

CEO general managerial skills and corporate social responsibility

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Abstract

This study examines the impact of managerial skill sets on corporate social responsibility (CSR). We show that firms with chief executive officers (CEOs) who gain general managerial skill sets through their lifetime work experience (i.e., generalist CEOs) tend to engage in less CSR. This finding remains consistent after considering potential endogenous matching between CEO types and firms, as well as alternative measures of CSR. We further show that the negative relationship between generalist CEOs and CSR becomes more prominent when CEOs are close to the timing of job-hopping, especially for firms with a higher level of institutional ownership and institutional investors who frequently alter their holding positions. These findings are consistent with the argument that CEOs who frequently face the short-term performance pressure from the labor market are reluctant to invest in projects which are likely to generate profits over the long run.

JEL classification: G32; G34; J24; M14

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1. Introduction

Corporate social responsibility (CSR), which requires companies to channel important resources to improve multi-stakeholder sustainability, has received considerable attentions in the recent business world. A growing body of literature has provided important insights into how CSR engagements affect corporate activities and firm value (McWilliams and Siegel, 2001; Bénabou and Tirole, 2010; Kitzmueller and Shimshack, 2012; Ferrell et al., 2016; Liang and Renneboog, 2016). Furthermore, Mosley et al., (1996)) highlight that “corporate social responsibility refers to managements’ obligation to set policies, make decisions and follow courses of action beyond the requirements of law that are desirable in terms of the values and objectives of society”. According to this line of thought, some studies show that CSR is related to CEO-level characteristics such as altruism, confidence and materialism (e.g., Borghesi et al., 2014; Davidson et al., 2016; McCarthy et al., 2017). However, given the importance of CSR in firm strategy, we still know relatively little about the role of individual executives in formulating firm-level CSR activities. In particular, very few studies have examined the effects of managerial human capital on CSR. Our paper aims to shed some light on the empirical relevance of this literature.

Becker (1962) introduces two types of managerial capital: general human capital (i.e., skills not specific to any organization and transferrable across firms or industries) and firm-specific human capital (i.e., skills valuable only within an organization). The relevance of this theory is further underlined when modern corporations show a greater appetite for recruiting outside CEOs with more general managerial skills established over a lifetime work experience (hereafter referred to as generalist CEOs) (Murphy and Zabochnik, 2007). For instance, generalist managers are more likely to reach the top management positions under complex business environment and improved communication technologies (Ferreira and Sah, 2012), and firms pay more to generalist CEOs compared with those whose managerial skills

are specific to a firm or industry (hereafter referred to as specialist CEOs) (Custódio et al., 2013). Prior research further shows that firms managed by generalist CEOs are associated with higher risk (May, 1995), increased corporate innovation (Custódio et al., 2017), higher cost of equity (Mishra, 2014) and improved investment efficiency (Xuan, 2009).

In this paper, we bring prior study on the managerial human capital to the research of CSR by investigating the association between CSR and generalist CEOs. Prior studies on CSR provide several important findings. First, CSR investments are more likely to contribute to firm performance over the long term (e.g., Cornell and Shapiro, 1987; Donaldson and Preston, 1995; Freeman et al., 2004; Eccles et al., 2014), while short-term profits are not guaranteed (e.g., Zadek, 2004; Deckop et al., 2006; Kang, 2016). Second, the CSR-related activities are difficult to quantify and thus outside investors may not consider the level of CSR investments as a key indicator for evaluating CEO performance (e.g., Barnea and Rubin, 2010; Benabou and Tirole, 2010; Kruger, 2015). Third, financial markets may not fully value CSR investments unless the intangible resources generated through CSR investments produce tangible outcomes that could be valued by the stock market (e.g., Lev and Sougiannis, 1996; Chan et al., 2001; Edmans, 2011).

Additionally, generalist CEOs who have worked in various positions, companies and different industries may be often pursued by executive search firms, and thus their performances are more frequently evaluated by the labor market (Dasgupta and Ding, 2010; Giannetti, 2011; Mishra, 2014). Holmstrom and Ricart i Costa (1986), Stein (1989), Bebchuk and Stole (1993) and Goel and Thakor (2008) document that labor market tends to use firms' short-term stock prices to evaluate managerial abilities, especially when there are difficulties for obtaining the further information of long-term projects. As a result, given that generalist CEO's wealth is less contingent on the long-term performance of the incumbent firm that he

or she leads (Mishra, 2014), we conjecture that generalist CEOs are less likely to exploit CSR projects.

We examine the relationship between CEOs' general human capital and CSR using a panel of Standard & Poor's (S&P) 1500 firms over the period 1996-2007. To measure the generality of human capital of a CEO, we use the *General Ability Index (GAI)* developed by Custódio et al., (2013), which consists of five aspects of a CEO's career path: past number of (i) positions; (ii) firms; (iii) industries in which the CEO worked; (iv) whether the CEO held a CEO position at a different company; (v) whether the CEO worked for a conglomerate.¹ The CSR data is obtained from Kinder, Lydenberg, and Domini (KLD). Following Deng et al., (2013) and Lins et al., (2017), we measure the CSR as the difference between the standardized total strength score and the standardized total concern score. Using a sample of 5776 CEO-firm-year observations between 1996 and 2007, we find a negative and statistically significant relationship between generalist CEOs and CSR. Specifically, the coefficient estimation for our main variable of interest in the baseline regression model suggests that a one standard deviation increase in the *GAI* is related with 3.65% decrease in the scaled CSR. This finding is robust to alternative measures of CSR,² alternative empirical specifications with additional controls as well as different standard error clusters.

One empirical challenge for our study is the possibility of endogenous matching between CEO types and firms. For example, the non-random assignment of a CEO to a firm suggests that a firm with more CSR activities may be less likely to recruit a generalist CEO who has limited firm-specific knowledge in dealing with firm-related stakeholders (Miller, 1991; Datta et al., 2002). We use two identification strategies to address this concern and help establish causality. First, we apply propensity score matching to identify control firms with

¹ We greatly appreciate Pedro Matos for providing the *GAI* data as used in Custódio et al., (2013).

² In fact, a one standard deviation increase in *GAI* is related with 22.19% decrease in CSR, which is calculated as the total number of strengths minus the total number of concerns. The net difference CSR measurement has been widely used by a number of studies such as Godfrey et al. (2009), Borghesi et al., (2014), Tang et al., (2015); Cronqvist and Yu (2017), McCarthy et al., (2017).

specialist CEOs, which are indistinguishable for the firm-level fundamentals from sample firms with generalist CEOs. The estimation results suggest that firms with generalist CEOs show significantly lower CSR than the matched control group with specialist CEOs. Such finding confirms our baseline results.

Our second identification strategy is to employ the instrumental variable (IV) approach and to use the two-stage least squares (2SLS) regression analysis. We use depth of recession (i.e., *Recession depth*) as an instrument for the generality of human capital of the CEO. Following Schoar and Zuo (2017), we identify whether a CEO started career during the recession year based on NBER recession convention. The *Recession depth* is then created as the number of months that recession lasts. The rationale behind this instrument is that economic conditions for a manager's initial labor market entry have long-term effects on their career paths and management styles. For example, managers who started their careers during recessions are less mobile across both industries and firms, and they experience fewer positions before first becoming CEOs (Schoar and Zuo, 2017). The results of the first-stage of 2SLS suggest a negative relationship between the *Recession depth* and the generality of managerial human capital, while the second-stage results confirm the negative association between generalist CEOs and CSR.

We next explore whether the impact of generalist CEOs on CSR is affected by the pressure of performance evaluation from the labor market. Murphy and Zimmerman (1993), Cheng (2004) and Kang (2016) suggest that CEOs approaching job-hopping may have lower propensities in investing in any project with a delayed payoff. We examine the association between CSR and CEOs who are one year, two years and three years or more before job-hopping, respectively. Results show that the negative relationship between generalist CEOs and CSR is most pronounced for CEOs who are one year before job-hopping. Following the aforementioned findings, we further analyse the effect of short-term performance pressure

from the labor market on the relationship between generalist CEOs and CSR. In doing so, we first split the sample according to the level of institutional ownership. Graves and Waddock (1990), Porter (1992) and Bushee (2001) suggest that CEOs are more likely to be overly focusing on the short-term investments and tangible outcomes due to the presence of a higher level of institutional ownership. In addition, as institutional investors with short-term trading strategies are less likely to support long-term investments (Shleifer and Vishny, 1997), we also split the sample based on the investment turnover of institutional shareholders. We find that the effects of job-hopping by generalist CEOs on CSR are more prominent for firms with a higher level of institutional ownership and for firms with active trading institutional investors. These findings provide support that generalist CEOs are less likely to invest in CSR when they face stronger short-term performance pressure from the labor market.

This paper is closely related to two main streams of literature. First, we add to the studies on the association between CEOs and CSR by providing new evidence on the role of managerial human capital in formulating firm-level CSR activities. Prior studies find that CSR is affected by several CEO-related characteristics such as CEO confidence (Tang et al., 2015; McCarthy et al., 2017), CEO incentives (Fabrizi et al., 2014), CEO ages (Oh et al., 2014) and CEO parenting experiences (Cronqvist and Yu, 2017). The results of our paper show that CSR is significantly affected by the generality of the human capital of the CEO. Second, building upon the findings that generalist CEOs are more likely to engage in job-hopping and are frequently pursued by executive search firms (Dasgupta and Ding, 2010; Giannetti, 2011), our paper offers important evidence for the impact of labor market evaluation on CEOs' decisions in long-term investment. By showing that generalist CEOs who face performance pressures from the labor market have a lower propensity to invest in CSR projects, our paper shed light on the unintended consequences of CEO skill sets over corporate strategy.

The remainder of the paper is organized as follows. The related literature is reviewed in Section 2, while Section 3 describes the data, sample selection and summary statistics. Section 4 discusses the main results and endogeneity issues. Section 5 examines whether the relationship between generalist CEOs and CSR is affected by the performance pressure from the labor market. Section 6 shows robustness tests. Section 7 concludes.

2. Related literature

2.1 The CEO labor market

According to Fama (1980) and Holmstrom (1982), potential new employers in the external labor market may evaluate managers and offer them outside opportunities mainly based on the superior stock performance, so managers who are concerned with their future outside careers tend to increase their current firms' stock prices. Extending this view, a number of empirical studies find evidence that performance imposes a positive impact on the labor market valuations of top executives and outside directors. For example, studies by Gilson (1990) and Kaplan and Reishus (1990) find that managers with better performances are more likely to receive additional outside directorships since superior performance may lead to more outside opportunities for the CEO's services as an outside director. Similarly, by using the sample of retired CEOs, Brickley et al., (1999) and Evans et al., (2010) report a positive relationship between the CEO's performance during the final years of employment and the likelihood of board services for either his own board or outside boards over the postretirement period. Fee and Hadlock (2003) find that new employees who are selected as CEOs usually come from firms that show above-average stock performance, and the observed relationship becomes more pronounced for senior executives. This evidence supports the argument that managers have to show superior performance before they enter the external labor market for moving to a more senior position at another firm.

While knowing the pressures that market uses short-term stock prices to forecast the firm value and evaluate managerial abilities, managers may forgo value-increasing projects with long-term returns, especially when the market has difficulties in accessing the information of those long-term projects (Holmstrom and Ricart i Costa, 1986; Stein, 1989; Bebchuk and Stole, 1993; Goel and Thakor, 2008). In particular, Narayanan (1985) proposes that managers may make corporate decisions to boost short-term performance at the expense of long-term shareholder value when they feel pressures from the external labor market. Stein (1989) reports a similar finding and describes it as the manifestation of the interest conflict between short-term and long-term shareholders. He also argues that, a manager, whose firm is being acquired, or is preparing for issuing new equities, may have a strong propensity for enhancing the short-term stock price through which the market could be impressed. In line with such argument, Stein (2003) further shows that managers may underinvest in hard-to-measure assets, such as maintenance, employee training and customer loyalty, which may not contribute to their short-term perceived values in the external labor market but safeguard a firm's long-run reputation. In addition, studies by Whetten and Mackey (2002) and Cziraki and Xu (2017) suggest that CEOs with long-term contracts may be more long-run oriented and seek to increase the reputation of the firm. Specifically, by using the survey data of 800 CEOs from both family and non-family firms of 22 emerging countries, Mullins and Schoar (2016) find that CEOs with greater family involvement are more likely to be stakeholder-oriented, whereas professional CEOs, who have relatively a shorter horizon, show stronger interests to feel responsible to shareholders.

2.2 Generalist CEOs and CSR

In a recent study, Custódio et al., (2013) define generalist CEOs as those with general managerial skills that are acquired through different positions, in a number of firms and

industries, in multi-division firms and from prior CEO experiences. The general managerial skills thus are not firm-specific human capital and can be applied elsewhere. Empirical studies suggest that generalist CEOs are often pursued by executive search firms, frequently engage in the external labor market for job-hopping and have an easier time being recruited by other firms (Dasgupta and Ding, 2010; Giannetti, 2011; Mishra, 2014). Moreover, considering that a generalist CEO's long-term wealth is less related to the future reputation of the firm that she currently leads, Mishra (2014) suggests that CEOs with more general skills may have more incentives to invest in short-term profit projects that are not benefit to the corporate sustainability but to mainly boost the current performances. In contrast, specialist managerial skills have recently become the less important component of managerial capital as they are firm-specific human capital that may be only valuable within a particular firm or industry. Consequently, CEOs with more firm-specific skills have little bargaining power in the external labor market and focus more on internal promotions than do generalist CEOs of otherwise comparable characteristics (Murphy and Zabojnik, 2004, 2007; Lazear, 2009; Custódio et al., 2013). In a similar vein, Giannetti (2011) demonstrates that firm-specific skills, which are usually acquired through corporate internal operations such as activities with clients, suppliers and employees, may have limited effects on attracting outside offers and specialist CEOs thus place a greater emphasis on implementing value-enhancing long-term strategy.

Following the aforementioned discussions of the CEO labor market and general managerial skills, we expect a negative association between generalist CEOs and CSR, for three reasons. First, the empirical literature on the association between CSR and firm performance show mixed results and thus left the value implications of CSR largely unclear (see. Ferrell et al., 2016, for a review). For example, some scholars have demonstrated that CSR activities can increase stakeholders' interests in supporting a firm's operation and, hence,

they have a long-term perspective to increasing shareholder wealth (see Cornell and Shapiro, 1987; Freeman et al., 2004; Deng et al., 2013; Ferrell et al., 2016). Other studies such as Donaldson and Preston (1995); Brammer and Millington (2008); Godfrey et al., (2009) and Kacperczyk (2009) find that CSR improves firm-stakeholder relationship in a time-consuming process and thereby it contributes to the financial performance in the long term. However, research on the short-term value implications of CSR shows that firms involved in CSR are more likely to sacrifice short term financial performance as they spend limited firm resources on social issues, which do not ensure an immediate profit-generation (Thomas and Ely, 1996; Ogden and Watson, 1999; Zadek, 2004; Deckop et al., 2006; Kang, 2016). In a recent study, Kruger (2015) studies how stock market reacts to the announcements of CSR events and provides general evidence that stock market reacts strongly negatively to negative CSR events and weakly negatively to positive CSR events, suggesting that investors may still discount the implementations of positive CSR activities over the short run.

Second, the qualitative nature of many CSR-related activities may lead to the measurement difficulty in precisely quantifying CSR (see Kruger, 2015). Also, Barnea and Rubin (2010) document the difficulty in quantifying the CSR spending of US companies because these CSR-related expenses are reported together with non-CSR expenses under regular financial accounts. As a result, outside investors, who need to quantify target firms' real CSR information for supporting their investment decisions, may have difficulties to observe firm-level choices of CSR, and so they are reluctant to evaluate CEOs' performances based on long-term CSR projects (Benabou and Tirole, 2010; Edmans, 2011; Kruger, 2015). Additionally, as stakeholder theory proposes that corporate managers should focus on the interests of all their constituencies, it provides a multi-objective function which may cause confusions and management inefficiencies as managers cannot observe the complete specification of corporate mission (Dewatripont et al., 1999; Jensen, 2001). Furthermore, due

to the conflict of interests among different stakeholder groups, a measure of overall stakeholder welfare is extremely challenging (Tirole, 2001). For instance, CSR activities that benefit communities might be harmful to employees.

Third, theory highlights ambiguous findings for whether intangible resources generated through CSR investments is fully valued by financial markets. On the one hand, a bulk of management literature suggests that investing in CSR has a positive impact on creating important intangible resources such as corporate reputation, culture and employee satisfaction, and thus high CSR firms are unlikely to be undervalued by the stock market (Russo and Fouts, 1997; Sharma and Vredenburg, 1998; Branco and Rodrigues, 2006; Surroca et al., 2010). On the other hand, other studies argue that the stock market fails to fully incorporate intangibles into stock prices because it lacks information on the exact value of intangible assets (Lev and Sougiannis, 1996; Chan et al., 2001; Lev, 2004). Further, even if information is available to observe the output of intangibles, the market may still follow the traditional valuation methodologies, which allocate more weights on physical assets, while benefits from intangibles are unaware due to ambiguous predictions on value implications of intangibles (Deng et al., 1999; Hong et al., 2000). Relatedly, Edmans (2011) argues that the non-incorporation of intangibles, as suggested by prior studies, is not the manifestation of inadequate information on their value. Instead, he shows that intangibles can only affect the stock prices when they subsequently produce tangible outcomes that are valued by the stock market, such as earnings management.

3. Data and summary statistics

3.1 Measures of CSR, CEO general managerial ability index and other variables

We measure a firm's CSR using a rating score that presents the firm's relevant corporate social performance from the KLD database.³ KLD provides the firm's social responsibility rating data for seven major categories: community, corporate governance, diversity, employee relations, environment, human rights and product quality and safety. Each category contains several dimensions that are associated with positive (i.e., strength) and negative (i.e., concern) indicators, while the firm gains (losses) one point for each listed strength (concern) dimension. Following Deng et al., (2013) and Lins et al., (2017), we construct the modified CSR measure based on a two-step approach, rather than taking the net difference between the sum of strengths and the sum of concerns.⁴ First, we standardize the total score of strength and concern for each category by the corresponding number of strength and concern indicators across that category. Second, we then calculate the modified CSR score through taking the difference between the standardized total strength score and the standardized total concern score.⁵

To examine the effect of general managerial skills on CSR activities, we use the General Ability Index developed by Custódio et al., (2013).⁶ The value of the index of CEO i in year t is then calculated using the principle component analysis as presented in Eq. (1):

$$GAI_{i,t} = 0.268X1_{i,t} + 0.312X2_{i,t} + 0.309X3_{i,t} + 0.218X4_{i,t} + 0.153X5_{i,t} \quad (\text{Eq. 1})$$

where, X1 is the number of positions that a CEO experienced during her career; X2 is the number of firms that a CEO employed; X3 is the number of industries that a CEO worked; X4 is a dummy variable that equals one if a CEO used to hold the CEO position in another

³ The KLD database was acquired by RiskMetrics in November 2009, which was further acquired by MSCI in June 2010.

⁴ Manescu (2009) and Deng et al., (2013) argue that the simple net difference approach may cause the difficulty in comparing rating scores across relevant categories and firm years due to the high variety of strengths and concerns indicators for most dimensions.

⁵ For example, the KLD CSR rating scores of strengths and concerns across the seven categories for Starbucks in 2003 are 2, 0, 1, 2, 0, 0, 0 and 0, 1, 0, 1, 0, 0, 0, respectively. Next, we find that the number of indicators for these strengths and concerns dimensions is 6, 4, 8, 6, 5, 3, 4 and 4, 3, 3, 5, 7, 4, 4, respectively. The standardized scores for strengths and concerns are thus $0.7916 (=2/6+0/4+1/8+2/6+0/5+0/3+0/4)$ and $0.5333 (=0/4+1/3+0/3+1/5+0/7+0/4+0/4)$. We finally get the modified CSR score for the Starbucks in 2003 is $0.2583 (=0.7916-0.5333)$.

⁶ We do appreciate Pedro Matos for kindly providing the general managerial ability index data.

firm; and X5 is a dummy variable that equals one if a CEO has worked for a conglomerate firm. Thus, a higher value of the index suggests higher levels of general managerial ability. Similar to Custódio et al., (2013; 2017), the index is standardized with zero mean and unit variance.

Following previous by Branco and Rodrigues (2006); Godfrey et al. (2009); Barnea and Rubin (2010); Manner (2010); Custódio et al., (2013); Borghesi et al. (2014); Di Giuli and Kostovetsky (2014), Rao and Tilt (2016) and Kang (2016), we include a set of control variables that could have an impact on CSR engagements. First, we control *Size*, *ROA*, *Stock return*, *Leverage*, *Tobin's Q*, *Asset tangibility* and *Firm age* as firm-level fundamentals that may affect the variance of CSR. Second, the CEO characteristics that we control for include *CEO gender*, *CEO duality*, *CEO MBA*, *CEO Ivy league*, *CEO military*, *CEO age*, *CEO tenure* and *CEO fast track*. Finally, we construct *Board independence*, *Board busyness* and *Institutional holdings* as proxies for corporate governance that may have an impact on CSR. Throughout our analysis, the explanatory variables are lagged by one year to the dependent variable to alleviate potential endogeneity problems. All accounting variables are winsorized at the 1st and 99th percentile values. Detailed variable definitions are provided in Appendix A.

3.2 Sample

The original sample of general managerial ability index is based on Custódio et al. (2013). The dataset consists of a panel of 21,909 CEO-firm-year observations with 4,451 different CEOs between 1993 and 2007. To examine the effect of general managerial skills on CSR activities, we merge the initial sample with the Kinder, Lydenberg, and Domini (KLD) database which provides the firm's social responsibility rating data. We further merge the sample with firm-level financial data from CRSP/Compustat Merged database, corporate

governance and director data from RiskMetrics, and institutional investor data from 13F reports. We also manually collect the CEO characteristics data from the BoardEx. The final sample contains 5,776 CEO-firm-year observations and 1,819 different CEOs over the period 1996-2007.

3.3 Summary statistics

Table 1 reports the descriptive statistics of the variables used in our baseline regression models. The average firm in our sample has a CSR rating score equals to -0.221, a CEO's GAI value of 0.112, a sales revenue of \$6.433 billion, a return on asset of 15.1%, a stock return of 15.1%, a leverage of 0.220, a Tobin's Q equals to 2.133, a fraction of tangible assets of 30.1%, a firm age of approximately 29 years, a fraction of independent directors of 70.2%, a fraction of busy directors of 29.3%, and a fraction of institutional holdings of 73.2%. In general, the average CEO is 56 years old and has a tenure of eight years. Specifically, 1.5% CEOs in the sample are female, 68.3% CEOs are dual-title holders, 33.1% CEOs have a MBA degree, 19.3% CEOs are graduate from Ivy League universities, 6.4% CEOs have military experiences, and is 47 years old when became CEO for the first time. All these descriptive statistics are comparable to those reported by Deng et al., (2013); Custódio et al., (2013); Borghesi et al., (2014); Mishra (2014); Tang et al., (2015) and Hubbard et al., (2017).

[Insert Table 1 about here]

Table 2 shows the average firm and CEO characteristics for generalist and specialist CEOs. On average, compared to firms with specialist CEOs, firms with generalist CEOs show a lower CSR rating score. We also find that firms with generalist CEOs are bigger, older, have higher leverage, hold more tangible assets, and have a more independent and busy board. Accounting performance and Tobin's Q are higher for firms with specialist CEOs. The differences in stock market performance and institutional holdings are statistically

insignificant. In addition, similar to Custódio et al., (2013), generalist CEOs tend to be older, have a shorter tenure, hold dual CEO/Chairman titles, obtain a MBA degree, gain academic degrees from Ivy League universities, have military services history, and are approximately two years older when they became CEO for the first time than specialist CEOs.

4. Main results

4.1 General managerial ability and CSR

Table 3 presents our main test on the association between CEOs with more general managerial skills and CSR engagements. The first three columns present the ordinary least squares (OLS) panel regression results using the modified CSR rating scores as the dependent variable. The regressions include both year and industry fixed effects, and standard errors are clustered by firm. Across all regressions, the coefficients on *GAI* are negative and statistically significant at the 5% level or better, suggesting strong evidence that the level of CSR is negatively related to firms with generalist CEOs. In terms of economic significance, the coefficient on *GAI* in column (3) indicates that a one standard deviation increase in *GAI* is related with 3.65% decrease in CSR. Additionally, we use the *GAI Dummy* to capture the difference in CSR engagements with CEOs who change their skill sets from specialist to generalist or vice versa.⁷ Column (4) reports that the coefficient on the *GAI Dummy* is negative and significant at 5%, which is consistent with the result as shown in column (3).

[Insert Table 3 Here]

4.2 Endogeneity issues

In the baseline regression, we associate the level of CSR with the *GAI* and the *GAI Dummy*. However, both of these results may be biased due to the endogenous matching

⁷ According to Custódio et al., (2013), a CEO can be switched from the generalist to the specialist group as the yearly median value of *GAI* is used to establish those two groups.

between CEO managerial skill sets and firm types. For example, firms with more social investments may place greater emphasis on managing stakeholder relationships and thereby are less likely to recruit managers without deep firm-specific knowledge in dealing with firm-related stakeholders (Miller, 1991; Datta et al., 2002). We address these endogeneity issues in two ways. First, we perform propensity score matching whereby firm-years with generalist CEOs are matched with firm-years with specialist CEOs, but show no significant differences in terms of all other firm fundamentals. Second, we use an instrumental variable approach to alleviate the concern on the possible direction of causality.

4.2.1 Propensity score matching estimates

Table 4 compares the CSR for firms with generalist CEOs with those for firms with specialist CEOs that have been matched via propensity score matching with the former. We first estimate the probability that a firm recruits a generalist CEO. The propensity score is the probability predicted from a logit regression using the same controls as those included in regression model (3) of Table 3. The estimating results are presented in column (1) of Panel A of Table 4. Results show that firms with generalist CEOs are larger and younger. The pseudo R-square of regression is 0.147.

We then adopt the nearest neighbour approach to ensure that firms with generalist CEOs (i.e., the treatment group) are sufficiently similar to their matched firms with specialist CEOs (i.e., the control group). In doing so, each firm with a generalist CEO is matched to a firm with a specialist CEO under the closest propensity score. If a firm in the control group is matched to more than one firm in the treatment group, the only pair with the smallest difference between the propensity score of the two firms is retained.⁸ We further require that

⁸ In a robustness test, we also allow that control firms could be matched to multiple treatment firms. The results remain unchanged.

the maximum difference between the propensity score of each paired treatment and control firm does not exceed 0.1% in absolute value.⁹

We employ two diagnostic tests to verify that firms in the treatment and control groups are fundamentally indistinguishable for observable characteristics. The first test consists of re-estimating the logit model for the post-match sample. The results are reported in column (2) of Panel A of Table 4. None of the coefficient estimates is statistically significant, indicating that there are no distinguishable trends in recruiting generalist CEOs between treatment and control groups. In addition, most coefficients in column (2) are smaller in magnitude than those in column (1), indicating that the results are not an artefact of a decline in degrees of freedom in the restricted sample. Finally, the pseudo R-square decreases from 0.147 for the pre-match sample to 0.005 for the post-match sample. Such result shows that the propensity score matching removes all observable differences other than the difference from the presence of generalist CEOs.

The second test is to examine the difference for each observable characteristic between the treatment group and matched control group. The results are shown in Panel B of Table 4. None of the differences in observable characteristics between the treatment and control groups is statistically significant, which again confirms the findings in column (2) of Panel A. Overall, all these tests suggest that any difference in CSR between the two groups is because of the presence of generalist CEOs.

Finally, Panel C of Table 4 presents the propensity score matching estimates. The results suggest that there is a significant difference in CSR between firms with generalist CEOs and those without.¹⁰

[Insert Table 4 Here]

⁹ Our results remain robust when we increase the maximum permissible difference in propensity scores to 0.5% and 1.0% in absolute value, respectively (untabulated).

¹⁰ The difference reported in Panel C of Table 4 is the propensity score matching estimate of the average treatment effect on the treated (ATT) between the treatment group and the matched control group.

4.2.2 Instrumental variable approach

To further address the endogeneity concern, we employ the instrumental variable approach that exploits exogenous variation in the *GAI*. We adopt the depth of recession as an instrument for the generality of human capital of the CEO. Schoar and Zuo (2017) report that economic conditions when managers first enter the labor market matter a great deal in affecting their career paths and management skills over the long run. Specifically, managers who started their careers during recessions have less mobility across both industries and firms, and they hold fewer positions before first becoming CEOs.¹¹ Thus, we expect this instrumental variable to be negatively correlated with the generality of managerial human capital.

Following Schoar and Zuo (2017), we investigate the career path of a CEO and identify whether there is a recession year (i.e., recession period excluding the peak of a business cycle) for his/her starting career based on NBER recession convention. To be considered as a recession year, the calendar year must either include the trough of a business cycle or fully fall into a recession period. We then create the *Recession depth* for each CEO-year observation, which is defined as the number of months that recession lasts.

One important assumption of being a good instrument is that the instrumental variable can be excluded from the set of variables influencing the dependent variables of interest (i.e., CSR). Under our setting, we expect such exclusion restriction is likely to be satisfied as the *Recession depth* measures the number of months the recession lasted for the initial labor market conditions when a CEO enters the job market. In addition, given that the *Recession depth* is based on the first job over the CEO's career, going further back in times may make it

¹¹ The long-term effects of the economic conditions for an individual's initial labor market entry have been well-documented. Gibbons and Waldman (2006) suggest that initial labor conditions are important in long-term labor market outcomes because of the effect of on-the-job skill establishment. Oyer (2006) finds that initial career placement imposes a significant impact on determining the careers of economists and their research productivity. Oyer (2008) shows that stock market conditions upon MBA students' graduation have a substantial impact on whether they go directly to Wall Street and their income levels. Similarly, Kahn (2010) finds that timing and location of college graduation could be affected by economic conditions as workers who graduate in a bad economy earn significantly lower wages, suggesting persistent business-cycle effects on recent labor market entrants.

less likely that the exclusion restriction is violated (Custódio et al., 2017). However, we are still unable to perfectly address any unobserved time-varying CEO characteristic, which is associated both with CSR engagements and the *Recession depth*, makes CSR related to the instrument for reasons other than the generality of managerial human capital.¹²

Column (1) of Table 5 shows the results of the first-stage regression where the dependent variable is a dummy variable equals to one if the firm is managed by a generalist CEO, and zero otherwise. The explanatory variables include the instrument and the control variables as in regression (3) of Table 3. Consistent with our expectation, the coefficient of *Recession depth* is negative and statistically significant at the 5% level. The reported F-statistic is 24.23, which is larger than the conventional threshold for weak instruments. Column (2) of Table 5 shows the results for the second-stage regression whose dependent variable is CSR. Results confirm the negative effect of the generality of managerial human capital on the CSR, suggesting that our baseline result is robust to endogeneity concerns.

[Insert Table 5 Here]

5. Generalist CEOs, labor market and CSR

In this section, we investigate whether the association on the generality of managerial human capital and CSR is affected by the pressure of performance evaluation from the labor market. Generalist CEOs are more mobile across different industries, and hence are more frequently evaluated by the labor market than their specialist counterparts (see e.g., Dasgupta and Ding, 2010; Giannetti, 2011). As a result, a generalist CEO may focus on short-term performance projects, as his or her wealth is less contingent on the firm's long-term performance (Mishra, 2014). In addition, other studies on the executive labor market indicate

¹² Another plausible concern on the validity of the instrument is that a manager's decision on entering the external labor market may not be exogenous, as he/she can aware the downturn and thus postpone his/her entrance into the labor market during the recession. To mitigate such selection bias, Schoar and Zuo (2017) define the manager's career starting year by using the birth year plus 24. They use 24 as a specification because the distribution of starting ages shows a strongest mode at 24. We follow their methodology in creating our *Recession depth* variable.

that CEOs approaching job-hopping may not invest in any project with a delayed payoff (Murphy and Zimmerman, 1993; Cheng, 2004; Kang, 2016). According to these lines of evidence, we expect that the negative association between generalist CEOs and CSR should be more pronounced when generalist CEOs are closer to the timing of job-hopping.

Table 6 presents the regressions on the CSR for the CEOs who are one year, two years and three years or more before job-hopping, respectively. Specifically, column (1) shows the regression results of CSR on CEOs who are one year before job-hopping. Again, the coefficient on GAI is negative and statistically significant, which confirms our baseline results that generalist CEOs invest less in CSR projects. Moreover, as expected, the coefficient on the interaction term is negative and statistically significant at 5% level, suggesting that, for CEOs who are one year before job-hopping, a one standard deviation increase in GAI is related with a 7.59% more decrease in CSR. Column (2) shows the regression results of CSR on CEOs who are two years before the job-hopping. The coefficient on the interaction term remains negative and statistically significant at 10% level. However, the economic magnitude of the impact of generalist CEOs on CSR decreases from 7.59% in column (1) to 5.23%. In the last specification reported in column (3), we regress the CSR on CEOs who are three years or more before the job-hopping. The coefficient on the interaction terms is still negative but statistically insignificant.

To summarize, our results consistently suggest a negative association between CSR and the generality of managerial human capital. In particular, we find that generalist CEOs have a statistically and economically significant impact on CSR when they are one year and two years before the job-hopping, whereas such impact disappears when generalist CEOs are three years or more before entering the external job market. These findings lend further support to our prediction that since generalist CEOs are more likely to engage in job-hopping,

the pressure of performance evaluation from the labor market may diminish their willingness to invest in CSR.

[Insert Table 6 Here]

We next investigate whether institutional investors affect the impact of job-hopping by generalist CEOs on CSR. We consider the situation of institutional investors based on two main reasons. First, institutional investors may decrease their stock holdings for firms with unfavourable financial performances when monitoring is costly because of the risk diversification strategy of many institutional investors make themselves indifferent to and “walk away” from influencing corporate policies (Coffee, 1991; Manconi et al., 2012; Callen and Fang, 2013). Second, institutional investors may place excessive emphasis on short-term performance since they trade actively based on current earnings news, which in turn causes CEOs to be overly concentrating on the short-term investments and tangible outcomes (Graves and Waddock, 1990; Porter, 1992; Bushee, 2001). Therefore, if firms with more institutional investors are more likely to concentrate on short-term performance, we expect the effect of job-hopping by generalist CEOs on CSR should be more prominent for firms with a higher level of institutional holdings.

Table 7 shows the regressions on the CSR for the subsamples of firms with a higher and lower level of institutional holdings as measured by the median level of institutional shareholdings. For brevity, we report only the coefficient estimates for the main variables of interest. Regressions (1) presents the results for the relationship between CSR and generalist CEOs who are one year before job-hopping with the subsample of higher institutional shareholdings. The coefficient on the interaction term remains negative and statistically significant at the 5% level. Regression (2) shows the results for the impact of generalist CEOs, who are two years before the job-hopping, on CSR. Again, the coefficient on the interaction term is negative and statistically significant. Regression (3) shows the results for the

relationship between CSR and generalist CEOs who are three years or more before the job-hopping, while the coefficient on the interaction term is statistically insignificant. Regressions (4) to (6) report the results for the subsamples of lower institutional shareholdings. All coefficients on the interaction terms are statistically insignificant, indicating that there is no impact of job-hopping by generalist CEOs on CSR for firms with lower institutional shareholdings.

[Insert Table 7 Here]

Research on institutional shareholdings also provides important evidence on the association between corporate investments and shareholder trading strategies (Froot et al., 1992; Goldman and Strobl, 2013; Harford et al., 2017). Shleifer and Vishny (1997) point out that institutional investors with short-term trading strategies show a lower propensity to support long-term investments. Other empirical findings suggest that institutional investment horizon is significantly related to corporate issues such as takeovers (Gaspar et al., 2005), investment-cash flow sensitivity (Attig et al., 2012) and cost of equity capital (Attig et al., 2013). Indeed, the heterogeneity of investment horizon among institutional investors can be attributed to various liquidity needs. For instance, Edelen (1999) shows that retail open-ended mutual funds might be more short-term oriented because of frequent money inflows and outflows. Based on these arguments, we thus further investigate whether the impact of job-hopping by generalist CEOs on CSR is affected by the institutional investors' trading strategies. Specifically, if short-term institutional investors tend to trade frequently in a liquid market and are more likely to put downward pressure on a firm's stock price (Wermers, 1999; Parrino et al., 2003; Yan and Zhang, 2009), the association is expected to be more prominent for firms whose institutional investors frequently trade their holding shares.

To measure the frequency that an institutional investor alters its position (i.e., investor turnover), we use the “churn rate” as developed by Gaspar et al., (2005).¹³ We then establish two subsamples according to the median value of detailed institutional investors’ churn rates of each firm. Columns (1) to (3) of Table 8 report the estimation results for the subsample of firms whose institutional investors’ turnover is above the median level (i.e., frequent traders). Again, results confirm that the relationship between CSR and generalist CEOs is affected by the short-term performance pressure from the labor market, especially for generalist CEOs who are one year before job-hopping. Also, given coefficients on the interaction terms are statistically insignificant throughout all regressions as shown in columns (4) to (6), we fail to find such results with the subsample of firms whose institutional investors are infrequent traders.

[Insert Table 8 Here]

To summarize, in Tables 7 and 8, we find that the negative relationship between CSR and generalist CEOs becomes more prominent when generalist CEOs are close to the timing of job-hopping, and such association can only be found for firms with more institutional ownerships and institutional investors that frequently alter holding positions. These results further confirm that the relationship between CSR and generalist CEOs could be affected by the short-term performance pressure from the labor market.

6. Robustness tests

In this section, we perform several robustness checks of our main findings. First, we adopt an alternative measurement of CSR (i.e., *CSR_Net Score*), which is the sum value of

¹³ Specifically, following Gaspar et al., (2005), we calculate the quarterly churn rate of an institutional investor i which holds the set of companies Q at quarter t as: $CR_{i,t} = \frac{\sum_{j \in Q} [N_{j,i,t} P_{j,t} - N_{j,i,t-1} P_{j,t-1} - N_{j,i,t-1} \Delta P_{j,t}]}{\sum_{j \in Q} \frac{N_{j,i,t} P_{j,t} + N_{j,i,t-1} P_{j,t-1}}{2}}$, where $P_{j,t}$ and $N_{j,i,t}$ are the price and the number of shares of firm j held by institutional investor i at quarter t . A higher churn rate indicates that the institutional investor alters the holding position more frequently. The investor turnover of firm $k = \sum_{i \in S} w_{k,i,t} \left(\frac{1}{4} \sum_{r=1}^4 CR_{i,t-r+1} \right)$, where S represents the set of institutional shareholders in firm k , and $w_{k,i,t}$ is the weight of shareholder i in the total percentage held by institutional investors at quarter t .

the net difference between strengths and concerns of all CSR categories, as suggested by Borghesi et al., (2014), Kang (2016), McCarthy et al., (2017). Moreover, some studies argue that not all dimensions reported in KLD are in the greatest interest to stakeholder (e.g., Choi and Wang, 2009; Tang et al., 2015), we then develop the CSR based on five dimensions, including community, diversity, employee relations, environment, and product, for both standardized CSR and net different CSR scores.¹⁴ The results are reported in the Panel A of Table 9. For brevity, for each regression we only report the coefficient on the *GAI* and *GAI_dummy* while the same set of control variables, year fixed effects and industry fixed effects as in Table 3 are included. We find both *GAI* and *GAI_dummy* are negative and statistically significant at 5% level or better, suggesting that our results remain consistent with different CSR measures.

Second, McWilliams and Siegel (2000) find that firms with ample R&D resources also enjoy higher corporate social performance, especially when innovated products with higher qualities are produced based on the concern of CSR. Meanwhile, Custódio et al., (2017) suggest a positive relationship between generalist CEOs and innovation. Therefore, in Panel B we include R&D expenditure as an additional control. Our results are largely unaffected by this inclusion.

Third, prior studies find that CEO incentive compensation plays an important role in CSR engagements (McGuire et al., 2003; Deckop et al., 2006; Fabrizi et al., 2014). Since pay is higher for generalist CEOs (Custódio et al., 2013), the *GAI* in our main findings may also capture the effect of managerial incentives on CSR. To address such concern, in Panel C we add *Total Pay* as an additional control. In another regression as shown in Panel D, we also add the CEO Delta and Vega variables as further controls of CEO incentive payments. We confirm that our main results are unaffected by these inclusions.

¹⁴ Hillman and Keim (2001) suggest that these five dimensions impose significant impact on managing stakeholder relationships, and thus provide important implications for firm performances.

Fourth, McCarthy et al., (2017) report a significant negative association between CSR and CEO confidence. Therefore, we include CEO Overconfidence as an additional control.¹⁵ As reported in Panel E, our baseline results remain consistent given both *GAI* and *GAI_dummy* are negative and statistically significant at 5% level or better.

Finally, we also test whether the results are robust to the use of alternative clustering and definitions of industry dummies. As shown in Panel F, we confirm that our results are robust to clustering by year and industry, to using two-digit SIC industry dummies and to using three-digit NAICS industry dummies.

[Insert Table 9 Here]

7. Conclusion

Recent studies produce important evidence on the impact of managerial skill sets on corporate activities such as compensation design, innovation, cost of capital and initial public offering (Custódio et al., 2013, 2017; Mishra, 2014; Gounopoulos and Pham, 2017). However, little is known on whether CSR activities are also influenced by CEO skill sets that are gained through their lifetime work experiences. Motivated by this interest, this study explores whether managerial skills matter for CSR. Given early evidence that CSR normally generates long-term value and financial markets may not fully value intangible CSR investments, we hypothesize that generalist CEOs, who are more frequently to face the labor market evaluation, may have a lower propensity to engage in CSR activities. We find evidence in favour of our hypothesis, as there is a significant and negative relationship between generalist

¹⁵ Following Campbell et al., (2011) and Hirshleifer et al. (2012), we estimate the average CEO stock option moneyness for each year from the ExecuComp as follows. We first calculate the average realizable value per option by dividing the total realizable value of the exercisable but unexercised options by the number of exercisable but unexercised options. We then subtract the average realizable value from the fiscal year-end stock price to obtain the average exercise price of the options. The estimated moneyness of the options is then calculated as the stock price divided by the estimated average exercise price minus one. Moreover, our continuous “*CEO Confidence*” variable is to the basis for the indicator variable used in Malmendier and Tate (2005) and Malmendier and Tate (2008), as CEOs are overconfident if they hold exercisable but unexercised stock options that are at least 67% in the money.

CEOs and CSR. We perform both propensity score matching and instrumental variable approaches to mitigate concerns on endogenous matching between CEO types and firms. Nevertheless, our findings remain robust to alternative CSR measures and empirical specifications with additional controls.

We next analyse whether the relationship between generalist CEOs and CSR is affected by the performance evaluation pressure from the labor market. We find that such negative relationship is the most prominent for generalist CEOs who are one year before job-hopping. Finally, we further split the sample according to the level of institutional ownership and trading frequency of institutional investors. Results show that the negative impact of job-hopping by generalist CEOs on CSR becomes more prominent for firms with a higher level of institutional ownership, as well as institutional investors who frequently alter their holding positions. These findings further confirm that generalist CEOs may feel reluctant to engage in CSR activities when they face short-term performance evaluation by the labor market.

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Table 1

Summary statistics

This table presents the number of observations, mean, median, standard deviation, minimum and maximum for each variable. The sample consists of 5776 CEO-firm-year observations between 1996 and 2007. Variable definitions are provided in the appendix.

Variable	Obs.	Mean	Median	Stdev	Minimum	Maximum
CSR	5776	-0.221	-0.200	0.508	-2.767	2.185
General Ability Index	5776	0.112	-0.021	0.986	-1.504	5.854
Sales (\$ millions)	5776	6433.458	2033.477	12203.820	94.433	76476.000
ROA	5776	0.151	0.141	0.08	-0.076	0.403
Stock return	5776	0.151	0.112	0.386	-0.672	1.684
Leverage	5776	0.220	0.218	0.165	0.000	0.776
Tobin's Q	5776	2.133	1.712	1.263	0.877	7.640
Asset tangibility	5776	0.301	0.241	0.221	0.003	0.880
Firm age	5776	29.138	23.000	20.928	2.000	80.000
Board independence	5776	0.702	0.727	0.160	0.000	1.000
Board busyness	5776	0.293	0.250	0.262	0.000	1.000
Institutional ownership	5776	0.732	0.750	0.175	0.242	1.000
CEO age	5776	55.956	56.000	7.117	35.000	91.000
CEO tenure	5776	8.116	6.000	7.421	1.000	57.000
CEO gender	5776	0.015	0.000	0.121	0.000	1.000
CEO duality	5776	0.683	1.000	0.465	0.000	1.000
CEO MBA	5776	0.331	0.000	0.471	0.000	1.000
CEO Ivy league	5776	0.193	0.000	0.395	0.000	1.000
CEO military	5776	0.064	0.000	0.245	0.000	1.000
CEO fast track	5776	46.588	47.000	7.732	21.000	80.000

Table 2

Univariate analysis

This table compares the means and medians of firm, corporate governance and CEO characteristics for firm-years with generalist CEOs to those without, using the subsample of specialist CEOs. The total number of observation is 5776. All variables are defined in the appendix. t-tests (Wilcoxon-Mann-Whitney tests) are conducted to test for differences in the means (medians). ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variable	Generalist CEOs		Specialist CEOs		Test of difference	
	Mean	Median	Mean	Median	Mean	Median
CSR	-0.264	-0.218	-0.177	-0.167	-0.086***	-0.051***
Sales (\$ millions)	8153.182	2711.493	4690.956	1553.888	3462.226***	1157.605***
ROA	0.145	0.137	0.156	0.146	-0.011***	-0.009***
Stock return	0.145	0.112	0.156	0.111	-0.011	0.001
Leverage	0.233	0.231	0.206	0.202	0.027***	0.029***
Tobin's Q	2.070	1.666	2.197	1.760	-0.127***	-0.094***
Asset tangibility	0.293	0.236	0.309	0.244	-0.016***	-0.008**
Firm age	30.940	26.000	27.312	22.000	3.628***	4.000***
Board independence	0.726	0.750	0.678	0.700	0.048***	0.050***
Board busyness	0.336	0.286	0.250	0.182	0.086***	0.104***
Institutional ownership	0.731	0.750	0.733	0.750	-0.002	0.000
CEO age	56.854	57.000	55.047	55.000	1.807***	2.000***
CEO tenure	7.235	6.000	9.008	6.000	1.774***	0.000***
CEO gender	0.017	0.000	0.013	0.000	0.005*	0.000
CEO duality	0.695	1.000	0.670	1.000	0.025**	0.000**
CEO MBA	0.384	0.000	0.277	0.000	0.107***	0.000***
CEO Ivy league	0.232	0.000	0.154	0.000	0.077***	0.000***
CEO military	0.082	0.000	0.046	0.000	0.036***	0.000***
CEO fast track	47.681	48.000	45.480	46.000	2.201***	2.000***

Table 3**General managerial ability and CSR**

This table presents estimates of ordinary least squares (OLS) panel regressions of the CSR rating on the General Ability Index and other firm- and CEO-level control variables. The General Ability Index Dummy equals to one if the General Ability Index is above the yearly median. The regressions also include year and industry fixed effects. Industry effects are constructed based on the Fama-French 49-industry classification. Variable definitions are provided in the appendix. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variable	OLS regressions			Dependent
	variable: CSR			
	(1)	(2)	(3)	(4)
General Ability Index _{t-1}	-0.048*** (0.013)	-0.031** (0.013)	-0.037*** (0.012)	-
General Ability Index Dummy _{t-1}	-	-	-	-0.052** (0.024)
Ln(Sales) _{t-1}	-	-0.113*** (0.035)	-0.108*** (0.035)	-0.113*** (0.035)
ROA _{t-1}	-	0.675*** (0.181)	0.723*** (0.182)	0.736*** (0.183)
Stock return _{t-1}	-	-0.021 (0.017)	-0.020 (0.016)	-0.021 (0.016)
Leverage _{t-1}	-	-0.056 (0.086)	-0.061 (0.084)	-0.065 (0.085)
Tobin's Q _{t-1}	-	0.003 (0.012)	0.000 (0.012)	-0.001 (0.012)
Asset tangibility _{t-1}	-	0.059 (0.097)	0.074 (0.096)	0.070 (0.097)
Firm age _{t-1}	-	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Board independence _{t-1}	-	0.107 (0.070)	0.107 (0.071)	0.103 (0.071)
Board busyness _{t-1}	-	0.088 (0.069)	0.076 (0.068)	0.062 (0.068)
Institutional ownership _{t-1}	-	-0.278*** (0.105)	-0.264** (0.104)	-0.266** (0.104)
CEO age _{t-1}	-	-	0.000 (0.003)	-0.001 (0.003)
CEO tenure _{t-1}	-	-	-0.003 (0.003)	-0.002 (0.003)
CEO gender _{t-1}	-	-	0.363*** (0.097)	0.351*** (0.097)
CEO duality _{t-1}	-	-	-0.010 (0.025)	-0.013 (0.025)
CEO MBA _{t-1}	-	-	0.009 (0.026)	0.008 (0.026)

CEO Ivy league _{t-1}	-	-	0.084** (0.033)	0.082** (0.034)
CEO military _{t-1}	-	-	0.027 (0.048)	0.025 (0.048)
CEO fast track _{t-1}	-	-	-0.003 (0.003)	-0.002 (0.003)
Constant	-0.213** (0.099)	0.471** (0.221)	0.584** (0.250)	0.673*** (0.243)
Industry effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
N	5776	5776	5776	5776
Adjusted-R ²	0.143	0.172	0.185	0.183

Table 4**Propensity score matching estimates**

Table 4 presents the propensity score matching estimation results for the sample of specialist CEOs. Panel A reports parameter estimates from the logit model used to estimate propensity scores. The dependent variable is an indicator variable for the presence of generalist CEOs in a firm for a given year. All independent variables are defined in the appendix. Industry effects are constructed based on the Fama-French 49-industry classification. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. Panel B shows the univariate comparisons of firm characteristics between firms with and without generalist CEOs and the corresponding t-statistics. Panel C shows the average treatment effect estimates. CSR is the rating of corporate social responsibilities. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

<i>Panel A. Pre-match propensity score regression and post-match diagnostic regression</i>		
Dependent variable: Equals 1 for generalist CEOs and 0 otherwise		
Variables	Pre-match (1)	Post-match (2)
Ln(Sales) _{t-1}	0.644*** (0.120)	0.046 (0.129)
ROA _{t-1}	-0.577 (0.788)	-0.434 (0.866)
Stock return _{t-1}	-0.162* (0.086)	0.014 (0.103)
Leverage _{t-1}	0.351 (0.385)	-0.174 (0.408)
Tobin's Q _{t-1}	-0.009 (0.058)	0.039 (0.062)
Asset tangibility _{t-1}	-1.931*** (0.422)	0.271 (0.472)
Firm age _{t-1}	-0.010*** (0.004)	0.000 (0.004)
Board independence _{t-1}	0.783** (0.347)	0.049 (0.373)
Board busyness _{t-1}	1.646*** (0.320)	-0.192 (0.338)
Institutional ownership _{t-1}	0.672 (0.411)	0.082 (0.428)
CEO age _{t-1}	0.101*** (0.017)	0.005 (0.016)
CEO tenure _{t-1}	-0.085*** (0.017)	0.000 (0.016)
CEO gender _{t-1}	0.716* (0.411)	-0.024 (0.427)
CEO duality _{t-1}	0.048 (0.136)	0.006 (0.141)
CEO MBA _{t-1}	0.327**	-0.008

	(0.132)	(0.138)
CEO Ivy league _{t-1}	0.460*** (0.168)	0.035 (0.178)
CEO military _{t-1}	0.412* (0.230)	-0.046 (0.257)
CEO fast track _{t-1}	-0.040** (0.016)	-0.003 (0.015)
Constant	-9.714*** (1.332)	-0.378 (1.215)
Industry effects	Yes	Yes
Year effects	Yes	Yes
N	5773	3456
Pseudo R ²	0.147	0.005

Panel B. Differences in firm characteristics

Variables	Firm-year obs. with generalist CEOs (N=1728)	Firm-year obs. with specialist CEOs (N=1728)	Difference	t-stat
Ln(Sales) _{t-1}	6.347	6.346	0.002	0.076
ROA _{t-1}	0.150	0.150	0.001	0.274
Stock return _{t-1}	0.158	0.151	0.007	0.524
Leverage _{t-1}	0.217	0.223	-0.006	-0.986
Tobin's Q _{t-1}	2.159	2.120	0.039	0.901
Asset tangibility _{t-1}	0.292	0.298	-0.006	-0.849
Firm age _{t-1}	29.340	29.445	-0.105	-0.149
Board independence _{t-1}	0.705	0.706	-0.001	-0.202
Board busyness _{t-1}	0.292	0.294	-0.003	-0.306
Institutional ownership _{t-1}	0.740	0.739	0.002	0.269
CEO age _{t-1}	55.856	55.648	0.208	0.908
CEO tenure _{t-1}	7.766	7.567	0.200	0.859
CEO gender _{t-1}	0.014	0.014	0.001	0.144
CEO duality _{t-1}	0.673	0.667	0.006	0.362
CEO MBA _{t-1}	0.345	0.343	0.002	0.107
CEO Ivy league _{t-1}	0.189	0.183	0.006	0.437
CEO military _{t-1}	0.055	0.055	0.000	0.000
CEO fast track _{t-1}	47.018	47.060	-0.042	-0.166

Panel C. Propensity score matching estimate

Variable	Firm-year obs. with generalist CEOs (N=1728)	Firm-year obs. with specialist CEOs (N=1728)	Difference	t-stat
CSR	-0.244	-0.195	-0.049***	-2.890

Table 5**Instrumental variable estimates**

Table 5 presents estimates of the instrumental variable method using two-stage least square (2SLS) panel regression. The dependent variable is the presence of generalist CEOs for the first-stage regression and CSR for the second-stage regression. The instrumental variable is Recession depth. Following Schoar and Zuo (2017), we identify whether there is a recession year for a CEO's starting career based on NBER recession convention. The Recession depth is then created as the number of months that recession lasts. All other variables are defined in the appendix. Industry and year fixed effects are included. Industry effects are constructed based on the Fama-French 49-industry classification. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in brackets. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variables	Dependent variable: Generalist CEOs	Dependent variable: CSR
	First-stage regression	Second-stage regression
Recession depth _{t-1}	-0.007** (0.003)	- -
General Ability Index _{t-1}	- -	-0.492* (0.269)
Ln(Sales) _{t-1}	0.311*** (0.051)	0.016 (0.105)
ROA _{t-1}	-0.494 (0.313)	0.523* (0.286)
Stock return _{t-1}	-0.010 (0.034)	-0.023 (0.022)
Leverage _{t-1}	0.213 (0.172)	0.027 (0.121)
Tobin's Q _{t-1}	0.018 (0.022)	0.007 (0.017)
Asset tangibility _{t-1}	-0.445*** (0.151)	-0.102 (0.173)
Firm age _{t-1}	-0.004** (0.001)	-0.002 (0.002)
Board independence _{t-1}	0.342** (0.134)	0.248* (0.143)
Board busyness _{t-1}	0.853*** (0.140)	0.426 (0.271)
Institutional ownership _{t-1}	0.218 (0.155)	-0.169 (0.132)
CEO age _{t-1}	0.055*** (0.007)	0.022 (0.017)
CEO tenure _{t-1}	-0.047*** (0.006)	-0.021 (0.015)
CEO gender _{t-1}	0.537** (0.214)	0.579*** (0.203)
CEO duality _{t-1}	0.101** (0.050)	0.030 (0.044)

CEO MBA _{t-1}	0.131** (0.054)	0.064 (0.051)
CEO Ivy league _{t-1}	0.181** (0.070)	0.158** (0.070)
CEO military _{t-1}	0.180* (0.099)	0.094 (0.080)
CEO fast track _{t-1}	-0.028*** (0.006)	-0.014 (0.009)
Constant	-4.533*** (0.446)	-1.245 (1.416)
Industry effects	Yes	Yes
Year effects	Yes	Yes
N	5776	5776
F-statistic	24.23	-

Table 6**Generalist CEO, labor market evaluation and CSR**

Table 6 presents estimates of whether the relationship between CSR and generalist CEOs is affected by the labor market evaluation. The dependent variable is CSR. Leave dummy^{1-year}, Leave dummy^{2-year} and Leave dummy^{≥3-year} are dummy variables equal to one if a CEO is one year, two year, and three years or more before entering the external labor market. The regressions also include year and industry fixed effects. Industry effects are constructed based on the Fama-French 49-industry classification. Variable definitions are provided in the appendix. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variables	OLS regressions		
	Dependent variable: CSR		
General Ability Index _{t-1}	-0.031** (0.013)	-0.034*** (0.012)	-0.032*** (0.012)
General Ability Index _{t-1} ×Leave dummy ^{1-year}	-0.077** (0.034)	-	-
Leave dummy ^{1-year}	0.007 (0.028)	-	-
General Ability Index _{t-1} ×Leave dummy ^{2-year}	-	-0.053* (0.031)	-
Leave dummy ^{2-year}	-	0.002 (0.030)	-
General Ability Index _{t-1} ×Leave dummy ^{≥3-year}	-	-	-0.041 (0.039)
Leave dummy ^{≥3-year}	-	-	0.029 (0.042)
Ln(Sales) _{t-1}	-0.129*** (0.036)	-0.117*** (0.033)	-0.117*** (0.033)
ROA _{t-1}	0.773*** (0.180)	0.671*** (0.178)	0.664*** (0.176)
Stock return _{t-1}	-0.025 (0.017)	-0.020 (0.017)	-0.019 (0.017)
Leverage _{t-1}	-0.152* (0.089)	-0.120 (0.090)	-0.124 (0.089)
Tobin's Q _{t-1}	0.001 (0.011)	-0.003 (0.011)	-0.004 (0.011)
Asset tangibility _{t-1}	-0.054 (0.095)	-0.056 (0.078)	-0.054 (0.078)
Firm age _{t-1}	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Board independence _{t-1}	0.102 (0.070)	0.089 (0.072)	0.086 (0.071)
Board busyness _{t-1}	0.104* (0.061)	0.115* (0.067)	0.114* (0.067)
Institutional ownership _{t-1}	-0.250** (0.103)	-0.239** (0.099)	-0.240** (0.095)
CEO age _{t-1}	0.001	-0.001	-0.001

	(0.003)	(0.003)	(0.003)
CEO tenure _{t-1}	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)
CEO gender _{t-1}	0.410***	0.325***	0.325***
	(0.096)	(0.110)	(0.109)
CEO duality _{t-1}	-0.012	-0.009	-0.008
	(0.025)	(0.025)	(0.025)
CEO MBA _{t-1}	0.008	0.014	0.014
	(0.027)	(0.026)	(0.026)
CEO Ivy league _{t-1}	0.084**	0.081**	0.087**
	(0.034)	(0.033)	(0.035)
CEO military _{t-1}	0.023	-0.003	-0.005
	(0.047)	(0.050)	(0.049)
CEO fast track _{t-1}	-0.003	-0.003	-0.002
	(0.003)	(0.003)	(0.003)
Constant	0.826***	0.805***	0.802***
	(0.221)	(0.213)	(0.213)
Industry effects	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
N	5776	5776	5776
Adjusted-R ²	0.180	0.177	0.175

Table 7

Generalist CEOs, institutional ownership and CSR

Table 7 shows the estimates of whether the impact of job-hopping by generalist CEOs on CSR is affected by the **performance** pressure from the labor market. The dependent variable is CSR. Two subsamples are established based on the median level of institutional ownership. For brevity, we report only the coefficient estimates for the main variables of interest. Leave dummy^{1-year}, Leave dummy^{2-year} and Leave dummy^{≥3-year} are dummy variables equal to one if a CEO is one year, two year, and three years or more before entering the external labor market. The regressions also include year and industry fixed effects. Industry effects are constructed based on the Fama-French 49-industry classification. Variable definitions are provided in the appendix. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variables	OLS regressions					
	Dependent variable: CSR					
	Institutional ownership_high			Institutional ownership_low		
	(1)	(2)	(3)	(4)	(5)	(6)
General Ability Index _{t-1}	-0.031** (0.014)	-0.038** (0.015)	-0.032** (0.015)	-0.031 (0.020)	-0.027 (0.019)	-0.026 (0.020)
General Ability Index _{t-1} ×Leave dummy ^{1-year}	-0.099** (0.043)			0.008 (0.045)		
Leave dummy ^{1-year}	0.022 (0.040)			-0.033 (0.045)		
General Ability Index _{t-1} ×Leave dummy ^{2-year}		-0.067* (0.036)			-0.055 (0.044)	
Leave dummy ^{2-year}		-0.031 (0.041)			0.017 (0.042)	
General Ability Index _{t-1} ×Leave dummy ^{≥3-year}			-0.101 (0.074)			-0.028 (0.051)
Leave dummy ^{≥3-year}			0.074 (0.061)			0.036 (0.050)
All Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2888	2888	2888	2888	2888	2888
Adjusted-R ²	0.215	0.214	0.214	0.199	0.199	0.200

Table 8

Generalist CEOs, institutional trading frequency and CSR

Table 8 presents the estimates of whether the impact of job-hopping by generalist CEOs on CSR is affected by the **short-term** performance pressure from the labor market. The dependent variable is CSR. Two subsamples are established based on the median value of investor turnover, which is calculated through the detailed institutional investors' churn rates of each firm. For brevity, we report only the coefficient estimates for the main variables of interest. Leave dummy^{1-year}, Leave dummy^{2-year} and Leave dummy^{≥3-year} are dummy variables equal to one if a CEO is one year, two year, and three years or more before entering the external labor market. The regressions also include year and industry fixed effects. Industry effects are constructed based on the Fama-French 49-industry classification. Variable definitions are provided in the appendix. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Variables	OLS regressions					
	Dependent variable: CSR					
	Investment turnover_low	Investment turnover_low	Investment turnover_low	Investment turnover_high	Investment turnover_high	Investment turnover_high
General Ability Index _{t-1}	-0.040* (0.021)	-0.036* (0.020)	-0.034* (0.019)	-0.025* (0.014)	-0.022* (0.013)	-0.031** (0.014)
General Ability Index _{t-1} ×Leave dummy ^{1-year}	-0.003 (0.047)			-0.085** (0.037)		
Leave dummy ^{1-year}	-0.046 (0.043)			0.035 (0.041)		
General Ability Index _{t-1} ×Leave dummy ^{2-year}		-0.065 (0.042)			-0.058* (0.032)	
Leave dummy ^{2-year}		0.026 (0.041)			-0.025 (0.039)	
General Ability Index _{t-1} ×Leave dummy ^{≥3-year}			-0.017 (0.050)			-0.043 (0.051)
Leave dummy ^{≥3-year}			0.043 (0.051)			0.041 (0.054)
All Control	Yes	Yes	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2888	2888	2888	2888	2888	2888
Adjusted-R ²	0.191	0.188	0.190	0.202	0.192	0.199

Table 9

Robustness tests

Table 9 presents the robustness tests of our main findings. Panel A shows the estimation results with alternative measures of CSR. CSR_net score is the sum value of the net difference between strengths and concerns of all CSR categories. CSR_(five factors) is the standardized CSR as shown in Table 3, but with only five categories such as community, diversity, employee relations, environment, and product. CSR_net score (five factors) is the sum value of the net difference between strengths and concerns of five categories including community, diversity, employee relations, environment, and product. Panel B reports the estimation results with additional control of firm-level R&D expenditures. Panels C and D present the estimation results of CEO total compensation and incentives, respectively. CEO total compensation is natural logarithm of one plus CEO total pay (in thousands of dollars), which includes salary, bonus value of restricted stock granted, value of options granted, long-term incentive payout, and other compensation. CEO delta and vega. CEO delta is natural logarithm of one plus Delta, where Delta is the change (in thousands of dollars) in the value of the CEO's wealth due to a 1% increase in the firm's stock price. CEO vega is natural logarithm of one plus Vega, where Vega is the change (in thousands of dollars) the value of the CEO's wealth due to a 0.01 increase in the annualized standard deviation of the firm's stock return. Panel E presents the estimation results with CEO confidence. To measure the CEO confidence, we estimate the average CEO stock option moneyness for each year from the ExecuComp as follows. We first calculate the average realizable value per option by dividing the total realizable value of the exercisable but unexercised options by the number of exercisable but unexercised options. We then subtract the average realizable value from the fiscal year-end stock price to obtain the average exercise price of the options. The estimated moneyness of the options is then calculated as the stock price divided by the estimated average exercise price minus one. Panel F shows the estimation results alternative clustering and definitions of industry dummies. For brevity, we report only the coefficient estimates for the main variables of interest. The regressions also include year and industry fixed effects. Industry effects are constructed based on the Fama-French 49-industry classification. Variable definitions are provided in the appendix. Statistical significance is based on the heteroscedasticity robust firm-clustered standard errors reported in parentheses. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

	General Ability Index (1)	General Ability Index_dummy (2)
<i>Panel A. Alternative measures of CSR</i>		
CSR_net score	-0.225*** (0.068)	-0.351*** (0.124)
CSR_(Five factors)	-0.023** (0.011)	-0.050** (0.022)
CSR_net score (five factors)	-0.155** (0.065)	-0.278** (0.118)
<i>Panel B. R&D</i>		
R&D expenditure	-0.040*** (0.012)	-0.057** (0.024)
<i>Panel C. CEO total compensation</i>		
CEO total compensation	-0.031** (0.012)	-0.042* (0.023)
<i>Panel D. CEO incentives</i>		
CEO delta and vega	-0.042*** (0.012)	-0.063*** (0.024)
<i>Panel E. CEO confidence</i>		
CEO confidence	-0.037*** (0.012)	-0.052** (0.024)
<i>Panel F. Alternative clustering and alternative definitions of industry dummies</i>		
Clustering by year	-0.037*** (0.006)	-0.057*** (0.014)
Clustering by industry	-0.042*** (0.015)	-0.066** (0.024)
Two-digit SIC industry dummies	-0.034*** (0.012)	-0.048** (0.024)
Three-digit NAICS industry dummies	-0.036*** (0.012)	-0.044* (0.024)

Appendix

Variable definition

Variable	Description	Source
<i>Panel A: Main variables</i>		
CSR	We construct the CSR based on a two-step approach. First, we standardize the total score of strength and concern for each category by the corresponding number of strength and concern indicators across that category. Second, we then calculate the modified CSR score through taking the difference between the standardized total strength score and the standardized total concern score.	Kinder, Lydenberg, and Domini (KLD)
General Ability Index	First factor of applying principal components analysis to five proxies of general managerial ability: past number of positions, number of firms, number of industries, CEO experience dummy, and conglomerate experience dummy.	BoardEx
General Ability Index Dummy	Dummy variable that takes a value of one if the CEO's General Ability Index value is above the yearly median value, and zero otherwise.	BoardEx
<i>Panel B: Firm characteristics</i>		
Ln(Sales)	The natural logarithm of the firm's sales.	Compustat
ROA	Earnings before interest, taxes depreciation, and amortization divided by total assets.	Compustat
Stock return	The firm's stock return over the past year.	CRSP
Leverage	The sum of short-term and long-term debt divided by total assets.	Compustat
Tobin's Q	The market value of equity plus book value of total assets minus book value of equity, all divided by total assets, where the market value of equity is the year-end closing price times the number of shares outstanding.	Compustat
Asset tangibility	Total value of property, plant and equipment divided by total assets.	Compustat
Firm age	Number of years since a firm listed its shares.	CRSP
<i>Panel C: Corporate governance characteristics</i>		
Board independence	The fraction of independent directors on the board.	IRRC/RiskMetrics
Board busyness	The fraction of independent directors with multiple directorships on the board.	IRRC/RiskMetrics

Institutional ownership	The number of shares held by institutional investors divided by the number of shares outstanding.	Thomson CDA/Spectrum 13F Holdings
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Panel D: CEO characteristics

CEO age	Age of CEO in years.	BoardEx
CEO tenure	Number of years as CEO in the current position.	BoardEx
CEO gender	A dummy variable that equals to one if a CEO is female, and zero otherwise.	BoardEx
CEO duality	A dummy variable that equals to one if a CEO is also the chairman of the board, and zero otherwise.	BoardEx
CEO MBA	A dummy variable that equals to one if a CEO has an MBA degree, and zero otherwise.	BoardEx
CEO Ivy league	A dummy variable that equals to one if a CEO attended an Ivy League university (i.e., Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, Princeton University, University of Pennsylvania, and Yale University) at any academic level, and zero otherwise.	BoardEx
CEO military	A dummy variable that equals to one if a CEO has the military experience, and zero otherwise.	BoardEx
CEO fast track	Age at which a CEO became the CEO for the first time.	BoardEx