

CEO Innate Altruism and Firm Corporate Social Responsibility

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This paper examines the role of CEO's innate altruism in explaining firm corporate social responsibility (CSR) performance by studying a sample of U.S. firms that are S&P 1500 components over the period 1997-2018. Building on the literature that highlights the importance of cultural heritage in shaping individuals' beliefs and values, we measure CEOs' innate altruism using the preference scores from the Global Preference Survey (GPS) associated with the CEOs' countries of origins. We find that firms led by more altruistic CEOs have stronger CSR performance. This result remains robust to controlling for a variety of firm attributes (financials and corporate governance controls) and CEOs' individual characteristics (such as age, gender, tenure), as well as to a battery of robustness checks and endogeneity tests, including propensity score matching and difference-in-difference regressions around exogenous CEO turnover events. We also find that the link between CEO altruism and CSR is stronger in well-governed firms where the CEO is not overly powerful. In addition, firms with more altruistic CEOs do not show worse financial performance, suggesting that altruism, as an innate trait of CEOs, is not value-destroying for shareholders.

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1. Introduction

Corporate Social Responsibility (CSR) has become increasingly important over the last two decades with more firms adopting CSR policies, increasing their spending on social and environmental initiatives and reporting on their CSR performance to their shareholders and the general public. CSR typically refers to the activities that organizations carry out to protect and improve society's wellbeing and the physical environment, beyond the direct economic and technical interests of the firm and what is imposed by legislative norms (McWilliams and Siegel, 2000, 2001; Waddock, 2004; Waldman, Siegel and Javidan, 2006; Kitzmueller and Shimshack, 2012). These CSR initiatives span a variety of issues from firms' internal corporate policies around employee relations and workforce diversity, to their external institutional engagement and impact via community relations, environmental impact, and human rights considerations.

Despite the increasing popularity of CSR, there is a considerable variation in the CSR performance among firms, with some companies championing CSR and others not engaging in any form of CSR activities beyond any legal requirements.¹ In this paper, we explore the variation in firms' CSR performance by studying the role of the CEO's cultural heritage in influencing the firm's overall CSR performance. In particular, we look at the impact that the CEO's innate altruism has on CSR.

Altruism can be defined as "unselfish regard for or devotion to the welfare of others" (Merriam-Webster dictionary, 2022). Fehr and Fischbacher (2003) provide an economic and behavioral definition of altruism as "costly acts that confer economic benefits on other individuals".

CSR, by definition, signals policies and corporate activities that are – at least partially – *altruistic* (other-considering), as it captures corporate social or environmental behaviour that goes beyond any legal or regulatory requirements and benefits the interests of a broader stakeholder base beyond firms' shareholders. CSR also conveys the message that the corporate leadership considers the impact of their decisions upon the social good and broad stakeholder interest in the expectation that this will flow back as "positive attribution or moral capital" (Godfrey et al., 2009). As the main corporate decision-maker responsible for setting corporate strategy, the preferences and innate

¹ In our sample, we observe a dispersed distribution of CSR performance. Our overall adjusted CSR score has a mean of 0.156, a standard deviation of 0.690, and a value range of 6.311.

values of a firm's CEO are expected to play a crucial role in firms' CSR performance.² Hence, we argue that firms led by CEOs that have stronger altruistic tendencies will show a better CSR performance than firms led by less altruistic CEOs.

To capture a CEO's innate altruism, we rely on the CEO's culture heritage and the level of altruism attributed to his or her country of origin which we measure using the preference scores from the Global Preference Survey associated with that country. The CEOs' countries of origin are inferred from their surnames and the U.S. immigration passengers' records retrieved from the Ancestry.com website. Each CEO's surname is associated to one country for which the surname appears with the highest frequency in the immigration records. The U.S. is a multicultural society with a long immigration history, so it provides substantial variation in cultural origins. In the U.S., most people tend to marry within their ethnic group (endogamy); thus, the society appears more like a 'salad bowl' than a 'melting pot' (Bisin and Verdier, 2000; Kalmijn, 1998): many individuals tend to continue referring – to various extent - to the values embedded in their cultural heritage. Therefore, the U.S. provides an interesting case-study to understand the influence of cultural origins in corporate decision-making. Another merit of our research design is that a single-country study enables to keep the corporate culture and the institutional environment constant and let only cultural heritage vary across CEOs, with the clear advantage of singling out other country-level confounding factors (such as the level of economic, social, political development, and relevant institutional features).

Using multivariate panel regression analysis with firm and year fixed effects, we are able to show that firms led by more altruistic CEOs have higher ratings in overall CSR performance after controlling for many firm attributes (financials and corporate governance controls) and for CEOs' other ethnically-inherited cultural values and individual characteristics (such as age, gender, tenure). The results remain robust to a battery of robustness checks and endogeneity tests, including propensity score matching and difference-in-difference regressions used as quasi-natural experiment based on changes in CEO altruism following exogenous CEO turnover events.

We further explore what might be driving the link between CEO's innate altruism and firm's increased CSR performance. In the corporate finance literature, there are two opposing views regarding the drivers of CSR (see Ferrell et al., 2016): the agency view which regards CSR as a manifestation of agency conflicts between firm management and shareholders and, as such, a mis-

² Previous research has shown that individual CEOs and their personal characteristics have much stronger explanatory power for the firm's CSR performance than firm-specific factors (see, for instance, Davidson et al., 2019).

use of corporate resources (see Friedman, 1970; and further explored in Benabou and Tirole, 2010; Masulis and Reza, 2015), and the good governance view of CSR which understands CSR as a consequence of good corporate governance by incorporating the views of firms' broader stakeholder base, which can be value maximising (see Freeman, 1984; and further explored in Edmans, 2011; Deng et al., 2013). We find that the link between CEO altruism and CSR is stronger in well-governed firms where the CEO is not overly powerful. In addition, firms with more altruistic CEOs do not show worse financial performance, suggesting that altruism, as an innate trait of CEOs, is not value-destroying for shareholders. Instead, we find evidence that suggests that CEO altruism may shield the firm from financial under-performance during a crisis period and so it may financially benefit shareholders during these specific times.

Our paper makes several contributions to the literature. Firstly, we contribute to the literature that investigates the importance of CEO personal characteristics in explaining firms' CSR policies and performance. Previous studies have shown that CEO confidence (McCarthy, Oliver and Song, 2017), CEO ability (Yuan et al., 2019), CEOs' marital status (Hegde and Mishra, 2019), their degree of narcissism (Al-Shammari, Rasheed, and Al-Shammari, 2019), their political affiliation (Chin, Hambrick and Treviño, 2013), whether they have a daughter (Cronqvist and Yu, 2017) and their ownership of materialistic goods (Davidson et al., 2019) affect the CSR performance of the companies that they lead. We add to this literature by demonstrating that CEOs' cultural heritage and in particular their innate altruism serves to explain their firms' CSR.

Secondly, our study provides novel insights to the stream of literature that explores the role of managers' cultural heritage on their corporate decision-making. It has been shown by prior studies that a variety of values and personal traits rooted in managers' cultural heritage affect their firms' policies and decisions, such as CEOs' ancestral uncertainty avoidance in the context of mergers and acquisitions (Pan et al., 2020), their innate level of trust and individualism as a determinant of corporate innovation (Nguyen, 2019; Gao et al., 2021), and CEOs' ancestral degree of restraint, group-mindedness, uncertainty avoidance and long-term orientation in the context of cost efficiency efforts and corporate acquisitiveness (Nguyen et al., 2018). However, to the best of our knowledge, no previous study has explored the role of CEOs' cultural heritage on their propensity to improve their firms' CSR performance, and in particular the role of CEO's innate altruism in driving the allocation of corporate resources.

Finally, we add to the vast body of research that investigates whether CSR is driven by agency conflicts between managers and shareholders or rather signifies an expression of good corporate governance. The existing literature provides conflicting findings with some studies supporting the

CSR agency view (Benabou and Tirole, 2010; Masulis and Reza, 2015; Ferrell et al., 2016) and others providing evidence in line with the good governance view of CSR (Edmans, 2011; Deng et al., 2013; Davidson et al., 2019; Liu et al., 2022). While both views are not necessarily mutually exclusive and different CSR activities may be driven by different motives, our findings of the positive link between CEO altruism and CSR are more in line with the good governance perspective of CSR.

The rest of the paper is structured as follows. Section 2 reviews the relevant literature and develops the hypothesis. Section 3 presents the data and empirical methodology. Section 4 illustrates the main results of our panel regressions and presents numerous robustness and endogeneity checks. Section 5 investigates the agency view versus the good governance view of CSR, while Section 6 summarises the conclusions of our study.

2. Literature review and hypothesis development

2.1 Cultural transmission

Our study builds on the literature on transmitted cultural values that highlights the role of cultural origins in shaping individuals' cultural traits. Guiso et al. (2006) show that the heritage culture is a persistent trait: the beliefs and values that ethnic groups transmit remain fairly unchanged from generation to generation. They compare the World Value Survey (WVS) with the U.S. General Social Survey (GSS), which inquires about participants' ethnic origin. The U.S. data show a strong effect of ethnic origin on the current set of values. For example, there is a significant positive correlation (0.6) between the trust level of U.S. immigrants from different countries and the trust level of nationals in the corresponding U.S. immigrants' countries of origin. Similarly, Tabellini (2008) shows that trust attitudes of third-generation U.S. immigrants, who have had time to adapt to their new environment, can still be explained by the political institutions and education prevailing around or before 1900 in the ancestors' countries of origin. These findings are consistent with the idea that individual beliefs have a cultural heritage component, which is transported to the 'new' environment and continues to impact them even a few generations later. While it is beyond the scope of our study to investigate this matter in detail, there are a few explanations about why cultural heritage is transmitted from one generation to the next. For instance, one explanation is that parents evaluate their children's actions with their own preferences and therefore attempt to shape them based on their own cultural traits (Bisin and Verdier, 2000, 2001). This also helps to explain the marital segregation in the U.S. because endogamy is more efficient

in terms of cultural transmission: according to the U.S. Census Bureau the vast majority (90%) of married-couple households across all States are not interracial or interethnic.³

Some empirical evidence has been provided on the causal effect of inherited beliefs on various economic outcomes. For instance, Algan and Cahuc (2010) estimate the inherited component of trust for U.S. immigrants and show that: i) it is significantly influenced by their country of origin; and ii) it has a significant impact on economic growth. Ellahie et al. (2017) use the ethnicity of CEOs as a proxy for their common inherited beliefs and values and document a strong (fixed) effect of ethnicity in the variable proportion of CEO compensation. Liu (2016) constructs a corporate corruption measure as the average corruption attitudes of corporate insiders, derived from the corruption levels in their countries of ancestry. Firms with higher corruption culture tend to be more tolerant toward corrupt behaviour and are more likely to engage in corporate misconduct. Furthermore, using a quasi-natural experiment - the staggered introduction of interstate branching - as an exogenous shock in bank industry competition, Nguyen et al. (2018) show that banks led by CEOs whose ancestral origins emphasize restraint, group-mindedness, uncertainty avoidance and long-term orientation are more cost-efficient and more cautious with acquisitions, which, in turn, explains their outperformance under competitive pressure. Pan, Siegel, and Wang (2020) find that U.S. firms managed by CEOs with origins in cultures with higher uncertainty avoidance are significantly less likely to engage in acquisitions. Uncertainty avoiding CEOs prefer to target familiar industries and firms that can be more easily integrated.

Nguyen (2019) looks at the variation in the cultural origin's trust level across CEOs and between CEOs and firm's innovators (researchers). Her model predicts that a more trusting CEO has a higher tolerance to failure after a bad outcome. Empirical testing shows that a one standard deviation increase in CEO's generalized trust level is associated with over 6% increase in firms' annual patent counts. Changes in CEO's bilateral trust towards inventors in different countries or from different ethnic origins have comparable effects on inventors' patenting. Gao et al. (2021) investigate CEO's individualistic cultural background and corporate innovation. However, they measure individuals' cultural values based on the CEOs' 'hometowns' (places of birth) and create a measure of the individualistic culture at the county level. They find that CEOs from more individualistic cultures promote more innovation achievements.

³ Data related to the years 2012-2016 retrieved from <https://www.census.gov/library/stories/2018/07/interracial-marriages.html> (last accessed on 22 July 2022).

Collectively, these findings highlight the importance of a CEO's *intrinsic* characteristics and cultural heritage on key corporate strategies. However, none of the reviewed study focuses on CSR and on CEOs' innate altruism.

2.2 CEO characteristics and CSR

Several studies document interesting correlations between a firm's CSR characteristics and various demographic and/or individual traits of the CEO (Huang, 2013; Borghesi, Houston, and Naranjo, 2014). Demographics are, in many cases, used to proxy for the underlying values of an individual because, as Hambrick and Mason (1984) argue, they help to examine values and cognitive biases of individuals. Some researchers have attempted to capture the moral values of the CEOs through surveys, documenting some interesting evidence: for instance, female CEOs, CEOs with certain bachelor's and advanced degrees, younger CEOs, and those who make political contributions are more likely to make CSR investments (Godos-Díez, Fernandez-Gago, and Martinez-Campillo, 2011; Papagiannakis and Lioukas, 2012). Davidson, Dey, and Smith (2019) find that firms led by materialistic CEOs have lower CSR scores, fewer CSR strengths, and more CSR weaknesses. They measure CEOs' materialism by looking at CEOs' ownership of vehicles, boats, and real estate. McCarthy, Oliver, and Song (2016) show that more confident CEOs underestimate firm risks, which, in turn, leads them to undertake relatively less hedging. Consistently, they find that CEO confidence is negatively related to the level of CSR, as CSR is considered a hedging feature for the firm. Petrenko et al. (2016) report that narcissistic CEOs⁴ are more invested in socially responsible initiatives because they want to draw attention to themselves and achieve their need for acclaim and fame (Myung, Choi, and Kim, 2017; Petrenko et al., 2016). Consistently, Al-Shammari, Rasheed, and Al-Shammari (2019) find that there is an overall positive relationship between CEO narcissism and CSR, but while CEO narcissism is positively related to externally oriented CSR, the relationship between CEO narcissism and internally oriented CSR is negative but not significant. Hegde and Mishra (2019) show that firms led by married CEOs are associated with significantly higher scores on the CSR index, after controlling for a wide range of firm characteristics and CEO attributes. Further, they observe that the positive relation is sharper in the diversity and employee relations components of CSR. Cronqvist and Yu (2017) provide similar findings for CEOs who have at least one daughter.

The paper by Guo, Kong, and Zhang (2018) is the closest to our study: using a hand-collected dataset of CEOs' charitable donations they find that firms managed by CEOs who make regular

⁴ CEO narcissism is a measure based on the prominence of the CEO's photograph in the company's annual reports and appearance in press releases, and on the CEO cash and non-cash compensation.

charitable donations have significantly higher CSR performance than those managed by CEOs who only occasionally donate or never donate. Their finding suggests that CEOs' socially-responsible behaviours on a personal level can then translate into corporate socially-responsible behaviours. It is challenging to measure quantitatively the individual CEO's preference for altruism. Looking at CEOs' personal donations can be one way as donations fulfil the psychological value of altruism. However, corporate donations can also be driven by politics, lobbying, tax avoidance reasons and support for the so-called CEO 'pet projects' (Yermack, 2009). Thus, while charitable donations can reflect the CEO's level of altruism, this study by Guo, Kong, and Zhang (2018) does not connect altruism to the CEOs' cultural heritage which is what our analysis instead does. Although our country-level innate altruism measure is not directly related to the CEO's individual behaviour and choices, it should not be impacted by an opportunistic rationale that can cause measurement errors and misspecifications.

2.3 Hypothesis development

The upper echelons theory suggests that organizational outcomes are partially predicted by the background characteristics of the top-level management team. As a result, the strategic choices CEOs make, included those related to CSR policies, can be explained by their characteristics, personal traits, and their own 'lenses' (Hambrick, 2007; Hambrick and Mason, 1984). CEOs are broadly believed to affect, in some manner, firm outcomes due to their involvement in establishing a firm's culture and providing leadership (Berson, Oreg, and Dvir, 2008).

Culture has received growing attention in the finance literature in recent years. It can be defined as "the collective programming of the mind that distinguishes members of one country from another" (Hofstede, 1984, 2001; Hofstede et al., 2005) and serves as a mechanism that shapes individuals' values and preferences. Hence, CEOs' cultural heritage can have a significant role in shaping their beliefs, behaviours, and choices not just at a personal level but also for the firms they lead.

Although culture is a multi-dimensional concept, altruism is particularly relevant to a firm's CSR performance. Because altruism represents a focus on others rather than self, potentially resulting in self-sacrifice, altruistic CEOs are less likely to take actions only targeted to maximize their compensation (Zajac and Westphal, 1995) – typically aligned to shareholders' interests - and are more likely to consider the effect of firm actions on the firms' multiple stakeholders, including employees, customers, and other societal members, as emphasized by the stakeholder approach (Harrison and Freeman, 1999).

The perceived altruistic behaviors of top management teams and particularly CEOs who may have the greatest discretion to direct the corporation in accordance with their own altruistic preferences could be reflected in the expected benefits to the firm from socially responsible investments (Borghesi, Houston, and Naranjo, 2014; Waldman, Siegel, and Javidan, 2006).

This is consistent with the findings of prior research that suggested links between altruism and willingness to contribute to public goods (Andreoni, 1990; Clark, Kotchen, and Moore, 2003), including actions that are beneficial to maintaining the physical environment. For example, while a greedy CEO may be more prone to “taking shortcuts,” such as investing less in environmental clean-ups, polluting more,⁵ or reducing the investment in quality customer service or product control to achieve the short-term performance goals, we expect altruistic CEOs to be more inclined to undertake environmentally friendly actions, such as reducing carbon emissions or other forms of pollution. The altruistic CEO may also focus on the welfare of those within the company. S/he may be less aggressive in negotiations, for instance, providing more concessions in labour negotiations, such as more generous employee benefits. In addition, altruistic CEOs may seek to improve the quality of the workplace on behalf of employees. The altruistic CEO’s focus on others is likely to create goodwill that benefits the firm in the long run. A high level of mutual altruism may also reduce agency problems within and outside a firm. Altruistic CEOs are often concerned for the well-being of multiple stakeholders of the firm (as opposed to only those of shareholders). For instance, an altruistic CEO may be less willing to pursue cost savings that require the closing of facilities, elimination of jobs, or offshoring of positions, out of concern for those who would be affected.

In this study, we look at the relationship between the innate altruism of the CEO and the firm’s CSR performance by following an “epidemiological approach” (Fernández, 2011) as we separate innate culture from the local environment and study the decision-making outcomes of individuals (the CEOs) with potentially different cultural backgrounds within a common economic and institutional setting.

We test the following hypothesis:

Hypothesis: CEOs whose countries of origin have a higher score of altruism are more likely to engage with and perform better in CSR.

⁵ In the accusation against BP following the Macando well explosion that resulted in an estimated four-million-barrel oil spill in the Gulf of Mexico in 2010 the Alabama’s attorney general during the civil trial stated that “BP was blinded by greed . . . Greed devastated the gulf”.

3. Data

3.1 Measuring cultural origin and dimensions

Since self-reported data on CEO cultural origin are not available, we follow Pan, Siegel, and Wang (2020) and infer CEOs' cultural origins from their surnames using the passenger lists of ships arriving at the port of New York from 1820-1957, available at the website Ancestry.com. The passenger lists provide passengers' first names and surnames (family names), date of arrival, ethnicity, and other demographic characteristics. We search for each CEO's surname and use the ethnicity of passengers with the same surname to estimate the frequency distribution across ethnicity. We then attribute to each surname the country with the highest frequency for that specific surname: this country will be inferred as the country of origin of the CEO. For female CEOs, we use their maiden names to infer their culture of origin. We identify maiden names from various sources, including Marquis Who's Who, NNDB.com, and Google searches.⁶ In summary, we create a dataset where we map CEOs' surnames to ethnicity data from passenger records to countries of origin and then to the country-level culture dimensions, and more specifically to the altruism score.⁷ Our surnames dataset contains information about the ethnicity in passenger records for 4,581 different surnames which are linked to 5,934 different U.S. CEOs.⁸

We obtained the culture scores from the Global Preference Survey, which relies on a range of qualitative and quantitative survey items to construct preference measures from 80,000 people in 76 countries (Falk et al., 2018). This empirically validated survey reveals heterogeneous preferences across countries in the following dimensions: time preference, risk preference, positive and negative reciprocity, altruism, and trust. Altruism is constructed using a qualitative and a quantitative question, both related to donations. The qualitative question asks respondents their willingness to give to a charitable cause without expecting anything in return. The quantitative scenario describes a situation where the respondent receives 1,000 euros unexpectedly and is asked to indicate how much they would donate.

⁶ In few cases, we are unable to identify a female CEO's maiden name. However, this is not a serious issue. For one thing, female CEOs only accounts for 3% of our sample. For another, intra-ethnic marriage rates are quite high in the U.S., as mentioned in section 1.

⁷ Note: we map English, Welsh and Scottish to Great Britain. In a few cases, the ethnicity can only be ambiguously associated with *one* country of origin. For example, 'Scandinavian' is reported in the records as a uniform group. When a surname is ambiguously associated to Scandinavia, we look at the Scandinavian country where the surname reports the highest frequency and use that country (Denmark, Norway, or Sweden). We drop those records where the information on ethnicity is missing or unidentifiable. Passenger records in which the ethnicity is reported as American are also excluded because they identify returning U.S. citizens.

⁸ We are able to identify a dominant country of origin for around 90% of the CEOs.

The surname approach is widely used in the finance literature to identify cultural origins (e.g. Hegde and Tumlinson, 2014; Liu, 2016). Despite its popularity, one concern is that its use to infer the country of origin may still involve some measurement error (Giannetti and Zhao, 2018). First, Pan et al. (2020) perform a cross-validation with data from Nguyen et al. (2018), as the two papers use slightly different surname-ethnicity identification approaches. Both approaches yield the same origin in 80% of cases and most mismatches are close to one another. Second, we provide results also using an alternative measure of cultural heritage. We create an alternative altruism score as the weighted average of the altruism associated with each country-of-origin j : $Altrusim_l = \sum w_{lj} \times Altruism_j$, where the w_{lj} is the frequency of surname l in country j that appears in the passengers' records. We discuss the results of this alternative measure in the robustness checks section 4.3.

3.2 Sample construction

Following a large body of finance studies related to firm's CSR choices (e.g. Jiao, 2010; El et al., 2011; Jo and Harjoto, 2012, and McCarthy et al., 2017), we use the ratings provided by Kinder, Lydenberg, and Domini (KLD) Stats to construct our measure of CSR performance. KLD provides the most comprehensive data on firm's social performance assessed across seven major categories: community (COM), workforce diversity (DIV), employee relations (EMP), human rights (HUM), environment impact (ENV), product quality and corporate governance. In this study, we use the KLD ratings for five categories, which are the aforementioned seven categories excluding product quality and corporate governance. Following previous literature (see, for instance, Hong and Kostovetsky, 2012; Servaes and Tamayo, 2013, Lins, Servaes and Tamayo, 2017), we do not include product quality and corporate governance as they cover a number of items that we consider to be outside the scope of CSR.⁹ Our KLD sample period covers 1992 to 2018.

For each individual category, KLD assigns a binary score (0/1) to a set of strengths and concerns. Each strength or concern is assigned a value of one if it meets the specified criteria, and a value of zero otherwise. Some studies use 'raw' CSR scores obtained by subtracting the number of concerns from the number of strengths for each CSR category and aggregate them to form an overall CSR score. However, this could lead to a biased measurement because the number of CSR items varies across years and the number of strengths and concerns items varies across categories. Therefore, we follow Deng et al. (2013), Servaes and Tamayo (2013), and Lins et al. (2017) and construct an

⁹ Our results continue to hold when we include the product category in the overall CSR score.

adjusted CSR score. We first calculate the total strength (concern) score for each category and then divide it by the maximum number of strengths (concerns) for each category to obtain the adjusted strength (concern) scores for that category. Then we capture the performance of a firm for each category of CSR by subtracting the adjusted concern score from the adjusted strength score. Finally, the overall adjusted CSR score is the sum of all adjusted CSR category scores. Hence, the possible range of the overall adjusted CSR score is -5 to +5.

We also collect a large number of variables intended to be used as controls in regression analysis: they are time-varying firm characteristics and CEO-specific variables that capture their demographic features and their external incentives. We construct this sample of variables from several different sources. We start from ExecuComp, which provides executive names and CEO-related information for S&P 1500 firms starting from 1992. During years of CEO turnover or in the few cases where the firm has a co-CEO, we assign to the firm the CEO with the CEO annual flag (CEOANN) in the specific fiscal year, which in turn is based on who was identified as the CEO in the firm's summary compensation table. From ExecuComp we also collect information on CEO's age, gender, and tenure.

To obtain information on CEO/chairman duality (chairman of the board and CEO are the same individual), we merge the Compustat firms' sample with the BoardEx firms' sample using the ISIN number as common identifier in the two datasets. For each firm, we then match executives reported in BoardEx with the CEOs reported in ExecuComp by calculating the Levenshtein distance between executive names and hand-checking the CEO-name match when necessary.¹⁰

Firms' financial information is retrieved from Compustat. Specifically, our dataset includes information on firm size (measured by firm's total assets); ROA (measured as earnings before interest and taxes to total assets); leverage ratio (measured as long-term debt plus debt in current liabilities divided by total assets); R&D expenditure scaled by total assets, and free cash flow defined as cash flow from operations minus capital expenditures.

We add to this dataset the firm's institutional ownership data from the Refinitiv database. These data on the percentage of shares held by different types of investors start in 1997, therefore our final merged sample starts from 1997 as well and ends when KLD data ends in 2018.

Financial firms (SIC code 6000-6999) and utility firms (SIC code 4900-4999) are excluded from the sample. Continuous variables are winsorized at 1% and 99%. After dropping missing values,

¹⁰ We keep all matches that have a Levenshtein distance below 10. If the matching is not one to one, we manually checked by comparing executive's name, role, and start/end date.

our sample consists of 7,823 firm-year observations that belong to 992 U.S. firms with 1,704 CEOs, whose ancestral origins are traced back to 29 different countries. Table A2 in Appendix illustrates the frequency of countries of origin in our sample.

3.3 Summary statistics

Table 1 presents the descriptive statistics of the variables used in our main tests, including CSR ratings, culture scores, and firm and CEO characteristics. All variable definitions and sources are listed in Table A1 in the Appendix.

The overall adjusted CSR score ranges from -1.867 to $+4.444$ in our sample, and its sample mean is 0.156 . The mean CSR score is positive for each of the five primary categories, which indicates that, on average, firms in our sample have more strengths than concerns.

Our variable of interest, CEO altruism, has a mean of -0.013 and a standard deviation of 0.191 , which is close to the distribution described in the Global Preference Survey. GPS integrates the quantitative and qualitative questions associated with altruism into a single score for each surveyed individual. The score is standardized to have a mean of zero and standard deviation of one at the individual level. 12.3% of the variation in the individual level is then attributed to cross-country differences in preference for altruism (Falk et al., 2018).

With respect to firm and CEO variables, the average firm size is 9.5 billion dollars; the average ROA is 11.5%; the average leverage is a little less than 20% on a book value basis; and the free cash flow is 763.5 million dollars. On average, firms spend 4.6% on R&D and the percentage of shares held by institutions is 81.4%. The majority of CEOs in the sample are male, while only 3.1% of the firm-year observations are associated to female CEOs. The average CEO age is 56 years, and the average tenure is around 8.1 years. The descriptive statistics for firm and CEO characteristics in our sample closely resemble those of other studies that also focus on large U.S. public firms over a similar sample period (e.g., Cronqvist and Yu, 2017; Yuan et al., 2019; Chen, Dong, and Lin, 2020).

[Insert Table 1 here]

4. Empirical Analysis

4.1 Main methodology

We start by estimating the following baseline multivariate panel regression with CEO and firm controls and a set of fixed effects (i represents the firm, t the year). CEO Altruism is the key

regressor, as an innate measure of CEO altruism derived from the GPS altruism score associated to the CEO's country of origin.

$$\begin{aligned}
CSR\ Score_{it} = & \alpha_1 + \beta_1 CEO\ Altruism_{it} + \beta_2 CEO\ Age_{it} + \beta_3 CEO\ Gender_{it} \\
& + \beta_4 CEO\ Tenure_{it} + \beta_5 Firm\ Size_{it} + \beta_6 ROA_{it} + \beta_7 Leverage_{it} \\
& + \beta_8 Free\ Cash\ Flow_{it} + \beta_9 R\&D_{it} + \beta_{10} Inst\ Ownership_{it} \\
& + Year\ FE + Firm\ FE + \varepsilon_{it}
\end{aligned} \tag{1}$$

We alternate this specification with one that also include industry fixed effects in lieu of firm fixed effects. Estimated standard errors are clustered at the firm level.¹¹

4.2 Baseline Regression Results

Table 2 reports the results of our baseline panel regression analysis. In all regression specifications the CEO's country of origin altruism score results in a higher KLD CSR score for the firm led by the specific CEO. As shown, the coefficient on the CEO altruism, ranging from 0.181 to 0.292, is consistently positive and statistically significant at the 1% level across the model specifications (except for the specification in column 2 where significance is at the 5% level).

The panel regressions in columns (1) and (2) include year and firm fixed effects. We observe a positive and statistically significant impact of CEO's altruism on the overall CSR score. For example, column (1) suggests that when a CEO's innate altruism score increases by one standard deviation, the firm's CSR rating will increase on average by 0.043 (0.224×0.191), *ceteris paribus*. This translates into an approximately 27.6% ($0.043/0.156$) increase in the firm's CSR rating, compared to a firm that takes an average value in our sample. The effect is therefore both economically and statistically significant (at the 1% level).

In the specifications of columns (3) and (4) the panel regressions include year and industry fixed effects (using the two-digit SIC industry classification) to account for systematic unobservable variations in the dependent variables across year and industry. The result that CEO innate altruism positively impacts the firm's CSR score remains unchanged. In the third column, we find that the coefficient of altruism is positive (0.193) and statistically significant at the 1% level (t-statistics of 3.075).

Interestingly, in columns (2) and (4) we control for all other country-of-origin cultural dimensions included in the GPS (patience, risk taking, positive and negative reciprocity, trust) and find that

¹¹ In unreported checks we use all other possible clustering methodologies (at industry level, year level and industry-year level) and our results remain unchanged. In addition, as explained in section 4.3, we run the regression with all dependent variables lagged by one year and results do not vary.

none of them is statistically significant; only altruism appears to be strongly related to the CSR score.¹²

ROA, firm size, and R&D expenses are insignificant in the specifications with firm fixed effects but have a significant positive impact when we use industry fixed effects. CEO tenure and institutional ownership are insignificant in the specifications with firm fixed effects but have a significant negative impact when we use industry fixed effects. Harjoto, Jo and Kim (2017) show a concave relation between institutional ownership and CSR. Oikonomou, Yin and Zhao (2020) distinguish investors between long term and short term and find the effect to be opposite across these groups: the effect is strongly negative for short-term investors. The institutional ownership measure used in our regression and taken from Refinitiv is ‘undifferentiated’ as it includes shares owned by any type of ‘institution’, such as mutual funds, hedge funds, banks, pension funds, which are likely to vary in their investment horizons. It is plausible that the majority of the institutional investors (included in our institutional ownership measure) is short term oriented (Oikonomou, Yin, and Zhao, 2020, estimate 44% short term vs. 20% long term) therefore the joint effect is negative.

Leverage is not significant in the specifications with industry fixed effects, while it has a positive and statistically significant coefficient in the specifications with firm fixed effects. This finding of a positive sign for leverage in our CSR panel regression aligns with results presented in Cronqvist and Yu (2017) and McCarthy et al. (2017). Better CSR performance is generally associated with lower cost of debt (Goss and Roberts, 2011) and therefore with firms preferring debt financing. Sharfman and Fernando (2008) show that firms with better environmental risk management are also those that shift more from equity to debt financing to exploit higher tax benefits associated with their increased debt. Finally, we show that firms led by female CEOs and with a larger amount

¹² The altruism score has about 8% correlation with patience, 24% with risk, 83% with positive reciprocity, -3% with negative reciprocity, and 45% with trust. In unreported regressions where we control for each cultural dimension separately, we still find all of them insignificant with the exception of positive reciprocity with a reported positive coefficient but statistically significant only at the 10% level. This result and the higher correlation between altruism and positive reciprocity are due to the similarity between these two concepts. However, the latter dimension measures respondents’ propensity to act in a positively reciprocal manner. First, respondents are presented a choice scenario in which they are asked to imagine that they got lost in an unfamiliar area and that a stranger – when asked for directions – offers to take them to their destination. Respondents are then asked which out of six presents (worth between 5 and 30 euros, or the respective country-specific equivalents) they would give to the stranger as a “thank you”. Second, respondents are asked to provide a self-assessment about how willing they are to return a favor on an 11-point Likert scale. These two items receive roughly equal weights. The difference with altruism clearly is that altruism does not require the precedent of any action or good deed that one feels needs to be rewarded or reciprocated, it is a purer self-less action motivated by a focus on others.

of free cash flow perform better in CSR as evidenced by the higher scores. The coefficients on these two regressors are positive and strongly statistically significant across all specifications.

Next, we use a firm's CSR strengths and CSR concerns, separately, as our dependent variable to understand what kind of impact altruism has on different dimensions of a firm's CSR performance. This disaggregation of the CSR scores is in line with the CSR literature that shows that CSR strength (responsible actions) and CSR concerns (irresponsible actions) are distinct concepts and affect firm characteristics differently (e.g., Kotchen and Moon, 2012; Oikonomou, Brooks and Pavelin, 2012). In Table 3 we report in a succinct manner the results from the same baseline panel regressions as in Table 2 (columns 1 and 3) but using first the overall CSR strength score and then the overall CSR concern score as dependent variables. We find that altruism increases firms' CSR strengths but has no impact on CSR concerns, i.e. corporate socially irresponsible actions. In other words, CEO innate altruism helps to stir the firm towards taking 'good', socially-responsible actions, rather than refraining it from 'bad', irresponsible ones. Studies on social capital suggests that CSR strengths rather than concerns create trust and cooperation between the firm and its stakeholders (Guiso et al. 2004; Scrivens and Smith, 2013). Furthermore, it can be argued that CEOs have greater discretionary power and ease to take pro-active actions to generate positive CSR outcomes than to prevent the firm from negative ones. As Servaes and Tamayo (2013) point out, it is very unlikely that a firm with a poor environmental performance has made some 'effort' to obtain such a record. Altruism, being in line with commitment, plays a more important role in improving CSR strengths rather than reducing CSR concerns.

4.3 Robustness checks

Table 4 presents the results of a battery of robustness checks we have performed for the results of the baseline panel regressions discussed in section 4.2. For brevity, for each additional test/regression performed here we report only the specification with firm fixed effects and omit the one with industry fixed effects, as all main results remain unchanged across the two specifications.

First, we adjust the sample to show that the results do not depend on potential selection biases. In column (1) we drop the United Kingdom as the CEO's country of origin from our sample as this is the most dominant country (with 46.17% CEO-observations, see Table A2 in Appendix for details); in column (2) we drop instead those countries that in aggregate represent only 1% of the CEOs' countries of origin in our sample and therefore are less dominant and can represent

outliers;¹³ in column (3) we exclude from the sample the foreign-national CEOs that were likely born abroad (representing 3 % of the sample) to avoid confounding effects coming from their possible direct experience and connection with the country of origin. As shown in Table 4, in all these checks the main result of a positive impact of CEO altruism on the CSR score survives.

Second, to ameliorate possible concerns of endogeneity coming from the use of contemporaneous dependent and independent variables, in column (4) we lag all independent variables by 1 year while requiring the CEO to be the same one in the prior year to ensure that we observe the characteristics of the CEO in place at the time when the CSR score is being measured.¹⁴ The results are unchanged.

Third, to validate our cultural dimension, in columns (5) and (6) we use alternative measures for our altruism score. In column (5), we use the country-weighted average altruism score discussed in section 3.1. In column (6), we use Schwartz's egalitarianism score as an alternative cultural dimension, related to altruism. Egalitarian cultures seek to induce people to recognize one another as moral equals who share basic interests as human beings. These cultures try to influence their members to internalize a commitment to cooperate and to feel concern for everyone's welfare. People in egalitarian cultures are expected to act for the benefit of others as a matter of choice (Schwartz, 2006). Hence, the definition of Schwartz's egalitarian score closely aligns with our measure of altruism. We observe that these alternative measures of altruism have a significant positive impact on the CSR score of the firm.

The CEO is subject to multiple cultural influences besides the one coming from his/her country of origin. For example, the CEO's choices can be influenced by the predominant culture of the county where he/she lives in the U.S. Therefore, as a final check, in columns (7) and (8) of Table 4 we add a control for the 'local' culture by using: i) a dummy variable named 'Blue State' which is equal to one when the State is governed by Democrats and zero otherwise; and ii) a measurement of U.S county-level social capital. The Blue State dummy can only change every four years (as an outcome of the general elections). It has been used in previous CSR-related studies (e.g., Bae et al., 2021). In particular, Di Giuli and Kostovetsky (2014) observe that firms score higher on CSR when they have Democratic rather than Republican founders, CEOs, and directors, and when they are headquartered in Democratic rather than Republican-leaning states.

¹³ The countries are Canada, Finland, Croatia, Ukraine, Japan, Jordan, Lithuania, Brazil, Egypt, and Estonia.

¹⁴ In this way, we exclude observations where the CEO tenure is less than one year, as such CEOs would have little influence on a firm's strategic decisions.

Following Rupasingha and Goetz (2006) and Jha and Cox (2015), we use the county-level index of social capital which is based on county ‘norms’ (census mail response rate and total number of votes cast in presidential elections) and ‘networks’ (number of associations and non-profit organizations per 10,000 people). We linearly interpolate the data on social capital which are freely available online for the years 1990, 1997, 2005, 2009, and 2014.¹⁵ Jha and Cox (2015) show that a firm from a high social capital county exhibits a higher CSR score.

In columns (7) and (8) of Table 4 we observe that the estimated coefficients on the variable CEO altruism remain positive and highly significant. Taken together, these two final checks suggest that a CEO with higher innate altruism rooted in the culture of his/her country of origin increases the firm’s CSR scores and that this result survives controlling for the influence coming from the CEO’s local culture in the U.S.

In unreported checks, we also control for the popular Hofstede cultural dimensions (Hofstede, 1980): power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. Our result on altruism is robust to controls for this alternative set of cultural dimensions, suggesting that it is not driven by other country-level cultural traits.

4.4 Endogeneity controls

A common concern in the literature that investigates the impact of CEO characteristics on firm-specific policies and performance is that the ‘match’ between the CEO and the firm is endogenous and that this can lead to biased results. In our case, it is possible that a more altruistic CEO might favour those firms that already have higher CSR ratings or other related characteristics.

The first approach we use to address the endogeneity issues is a propensity score matching (PSM) analysis. The PSM approach is first proposed by Rosenbaum and Rubin (1983) to examine causal treatment effects. We conduct the PSM to account for the possibility that the choice of an altruistic CEO may not be random, but to some extent related to the firm’s and/or the CEO’s other observable characteristics.

First, we perform a probit regression to estimate a firm’s propensity (likelihood) to have an altruistic CEO as a function of firm and CEO characteristics. The dependent variable is a dummy variable that equals one if the CEO has an altruism score above zero, and zero otherwise. In this way, we estimate the probability that the firm will hire a CEO with high innate altruism. Next, we match firms with high-altruism CEOs (treated firms) with firms with low-altruism CEOs based

¹⁵ The data have been retrieved from the website: <https://aese.psu.edu/nercrd/community/social-capital-resources> (last accessed on 30 July 2022).

on the estimated propensity scores. We use a one-on-one nearest neighbour matching methodology with replacement because it results in higher-quality matches and larger sample size than matching without replacement (Shipman et al., 2017). Then we re-run the regression of equation (1) using the matched sample and the same sets of control variables as in our baseline models in Table 2.

Table 5 shows the results of the PSM. Panel A reports the diagnostic tests that ensure no sample selection bias: the treated and control group after matching appear balanced and comparable. Panel B shows a very similar distribution for the propensity score for treated and control groups respectively. Panel C reports the results of the PSM regression. The results remain robust in the matched sample, confirming that the positive impact of CEOs' innate altruism on CSR is not driven by the selected observable characteristics.¹⁶

The second approach we use to address the endogeneity concern is a difference-in-difference research design based on CEO turnover events. This test helps to further establish a causal effect of CEO altruism on CSR performance and to confirm our identification strategy. In particular, we look at CEO turnovers when the predecessor CEO is replaced for plausibly exogenous reasons. We follow Eisfeldt and Kuhnen (2013) and focus only on CEO turnovers due to CEO death, illness, and voluntary retirement. We do not use forced CEO turnovers or unclassified CEO turnovers because these events could be associated to the firm performance and CSR score, hence could be endogenous. We map turnovers identified from CEO changes in ExecuComp to the CEO dismissal database developed by Gentry et al. (2021) and retrieve the reasons for CEO departures for S&P 1500 firms.¹⁷ Event years (year 0) are identified as those years when the predecessor CEO is in his/her last year in office according to the ExecuComp CEOANN flag.

We identify a set of 'treated' turnovers, defined as those turnovers in which a CEO is replaced by a successor CEO from a country of origin that has a higher altruism score. The control group instead includes turnovers in which a CEO is replaced by a successor CEO from a country of origin that has a lower altruism score. Therefore, in our research setting, both treated and control groups have experienced CEO turnover. The difference between the two groups is based on the altruism score of the successor CEO. Consequently, our identified treatment effect can be attributed directly to the altruism score change rather than to the CEO turnover per se. We exclude

¹⁶ In unreported results we also perform PSM without replacement and still observe that the CEO innate altruism continues having a positive and significant coefficient.

¹⁷ Gentry et al. (2021) collect news articles and SEC filings for each CEO turnover event and identify eight departure reasons. Then, they use 23 independent coders to read through the articles and categorize each turnover event into one of the eight categories. The data have been retrieved from the website: <https://doi.org/10.5281/zenodo.4543893> (last accessed on 30 July 2022).

CEOs with a tenure lower than two years as they may not have enough time to affect firm CSR performance. We are able to identify 334 turnover events in our sample, of which 175 are treated events and 159 are control events.

We use a difference-in-differences (DiD) approach to analyse the changes in CSR score around these exogenous CEO turnovers in the treated group relative to the control group. Based on this research design, our DiD model is estimated as following:

$$\begin{aligned}
 CSR\ Score_{it} = & \alpha_1 + \beta Treated_{it} \times CEO\ Turnover_{it} + \gamma Controls_{it} \\
 & + Year\ FE + Event\ FE + \varepsilon_{it}
 \end{aligned} \tag{2}$$

‘Treated’ is a dummy variable that equals one (both in pre- and post-turnover periods) if the firm has experienced a CEO transition from a less to a more altruistic CEO at some point, and zero for the control firms. ‘CEO Turnover’ is a dummy variable taking the value of one in periods following an exogenous turnover and zero during the pre-turnover period. The difference-in-differences coefficient for ‘Treated \times CEO Turnover’ captures the differential effects. A causal effect of altruistic CEOs on corporate social performance would manifest in a positive coefficient on the interaction term since an exogenous change from a less altruistic CEO to a more altruistic CEO should cause an increase in CSR performance. We report the results of the regressions in Table 6.

In column (1) of Table 6, we find that the interaction term Treated \times CEO Turnover is positive and statistically significant at the 1% significance level. This provides support for our hypothesis that CEOs with higher innate altruism invest more in CSR activities. In other words, the innate personal preference of a CEO derived from his or her cultural heritage is a determinant of firm level CSR engagement.

In column (2) of Table 6, we perform a similar regression as in column (1), but we add a set of year dummies to verify parallel trend assumption (the event year, year 0, is omitted and serves as the reference for comparison). The pre-turnover year dummies are all insignificant, suggesting there is virtually no difference between the treated and the control group prior to the turnover. The post-turnover year dummies echo our finding in column (1), that firms’ CSR performance improves after a CEO is being replaced by a more altruistic CEO.

Overall, the difference-in-differences tests confirm that firms with a more altruistic replacement CEO tend to have higher CSR ratings after the turnover than firms where the CEO’s altruism score declines after the turnover.

4.5 The agency conflict view of CSR versus the good governance view of CSR

While we have established a positive relation between CEOs' innate altruism and firms' CSR performance in the previous sections, it is not clear whether more altruistic CEOs increase CSR investments to the benefit of their shareholders, or whether the positive altruism-CSR link rather represents a mis-use of corporate resources for the personal satisfaction of the CEO. This question links back to the broader debate in the corporate finance literature on whether CSR is the result of good corporate governance, where firm managers incorporate their stakeholders' interests, or whether CSR is the result of an agency conflict between managers and shareholders at the expense of shareholder wealth (see Ferrell et al., 2016, for a more in-depth discussion of this literature).

In our context, a more altruistic CEO might undertake corporate initiatives and policies that improve the firm's relationship with its stakeholders and/or the appeal of its products and services for shareholders' long-term benefits instead of engaging in self-servicing short-term actions to increase his/her own reward at the expense of shareholders (and stakeholders). In this regard, the positive altruism-CSR link can be viewed as a result of good corporate governance, and we would expect that CEO altruism does not financially hurt shareholder returns.

On the other hand, the increased CSR performance of altruistic CEOs may only serve CEO's personal motives to align their personal values with their corporate policies, irrespective of whether these CSR investments are financially beneficial to the firm or might even be value destroying. For instance, past literature finds that CEOs can create a favorable public image for themselves and elevate their social status in the corporate community by engaging in CSR (Hayward, Rindova, and Pollock, 2004). Moreover, non-monetary incentives for the CEOs, such as career advancement, reputation, power, and entrenchment, can have a positive effect on CSR decisions (Fabrizi, Mallin and Michelon, 2014). In this agency view of CSR, we would expect that the positive CEO altruism-CSR relation is linked to a worse corporate governance environment in the firm and that CEO altruism negatively affects shareholder returns.

To test the good governance vs. agency conflict views of CSR, we conduct a set of additional tests. First we explore whether the CEO altruism – CSR link is moderated by the corporate governance environment of the firm. We divide our sample into sub-samples based on i) the firm's corporate governance rating as measured by the E-index and the G-index; ii) the level of CEO power,¹⁸

¹⁸ Existing literature finds that more powerful CEOs fail to experience discipline from the full range of corporate governance and control mechanisms (Berger et al., 1997) and that a CSR-oriented strategy can be used by the CEO as entrenchment mechanisms to counterbalance the impact of internal corporate control mechanisms (Surroca and Tribó, 2008).

measured by two dummy variables, ‘CEO duality’ (equal to one if the CEO is also the chairman of the board and zero otherwise), and ‘CEO pay slice’ (equal to 1 if the percentage of CEO compensation to the total of five highest paid managers is above median and 0 otherwise); and iii) the availability of free cash flow as a CEO disposing of more free cash would have more leeway and resources to decide how to use the firm’s funds for personal motives.

Table 7 shows the results of the corporate governance based sub-sample analysis. In line with the good governance view of CSR, we observe that the impact of CEO innate altruism on CSR *increases* when corporate governance is at the highest level: the impact of innate altruism on CSR is in fact significant only for those firms with the lowest level of E- and G-indexes, that indicate the highest level of corporate governance. Furthermore, we see that altruism is more effective on CSR when the CEO is less powerful. Specifically, we report that altruistic CEOs significantly improve corporate CSR performance when he/she is not in a dual CEO/Chairman role. The positive effect of CEO innate altruism is more pronounced when the CEO pay is relatively low compared to other executives. Taken together, this set of results provides counter-evidence for the agency view of CSR and suggests that the positive relation between CEO altruism and CSR performance reflects firms’ good corporate governance structures. Finally, we find that CEO altruism is more significant for CSR in firms with more free cash flow. While on the one side using free cash flow for CSR may be considered a signal of agency issues (a CEO would use free cash for CSR when this is not part of the regular budgeting and so not considered strategically crucial), on the other side it is also possible that an altruistic CEO can do better CSR if the firm has extra resources to commit to it. This latter explanation could be the reason for the positive impact of free cash flow on the CSR scores which we observe in our baseline regression (Table 2) and would not entail an agency problem.

In our second set of tests, we analyse the link between CEO altruism and firm financial performance. In particular, we look at the impact of CEO altruism on firm’s returns and abnormal returns (calculated using the market model, the CAPM model, the Fama-French model, and the Fama-French model with momentum). Our findings reported in Table 8 show that firms with a more altruistic CEO record significantly higher returns (and abnormal returns) during the crisis period of 2008-2009 and the two NBER-classified recession periods (2001, and 2007 – 2009). Instead, altruism does not have any impact on firm’s returns over the full-time sample, in the non-crisis years, and in expansionary periods. In other words, CEO altruism does not seem to hurt companies in normal periods and instead helps companies during crisis periods by shielding value for the shareholders. Again, these findings support the good governance view and are in contrast to the agency conflict view.

What might explain the findings of the positive link between CEO altruism and stock returns during crises periods? Altruistic CEOs may take a longer-term perspective in managing the firm and thereby may engage in strategic decisions that require more time to come to fruition in terms of higher firm profit. For instance, Haynes et al. (2015) find that self-interest keeps managers focused on the firm's short-term goals, while altruism helps the firm to build and maintain strong human and social capital, which might be particularly valuable in times of crises. Lins, Servaes, and Tamayo (2017) suggest that increased social capital resulting from CSR activities matters predominantly in periods when trust in corporations at large has eroded, and that during normal times any benefits of social capital are already imbedded in a firm's share price.

5. Conclusions

This study presents first-hand evidence of the positive impact that CEO innate altruism (transmitted from the culture of origin) has on the CSR performance of the firm the CEO leads. This finding enriches an emerging literature that points at the importance of CEO cultural traits for firms' decision-making and strategies and has an important implication for firm's top management choices, as it shows that CEOs who value altruism more because of their cultural heritage (and above the influence of their local U.S.-county culture) appear more inclined to take corporate socially responsible actions as a result of their higher concern for 'others' (stakeholders, community, future generations).

The impact of CEO altruism on CSR is higher when firms have better governance and less dominant CEOs, suggesting that it is not a manifestation of agency conflicts between CEOs and shareholders. Instead, our results support the good governance view of CSR. Further, CEO altruism appears not to have a negative impact on firms' returns and instead protects shareholder returns in times of deep crisis and recessions.

Our finding on the relationship between CEO innate altruism and firm CSR performance survives controls for unobservable firm and industry characteristics and common trends (captured by fixed effects), a large battery of control variables and robustness checks, and further controls for endogeneity, using propensity score matching and a quasi-natural experiment based on changes in CEO altruism following exogenous CEO turnover events.

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Tables

Table 1. Summary Statistics

This table presents summary statistics for all variables used in our main tests. A detailed description of the variables and the sources of the data is provided in Appendix Table A1.

| Variable | Obs. | Mean | Std. Dev. | Min | Max |
|------------------------|------|----------|-----------|--------|------------|
| CSR Scores | | | | | |
| KLD_CSR5 | 7823 | 0.156 | 0.690 | -1.867 | 4.444 |
| KLD_STR5 | 7823 | 0.417 | 0.643 | 0.000 | 4.800 |
| KLD_CON5 | 7823 | 0.261 | 0.338 | 0.000 | 3.267 |
| COM | 7823 | 0.034 | 0.204 | -1.000 | 1 |
| DIV | 7823 | 0.008 | 0.348 | -1.000 | 1 |
| EMP | 7823 | 0.033 | 0.212 | -0.800 | 1 |
| ENV | 7823 | 0.072 | 0.201 | -0.714 | 1 |
| HUM | 7823 | 0.009 | 0.153 | -1.000 | 1 |
| Cultural Dimensions | | | | | |
| CEO_altruism | 7823 | -0.013 | 0.191 | -0.940 | 0.634 |
| CEO_patience | 7823 | 0.475 | 0.242 | -0.431 | 1.071 |
| CEO_risktaking | 7823 | 0.006 | 0.114 | -0.792 | 0.244 |
| CEO_posrecip | 7823 | -0.021 | 0.124 | -0.532 | 0.570 |
| CEO_negrecip | 7823 | 0.029 | 0.214 | -0.375 | 0.739 |
| CEO_trust | 7823 | 0.093 | 0.195 | -0.519 | 0.609 |
| Firms' Characteristics | | | | | |
| ROA | 7823 | 0.115 | 0.078 | -0.415 | 0.370 |
| Leverage | 7823 | 0.199 | 0.179 | 0.000 | 0.954 |
| Size | 7823 | 9530.883 | 29815.000 | 12.303 | 531864.000 |
| Free Cash-Flow | 7823 | 763.571 | 2332.873 | 0.075 | 34299.000 |
| R&D | 7823 | 0.046 | 0.057 | 0.000 | 0.417 |
| Inst_Ownership | 7823 | 0.814 | 0.173 | 0.072 | 1.000 |
| CEO Characteristics | | | | | |
| Age | 7823 | 55.993 | 7.106 | 29.000 | 95.000 |
| Gender | 7823 | 0.031 | 0.173 | 0.000 | 1.000 |
| Tenure (in months) | 7823 | 96.825 | 89.962 | 1.000 | 732.000 |

Table 2. Baseline Panel Regression Results (Overall KLD CSR Score with 5 Categories)

This table shows the results of the baseline panel regressions where the overall KLD CSR score with five categories is regressed on the altruism score of the CEO's country of origin, several other cultural dimensions scores (all from GPS), and firms and CEO characteristics. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| | (1) | (2) | (3) | (4) |
|----------------------|-----------------|-----------------|-----------------|----------------|
| Dependent Variables: | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 |
| Regressors: | | | | |
| CEO_altruism | 0.224*** | 0.292*** | 0.193*** | 0.181** |
| | (3.152) | (3.190) | (3.075) | (2.016) |
| CEO_patience | | -0.0990 | | 0.0870 |
| | | (-0.794) | | (0.954) |
| CEO_risktaking | | -0.0485 | | -0.125 |
| | | (-0.227) | | (-0.746) |
| CEO_posrecip | | -0.177 | | 0.0137 |
| | | (-1.143) | | (0.106) |
| CEO_negrecip | | -0.0346 | | 0.0662 |
| | | (-0.323) | | (0.854) |
| CEO_trust | | -0.0124 | | 0.00886 |
| | | (-0.149) | | (0.117) |
| ROA | -0.158 | -0.159 | 0.298* | 0.297* |
| | (-1.102) | (-1.106) | (1.873) | (1.860) |
| Leverage | 0.181** | 0.179** | -0.122 | -0.122 |
| | (2.103) | (2.109) | (-1.443) | (-1.452) |
| Log Size | -0.0263 | -0.0278 | 0.148*** | 0.148*** |
| | (-0.831) | (-0.878) | (8.973) | (8.970) |
| Log Free Cash-Flow | 0.0273*** | 0.0274*** | 0.0549*** | 0.0545*** |
| | (3.386) | (3.412) | (5.288) | (5.246) |
| R&D | 0.0655 | 0.0505 | 1.473*** | 1.467*** |
| | (0.174) | (0.134) | (6.213) | (6.179) |
| Log CEO Age | -0.0257 | -0.0182 | -0.122 | -0.119 |
| | (-0.197) | (-0.138) | (-1.197) | (-1.172) |
| CEO Gender | 0.246** | 0.247** | 0.443*** | 0.445*** |
| | (2.250) | (2.235) | (5.503) | (5.500) |
| Log CEO Tenure | 0.00293 | 0.00356 | -0.0237** | -0.0244** |
| | (0.263) | (0.313) | (-2.008) | (-2.063) |
| Inst_Ownership | -0.0592 | -0.0565 | -0.260*** | -0.256*** |
| | (-0.558) | (-0.534) | (-2.910) | (-2.849) |
| Constant | -0.0123 | 0.0124 | -0.613 | -0.664 |
| | (-0.0234) | (0.0229) | (-1.308) | (-1.426) |
| Firm FE | Yes | Yes | No | No |
| Industry FE | No | No | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 7,823 | 7,823 | 7,823 | 7,823 |
| R-squared | 0.292 | 0.293 | 0.395 | 0.395 |

Table 3. Baseline Panel Regression Results (Overall KLD CSR ‘Strengths’ and ‘Concerns’ Scores with 5 Categories)

This table shows the results of the baseline panel regressions in Table 2 columns (1) and (3) where the overall KLD CSR score with five categories is replaced by the separate scores for ‘strengths’ and ‘concerns’, and these variables are regressed on the altruism score of the CEO’s country of origin, and firms’ and CEOs’ characteristics. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| | (1) | (2) | (3) | (4) |
|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Dependent Variables | KLD_STR5 | KLD_STR5 | KLD_CON5 | KLD_CON5 |
| Regressors: | | | | |
| CEO_altruism | 0.208*** (3.060) | 0.177*** (3.426) | -0.0153 (-0.446) | -0.0159 (-0.457) |
| Firms Characteristics | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Firm FE | Yes | No | Yes | No |
| Industry FE | No | Yes | No | Yes |
| Observations | 7,823 | 7,823 | 7,823 | 7,823 |
| R-squared | 0.272 | 0.475 | 0.282 | 0.290 |

Table 4. Propensity Score Matching

Panel A presents the results of the t-tests conducted on the differences between the sample means for all main variables used in the panel regression in the treated and control groups; Panel B illustrates the distribution of the estimated propensity scores for treatment and control firms; Panel C shows the results of the probit model (column 1) and the panel regressions using the matched sample (columns 2 and 3). The probit regression estimates the firm's propensity (likelihood) to have an altruistic CEO as a function of firm and CEO characteristics. The dependent variable is a dummy variable that equals one if the CEO has an altruism score above zero and zero otherwise. Firms with high-altruism CEOs (treated firms) are matched with firms with low-altruism CEOs based on the estimated propensity scores from the probit model. We use a one-on-one nearest neighbourhood matching methodology with replacement. The baseline panel regression is estimated using the matched sample and the same sets of control variables as in our baseline models in Table 2. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| Panel A. T-tests on Sample Means for Treated and Control Firms | | | | | |
|--|------------------------------|------------------------------|-----------------------------------|---|---------|
| Variables: | Sample Mean Treated Firms | Sample Mean Control Firms | Difference btw Sample Means | t-stat for Difference btw Sample Means | p-value |
| ROA | 0.1139 | 0.1159 | -0.0020 | -1.25 | 0.212 |
| Leverage | 0.2050 | 0.2063 | -0.0013 | -0.36 | 0.722 |
| Firm Size | 7.6881 | 7.6997 | -0.0116 | -0.35 | 0.726 |
| Log Free Cash-Flow | 4.9469 | 4.9607 | -0.0138 | -0.37 | 0.711 |
| R&D | 0.0462 | 0.0469 | -0.0007 | -0.59 | 0.552 |
| Inst_Ownership | 0.8101 | 0.8152 | -0.0051 | -1.39 | 0.165 |
| Log CEO Age | 4.0152 | 4.0168 | -0.0016 | -0.66 | 0.512 |
| CEO gender | 0.0325 | 0.0364 | -0.0039 | -1.03 | 0.304 |
| Log CEO Tenure | 4.1236 | 4.1172 | 0.0064 | 0.32 | 0.752 |

| Panel B. Estimated propensity score distribution for Treated and Control Firms | | | | | | | | |
|--|------|-------|-------|--------|--------|--------|--------|-------|
| Propensity score | N | Mean | S.D. | P1 | P5 | P50 | P95 | P99 |
| Treatment | 2052 | 0.589 | 0.041 | 0.504 | 0.521 | 0.588 | 0.658 | 0.684 |
| Control | 2119 | 0.589 | 0.041 | 0.506 | 0.522 | 0.589 | 0.659 | 0.683 |
| Difference | 67 | 0.000 | 0.000 | -0.002 | -0.001 | -0.001 | -0.001 | 0.001 |

| Panel C. PSM Regression Results | | | |
|---------------------------------|-----------------------------------|----------------------------|-----------------------|
| VARIABLES | Pre-match | Matched sample regressions | |
| | (1) Probit High Altruism Dummy | (2) KLD_CSR5 | (3) KLD_CSR5 |
| CEO_altruism | | 0.220*** | 0.186*** |
| | | (2.669) | (3.001) |
| ROA | -0.131 (-0.600) | 0.163 (0.864) | 0.408** (2.267) |
| Leverage | 0.161* (1.782) | 0.284*** (2.952) | -0.0220 (-0.239) |
| Firm Size | 0.0650*** (2.904) | -0.0496 (-1.429) | 0.133*** (7.200) |
| Log Free Cash-Flow | -0.0316 (-1.584) | 0.0398*** (3.552) | 0.0541*** (4.431) |
| R&D | 0.253 (0.935) | 0.00814 (0.0202) | 1.605*** (6.337) |
| Log CEO Age | -0.0942 (-0.747) | 0.00880 (0.0632) | -0.113 (-1.120) |
| CEO Gender | 0.0846 (1.001) | 0.316** (2.551) | 0.382*** (4.159) |
| Log CEO Tenure | -0.0565*** (-3.420) | -0.00582 (-0.440) | -0.0235* (-1.953) |
| Inst_Ownership | -0.194** (-2.312) | -0.0185 (-0.144) | -0.318*** (-3.906) |
| Constant | 0.629 (1.274) | -0.123 (-0.217) | -0.0266 (-0.0491) |
| Year FE | No | Yes | Yes |
| Firm FE | No | Yes | No |
| Industry FE | No | No | Yes |
| Observations | 7,823 | 4,171 | 4,171 |
| R-squared | | 0.309 | 0.398 |

Table 5. CEO Turnover Events

This table reports in column (1) the results of a panel regression where the KLD CRS score is regressed on the interaction variable $\text{Treated} \times \text{CEO_Turnover}$ where ‘Treated’ is a dummy variable equal to 1 if the event is part of the ‘treated group’, i.e. for those turnover events where the new CEO comes from a country of origin with a higher altruism score than the previous CEO (otherwise the dummy is 0); and ‘CEO_Turnover’ is a dummy equal to 1 after a quasi-natural turnover event occurs due to CEO death, illness and voluntary retirement for both treated and control groups. For the treated group, the interaction variable is zero before (including) the event year and one after the event year; for the untreated group, it is zero throughout all the years. The event year is the last year that the old CEO is in his/her position (the last year that he/she has the CEO annual flag in ExecuComp). In column (2) a parallel trends test is performed, and the event year (year 0) is the reference for comparison. Before5+ indicates a dummy variable that is equal to one in all years before year -5 and zero otherwise; Before4 is one in year -4 and zero otherwise; etc. Post5+ indicates a dummy variable that is equal to one in all years after year 5 and zero otherwise; Post4 is one in year 4 and zero otherwise; etc. CEO must have at least a tenure of two consecutive years to be included in the sample. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| | (1) | (2) |
|-------------------------------|-----------------------------------|-----------------------------------|
| Dependent Variables: | KLD_CSR5 | KLD_CSR5 |
| Regressors: | | |
| Treated \times CEO_Turnover | 0.152*** (2.695) | |
| Before5+ | | -0.103 (-1.072) |
| Before4 | | 0.0577 (0.909) |
| Before3 | | 0.0218 (0.362) |
| Before2 | | 0.0194 (0.384) |
| Before1 | | 0.0273 (0.669) |
| Post1 | | 0.147*** (2.755) |
| Post2 | | 0.0946* (1.782) |
| Post3 | | 0.132** (2.007) |
| Post4 | | 0.156** (2.142) |
| Post5+ | | 0.226*** (2.642) |
| ROA | -0.385 (-1.441) | -0.422 (-1.607) |
| Leverage | 0.495** (2.305) | 0.476** (2.229) |
| Firm Size | -0.0250 | -0.0267 |

| | | |
|---------------------------|-----------|-----------|
| | (-0.464) | (-0.498) |
| Log Free Cash-Flow | 0.0302* | 0.0304* |
| | (1.774) | (1.781) |
| R&D | 0.551 | 0.543 |
| | (0.903) | (0.925) |
| Log CEO Age | 0.194 | 0.164 |
| | (0.877) | (0.790) |
| CEO Gender | -0.0890 | -0.0767 |
| | (-0.731) | (-0.640) |
| Log Tenure | 0.0424** | 0.0330 |
| | (2.015) | (1.537) |
| Inst_Ownership | -0.00797 | -0.00980 |
| | (-0.0370) | (-0.0453) |
| Constant | -1.022 | -0.801 |
| | (-1.076) | (-0.906) |
| <hr/> | | |
| Event FE | Yes | Yes |
| Year FE | Yes | Yes |
| Observations | 2,736 | 2,736 |
| R-squared | 0.294 | 0.298 |
| Number of Turnover Events | 334 | 334 |
| <hr/> | | |

Table 6. Robustness Checks

The table presents the results of several robustness checks on: firms and CEOs sample selection (columns 1 to 3), use of lagged regressors (column 4), alternative measures of altruism (columns 5 and 6), and control for local culture (columns 7 and 8). All variables are defined in Table A1 of the Appendix. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| | Excluding UK origin | Removing less- dominant origins | Excluding Foreign CEOs | Regressors lagged by one year | Weighted average of altruism | Schwartz egalitarianis m | Blue States | State social capital |
|---------------------------|---------------------------|--|------------------------------|-------------------------------------|------------------------------------|--------------------------------|----------------------------|---------------------------|
| Dependent Variable: | (1) KLD_CSR5 | (2) KLD_CSR5 | (3) KLD_CSR5 | (4) KLD_CSR5 | (5) KLD_CSR5 | (6) KLD_CSR5 | (7) KLD_CSR5 | (8) KLD_CSR5 |
| Regressors: | | | | | | | | |
| CEO_altruism | 0.190** (2.558) | 0.221*** (2.979) | 0.177** (2.397) | 0.216*** (2.454) | | | 0.206*** (2.825) | 0.222** (2.370) |
| CEO_altruismmean | | | | | 0.205** (2.420) | | | |
| CEO_egalitarianism | | | | | | 0.150** (1.966) | | |
| ROA | 0.0454 (0.251) | -0.171 (-1.189) | -0.176 (-1.181) | 0.152 (1.008) | -0.158 (-1.106) | -0.132 (-0.882) | -0.154 (-1.081) | -0.0450 (-0.282) |
| Leverage | 0.246** (2.273) | 0.184** (2.125) | 0.206** (2.329) | 0.179** (2.169) | 0.185** (2.145) | 0.194** (2.338) | 0.176** (2.064) | 0.112 (1.227) |
| Firm Size | -0.0431 (-1.119) | -0.0307 (-0.965) | -0.0230 (-0.713) | 0.0466 (1.383) | -0.0269 (-0.846) | -0.0401 (-1.310) | -0.0153 (-0.484) | -0.00886 (-0.232) |
| Log of Free Cash Flow | 0.0107 (1.066) | 0.0273*** (3.366) | 0.0267*** (3.269) | 0.0144 (1.523) | 0.0274*** (3.396) | 0.0277*** (3.558) | 0.0255*** (3.143) | 0.0177* (1.836) |
| R&D | 0.227 | 0.0750 | 0.121 | 0.435 | 0.0621 | 0.0811 | 0.0852 | -0.606 |

| | | | | | | | | |
|----------------------|----------|----------|-----------|-----------|-----------|-----------|----------|----------|
| | (0.499) | (0.196) | (0.299) | (1.099) | (0.164) | (0.218) | (0.226) | (-1.568) |
| Log CEO Age | 0.131 | -0.0250 | -0.00303 | -0.0507 | -0.0220 | -0.00527 | -0.0173 | 0.140 |
| | (0.656) | (-0.190) | (-0.0222) | (-0.312) | (-0.169) | (-0.0396) | (-0.131) | (0.998) |
| CEO Gender | 0.145 | 0.273** | 0.259** | 0.235* | 0.246** | 0.255** | 0.246** | 0.376*** |
| | (1.312) | (2.537) | (2.337) | (1.757) | (2.250) | (2.480) | (2.226) | (2.883) |
| Log CEO Tenure | 0.0196 | 0.00192 | 0.00426 | 0.00896 | 0.00274 | -0.00335 | 0.00283 | 0.00200 |
| | (1.108) | (0.171) | (0.374) | (0.665) | (0.244) | (-0.314) | (0.251) | (0.149) |
| Inst_Ownership | 0.0799 | -0.0501 | -0.0244 | -0.00628 | -0.0558 | -0.0972 | -0.0681 | -0.172 |
| | (0.683) | (-0.471) | (-0.223) | (-0.0548) | (-0.525) | (-0.927) | (-0.645) | (-1.604) |
| Blue States Dummy | | | | | | | 0.00339 | |
| | | | | | | | (0.145) | |
| State Social Capital | | | | | | | | 0.146** |
| | | | | | | | | (2.024) |
| Constant | -0.629 | 0.00783 | -0.150 | -0.470 | -0.0238 | -0.704 | -0.109 | -0.543 |
| | (-0.783) | (0.0147) | (-0.275) | (-0.727) | (-0.0454) | (-1.107) | (-0.205) | (-0.892) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of gvkeyn | 656 | 986 | 980 | 938 | 992 | 1,051 | 977 | 710 |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 4,134 | 7,751 | 7,533 | 6,563 | 7,823 | 8,897 | 7,649 | 4,650 |
| R-squared | 0.280 | 0.294 | 0.283 | 0.282 | 0.291 | 0.299 | 0.287 | 0.208 |

Table 7. Sub-sample tests on agency channel

The table presents a sub-sample analysis of the impact of CEO altruism on CSR to uncover a possible agency channel. Panels A and B show the results of the multivariate panel regressions on sub-samples of firms at different quartiles of the E-index and G-index distributions (a higher quartile indicates worse corporate governance); Panel C on sub-samples of firms at different quartiles of the distribution of free-cash flow; Panel D on sub-samples based on CEO duality (a dummy equal to 1 if the CEO is also the Chairman of the board); Panel E on sub-samples based on CEO pay slice (a dummy equal to 1 if the percentage of CEO compensation to the total of the compensation of the five highest paid executive is above median and zero otherwise). Columns 1 to 4 presents the panel regressions with year and industry fixed effects; Columns 5 to 8 with year and firm fixed effects. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| Dependent Variable: | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--|----------------------------------|------------------|------------------|------------------|------------------|---------------------|--------------------|-------------------|
| | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 | KLD_CSR5 |
| Panel A. E-Index of Corporate Governance | | | | | | | | |
| | E-index ≤ Q2 | E-index = Q3 | E-index = Q4 | E-index ≥ Q5 | E-index ≤ Q2 | E-index = Q3 | E-index = Q4 | E-index ≥ Q5 |
| Regressors: | | | | | | | | |
| CEO_altruism | 0.331** (2.277) | 0.148 (1.159) | 0.147 (1.269) | 0.359 (1.115) | 0.133 (0.429) | -0.0899 (-0.690) | -0.117 (-0.594) | 0.0482 (0.148) |
| Firm Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| CEO Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Obs. | 962 | 1,526 | 1,176 | 533 | 962 | 1,526 | 1,176 | 533 |
| R-squared | 0.522 | 0.463 | 0.373 | 0.390 | 0.408 | 0.264 | 0.212 | 0.270 |
| Industry FE | Yes | Yes | Yes | Yes | No | No | No | No |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | No | No | No | No | Yes | Yes | Yes | Yes |

| Panel B. G-Index of Corporate Governance | | | | | | | | |
|--|---------------------------------|------------------|------------------|--------------------|-------------------------|---------------------|-------------------|------------------|
| | G-index<= Q2 | G-index=Q3 | G-index = Q4 | G-index >=Q5 | G-index <= Q2 | G-index=Q3 | G-index = Q4 | G-index >=Q5 |
| CEO_altruism | 0.311* (1.788) | 0.191 (0.957) | 0.300 (1.025) | -0.110 (-0.383) | -0.000384 (-0.00243) | -0.0636 (-0.383) | 0.0401 (0.162) | 0.129 (0.439) |
| Firm Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| CEO Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Obs. | 741 | 1,000 | 864 | 709 | 741 | 1,000 | 864 | 0.229 |
| R-squared | 0.497 | 0.516 | 0.524 | 0.466 | 0.253 | 0.359 | 0.363 | 0.334 |
| Industry FE | Yes | Yes | Yes | Yes | No | No | No | No |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | No | No | No | No | Yes | Yes | Yes | Yes |

| Panel C. Free Cash Flow | | | | | | | | |
|-------------------------|------------------------|------------------------|------------------------|-----------------------------------|------------------------|------------------------|------------------------|----------------------------------|
| | Free Cash Flow<= Q2 | Free Cash Flow = Q3 | Free Cash Flow = Q4 | Free Cash Flow>=Q5 | Free Cash Flow<= Q2 | Free Cash Flow = Q3 | Free Cash Flow = Q4 | Free Cash Flow>=Q5 |
| CEO_altruism | 0.0296 (0.573) | 0.0522 (0.820) | 0.00614 (0.0683) | 0.421*** (3.027) | 0.110 (1.269) | 0.0292 (0.300) | 0.0899 (0.716) | 0.378** (2.592) |
| Firm Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| CEO Charact. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Obs. | 1,956 | 1,956 | 1,956 | 1,955 | 1,956 | 1,956 | 1,956 | 1,955 |
| R-squared | 0.337 | 0.270 | 0.263 | 0.484 | 0.334 | 0.249 | 0.297 | 0.516 |
| Industry FE | Yes | Yes | Yes | Yes | No | No | No | No |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | No | No | No | No | Yes | Yes | Yes | Yes |

| Panel D. CEO Duality (CEO & Chairman) to measure High CEO Power | | | | |
|---|-------------------|-----------------------------------|------------------|-----------------------------------|
| | Duality | No Duality | Duality | No Duality |
| CEO_altruism | 0.0379 (0.272) | 0.237*** (2.976) | 0.107 (0.395) | 0.258*** (3.084) |
| Firm Charact. | Yes | Yes | Yes | Yes |
| CEO Charact. | Yes | Yes | Yes | Yes |
| Obs. | 1,649 | 5,026 | 1,649 | 5,026 |
| R-squared | 0.442 | 0.408 | 0.320 | 0.275 |
| Industry FE | Yes | Yes | No | No |
| Year FE | Yes | Yes | Yes | Yes |
| Firm FE | No | No | Yes | Yes |

| Panel E. CEO Pay Slice as Measure of CEO Power | | | | |
|--|-----------------------------------|-------------------|-----------------------------------|-------------------|
| | Low Pay Slice | High Pay Slice | Low Pay Slice | High Pay Slice |
| CEO_altruism | 0.183*** (2.919) | 0.174* (1.827) | 0.253*** (2.850) | 0.172* (1.661) |
| Firm Charact. | Yes | Yes | Yes | Yes |
| CEO Charact. | Yes | Yes | Yes | Yes |
| Obs. | 3,631 | 3,631 | 3,631 | 3,631 |
| R-squared | 0.439 | 0.379 | 0.303 | 0.306 |
| Industry FE | Yes | Yes | No | No |
| Year FE | Yes | Yes | Yes | Yes |
| Firm FE | No | No | Yes | Yes |

Table 8. Effect of CEO Altruism on firms' performance

This table presents the results of panel regressions of CEO innate altruism on firm's monthly raw returns and abnormal returns calculated using the market model, the CAPM model, the Fama-French model, and the Fama-French model with momentum, controlling for all firms' and CEOs' characteristics used in our baseline panel regressions in Table 2, plus four factors' loadings for the asset pricing models used. Panel A shows the results for the full sample; Panel B for the global financial crisis period of 2008-2009; Panel C for all years excluding the global financial crisis years of 2008 – 2009; Panel D focuses on the two NBER-classified recession periods (2001, and 2007 – 2009); Panel E on the rest of the sample, i.e., expansionary periods. Robust t-statistics are reported in parentheses, and they are calculated from estimated standard errors clustered at the firm level. ***, **, and * represents respectively statistical significance at the 1%, 5%, and 10% level.

| Dependent Variables: | (1) Return | (2) Abreturn_Mkt | (3) Abreturn_CAPM | (4) Abreturn_FF3 | (5) Abreturn_FF3mom |
|------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|-----------------------------------|
| Panel A. Full Sample | | | | | |
| Regressors: | | | | | |
| CEO_altruism | 0.000713 (0.484) | 0.000129 (0.0940) | 0.000578 (0.401) | 0.00127 (0.889) | 0.00154 (1.130) |
| Firm Characteristics | Yes | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes | Yes |
| Factor Loadings | Yes | Yes | No | No | No |
| Observations | 112,138 | 112,138 | 112,138 | 112,138 | 112,138 |
| R-squared | 0.225 | 0.043 | 0.042 | 0.019 | 0.016 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes |
| Panel B. Crisis Period (2008-2009) | | | | | |
| CEO_altruism | 0.0218** (2.259) | 0.0198** (2.161) | 0.0215** (2.169) | 0.0240*** (2.613) | 0.0206** (2.500) |
| Firm Characteristics | Yes | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes | Yes |
| Factor Loadings | Yes | Yes | No | No | No |
| Observations | 4,025 | 4,025 | 4,025 | 4,025 | 4,025 |
| R-squared | 0.417 | 0.116 | 0.060 | 0.040 | 0.035 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes |

| Panel C. Non-Crisis Period | | | | | |
|---|-----------------------------------|-----------------------------------|----------------------|------------------------------------|------------------------------------|
| CEO_altruism | 0.00005 (0.0326) | -0.000571 (-0.415) | 4.80e-05 (0.0332) | 0.000638 (0.437) | 0.000968 (0.692) |
| Firm Characteristics | Yes | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes | Yes |
| Factor Loadings | Yes | Yes | No | No | No |
| Observations | 108,113 | 108,113 | 108,113 | 108,113 | 108,113 |
| R-squared | 0.207 | 0.043 | 0.043 | 0.019 | 0.016 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes |
| Panel D. Recession Periods (2001 and 2007 - 2009) | | | | | |
| CEO_altruism | 0.00973* (1.799) | 0.00865* (1.718) | 0.00774 (1.452) | 0.0135*** (2.635) | 0.0137*** (2.796) |
| Firm Characteristics | Yes | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes | Yes |
| Factor Loadings | Yes | Yes | No | No | No |
| Observations | 12,225 | 12,225 | 12,225 | 12,225 | 12,225 |
| R-squared | 0.297 | 0.056 | 0.041 | 0.026 | 0.025 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes |
| Panel D. Expansion Periods | | | | | |
| CEO_altruism | 0.000055 (0.0356) | -0.000577 (-0.393) | 0.00005 (0.0334) | 0.000202 (0.137) | 0.000382 (0.265) |
| Firm Characteristics | Yes | Yes | Yes | Yes | Yes |
| CEO Characteristics | Yes | Yes | Yes | Yes | Yes |
| Factor Loadings | Yes | Yes | No | No | No |
| Observations | 99,913 | 99,913 | 99,913 | 99,913 | 99,913 |
| R-squared | 0.207 | 0.040 | 0.041 | 0.018 | 0.015 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes |

Appendix

Table A1. Variable Descriptions

| Variable Name | Description | Source |
|---------------------|---|--------------------------|
| CSR Measures | | |
| KLD_CSR5 | The sum of adjusted Community, Diversity, Employee, Environment and Human rights corporate social responsibility scores. Adjusted CSR is calculated by scaling the raw strength and concern scores of each category by the number of items of the strength and concern of that category in the year and then taking the net difference between adjusted strength and concern scores for that category. | MSCI KLD |
| KLD_STR5 | The sum of adjusted Community, Diversity, Employee, Environment and Human rights CSR strength scores. The adjusted strength score is calculated by scaling the raw strength of each category by the number of items of the strength category in the year. | MSCI KLD |
| KLD_CON5 | The sum of adjusted Community, Diversity, Employee, Environment and Human rights CSR concern scores. The adjusted concern score is calculated by scaling the raw concern of each category by the number of items of the concern category in the year. | MSCI KLD |
| COM | Net adjusted CSR score (strength less weakness) for the Community | MSCI KLD |
| DIV | Net adjusted CSR score (strength less weakness) for the Diversity | MSCI KLD |
| EMP | Net adjusted CSR score (strength less weakness) for the Employee | MSCI KLD |
| ENV | Net adjusted CSR score (strength less weakness) for the Environment | MSCI KLD |
| HUM | Net adjusted CSR score (strength less weakness) for the Human rights | MSCI KLD |
| Cultural Dimensions | | |
| CEO_altruism | A measure of willingness to donate to the charity. Measured as a combination of one qualitative and one quantitative item. The qualitative question asked respondents how willing they would be to give to good causes without expecting anything in return on an 11-point scale. The quantitative scenario depicted a situation in which the respondent unexpectedly received 1,000 euros and asked them to state how much of this amount they would donate. | Global preference survey |

| | | |
|--------------------|---|--------------------------|
| CEO_altruismmean | Weighted average of altruism score, where the weight is determined by the frequency appeared in passengers' records across origins associated with a CEO's last name. | Global preference survey |
| CEO_patience | A measure of patience, i.e. how individuals prefer the earlier payment to the larger delayed payment. | Global preference survey |
| CEO_risktaking | A measure of how individuals trade off risky payments and sure payments. | Global preference survey |
| CEO_posrecip | A measure of the individuals' willingness to reciprocate positively. | Global preference survey |
| CEO_negrecip | A measure of the individuals' willingness to reciprocate negatively. | Global preference survey |
| CEO_trust | A measure of willingness to trust strangers. | Global preference survey |
| CEO_egalitarianism | A measure of egalitarian culture. Egalitarian cultures seek to induce people to recognize one another as moral equals who share basic interests as human beings. They try to socialize their members to internalize a commitment to cooperate and to feel concern for everyone's welfare. People are expected to act for the benefit of others as a matter of choice. | Schwartz (2006) |

Firm and CEO Characteristics

| | | |
|--------------------|---|-----------|
| ROA | Return on asset, Earnings before interest and taxes (EBIT)/Total assets (AT) | Compustat |
| Leverage | Total debt, (DLTT + DLC)/Total assets (AT) | Compustat |
| Firm Size | Firm size, Log of total assets (AT) of a firm. | Compustat |
| Log Free Cash-Flow | Log of free cash flow, Cash flow from operations (OANCF) less capital expenditures (CAPX) | Compustat |
| R&D | R&D intensity, Annual firm dollars spent on R&D (XRD) scaled by total assets (AT) | Compustat |
| Inst_Ownership | Total institutional ownership | Refinitiv |
| Log CEO Age | Log of CEO age | ExecuComp |
| CEO Gender | CEO gender | ExecuComp |
| Log CEO Tenure | Log of CEO tenure in month | ExecuComp |

Corporate Governance and Additional Control Variables

| | | |
|---------|--|-----|
| G-index | G-Index is the sum of binary variables based on the number of shareholder rights-decreasing provisions a firm has. The index ranges from a feasible low of 0 to a high of 24; a high score is associated with weak shareholder rights. | ISS |
|---------|--|-----|

| | | |
|----------------------------|--|--|
| E-index | E-index is the sum of binary variables of the six most important provisions as described in Bebchuk, Cohen and Ferrell (2009). | ISS |
| CEO duality | A dummy variable that is equal to one if the CEO is also the Chairman and zero otherwise. | BoardEx |
| CEO payslice | CEO pay slice is defined as the fraction of the aggregate compensation of the firm's top-five executive team captured by the CEO, as defined in Bebchuk, Cremers and Peyer (2011). | ExecuComp |
| Social capital | The social capital of the county where the firm is headquartered constructed as in Rupasingha, Goetz and Freshwater (2006) A higher number indicates greater social capital. | Rupasingha, Goetz and Freshwater (2006) |
| Blue state dummy | A dummy variable that is equal to one if Democratic wins in the gubernatorial elections and zero otherwise. The dummy variable changes every four years except in New Hampshire and Vermont where governors only serve two-year terms. | CQ Press U.S. Political Stats |
| Definition of Time Periods | | |
| Financial Crisis Period | A dummy variable that is equal to one from August 2008 to March 2009 and zero otherwise. | Lins, Servaes and Tamayo (2017) |
| Recession Period | A dummy variable that is equal to one from March 2001 to November 2001 and from December 2007 to June 2009, and zero otherwise. | NBER US Business Cycle Expansions and Contractions |

Table A2. Distribution of countries of origin

| Country | Frequency | Percent |
|---------------|-----------|---------|
| Great Britain | 3,689 | 47.16 |
| Germany | 1,476 | 18.87 |
| Italy | 658 | 8.41 |
| Israel | 478 | 6.11 |
| France | 283 | 3.62 |
| Sweden | 181 | 2.31 |
| China | 151 | 1.93 |
| Netherlands | 128 | 1.64 |
| Poland | 111 | 1.42 |
| Spain | 99 | 1.27 |
| Greece | 84 | 1.07 |
| India | 84 | 1.07 |
| Russia | 77 | 0.98 |
| Switzerland | 70 | 0.89 |
| Hungary | 56 | 0.72 |
| Austria | 46 | 0.59 |
| Czech Rep | 42 | 0.54 |
| Portugal | 21 | 0.27 |
| Turkey | 17 | 0.22 |
| Canada | 14 | 0.18 |
| Finland | 12 | 0.15 |
| Croatia | 11 | 0.14 |
| Ukraine | 9 | 0.12 |
| Japan | 7 | 0.09 |
| Jordan | 6 | 0.08 |
| Lithuania | 6 | 0.08 |
| Brazil | 4 | 0.05 |
| Egypt | 2 | 0.03 |
| Estonia | 1 | 0.01 |
| Total | 7,823 | 100 |