014: 6). We used Asset4 because the dataset is increasingly used

in the empirical CSR literature (e.g., Cheng et al., 2014; Eccles, Ioannou, & Serafeim, 2014; Hawn & Ioannou, 2016; Ioannou & Serafeim, 2012).³

We used Execucomp for information on CEOs, while the firm-level accounting measures and industry classifications necessary to compute industry-average performance variables came from Compustat. Consistent with prior research on CSR, industry classifications were based on two-digit SIC codes (Chin et al., 2013; Gupta, Briscoe, & Hambrick, 2017; Surroca, Tribó, & Waddock, 2010). We excluded highly regulated industries (for example, the financial services industry, the public sector, and miscellaneous industries), as these are subject to different regulatory environments (McNamara, Aime, & Vaaler, 2005) and accounting rules (McGahan & Porter, 1997).

We followed the procedure of Hambrick and Quigley (2014) to construct the samples and measures crucial for the CiC technique. There were four conditions for a CEO's inclusion in the final samples. First, the CEO had to have been newly appointed during our observation period. This condition is necessary to be able to control for the contextual conditions at the time when the person became CEO. Second, the CEO needed to have held the top managerial position for at least two years. The two-year period was necessary because dummies of CEOs who served for only one year perfectly predict their effect and thereby artificially inflate the overall impact of CEOs (Quigley & Graffin, 2017). A minimum tenure of two years is also standard in research on CEOs (e.g., Chin et al., 2013; Wowak, Mannor, Arrfelt, & McNamara, 2016). Third, as the CiC technique requires an indicator of the industry context, we only retained firms in industries that in a given year comprised at least four firms. Fourth, in order to measure the extent to which a

³ Although Asset4 provides CSR ratings for multiple countries, for comparability with KLD ratings we restricted the Asset4 sample only to firms operating in the United States.

CEO altered the CSR trajectory of an organization and to control for firm health, we excluded firms with missing information for the two years prior to the CEO's start.

The final sample using KLD to measure CSR was an unbalanced panel consisting of 1,199 CEOs at 819 firms in 49 industries (6,909 firm-year observations) from 1993 to 2015 (measurement of the presuccession variables, which we further explain below, started in 1991). The final sample obtained from using Asset4 consisted of 380 CEOs at 298 firms in 34 industries (1,854 firm-year observations) for the years 2004 to 2015 (measurement of the presuccession variables began in 2002).

Measures

For the first sample, we used KLD and its rating of firms according to the following stakeholder categories: community, diversity, employee relations, environment, human rights, and product. Each category is an index composed of several *strengths* and *concerns*, items that are binary indicators denoting the presence (1) or absence (0) of a particular outstanding quality or, in the case of concerns, potential problem. We constructed several dependent variables from this dataset. First, as one of our two main dependent variables, we used the annual net KLD score (KLD), which is the difference between the aggregated annual strengths and the aggregated annual concerns.⁴ The use of a net score is a common approach in the recent CSR literature (e.g., Chin et al., 2013; Gupta et al., 2017; Kang, 2016; Petrenko, Aime, Ridge, & Hill, 2016; Tang, Mack, & Chen, 2018; Wowak et al., 2016), and it is consistent with the idea that CSR is achieved through doing societal good and minimizing negative externalities (Chin et al., 2013; Wong, Ormiston, & Tetlock, 2011).

⁴ For example, a firm with six strengths and four concerns across all categories in a given year has a score of 2.

However, because there is an increasing awareness among scholars that the use of an aggregate CSR score blurs the unique features of distinct stakeholder categories (Aguinis & Glavas, 2012; Wang et al., 2016), in supplementary analyses, we also used the net score of each stakeholder category individually as dependent variable (*community, diversity, environment, employees, product, and human rights*). To address concerns in the literature that composite indexes mask important nuances between socially responsible activities and socially irresponsible ones (e.g., Mattingly & Berman, 2006), we also assessed the CEO effect on the sum of the aggregate annual strengths and aggregate annual concerns separately.

The second main dependent variable was from Asset4, which offers firm-level data on over 250 indicators to calculate overall scores for environmental, social, and governance performance. For instance, environmental performance captures factors such as emission reduction and product innovation, whereas social performance covers issues such as human rights and employment quality. Every year, Asset4 assigns a z-score to each firm by benchmarking its performance against the performance of all other firms in the Asset4 universe. In line with previous studies, we used the environmental and social pillars to construct a composite CSR measure by assigning equal importance to both pillars (Eccles, Serafeim, & Krzus, 2011; Ioannou & Serafeim, 2012).⁵

In all of our analyses, we captured macroinfluences with calendar-year dummies. To account for influences at the level of the industry, we included the *mean industry CSR*, which is the annual average CSR score of all firms (excluding the focal firm) that are in the same two-

⁵ For both datasets of CSR, we excluded the governance category, as it is less concerned with the social performance of the firm than it is with the mechanisms that allow shareholders to exert control on managers and to generate appropriate returns on their investments (Shleifer and Vishny, 1997). Excluding measures of corporate governance is also quite common in the literature on CSR (Flammer, 2015; Ioannou & Serafeim, 2012; Servaes & Tamayo 2013).

digit SIC industry as the focal firm.⁶ Because the industry indicators exclude the focal firm and are calculated for each year, the indicators are specific to each firm year. To assess differences at the level of firm, we included three covariates: *presuccession firm CSR*, *presuccession firm performance*, and *presuccession slack resources*. We calculated presuccession firm CSR as the mean CSR level at the focal firm for the two years prior to start of a CEO's tenure. Presuccession firm performance and presuccession slack resources are commonly used in research on the antecedents of CSR (e.g., Petrenko et al., 2016; Wowak et al., 2016) and reflect a firm's preexisting vitality that a new CEO inherited from his or her predecessor. Firm performance was the return on assets (ROA) (Tang et al., 2015; Wowak et al., 2016), and slack resources was the ratio of current assets to current liabilities (Neubaum & Zahra, 2006; Petrenko et al., 2016), both measured with their mean value in the two years prior to a CEO's tenure start.⁷ Because all three firm-level covariates were measured in the two years preceding a new CEO's start of tenure, these variables are specific to an individual CEO. Finally, to assess the CEO effect, we included a dummy for each CEO.

Model and estimation

We obtained effect sizes—the amount of total variance explained by each category—by sequentially estimating four ordinary least squares (OLS) models. The first model contains calendar-year dummies only. To the second model we added the industry indicators. The third model additionally contains the firm-level covariates. Finally, the fourth model also includes CEO dummies. The increase in the amount of the explained variance from one model to the next

⁶ The industry measure is based on all firms contained in a respective CSR database, and not only on those in the final sample. The variance attributed to industries, firms, and CEOs is very similar when we use three-digit or four-digit SIC codes instead of the two-digit SIC code.

⁷ In the analyses of individual stakeholder categories and of social (ir)responsibility, the mean industry CSR and presuccession firm CSR were calculated with the respective individual measures (e.g., the industry mean level of community and the presuccession mean firm community scores).

is due to the inclusion of the additional predictor and corresponds to a category's effect size. To avoid the possibility that CEO dummies erroneously capture random noise in CSR (Fitza, 2014), or inflate model fit statistics (Quigley & Graffin, 2017), we relied on adjusted R-squared to measure the explained variance (Kennedy, 2003).

RESULTS

Table 1 reports the results for the two composite CSR measures (results for Asset4 ratings are shown in parentheses in the text hereafter). Calendar-year dummies accounted for 3.9 (3.0) percent of the total variance in CSR. The inclusion of industry controls explains an additional 4.1 (12.1) percent of the variance. Controls for inherited firm conditions increased the explained variance in CSR by an extra 33.8 (42.7) percent. Finally, we added CEO dummies to measure the amount of variance explained by CEOs. The results indicate that the CEO effect can explain an additional 29.8 (30.3) percent of the variance, which is a sizable effect. Notably, while year and CEO effects in KLD and Asset4 are relatively similar, the impact of industry and firm influences in Asset4 is considerably larger than it is in KLD.

[Insert Table 1 here]

We further estimated the CEO effect as well as the year, industry, and firm effects on the sum of the aggregate annual strengths and aggregate annual concerns, and then on the specific subcategories of CSR. The results are shown in Table 2. Overall, effect sizes reiterate our main finding that CEO dummies consistently capture a sizable amount of variance, ranging from the lowest value of 21.2 percent in the composite KLD concerns measure to the highest value of 28.3 percent in the community category. Interestingly, relative to other predictors, the CEO effect is remarkably stable across different CSR dimensions. With respect to macroinfluences, calendar-year effects are highest in the employee (13.8%) and environment (10.3%) dimensions, whereas

industry predictors are more salient in the composite measure of KLD concerns (13.5%) and the human rights dimension (17.5%). Firm factors especially matter for explaining the composite score of the KLD strengths (49.6%) and concerns (35.7%).

[Insert Table 2 here]

Sensitivity analyses for the KLD dataset

We performed a number of robustness checks to test the sensitivity of our results to changes in the KLD data over time. Results are shown in Table 3. In 2003, KLD substantially increased its coverage from firms listed in the S&P 500 index to all firms included in the Russell 3000 index. Our results could potentially be biased if firms included in KLD from the beginning systematically differ with respect to the impact of the CEO on firm-level outcomes from firms that were added later. We tested the robustness of our results to this change in KLD's coverage by excluding all pre-2003 observations. The exclusion led to a small decrease in the CEO effect (28.9% versus 29.8% with the full sample) and a decrease of 4 percent in the firm effect (29.8% versus 33.8% with the full sample). Furthermore, industry and year effects increased to 4.4 percent and 6.2 percent respectively (versus 4.1% and 3.9% with the full sample).

Because KLD ratings underwent methodological changes in 2010 (Chin et al., 2013), we also performed a robustness check by excluding pre-2010 observations. We documented a decrease of 2.1 percent in the CEO effect (27.7% versus 29.8% with the full sample), whereas firm and industry effects increased to 50.0 and 5.7 percent respectively (versus 33.8% and 4.1% with the full sample). The year effect decreased to 1 percent (versus 3.9% with the full sample).

The total number of possible strengths and concerns within each stakeholder category changed over time. Because these differences make time-series analysis tenuous, some scholars

recommend dividing the sum of firm strengths (concerns) by the total number of possible strengths (concerns) within each stakeholder category for a given year (Servaes & Tamayo, 2013; Short et al., 2016). We reconstructed our KLD measure of CSR accordingly and investigated whether differences in operationalization might affect our findings. The results indicated that the CEO effect and the effects of other predictors are robust to the difference in scaling. The CEO effect and the firm effect decreased to 29.1 and 32.5 percent respectively (versus 29.8% and 33.8% with the full sample), whereas we find an increase in industry (4.9% versus 4.1% with the full sample) and year (4.2% versus 3.9% with the full sample) effects. Overall, the CEO effect seems to be robust to the change in KLD's coverage and methodology.

[Insert Table 3 here]

Exogenous CEO transitions

One concern associated with studies such as ours is the possibility that, when working with the data, some of the variation in CSR that in reality stems from differences between firms will mistakenly be attributed to CEOs (e.g., Bandiera, Prat, Hansen, & Sadun, 2020; Fee, Hadlock, & Pierce, 2013). Such a scenario can arise because “firms/boards [often] decide to make a simultaneous set of major changes, including changing the firm's leadership, along with major investment or financing decisions” (Fee et al., 2013: 569). Hence, if a board had simultaneously decided to change the CEO and to modify activities related to social responsibility, we would erroneously attribute a change in CSR to the CEO and not to the firm. Fee et al. (2013) argue that this is unlikely to be the case in instances of exogenous CEO transitions that involve departures caused by a death, a health problem, or a natural retirement.

To address this concern, we built on the argument of Fee et al. (2013) and estimated the CEO effect for the subsample of firms in the KLD dataset with exogenous CEO transitions. Fee

et al. (2013) kindly provided us with their data on CEO transitions occurring until 2006, and we followed their procedure to classify turnovers for all other years.⁸ Overall, our sample includes 359 exogenous CEO transitions. The CEO effect in Table 4 for the sample exogenous transitions is 26.9 percent, which suggests that the variance explained by CEOs in the full sample is not the result of an omitted endogenous matching process, as the CEO effect in the sample of exogenous CEO transitions is similar to the CEO effect in the full sample. This finding also resonates with several upper echelons studies on CSR that have investigated and found no evidence of endogenous selection of CEO types when firms that are either embroiled in scandals or have certain CSR deficiencies appoint a CEO (Chin et al., 2013; Koch-Bayram & Wernicke, 2018; Petrenko et al., 2016; Tang et al., 2018; Wowak et al., 2016).

[Insert Table 4 here]

Managerial discretion

To strengthen the validity of our findings, we additionally estimated the CEO effect on subsamples with differing degrees of managerial discretion. Managerial discretion, defined as the “latitude of options top managers have in making strategic choices” (Finkelstein & Boyd, 1998: 179), determines whether an organization’s form and fate lie totally outside of or totally within the control of CEOs, or somewhere in between (Finkelstein, Hambrick, & Cannella, 2009). Based on this logic, we expected the extent to which CEOs matter for explaining variation in CSR to be associated with the level of managerial discretion (Gupta, Nadkarni, & Mariam, 2019).

⁸ We searched for news about CEO transitions on Factiva by including the name of the outgoing CEO and a set of signal words related to death and health. For a detailed description of the search procedure, see Appendix A in Fee et al. (2013). Natural retirements are departures of CEOs aged between 63 and 71 years at firms where the most recent return on assets exceeds the median return for all firms contained in ExecuComp.

To examine this relationship, we explored two sources of managerial discretion. First, we built on the idea that managerial discretion varies between industries (Hambrick & Finkelstein, 1987) and used the Finkelstein et al. (2009) managerial discretion scores available for 70 industries to create two subsamples consisting of high- versus low-discretion industries.⁹ Because the classification of industries in Finkelstein et al. (2009) is built on four-digit industry codes but our sample is based on two-digit SIC codes, we followed Adams, Almeida, and Ferreira (2005) and averaged the discretion scores based on two-digit SIC codes. We then classified industries in the upper 40 percent of the distribution as high-discretion industries and those at the bottom 40 percent as low-discretion industries. As in Adams et al. (2005), we excluded industries that rank from the 40th to the 60th percentile of the distribution from the sample, because industries in this range are more difficult to classify as either high- or low-discretion industries.

Second, one of the key sources of managerial discretion at the organizational level is the availability of resources (Finkelstein et al., 2009). For example, to the extent that CEOs have limited resources to work with, their ability to inject personal preferences into organizational outcomes should be severely constrained (Gupta et al., 2019). To operationalize managerial discretion at the organizational level, we exploited the mechanics of the CiC technique by dividing CEOs into two subsamples that are based on the degree of slack resources that CEOs inherited from their predecessors upon assuming the post. As before, we define slack resources as the ratio of current assets to current liabilities. As in the case of industry discretion, we obtained two subsamples, one with low organizational discretion and one with high

⁹ Originally developed by Hambrick and Abrahamson (1995) and Finkelstein et al. (2009), industry discretion scores have been repeatedly used in diverse literatures (e.g., Adams et al., 2005) and are widely considered as valid indicators of industry-level managerial discretion (Hambrick & Quigley, 2014).

organizational discretion. To do so, we used the top and bottom 40 percent of distribution of the *presuccession slack resources* variable.

The results of these analyses are shown in Table 5 and are in line with what can be expected from the literature on managerial discretion. More specifically, we find that in high-discretion industries, the CEO effect is 5.7 percentage points higher than in low-discretion industries (27.0% versus 32.7%). Furthermore, and in line with the expectation that executives have more leeway when they inherit a healthy firm with plentiful available resources from their predecessors, we find that the CEO effect is 5.9 percentage points higher in the subsample of firms with high levels of organizational discretion (32.9%) than it is in the subsample with low levels of organizational discretion (27.0%).

[Insert Table 5 here]

Customary VPM techniques

Finally, we compared estimates from the CiC technique applied to the KLD data to estimates derived from three other customary forms of VPM, namely sequential ANOVA, MLM, and the mover dummy variable (MDV) approach.¹⁰ In research on the CEO effect, sequential ANOVA is one of the most frequently employed VPM techniques. MLM has recently become popular (Quigley & Graffin, 2017), and the MDV approach is prevalent in the fields of finance and economics (Bandiera et al., 2020; Cho, Halford, Hsu, & Ng, 2016; Graham, Li, & Qiu, 2011).

In ANOVA, dummy variables for all predictors are successively added to the model, and the increase in the explained variance corresponds to the effect of the added predictor (Bowman & Helfat, 2001). For example, after year, industry, and firm effects have been estimated, the

¹⁰ Due to data limitations, we were able to compare all forms of VPM using the KLD data only.

incremental increase in the explained variance that is due to the addition of CEO fixed effects is attributed to the influence of top executives. Shared variance between two predictors is attributed to whichever predictor is entered earlier (Bowman & Helfat, 2001; Brush et al., 1999; Kennedy, 1985).

Like ANOVA, MLM also relies on nominal indicators of all predictors, but unlike ANOVA, the variance is decomposed by simultaneously estimating random intercepts of calendar years, industries, firms, and CEOs (Misangyi et al., 2006). MLM is designed to explicitly account for the inherently hierarchical structure of data—for example, when observations are nested within CEOs, CEOs are nested within firms, and firms are nested within industries (Crossland & Hambrick, 2011; McGahan & Porter, 2002).

Because ANOVA and MLM have similar data requirements, we constructed one sample that we used for both. We excluded CEOs who served for one year only from the sample, as their fixed effects would perfectly predict the movement of the dependent variable and thereby artificially inflate the CEO effect. Similarly, we also excluded firms for which we only observed one CEO from the sample, because in such cases, the contribution of firm fixed effects cannot be disentangled from that of CEO fixed effects. Finally, we followed prior work and required at least four firms per industry in order to capture stable industry differences (Hambrick & Quigley, 2014). The final sample consisted of 1,935 CEOs at 793 firms in 35 industries (10,519 firm-year observations) from 1992 to 2015.

The MDV approach is a method that was developed by Bertrand and Schoar (2003). The distinctive feature of the approach is that the data sample only includes CEOs who switched firms and hence were the CEO at a minimum of two different firms during the sample period. This condition is necessary to separate firm fixed effects from executive fixed effects. Relative to

other VPM techniques, the MDV approach produces very conservative estimates (Bertrand & Schoar, 2003). Executives contribute to the variance in an organizational outcome measure only to the extent that the measure is correlated across different firms when the same individual is present.

A drawback of the MDV approach is that executives who were the CEO of at least at two firms might be distinctive from the majority of CEOs, which could induce a sample selection bias and limit the generalizability of the findings (Graham et al., 2011). Additionally, the data requirements of the MDV approach typically result in relatively small sample sizes, as very few executives have held the CEO position at two firms. A small sample may include too few exogenous CEO turnover events for it to be possible to address concerns related to the endogenous nature of the matching process of CEOs to firms, which is a significant obstacle in research on the impact of CEOs on firms (Bandiera et al., 2020; Fee et al., 2013). Besides, a low number of observations relative to the number of fixed effects may result in overparameterizing the regression with too many fixed effects, meaning that evidence of significant CEO effects may be the result of a statistical artifact produced by the approach (Jarosiewicz & Ross, 2020).

To address some of these concerns, researchers have expanded the MDV approach and additionally included dummies for all CEOs who worked for a firm at which at least one moving executive was present at some point in time during the sample period (e.g., Mackey, 2008). In this expanded approach, CEO fixed effects capture not only correlations in the organizational outcome measure across firms for moving executives, but also the mean differences in the organizational outcome between moving and nonmoving CEOs within the same firm. Hence, compared to the original MDV approach, the expanded version additionally uses the within-firm

between-CEOs variation in the organizational outcome to estimate the CEO effect (Hagendorff, Saunders, Steffen, & Vallascas, 2018).

For the MDV approach, we included in the sample only those firms that contained at least one CEO who was present at two or more firms during the sample period (Bertrand & Schoar, 2003). For those firms, we retained *all* observations, even for the years when the moving CEO was not at the firm (Bertrand & Schoar, 2003). Diverging from the approach of Bertrand and Schoar (2003), we required an industry to contain at least two firms across the sample, because otherwise we would not have been able to disentangle firm and industry fixed effects.¹¹ In the estimation, we include fixed effects for calendar years, industries, firms, and moving CEOs.¹² In line with Bertrand and Schoar (2003), we included the most pertinent time-varying firm-level controls measured in year t-1: *firm performance* was measured by ROA (Tang et al., 2015), *slack resources* was measured by the ratio of current assets to current liabilities (Petrenko et al., 2016), and *firm size* was measured by the logarithm of firm sales (Gupta et al., 2017). The final sample consisted of 48 moving CEOs at 92 firms in 19 industries (1,011 firm-year observations) from 1992 to 2015.

For the expanded MDV approach, we followed Mackey (2008) and additionally included a CEO dummy for all nonmoving CEOs who worked for a firm at which at least one moving CEO was present during the sample period. This addition resulted in a slight decrease in the number of total observations, because after it we required at least two observations per CEO-firm

¹¹ We limited this requirement to a bare minimum because of the severe sample-size limitations of the MDV approach owing to the fact that it exclusively follows moving CEOs.

¹² The only difference between this specification and that of Bertrand and Schoar (2003) is that we additionally include industry fixed effects. This is because we are interested in estimating effect sizes of all predictors (years, industries, firms, and CEOs).

pair. The final sample consisted of 159 (moving and nonmoving) CEOs at 92 firms in 19 industries (981 firm-year observations) from 1992 to 2015.

Results of the comparative analyses are shown in Table 6. In line with the notion that the MDV approach produces very conservative estimates of the CEO effect, we find that CEOs explain 6.8 percent of the total variance in CSR. For the expanded MDV approach, the estimate of the CEO effect increases to 15.3 percent. This result is roughly similar to the 12.7 percent CEO effect that we estimated using sequential ANOVA. The estimates of the CEO effect from the expanded MDV approach and from sequential ANOVA are expected to be similar, as both exploit variance in CSR between CEOs within a firm. The expanded MDV approach is likely to yield a slightly greater estimate of the CEO effect compared to that obtained from use of sequential ANOVA because it additionally captures correlations in CSR across firms for moving executives (Mackey, 2008). Finally, we find a CEO effect of 22.3 percent when using MLM.¹³

[Insert Table 6 here]

DISCUSSION

How much influence do CEOs have on companies' CSR actions and initiatives? To answer this question, we provide estimates of the CEO effect on CSR that we generated by applying the recently developed CiC variance partitioning technique to data obtained from KLD and Asset4, the two most popular datasets in empirical research on CSR. The estimate of the CEO effect we obtained indicates that CEOs explain a substantial part—approximately 30 percent—of the total variance in CSR. The CEO effect is also consistently sizable across aggregate measures of socially responsible activities and aggregate measures of socially irresponsible behavior, as well

¹³ The difference in the variance attributed to groups between CiC, MLM, and ANOVA is similar to what Hambrick and Quigley (2014) find in their original article for ROA.

as across specific subcategories of CSR in KLD (community, diversity, employees, environment, human rights, and product). Taken together, the magnitude of the CEO effect that we consistently estimated across the various CSR datasets and measures suggests that CEOs hold significant sway over their companies' CSR actions and outcomes.

Implications for and contributions to the literature on the antecedents of CSR

Our study has important implications for research on the antecedents of CSR. Researchers in this line of inquiry have generated a substantial body of knowledge, but until rather recently they predominantly focused on the impact of industry and firm attributes or of the general institutional environment on CSR (e.g., Aguilera et al., 2007; Chiu & Sharfman, 2011; Ioannou & Serafeim, 2012; Matten & Moon, 2008; Rusinova & Wernicke, 2016; Rusinova & Wernicke, 2019).

Indisputably, understanding how contextual factors related to the industry or firm affect CSR is important—essential, in fact. Among all the effects that we estimated, the firm effect is the largest in both CSR datasets. However, the magnitude of the CEO effect underscores the major tenet of the upper echelons tradition—that is, organizations are, at least partly, a reflection of their CEOs and top managers (Hambrick & Mason, 1984). Our finding that CEOs are a central piece in the puzzle of what drives CSR provides a very solid basis and motivation for further research with a focus on CEOs.

Prior research has argued that aggregate measures of firms' social conduct mask important differences across firms' social activities directed at different stakeholders, and it has also indicated that future research on the antecedents of CSR would benefit from unpacking these measures. This is what we have done in the present paper (Mattingly & Berman, 2006; Wang et al., 2016). Interestingly, we find that the CEO effect is remarkably stable, whereas the sizes of the estimates of year, industry, and firm effects vary substantially across specific

subcategories of CSR in KLD (community, diversity, employees, environment, human rights, and product). For example, firm effects explain 31.1 percent of the variance for diversity but only 13.9 percent of the variance in the closely related employees category. Industry effects range from 2.5 percent in the community dimension to 17.5 percent in the human rights category, in which firm effects are 6.1 percent, their lowest value among all categories. When we split the composite KLD index into socially responsible and irresponsible conduct, we find that firm and CEO effects are relatively larger for socially responsible behavior than they are for socially irresponsible behavior, whereas industry and temporal effects are significantly larger for irresponsible actions than they are for responsible actions. This finding is largely consistent with prior VPM studies on CSR (Mazzei et al., 2015; Short et al., 2016).

Taken together, our results suggest that, aside from the CEO effect, the relative importance of predictors of CSR differs starkly across different stakeholder categories and between firms' socially responsible and irresponsible conduct. We see this variation as an exciting topic for future research to study in depth. Our results also reemphasize that unpacking composite measures of CSP will allow us to understand differences among antecedents of CSP much better (Mattingly & Berman, 2006; Wang et al., 2016).

Implications for and contributions to the literatures on upper echelons research and CSR

Our finding of such a large CEO effect has important implications for the still-nascent upper echelons research scholarship that has recently begun to study how idiosyncratic CEO characteristics, values, and beliefs may affect a CEO's inclination toward CSR (for a recent overview see Mattingly, 2017). Scholars have provided evidence that, for example, charisma (Wowak et al., 2016), greed (Sajko, Boone, & Buyl, 2020), political ideology (Chin et al., 2013), mortality salience (Chen, Crossland, & Huang, 2020), and adherence to fair-market ideology

(Hafenbrädl & Waeger, 2017) relate to CSR. This research is helpful for gaining a better understanding of which idiosyncratic CEO characteristics, values, and beliefs affect executives' CSR profiles. It also provides evidence that CEOs affect CSR. However, it tells us little about the magnitude of the CEO effect on CSR. Individual CEO attributes can matter only to the extent that CEOs matter in their entirety. In addition, human characters comprise a complex set of features, and individual attributes have been shown to reinforce or counterbalance their impact on a CEO's inclination toward CSR when these two aspects are studied jointly. For example, Gupta et al. (2019) found that CEO narcissism magnifies the positive effect of CEO liberalism on CSR, and while CEO narcissism was found to correlate positively with CSR (Petrenko et al., 2016), CEO hubris was associated with lower CSR (Tang et al., 2018; Tang et al., 2015). Overall, these issues make it rather hard to grasp how much sway CEOs have over CSR from studying individual CEO attributes. Our contribution to this fast-developing literature is to provide an estimate of the CEO effect on CSR. Because the CEO effect on CSR is so large, we strongly encourage further research on which and how idiosyncratic CEO characteristics, values, and beliefs individually and jointly affect CEOs' preferences for CSR.

We would also like to encourage researchers to investigate the psychological and social processes based on which CEO preferences for CSR are formed. This research could, for example, build on the imprinting literature, which posits that the circumstances in which CEOs are brought up and socialized, such as social-class background (Kish-Gephart & Campbell, 2015), birth order (Campbell, Jeong, & Graffin, 2019), training in the military (Koch-Bayram & Wernicke, 2018), the condition of the economy at the time one enters the job market (Bianchi & Mohliver, 2016), or the values prevalent during the period in which individuals grew up (Sajko, Boone & Wernicke, 2020), have a long-lasting impact on CEOs' values, beliefs, and preferences

(e.g., Marquis & Tilcsik, 2013). Paying attention to the circumstances in which CEOs grew up and were socialized will allow a deeper understanding of the drivers of the heterogeneity in executives' CSR profiles, which, we show in our study, matter for CSR. Moreover, the literature on imprinting posits that the “zeitgeist” present during an individual's upbringing imprints on the person's value and belief system, suggesting that individuals from different birth cohorts vary in their values and beliefs (Alwin & McCammon, 2003). Future research could adopt a cohort-based approach. Doing so would be particularly interesting, as it allows one to investigate whether and how the imprinting of common past experiences on CEOs values and beliefs has lasting effects on firms' contemporary strategies. To the extent that history continues to shape the present via CEO cohorts, the replacement of one generation of CEOs by the next could be an important driver of CSR.

In a similar vein, future research could relax an assumption used in much of the research following the upper echelons traditions, namely that idiosyncratic CEO characteristics, values, and beliefs are time stable. While the assumption of time-stable preferences is sometimes reasonable—for example, political ideology was found to be relatively stable over time (Peterson, Smith, & Hibbing, 2020)—research in psychology has provided evidence that some personal values change over an individual's life cycle (Gouveia, Vione, Milfont, & Fischer, 2015). For instance, materialistic values decrease from early to middle adulthood and then increase again during old age (Jaspers & Pieters, 2016). Future research could build on the fact that some CEO characteristics, values, and beliefs vary over the life cycle to study how such changes affect CEO preferences for CSR. This approach could explain, for example, why individuals who were brought up in similar circumstances but who are at different stages of their life cycles differ in their preferences for certain strategic initiatives.

An interactionist perspective of CEO characteristics and temporal factors, the institutional context, and firm resources

Our study also points to the idea of adopting an interactionist perspective to explain CSR. In our view, taking an either/or approach only makes it possible to partially account for the potential joint effects of the institutional environment and specific CEO attributes or for the potential joint effects of firm-level resources and specific CEO attributes on firms' CSR initiatives and outcomes. For example, when normative pressures to adhere to certain standards are strong, or when the business environment is heavily regulated, CEOs will matter less than they do in contexts in which normative pressures are low and regulations are few. Similarly, CEOs will matter less at firms lacking the resources that are crucial to investment in CSR initiatives. Indeed, we find that the CEO effect on CSR is 32.7 percent in industries with high levels of managerial discretion and 27.0 percent in industries with low levels of it. For managerial discretion at the organizational level, we find that the CEO effect in a high-discretion context is 32.9 percent, compared to 27.0 in a low-discretion context. We encourage future research to build on the fact that CEOs differ—for example, with regard to their prosocial values (Boone, Buyl, Declerck, & Sajko, 2020) or in their beliefs about CSR (Hafenbrädl & Waeger, 2017)—to study how differences in institutional pressures or the availability of resources jointly affect the relationship between CEOs' preferences for CSR and companies' CSR initiatives.

We estimated the CEO effect on CSR using data from a single country. This limits the generalizability of our findings. Because a lot of the empirical research on CSR in general, and because most studies on idiosyncratic CEO characteristics, value, and beliefs use U.S. data, we believe that the U.S. is an appropriate setting for the purpose of our study. The specifics of the CiC technique also require data on a large number of public firms for a lengthy time series. Such

data are currently only available for the U.S. However, while using data from a single country allows us to catch the variance in the normative pressures and isomorphic processes across industries within a country, we cannot capture differences in institutional pressures across countries. Prior research has shown that both the degree of discretion available to CEOs to implement their preferred decisions and the CEO effect on firm financial performance differ across countries (Crossland & Hambrick, 2007). This research suggests that how much sway CEOs have on strategic company activities and outcomes depends on the institutional context. And because the context partly defines the discretion available to CEOs, aspects such as institutional pressures or isomorphic processes affect how much CEOs matter in a given country. The increasing availability of systematic data on CSR for firms from different countries—for example, in Asset4—means that there is an exciting opportunity for future research to estimate and compare the CEO effect on CSR across countries. Such studies could also incorporate cross-country differences in the business systems that, according to some research, affect companies' CSR activities (Matten & Moon, 2008). In countries in which companies' CSR activities are undertaken in part to comply with government policies as opposed to their being the product of companies' own discretion and initiatives, CEOs will matter less for CSR. With such cross-country data, one could study how institutional pressures on the country level and on the industry level as well as the availability of resources on the organizational level relate to one another and how these foster or hinder the implementation of CEOs' preferences for CSR.

We also encourage research on the organizational level that studies, for instance, how corporate governance provisions interact with CEOs' preferences for CSR. For example, firms are increasingly integrating CSR criteria in their compensation to executives as a means to direct managers' attention to CSR-related issues (Flammer, Hong, & Minor, 2019). Prior research has

shown that CEO characteristics and incentives jointly influence strategic choices (Wowak & Hambrick, 2010). Including social and environmental provision in executive compensation contracts implicitly assumes that managers would otherwise not pay attention to CSR. While this might be true for some CEOs, research reviewing the recent evidence in neuroscience suggests that CEOs who hold other-regarding values—for example, CEOs who derive utility from generating collectively beneficial outcomes—are intrinsically motivated to invest in CSR (Boone et al., 2020). By contrast, CEOs with self-regarding values derive utility from generating collectively beneficial outcomes only when they gain from such activities personally. This research suggests that integrating CSR criteria in executive compensation is likely to change the behavior of CEOs who hold strong self-regarding values but not the behavior of CEOs who hold strong other-regarding values. Another fruitful avenue for future research could be to study how board gender diversity (Harjoto, Laksmana, & Lee, 2015) or firm ownership types (Dyck, Lins, Roth, & Wagner, 2019) boost or impede the impact of specific CEO characteristics and values on CSR.

Implications for and contributions to research on CSR using VPM

With our study, we also make three contributions to research that uses forms of VPM to estimate year, industry, firm, and CEO effects on CSR. First, our in-depth comparative analyses of the effects estimated with different forms of VPM provide a solid basis for comparison with earlier VPM findings reported in the literature. When we compared the relative size of firm effects in our study with estimates from related VPM research, we found that these were considerably lower when we accounted for CEOs. For example, firm effects explain 58 percent of the variance in CSR in Moura-Leite et al. (2012) and over 70 percent of it in Orlitzky, Louche, Gond, and Chapple (2017), whereas we estimated a corresponding figure of 33.8 percent for the KLD data

and of 42.7 percent for the Asset4 data. Some of the differences likely came about owing to differences in sample characteristics or because other forms of VPM would assign part of the variance in an outcome measure to the firm or industry when under the CiC technique that part would be allocated to the CEO. However, much of the difference in the effect sizes arises because prior research had not considered the impact of CEOs when explaining variation in composite CSR measures, which is an important omission in prior work.

As for macro- and industry-level influences, we find, in line with the earlier VPM literature, that when put in a broader perspective, these factors explain comparatively little of the variance in CSR. However, we would like to stress that the small effect of macro- and industry-level factors might stem from the fact that our sample is from one country only. Pressures on firms concerning their CSR initiatives might not vary strongly across years and industries within one country, a limitation that future research could overcome by utilizing samples that span multiple countries. Such research could also provide us with comparative estimates of the CEO effect on CSR across countries, which prior research on financial performance has shown to vary greatly (Crossland & Hambrick, 2007). However, our finding of relatively small industry effects is consistent with evidence that “many industries have become extremely amorphous in recent decades” (Quigley & Hambrick, 2015: 825, footnote 1).

Second, we also addressed concerns that changes in the CSR trajectory of a firm might not be caused by the distinctive contribution of a new CEO but may instead be the result of a firm simultaneously deciding to replace a CEO and to alter the firm’s CSR activities (Fee et al., 2013). In such a case, we might erroneously attribute variance in CSR to the CEO instead of to the firm. To address this challenge, which has been ignored in prior work, we estimated the CEO effect on a subsample of likely exogenous CEO transitions and found that it does not differ

considerably from the CEO effect estimated on the full sample (26.9% versus 29.8%). This analysis complements prior literature on CSR, which finds no evidence of a selection of CEO types into firms based on firms' CSR profiles (Chin et al., 2013; Petrenko et al., 2016; Tang et al., 2018; Wowak et al., 2016), and it increases our confidence that our measure of the CEO effect indeed captures the impact of CEOs on CSR. We provided additional support for our assessment of the CEO effect by building on the idea that CEOs' influence on CSR is expected to be greater with higher levels of managerial discretion (Finkelstein et al., 2009). In line with this prediction, we find the CEO effect on CSR is larger in high-discretion industries than it is in low-discretion ones, and when CEOs start their tenures at firms with abundant slack resources as opposed to limited ones.

Third, our research makes additional methodological contributions. As we applied the CiC technique to the context of CSR, we had to make a choice about which variables to include to account for the firm conditions that new CEOs face. While we firmly believe that the variables that we included—the presuccession levels of the focal firm's CSR, ROA, and slack resources—account well for firm differences, there is a long list of further factors that are potentially relevant in our context. However, when we additionally included other measures—for example, presuccession firm size (Chin et al., 2013)—we found that our results were very similar. Note in this respect that the CiC technique is very flexible, as it allows scholars to select firm-level conditions based on substantive, theoretical explanations of what drives the focal organizational outcome of interest (e.g., ROA or CSR). However, forms of VPM vary, for example, in how the relative contribution to the variance in CSR is attributed to different predictors. In our study, we predominantly built on the CiC technique to estimate the CEO effect, because we agree with Hambrick and Quigley (2014) that the contribution of a CEO to an organizational outcome of

interest should be evaluated relative to the context that she inherited. We nevertheless also performed and presented numerous sensitivity and robustness tests to provide a range of estimates of the CEO effect that we derived from applying other forms of VPM commonly used in related research. We did so because we ultimately want readers to decide themselves on which estimate to build upon in future research. We find the lowest CEO effect (6.8%) with the MDV approach and a CEO effect of 12.7 percent and 15.3 percent with sequential ANOVA and the expanded MDV approach respectively, while in the case of MLM we find that 22.3 percent of the total variance in CSR is attributed to CEOs. These estimates are generally very consistent with expectations and the mechanics of the respective VPMs.

Implications for and contributions to the literature on CEOs' bearing on company actions and outcomes

Through this study, we also contribute to the lively debate on how much influence CEOs have on company actions and outcomes, a conundrum that has fascinated scholars across disciplines for many decades. In this debate, some scholars take the view that CEOs hold considerable sway over firms' activities and outcomes (e.g., Child, 1972; Hambrick & Mason, 1984; Rumelt, 2011), whereas others believe CEOs are severely constrained in their ability to undertake their preferred decisions (e.g., DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Haveman, 1993). Scholars in this line of research have used an array of VPM techniques to quantify how much influence CEOs have over company outcomes. In doing so, they have typically focused on proxies of firm financial outcomes—most often, ROA (Hambrick & Quigley, 2014). However, because firm financial performance can be impacted by CEOs' actions but also by many factors beyond CEOs' sphere of influence, including chance events (Fitza, 2014, 2017; Hannan & Freeman,

1977; Lieberman & O'Connor, 1972), some scholars are hesitant to draw conclusions about CEOs' bearing on companies in the context of such distant measures.

To overcome the need for such reticence, we shifted our focus to CSR, which is a more proximal measure of company actions and outcomes compared to firm financial performance. The degree to which a firm engages in social initiatives is not affected by chance events; it is the result of a firm's deliberate decision. The large CEO effect on CSR that we consistently estimated across the two most popular datasets of CSR, across multiple stakeholder categories, and with different forms of VPM suggests that CEOs do have a significant bearing on company actions and outcomes, at least when it comes to company actions and outcomes that are strongly value laden, as CSR is. However, it is plausible that CEOs enjoy more discretion for CSR than they do for other strategic company actions and outcomes. If this is so, a relatively large CEO effect on CSR is to be expected. We therefore encourage future researchers to provide estimates of the CEO effect and the effects of contextual factors (year, industry, firm) on other proximate measures of important company actions and outcomes. Doing so would be interesting, because it would reveal in which strategic domains CEOs could potentially have the highest impact and, therefore, in which domains heterogeneity among CEOs matters the most. We anticipate that measures of organizational and strategic change (Müller & Kunisch, 2018), corporate downsizing and upsizing (Cascio, Chatrath, & Christie-David, 2020), corporate lobbying activities (Delmas, Lim, & Nairn-Birch, 2016), voluntary disclosure of information (for example, about engagement in R&D (James & Shaver, 2016)), or corporate misconduct (Koch-Bayram & Wernicke, 2018; Schnatterly, Gangloff, & Tuschke, 2018) might be suitable variables for such undertakings. Having estimates of the CEO effect on these interesting company outcomes would not only further inform the longstanding debate on CEOs' impact on their companies in general

but also advance research within the specific topic domains that these measures are relevant in. For example, in research on strategic change, there is variety among scholars in terms of how much influence they assign to CEOs as opposed to the environment, and three decades of research have brought about little convergence of their opinions (Müller & Kunisch, 2018). Given that the CiC technique measures how an individual CEO changes the trajectory of a firm relative to the path it had taken under her predecessor, as opposed to how much the change effected by the CEO deviates from the average across large panels, the CiC technique seems well suited for such endeavors.

CONCLUSION

In this paper, we used the CEO in context VPM technique suggested by Hambrick and Quigley (2014) and assessed the impact that contextual influences—industry, firm, and macropredictors—and CEOs have on CSR using the two most widely used datasets of CSR in empirical research, namely KLD and Asset4. We find that of the total variation in CSR, CEOs account for approximately 30 percent. This effect is remarkably stable across the two datasets of CSR, different CSR categories and dimensions, and a sample of exogenous CEO transitions.

Table 1: Proportion of variance in CSR explained by category.

Dataset	Year	Industry	Firm	CEO	Unexplained
KLD	3.9	4.1	33.8	29.8	28.4
Asset4	3.0	12.1	42.7	30.3	11.9

The sample using the KLD data includes 6,909 firm years, 49 industries, 819 firms, and 1,199 distinct CEOs. The sample using the Asset4 database consists of 1,854 firm years, 34 industries, 298 firms, and 380 distinct CEOs.

Table 2: Proportion of variance in CSR dimensions explained by category.

CSR dimension	Year	Industry	Firm	CEO	Unexplained
Strengths	1.5	2.4	49.6	26.5	20.0
Concerns	9.3	13.5	35.7	21.2	20.3
Community	3.0	2.5	26.9	28.3	39.3
Diversity	7.2	4.4	33.1	26.8	28.5
Employees	13.8	2.4	13.9	26.4	43.5
Environment	10.3	7.4	20.9	27.7	33.7
Human rights	5.2	17.5	6.1	28.2	43.0
Product	2.6	9.0	28.6	26.4	33.4

Table 3: Proportion of variance in CSR explained by category on alternative samples.

Sample	Year	Industry	Firm	CEO	Unexplained
Post-2003 sample	6.2	4.4	29.8	28.9	30.7
Pre-2010 sample	1.0	5.7	50.0	27.7	15.6
Scaled CSR score	4.2	4.9	32.5	29.1	29.3

Table 4: Proportion of variance in CSR explained by category on a sample with exogenous CEO transitions.

	Year	Industry	Firm	CEO	Unexplained
Effect size	5.5	3.5	33.5	26.9	30.6

Table 5: Proportion of variance in CSR explained by CEOs on subsamples with differing degrees of managerial discretion.

	Industry discretion		Organizational discretion	
	Low	High	Low	High
CEO effect	27.0	32.7	27.0	32.9

Table 6: Proportion of variance in CSR explained by category using customary VPM techniques.

VPM technique	Year	Industry	Firm	CEO	Unexplained
Sequential ANOVA	5.6	7.1	46.0	12.7	28.6
MLM ¹⁴	4.8	4.1	37.7	22.3	31.1
MDV _(moving CEOs only)	5.4	13.2	33.7	6.8	40.9
MDV _(moving and nonmoving CEOs)	5.0	12.9	33.0	15.3	33.8

¹⁴ Because there is no accepted *adjusted* R-squared metric for MLM, effect sizes estimated with MLM are represented by R-squared.

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