**The past is never dead: Famine-CEOs and corporate social performance**

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**Abstract**

Using CEOs’ exposure to the Great Chinese Famine (1959-1961) as a measure of early-life trauma in their life (termed, famine-CEOs), we find that firms led by famine-CEOs are associated with lower corporate social responsibility (CSR) performance. Our findings are consistent with the egoism proposition that early-life traumatic experience of human-induced suffering adversely impacts CEOs’ social initiatives and willingness to engage in social practices. We also note that the adverse impact of famine-CEOs on CSR is mitigated by CEOs’ hometown connection and government ownership while magnified by CEO power. Our results are robust to various econometric methods, alternative explanations, and approaches to address endogeneity concerns such as two-stage least squares, propensity score matching, and the Lewbel procedure. This study shows the importance of considering the influences of CEO early-life experience on non-financial decisions.

Keywords: CEO early-life disaster, Great Chinese Famine, Egoism, Imprinting theory, Corporate social responsibility

# Introduction

Does CEOs’ experience of early-life traumatic events – events exacting an extreme cognitive and emotional toll – affect their firms’ corporate social responsibility (CSR) performance? According to the imprinting theory, exposure to traumas during individuals’ childhood or early adolescence (termed, “early-life”) has a lifelong impact on their personality traits (Marquis and Tilcsik, 2013). Based on this argument, previous studies show that CEOs’ early-life experiences influence their firms’ financial decisions.[[1]](#footnote-1) However, there are limited studies on the role of CEOs’ adverse early-life experiences in their firms’ non-financial decisions, particularly in emerging markets. We aim to fill this void by examining whether and why CEOs’ early-life experience of the Great Chinese Famine (hereafter, the GCF) influences their firms’ CSR decisions.

CSR reflects the extent to which a firm acts responsibly to meet a wide range of stakeholders’ interests, including shareholders, employees, consumers, suppliers, the community and society at large (Hillman and Keim, 2001; Tang et al., 2015). A growing body of studies evaluates the impact of CEO personal traits on CSR performance. For instance, firms with female CEOs (Borghesi et al., 2014; McGuinness et al., 2017), married CEOs (Hegde and Mishra, 2019), and CEOs with daughters (Cronqvist and Yu, 2017) engage more in CSR activities. Given the importance of CSR in a firm’s strategies and long-term performance,[[2]](#footnote-2) as well as its impact on the welfare of numerous stakeholders, it is important to further investigate whether a CEO’s personal experience of early-life trauma encourages or discourages a firm’s CSR performance.

To investigate the nature of the association between CEOs’ early-life disaster experience and CSR performance, we examine the long-term impact of CEOs having GCF experience (henceforth, famine-CEOs) on firms’ CSR performance. The GCF, characterised by wide-spread famine that lasted from 1959 to 1961, was traumatic and substantive enough to affect an entire generation of Chinese, but its effects vary across different regions of China (Li and Yang, 2005). Furthermore, the mobility of famine victims at the time was strictly limited by the unique household registration system (Hukou) in China, thus we can identify the severity of the famine a CEO experienced, based on his or her birthplace (Feng and Johansson, 2018). Therefore, the GCF provides an ideal setting to identify a causal relation between CEOs’ early-life disaster experience and CSR performance through a difference-in-differences estimator by combining CEOs’ age cohorts and variation in the intensity of the GCF.

Founded on psychology and anthropology literature, we have two competing theories about the nature of disaster imprints on individuals’ cognition and behaviour, to link between CEO early-life famine experience and CSR performance: altruism and egoism. On the one hand, in the aftermath of natural disaster, characterized by a therapeutic community, victims experience post-traumatic psychological growth conducive to increased commitment to maintain strong social relationships and a heightened sense of responsibility to prevent the suffering of others (Gill and Picou, 1998; Staub and Vollhardt, 2008). For example, Vollhardt and Staub (2011) find that natural disaster experience positively impacts victims’ prosocial behaviour and attitudes (i.e., long-term volunteering and disaster aid).

On the other hand, instead of the enhanced altruism typically observed in the aftermath of natural disasters, victims are viewed as behaving in a more egoistic manner in the corrosive community created by man-made disasters. With an identifiable party to blame and feeling a sense of betrayal, victims of man-made disasters experience a significant decline in their interpersonal trust level, community attachments, and the ability to feeling compassionate to others’ agony (Gill and Picou, 1998; Ritchie and Gill, 2007). As a result, they prioritise their individual survival over the well-being of others (Dirks et al., 1980). For example, Lipscomb (1945) observed in the Bergen-Belsen concentration camp that victims’ selfishness is positively associated with the human-induced suffering. Hence, egoistic CEOs who disregard the interests of others reflect their social preferences on their firms’ CSR activities, particularly if such activities do not directly benefit themselves (e.g., Edmans, 2011, 2012; Hubbard et al., 2017).

Because altruism and egoism are competing theories, we cannot test the null hypothesis for either theory individually. Instead, our models test for the two theories’ net effects. Using a sample of listed Chinese firms from 2008-2017 with a total of 3,978 firm-year observations, we find that firms with famine-CEOs are associated with low CSR performance. The negative relationship is more pronounced for external CSR activities. These findings support that CEO egoism effects dominate altruism effects, as famine-CEOs are less concerned about CSR activities. Our additional analyses strengthen the egoism theory, as we find that famine-CEOs are more likely to extract corporate resources for personal interests, such as consuming excess perks and paying lower dividends. Our key findings remain robust to five approaches to address endogeneity biases, including examination of changes in CSR performance surrounding CEO turnover, two-stage least-squares regression with instrumental variables (2SLS-IV), the Lewbel technique, propensity score matched analysis, and placebo tests.

We also examine the moderation effects of CEOs’ hometown bias, decision-making power and their firms’ government ownership on the relation between famine-CEOs and CSR performance. Our empirical results illustrate that famine-CEOs’ hometown attachment (i.e., when CEOs’ hometown is the same as their firm’s located province) alleviates the negative impact of their egoistic famine imprint on CSR performance. We also find that powerful famine-CEOs exert a great influence of their egoistic imprint on firm activities and, hence, magnify their negative impact on CSR performance. Furthermore, since CSR performance is part of the promotion criteria for managers in state-owned enterprises (SOEs), egoistic famine-CEOs in SOEs improve their firms’ CSR performance for their own career opportunities.

This study contributes to the literature in three important ways. First, we advance the CEO early-life experience literature by providing robust evidence that CEOs’ early-life human-induced disaster experience adversely impact CSR. Previous studies generally portray that CEOs’ early-life adverse experiences have beneficial impacts on firm outcomes, such as better performance during economic downturns (Feng and Johansson, 2018), and improved disclosure quality (Hu et al., 2020). In this regard, we are the first to argue and present that early-life human-made disaster experience such as GCF could have dissimilar effect compared to the early-life natural disaster experience.[[3]](#footnote-3)

Second, our study adds to the literature on CSR by focusing on an important emerging economy, China. A vast majority of existing studies on CSR mainly focus on the U.S. context (e.g., Di Giuli and Kostovetsky, 2014; Tao et al., 2020), with two notable exceptions, McGuinness et al. (2017) and Chen et al. (2018).[[4]](#footnote-4) Our paper thus responds to Wang et al.’s (2016) call for scholarly attention to CSR in emerging economies. In this instance, we contend that some Chinese firms’ poor CSR performance could be attributed to their CEOs’ early-life GCF experience.[[5]](#footnote-5) Finally, we extend the horizon of the research topic on early-life experience and CSR by explicitly verifying our theoretical conjecture, i.e., egoism with individuals’ early-life traumatic experience of human-made disaster, contesting alternative views, and removing all possible confounding factors.

The remainder of this paper is organized as follows. In Section 2, we provide the institutional background and in Section 3, we review the related literature and develop hypotheses. We outline the research data and specifies the empirical models in Section 4, present the main results in Section 5, address the endogeneity concerns in Section 6, describe the robustness tests in Section 7, and present supplementary tests to verify our theoretical arguments in Section 8. Finally, Section 9 concludes this paper.

# The Great Chinese Famine (1959-1961)

The GCF, which occurred between 1959 and 1961, is widely regarded as the deadliest famine and one of the greatest human-induced disasters in history.[[6]](#footnote-6) The estimated death toll is around 36 million people, and a substantial decrease in birth rate reduced the expected population by another 40 million (Hu et al., 2020).[[7]](#footnote-7) Scholars generally agree that the institutional causes of the GCF is political-rooted and largely attributable to a systematic failure of central government’s planning (e.g., Li and Yang, 2005; Meng et al., 2015). In the late 1950s, the chairman of the Communist Party of China (CPC), Mao Zedong, launched the campaigns of the Great Leap Forward and people’s communes with the aim of rapidly reconstructing the country from a traditional agrarian economy to a fully socialistic society and quickly surpassing the economy of the Great Britain (Feng and Johansson, 2018). The intensive focus on industrialization and collectivization along with senior government officials’ illusion of a superabundance of grain resulted in a massive shift of labour from agriculture into industry sector and imposed an excessive grain procurement burden on peasants that left them with insufficient food (Li and Yang, 2005).[[8]](#footnote-8) Meng et al. (2015) find that the rural mortality rates are positively correlated with per capita food production. This surprising pattern that is unique to the GCF provides strong evidence of the role of human culpability in the root-cause of the GCF.

The GCF provides a unique opportunity for examining the relation between CEOs’ early-life traumatic experiences and their firms’ CSR performance, for two important reasons. First, the uniqueness of the GCF lies not only in its long timespan and unprecedented scale, but also in its significant variation across different regions of China. Every province in China suffered from an unexpected increase in death toll during the GCF. However, comparing the average death ratio from the three-year famine period, the fatality rate (31.1%) of Anhui (one of the hardest-hit provinces in the GCF) was almost three times the fatality rate (11.3%) of Shaanxi (one of the lightest-hit provinces) (See Column (4) of Table 1). In addition, three years after the GCF, the average death ratios of all provinces returned to the normal level before the GCF (See Columns (3) and (5) of Table 1). Such uniqueness allows us to identify a causal impact of CEOs’ early-life adversity on their firms’ CSR activities with minimum noise (Feng and Johansson, 2018; Hu et al., 2020). Second, while migration often occurs after large-scale disasters as an adaption strategy to mitigate the adverse impacts of extreme shocks by providing new opportunities and resources, the rigid household registration system of China (Hukou) made interprovincial migration extremely unlikely if not impossible (Lin and Yang, 2000). Thus, we can identify the degree of severity of the GCF that a CEO experienced based on his or her birthplace. The strict restriction on migration also mitigates the potential sample selection bias resulting from migration.

# Literature Review and Hypothesis Development

## The imprinting theory

Building on the organizational imprinting theory introduced by Stinchcombe (1965), Marquis and Tilcsik (2013, p.199) define imprinting as “a process whereby, during a brief period of susceptibility, a focal entity develops characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods”. An important notion behind the imprinting theory is that “history matters”. This suggests that an individual’s personality traits can be shaped by early-life traumatic experiences (e.g., Cameron and Shah, 2015; Staub and Vollhardt, 2008) and that such cognitive imprints can be lifelong (Holman and Silver, 1998).

Applying the imprinting theory in accounting and finance research, previous studies examine the influences of management’s experience, culture and knowledge on corporate strategies and economic outcomes (e.g., Benmelech and Frydman, 2015; Cronqvist and Yu, 2017; Sunder et al., 2017).[[9]](#footnote-9) Using the GCF to measure CEOs’ adverse early-life experiences, prior studies show that famine-CEOs are risk-averse, as firms with famine-CEOs use less debt, hold more cash (Feng and Johansson, 2018), perform fewer merger activities (Zhang, 2017), and adopt more conservative financial reporting policies (Hu et al., 2020). However, previous studies focus on the impacts of CEOs’ early-life adverse experiences on financial decisions. Their influence on non-financial decisions is still unclear.

## The egoism and altruism hypotheses

Extant psychology and anthropology literature documents that the effects of different disasters are not identical and often opposite for different disaster victims (e.g., Sorokin, 1942; Dirks et al., 1980). Comparisons of natural disasters and those adverse events that are unique in the human culpability caused disastrous consequences for communities (i.e., man-made disaster) reveal different community attachment and social preference patterns (Gill and Picou, 1998; Ritchie and Gill, 2007). Sorokin (1942) and Dirks et al. (1980) thus suggests that a disaster depend on its nature can either bring out the very best (i.e., altruism) or the very worst (i.e., egoism) in people, which is important in determining whether an individual is capable of acting genuinely and selflessly in enhancing others’ social welfare.

On the one hand, the short-term traumatic psychological and social consequences of natural disasters result in a therapeutic community characterised by increased empathy and altruism (Gill and Picou, 1998). This emerges from natural disaster victims’ post-traumatic psychological growth and their recognition of self-vulnerability and reliance on others to survive natural disasters (e.g., Tedeschi et al., 1998; Li et al., 2013; Lim and DeSteno, 2016). Staub and Vollhardt (2008) also refer to this phenomenon as “altruism born from suffering”. For example, a structured interview study of Kaniasty and Norris (1995a) with a sample of 500 victims of Hurricane Hugo and an equally numbered control group indicated that Hurricane victims exhibit more pro-social behaviours than the control group. This emergence of an “altruistic community” is also observed in the aftermath of other natural disasters including floods, earthquakes (Kaniasty and Norris, 1995b).

On the other hand, man-made disasters create a corrosive community characterised by enhanced egoism and a deterioration of social relationship resulting from fear, anger, confusion, conflict and chronic stress (Gill and Picou, 1998; Ritchie and Gill, 2007). First, differentiated from natural disasters, man-made disasters involve identifiable parties to blame which leads to a more negative psychological impact on victims as they seek redress and compensation from the responsible party (Gill and Picou, 1998). Second, human-induced suffering erodes trust and community attachments (Staub and Vollhardt, 2008). Victims of man-made disasters thus demonstrate solitary attitudes instead of the pro-social attitudes that are typical to natural disasters, and generally behave egoistically with the aim to ensure their own survival (e.g., Lipscomb, 1945; Murray et al., 1976; Dirks et al., 1980; Edelstein, 1988; Kroll-Smith and Couch, 1990). Empirical research in psychosocial and anthropology literature also shows that victims of man-made disasters, such as wars and genocides, continue to feel the effects of those massive social trauma for many years after the events and exhibit an empathy deficit pattern (e.g., Dickson-Gomez, 2002; Chaitin and Steinberg, 2008).

## CEOs’ famine experiences and firms’ CSR performance

CSR is defined “as actions that appear to further some social good, beyond the interests of the firm and that which is required by law” (McWilliams and Siegel, 2001, p.117). According to the altruism theory, CEOs who have experienced the GCF may lead to better CSR performance for two reasons. First, post-traumatic psychological growth leads to CEOs placing a bigger weight on the benefits of others and perceiving themselves as having an added duty to act responsibly towards others (Zoellner and Maercker, 2006; Staub and Vollhardt, 2008). Their altruistic characteristics motivate them to make greater contributions to society through CSR activities. Second, if CEOs have recovered from disasters through the help of social support, they can have a profound impression of the value of social capital, which can be gained from CSR activities (Tedeschi et al., 1998). As a result, CEOs with disaster experiences put greater effort into developing and maintaining a sound relationship with internal and external stakeholders for deepened employee commitment (Edmans, 2011, 2012), better firm image, and a higher level of legitimacy from the community (Fombrun, 1996).

In light of the altruism hypothesis, we propose that CEOs with GCF experience are more likely to behave with altruistic motives and to maintain strong stakeholder relationships, which in turn contribute to their firms’ better CSR performance. Hence, we present the following hypothesis:

*Hypothesis 1A (H1A): Firms with famine-CEOs exhibit better CSR performance.*

However, the GCF, despite the Chinese government’s equivocation on its causes, is a man-made disaster as indicated by the positive correlation between per capita food production and rural mortality rates (Meng et al., 2015). According to the egoism theory, we argue that famine-CEOs are negatively associated with CSR performance for two reasons. First, with the attribution of the GCF made clear, the victims held the top echelons of the central government accountable and suffered from a *moral injury*, which occurred when there is a betrayal from the legitimate authority (Shay, 2014).[[10]](#footnote-10) As a result, the GCF shattered the victims’ belief, destroyed the mutual trust and cooperation among people, and leads to a corrosive community characterised by enhanced egoism and a disruption of social dynamics (e.g., Gill and Picou, 1998; Ritchie and Gill, 2007). Famine-CEOs who carry a strong egoistic imprint thus are less likely to extend their goodwill beyond their self-interest, that is, to genuinely cater to the needs of a wide spectrum of stakeholders. Second, it is difficult to measure the financial benefits of investing in CSR, and promoting CSR often does not contribute to CEOs’ wealth or career. The value generated from CSR activities is intangible (e.g., employee satisfaction), and such “stakeholder capital” can take as long as four to five years to be fully incorporated by the market into stock prices (Edmans, 2011, 2012).[[11]](#footnote-11) Shareholders and potential investors who value short-term profits may not reward CEOs for promoting CSR activities. This phenomenon is more pronounced in the Chinese capital market where the majority of shareholders are short-term investors and hold their stock for less than 6 months.[[12]](#footnote-12) Furthermore, CEOs who participate in more CSR activities are subject to higher risk of dismissal if their firms experience poor financial performance (Hubbard et al., 2017). The uncertainties of payoffs from CSR discourage self-interested famine-CEOs to invest in CSR activities.

Taken together, CEOs who carry a stronger egoistic imprint from their early-life famine experiences are more concerned about their personal welfare (e.g., career opportunities) and do not appreciate the intangible social capital generated from CSR activities, which in turn results in their firms’ lower tendency to invest in CSR. Thus, we develop the following hypothesis:

*Hypothesis 1B (H1B): Firms with famine-CEOs exhibit worse CSR performance.*

# Data and Empirical Method

## Data and sampling process

We begin with all the Chinese firms listed on the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE). We use several databases to construct our sample. Our sampling period covers 2008 to 2017 because of the availability of data on CSR ratings from Rankins (also known as RKS which is a leading independent CSR-rating entity in China). The RKS CSR ratings is a composite measure of CSR reporting and performance, which not only reflects a firm’s orientation, strategy, and ability to fulfil social and environmental expectations, but also reveals its initiatives on corporate philanthropic and charitable practices (McGuinness et al., 2017). The superiority of RKS CSR ratings in measuring Chinese firms’ CSR disclosure quality and CSR performance is well documented in previous CSR studies on the Chinese financial market (e.g., McGuinness et al., 2017). Financial data are retrieved from the China Stock Market and Accounting Research (CSMAR) database which includes a series of datasets such as the Chinese Listed Firm Financial Statements dataset and the Chinese Listed Firm Corporate Governance dataset.

We manually collect CEOs’ personal information (e.g., birth year, birthplace, and career experience) from several sources: annual reports, and online search engines such as Baidu and Sina Finance. We exclude those CEOs who are not Chinese citizens, because we cannot determine whether they experienced the GCF. Following prior studies (e.g., Kato and Long, 2006; Feng and Johansson, 2018), we consider the CEO of a Chinese listed firm as the chairman between the post of chairman and general manager (Zongjingli). Given the highly concentrated ownership structure of Chinese listed firms, a chairman is often appointed by the controlling shareholder and thus holds significant authority within a firm (Kato and Long, 2006). Unlike in the U.S. or Europe, a chairman is often involved in the daily operation of the company. If the positions of chairman and general manager are not occupied by a same individual, the chairman is considered to be more powerful than the general manager.[[13]](#footnote-13) CEOs’ personal information is then matched with the financial data obtained from the CSMAR database. Following prior studies (e.g., Kong et al., 2021; Chen et al., 2021), financial firms are excluded from the sample because of their unique business structure. Observations with related missing data are excluded and all continuous variables are winsorised at their 1st and 99th percentiles to minimise the influence of outliers. The final sample consists of 3,978 firm-year observations on 1,145 unique CEOs.

## Empirical method

 To analyse the relation between CEOs’ early-life traumatic experiences and CSR performance, we analyse the following panel data regression model:

|  |  |
| --- | --- |
| $$CSR\_{i,t}=α\_{0}+β×Famine\\_CEO\_{i,t}+δ^{'}Controls\_{i, t-1}+Firm\_{i}+Year\_{t}+Generation\_{k}+Birthplace\_{j}+Office Province\_{n}+ε\_{i,t,k,j,n}$$ | (1) |

where subscripts *i,* *t, k, j*, and *n* represent firm *i,* year *t*, CEO age cohort *k*, CEO birthplace *j*, and office province *n*, respectively. The dependent variable is RKS CSR ratings. Following previous studies (e.g., Feng and Johansson, 2018; Hu et al., 2020), the variable of interest that measures a CEO’s early-life famine experience is *Famine\_CEO*, which is a dummy variable that equals one if the CEO was six to sixteen years old during GCF (1959-1961) and was born in a famine province, and otherwise zero. A province is classified as a famine province if its abnormal death ratio is higher than the median of all provinces during the GCF.[[14]](#footnote-14) We have two reasons to support such a construct of our *Famine\_CEO*. First, psychological studies (e.g., Freud, 1953; Caspi et al., 2005) suggest that retrievable childhood memories begin at the age of six and that personality traits stabilize along with psychological maturation at the age of sixteen. Second, by combining CEOs’ age cohorts and the variation in the intensity of the famine across regions, *Famine\_CEO* reflects not only an age effect but also the intensity of the GCF that each CEO experienced. Thus, the magnitude and significance of the coefficient on *Famine\_CEO* captures the impact of CEO early-life famine experience on their firms’ CSR. We include fixed-effects at several levels – firm $(Firm\_{i}),$ year $(Year\_{t}),$ CEO age cohorts $(Generation\_{k}),$ CEO birthplace $(Birthplace\_{j}),$ and office location $(Office Province\_{n})$. $ε\_{i,t,k,j,n}$ signifies the idiosyncratic error term. In all of our regression analysis of Equation (1), we employ heteroscedasticity-robust standard errors clustered at the firm level.

We include a set of control variables that are widely recognized to influence CSR performance: CEO traits, corporate governance features, firm characteristics, and geographical conditions. Regarding CEO traits, we control for CEOs’ gender (*Female*), age (*Age*) (Borghesi et al., 2014), tenure (*Tenure*) (Waldman et al., 2006), and education level (*Degree*) (Manner, 2010). Regarding corporate governance features, we control for the largest ten shareholder’s shareholding ratio (*Top Ten*), the senior executives’ shareholding ratio (*Executive*), and the ratio of independent directors on the board (*Independent*). We also control for the firm’s state ownership (*SOE*) (Hsu et al., 2021), and province’s institutional environment (*Development*) using the NERI Index of marketisation developed by Fan et al. (2010) to assess the marketisation level of each province of China. Regarding firm characteristics, we control for firm size (*Size*), leverage (*Leverage*), financial performance (*ROA*), firm value (*TQ*), and Chinese special treatment (*ST*) firms[[15]](#footnote-15). Following Kong et al. (2021), we take one-year lagged values of all control variables that change continuously over time on the firm level, to avoid the effects of reversed causality ex ante. The definitions of all variables are in Appendix A.

## Summary statistics

Panel A of Table 1 presents the distribution of our sample by 31 provinces. The top three provinces that are highly represented in the sample are Shanghai (396), Guangdong (465) and Beijing (558). Columns (3), (4) and (5) present the morality rates across the provinces over three years prior and after the GCF (1959 – 1961). The morality rates across the provinces ranges between 6% and 18% during the pre- and post-GCF years. During the GCF, the morality rates increased sharply for most provinces, with several provinces reporting death rates above 30%. Particularly, the four hardest-hit provinces were Anhui (31.1%), Chongqing (31.7%), Guizhou (32%) and Sichuan (31.7%), with an abnormal death ratio of 21%, 18%, 17%, and 18%, respectively. During the post-GCF period, the mortality rates declined quickly to the levels before the GCF. The unprecedented severity of the GCF, together with its substantial variation across provinces, provides an ideal setting to study the long-term effects of early-life trauma on CSR.

[Table 1 about here]

Panel B of Table 1 reports the descriptive statistics of the key variables. The mean (median) of CSR score is 38.13 (35.48), which is in line with previous studies on CSR in the Chinese market (e.g., McGuinness et al., 2017). About 15% of our sample CEOs were severely affected by the GCF in their late childhood and adolescence (i.e., were six to sixteen years old during the GCF and were born in provinces that were severely impacted by the GCF). This figure is comparable with existing studies on GCF experience and firm decisions (e.g., Feng and Johansson, 2018; Hu et al., 2020). Furthermore, the mean values of control variables are broadly consistent with those in prior studies.

# Main results

Table 2 presents the results of panel fixed-effects estimation of Equation (1) evaluating the effects of famine-CEOs on firms’ overall CSR performance and the four constructs of the CSR performance score, “Content”, “Macrocosm”, “Technique” and “Industry”. Column (1) shows the estimated results incorporating year-, industry-, CEO generation-, CEO birthplace- and office location-fixed effects; while Column (2) adopts the same specification as Column (1), except incorporating firm-fixed effects instead of industry-fixed effects. The estimated coefficient on *Famine\_CEO* is negative and statistically significant at 5% level or better in both columns, suggesting that firms with CEOs’ early-life famine experience involve low CSR performance.[[16]](#footnote-16) The results are also economically large. For instance, the *Famine\_CEO* coefficient in Column (1) suggests that, ceteris paribus, when a firm has a famine-CEO, the firm’s CSR ratings are about 5.54% (=1.964/35.48) lower compared to a median firm in our sample. This corresponds to approximately 16.01% (=1.964/12.27) of one standard deviation of our CSR score distribution.[[17]](#footnote-17) Unlike existing studies that find positive effects of CEOs’ early-life adverse experiences on firm choices (Feng and Johansson, 2018; Hu et al., 2020; O’Sullivan et al., 2021; Malmendier et al., 2011), our results for Chinese firms are more consistent with egoism effects than with altruistic effects. Stated more precisely: we find strong support for the CEO egoism hypothesis (H1B) that firms with famine-CEOs are associated with lower CSR performance.

The results of the control variables are broadly consistent with theoretical predictions and existing studies. For example, the significant positive relation between firm size and CSR performance supports the view that large firms involve with larger social participation and have more resources to engage in CSR activities (McGuinness et al., 2017).

To rule out the alternative explanations or concerns that our results are driven by CSR reporting quality and industry factors, we decompose the RKS CSR rating into four dimensions: CSR performance (“Content”), a firm’s general attitudes towards CSR activities (“Macrocosm”), CSR reporting quality and transparency (“Technique”), and a firm’s CSR performance relative to the industry to which it belongs (“Industry”).[[18]](#footnote-18) We expect that, if our results are driven by famine-CEOs’ egoism, the impact should be more pronounced on CSR performance and a firm’s general attitudes towards CSR activities. In support of our argument, we find that the coefficient on *Famine\_CEO* (-1.031 in Column (3) and -0.734 in Column (4)) is negative and statistically significant at the 5% level or better when the dependent variable is *CSR Content* or *CSR Macrocosm.* These negative coefficients reflect that famine-CEOs are less likely to tailor CSR strategies to the needs of stakeholders. When the dependent variable is *CSR Technique* or *CSR Industry*, the coefficients on *Famine\_CEO* are not significant, reflecting that the negative relation between famine-CEOs and CSR performance is not driven by factors related to reporting quality and industries.

In summary, the estimated results in Table 2 are consistent with the egoism hypothesis and lend strong support to our Hypothesis 1B related to the egoism theory, as the results show clearly that there is a negative and direct impact of famine-CEOs on CSR ratings. Recalling that CSR engagement is a long-term investment and requires a large amount of resources that cannot be redeployed to other uses, CEOs with famine experience carry a stronger egoistic imprint and prioritize their personal welfare, which in turn reduces their firms’ engagement in CSR.

[Table 2 about here]

# Addressing endogeneity issues

Different from other CEO personal experience (e.g., military experience), the GCF is an exogenous historical event. The unprecedented famine was completely unexpected and not a choice variable for CEOs, which largely removes the endogeneity problem from reversed causality and sample selection biases (Feng and Johansson, 2018; Kong et al., 2021). However, endogeneity concerns may still arise from reversed causality, sample selection bias, measurement errors, and omitted variables. For example, firms that are less inclined to invest in CSR may prefer famine-CEOs who conform to their social profiles, which causes both reserved causality and sample selection bias. In addition, omitted variables (e.g., CEO family background) could affect both CEOs’ famine experience and their social preference, which later determines their firms’ CSR performance. We collectively address endogeneity issues by adopting five different empirical design strategies: (1) a difference-in-differences analysis in a quasi-natural empirical setting based on CEO turnovers; (2) a two-stage least-squares regression with instrument variable (2SLS-IV) method; (3) the Lewbel (2012) approach; (4) the propensity scores matching method; and (5) placebo tests.

## Difference-in-differences (DiD)

To tackle the possibility that our results are influenced by omitted firm-level variables and reversed causality, we investigate the change in CEO famine experience accompanying CEO turnover. The difference-in-differences (DiD) approach assists to identify causal effects of CEOs’ early-life famine experience that are not biased by endogenous CEO selection (Hermalin and Weisbach, 1998). We follow Fee et al. (2013) and Urban (2019) and restrict our sample to exogenous CEO turnover events.[[19]](#footnote-19) We set the test window period to two years before and after a CEO turnover (i.e., t$-$2 to t$+$2) and drop turnover events with insufficient data to cover the five-year window period. We introduce two new variables, *CEO Change 1* and *CEO Change 2*, to reflect our treatment group and control group under two circumstances. In the first scenario, *CEO Change 1* equals one if a non-famine-CEO is replaced by a famine-CEO (No to Yes), and equals zero if the turnover does not involve changes in famine experience and both CEOs are non-famine-CEOs (No to No). In the second scenario, *CEO change 2* equals one if a famine-CEO is taken over by a non-famine-CEO (Yes to No), and equals zero if the turnover does not involve changes in famine experience and both CEOs are famine-CEOs (Yes to Yes). We introduce another variable, *Post Turnover*, which equals one for post-CEO-turnover window (i.e., t to t$+$2), and zero for pre-CEO-turnover window (i.e., t$-$2 to t$-$1). The interaction term, *CEO Change 1* $× $*Post Turnover* and *CEO Change 2*$ × $*Post Turnover*, capture the causal effect of CEO early-life famine experience on CSR.

Table 3 presents the DiD regression results. We find a statistically significant drop in CSR performance (-10.319 in Column (1)) after a famine-CEO replaces a non-famine CEO (No to Yes). Likewise, we note a statistically significant increase in CSR performance (5.484 in Column (2)) after a non-famine CEO takes over a famine-CEO (Yes to No). These results reflect that, when there is a CEO turnover from a non-famine CEO to a famine-CEO, the famine-CEO appears to participate less in CSR activities. However, when a famine-CEO is replaced by a non-famine-CEO, the non-famine-CEO is more likely to elevate the firm’s CSR performance. Thus, our findings attest to our claim that famine-CEOs causally deteriorate CSR performance.

[Table 3 about here]

## Garden variety 2SLS-IV

Since the endogenous variable, *Famine\_CEO*, is a dummy variable, the regression in the second stage of the traditional 2SLS-IV estimation is an example of a “Forbidden Regression”.[[20]](#footnote-20) To address this issue, we use a two-step IV method proposed by Wooldridge (2002), which is also known as a Garden Variety 2SLS from Angrist and Pischke (2008).

The first step is to estimate the binary response model by maximum likelihood and obtain the fitted probabilities, $\hat{Famine\\_CEO\_{i,t}} $(Wooldridge, 2002). The second step is to estimate our baseline regression using the predicted probabilities, $\hat{Famine\\_CEO\_{i,t}}$, as the instrument variable for the actual likelihood that a focal firm has a famine*-*CEO (Wooldridge, 2002).

Our instrument variable, *Geographic IV*, is a five-year lagged percentage of firms with famine-CEOs that are in the same region as the focal firm but are not in the same industry (hereafter, geographically proximate firms) (Karpoff et al., 2017; Wang et al., 2020). *Geographic IV* is constructed based on geography-based peer effects, because a firm’s decision to appoint a CEO can be influenced by geography-based institutional environment and peer information spill-over. In addition, there is persistency in CEO characteristics that a firm prefers over time.[[21]](#footnote-21) We, therefore, expect geographically proximate firms to be positively associated with the likelihood that a firm has an incumbent famine-CEO.

Furthermore, we argue that the geography-based instrument variable meets the exclusion restriction condition, for three reasons. First, we exclude those peer firms that are from the same industry as the focal firm, and thus obtain industry-irrelevant geographic peer effects in appointing famine-CEOs.[[22]](#footnote-22) Second, firms make their location decisions for diverse reasons in different years, because economic and political conditions that attract firms change over years in different regions. Thus, it is unlikely that a firm and its geographically proximate firms’ choices of same operating location could then explain both their likelihood of appointing famine-CEOs and CSR performance in the year of analysis. Finally, the correlation between the appointment of famine-CEOs among geographically proximate firms exists for reasons that occur years before the year of our analysis. These reasons should not directly affect firms’ current CSR decisions. Overall, the instrument variable, *Geographic IV*, should not directly influence firms’ CSR performance other than through famine-CEOs.

Columns (1) and (2) of Table 4 present the results of our 2SLS-IV estimation. In the first stage, the coefficient on *Geographic IV* (3.291 in Column (1)) is positive and statistically significant at the 1% level, indicating that famine-CEOs in geographically proximate firms directly affects the choice of hiring a famine-CEO in the focal firm. In the second stage, the coefficient on *Famine\_CEO* (-5.481 in Column (2)) continues to be negative and statistically significant at the 1% level, which supports our egoism hypothesis. The economic magnitudes of the IV estimates are larger than their corresponding uninstrumented estimates in the single-stage panel regressions (Jiang, 2017; Pathan et al., 2021).[[23]](#footnote-23) For instance, a famine-CEO is associated with a decrease in CSR performance of 15.45% (=5.481/35.48) relative to a median firm, in Table 4, which is approximately three times larger than the 5.38% reduction observed from the OLS estimations in Table 2. Furthermore, the weak identification test shows that the F statistic (364.055 in Column (2)) is greater than the Stock and Yogo (2005) critical value, revealing that the instrument is correlated with the endogenous regressor, *Famine\_CEO*. The under-identification test indicates that the instrument does not have an under-identification problem and the *Geographic IV* is relevant, given that p-value of the Anderson statistic is statistically significant at the 1% level. Overall, the results indicate that our baseline results remain robust, and famine-CEOs are associated with poorer CSR performance.[[24]](#footnote-24)

[Table 4 about here]

## Lewbel approach

To further mitigate the endogeneity concerns, we adopt the heteroskedasticity-based instrument variable method developed by Lewbel (2012). Lewbel’s (2012) approach contributes to addressing endogeneity issues without relying on any external instrument. This method exploits the heteroskedasticity in the error term of the first-stage regression to generate instruments from within the existing model. More specifically, identification is achieved by having regressors that are uncorrelated with the product of heteroskedastic errors, the latter which are a feature of many models where error correlations are due to an unobserved common factor (Lewbel, 2012). Several recent studies have applied this method and show evidence that the generated instrument variables perform well (e.g., Chen et al., 2021; Hasan et al., 2021).

The estimated results of 2SLS regressions using Lewbel’s (2012) approach are reported in Columns (3) and (4) of Table 4. We select from the generated instruments and apply the standard IV estimation method with the selected instruments. The instruments ($IV\_{1}$ and$IV\_{2}$) are selected as their coefficients are statistically significant, suggesting that they are useful in explaining the likelihood of appointing famine-CEOs. The coefficient on *Famine\_CEO* (-8.156 in Column (4)) remains negative and statistically significant, and the standard diagnostic tests give us confidence that the model is neither weakly identified, under-identified, nor over-identified. Overall, our main results are robust to endogeneity concerns.

## Propensity score matching

We also perform an average treatment effect analysis using the propensity score matching (PSM) method to mitigate the concern that firms led by famine-CEOs are systematically different from firms led by non-famine CEOs. We conduct an analysis using the PSM methodology and match firms with famine-CEOs to firms with non-famine-CEOs. We define firms having famine-CEOs as the treatment group, and firms having non-famine-CEOs as the control group. To make sure that there is no statistical difference between the treatment and control groups, we employ one-to-one nearest neighbour matching with no replacement. The propensity score is calculated using the same set of control variables as in the baseline regression.[[25]](#footnote-25)

We investigate the accuracy of our propensity score matching in two ways. Table 5 presents the estimated results for the propensity score matched sample. In Panel A, we make univariate comparisons of the matching criteria between propensity score matched treatment and control groups. We find that there are statistically significant differences in the mean distribution of the potential selection variables between the treatment and control groups, but in general no statistically significant difference in the PSM matched sample. In Panel B, we re-estimate Equation (1) restricting the regression to the matched samples. We find that the coefficient on *Famine\_CEO* (-6.146) remains negative and statistically significant. In sum, the estimated average treatment effect on treated from the PSM analysis reaffirms our Hypothesis 1b, that firms with famine-CEOs are associated with lower CSR performance.

[Table 5 about here]

## Placebo tests

To further validate that our results are not driven by CEOs’ other experience during the testing period, we conduct two sets of placebo tests. First, following Kong et al. (2021), we examine whether the negative association between famine-CEOs and CSR holds if the GCF occurs ten years before or after the actual occurrence. Specifically, we develop two new synthetic dummy variables, *Famine\_CEO1949 - 1951* and *Famine\_CEO1969 – 1971*. *Famine\_CEO1949 - 1951 (Famine\_CEO1969 – 1971)* equals one if a CEO was born in a province that was severely affected by the actual GCF and was six to sixteen years old during the 1949-1951 (1969 – 1971) period, and zero otherwise. Panel A of Table 6 shows that the coefficients on *Famine\_CEO1949 - 1951* and *Famine\_CEO1969 – 1971* are insignificant, which substantiates that our measure of famine-CEOs truly captures a large-scale disaster event that significantly impacts CEOs’ cognition and value.

Second, to resolve the concern that the documented result could be driven by spurious correlations in our data, we randomly assign CEOs’ birthplace following Chen et al. (2021). We then construct a *pseudo-famine* variable similar to *Famine\_CEO*, except using the randomly assigned birthplace to measure the intensity of CEOs’ GCF experience. Next, we re-estimate Equation (1). By repeating this process 500 times, we obtain 500 coefficients of the *pseudo-famine* variable. We then construct an empirical distribution of the 500 *pseudo-famine* coefficients under the scenario that the relation between famine-CEOs and CSR performance is of a spurious nature. Panel B of Table 6 reports key distributions of these 500 coefficients from these bootstrap regressions. We observe that the actual coefficient estimates on *Famine\_CEO* from the baseline regression (-1.910 in Column (2) of Table 2) lies at the extreme lower tail of the empirical distribution of the coefficients of the *pseudo-famine* variable (the distribution ranges from -1.383 to 0.561 in Panel B of Table 6), which implies that our baseline results are unlikely to be driven by spurious correlations.

Overall, the results of these two sets of placebo tests involving change in the period of the GCF and altering the intensity of CEOs’ famine experiences confirm our egoism hypothesis that famine-CEOs are negatively associated with firms’ CSR performance.

[Table 6 about here]

# Cross-sectional analyses

## Internal versus external CSR

In this section, we test whether famine-CEOs driven by egoistic motives treat internal stakeholders (i.e., employees and shareholders) and external stakeholders (i.e., customers, suppliers, environment and society) differently. Internal stakeholders such as employees and shareholders are in a better position for monitoring famine-CEOs, and they can hinder CEOs’ career prospects or wealth through either leaking their irresponsible behaviours to the public[[26]](#footnote-26) or lowering their compensation. We thus expect egoistic famine-CEOs to avoid causing unpleasantness with internal stakeholders and to have a more pronounced negative impact on CSR performance relevant to external stakeholders.

Since RKS CSR ratings do not disclose detailed CSR ratings related to different categories of stakeholders, we retrieve information about firms’ CSR practices related to different stakeholders from the CSMAR database. The CSMAR database identifies whether a firm discloses measures to protect the interests of suppliers, customers and consumers, environment, society, employees and shareholders. Following Al-Shammari et al. (2019), we aggregate the dummy variables concerning employees and shareholders to measure CSR related to internal stakeholders (termed as *Internal CSR*), and aggregate the dummy variables concerning suppliers, customers and consumers, environment and society to measure CSR related to external stakeholders (*External CSR*). To account for the nonnegative, discrete and finite nature of the internal and external CSR variables, we employ a *poisson* regression model.

Table 7 reports estimation results obtained from Equation (1) where the dependent variables are *Internal CSR* (Column (1)) and *External CSR* (Column (2)). The coefficients on *Famine\_CEO* (-0.008 in Column (1), -0.042 in Column (2)) remain negative but are only statistically significant when the dependent variable is *External CSR*. These results support the egoism hypothesis that famine-CEOs neglect the needs of external stakeholders who are less involved in business operations and have less disciplinary power over CEO misconduct.

[Table 7 about here]

## Age boundaries

Recall that we focus on the age-span of middle childhood to middle adolescence (six to sixteen years old) as the period of heightened susceptibility to the influence of the external environment (e.g., Freud, 1953; Caspi et al., 2005). In this section, we examine whether the imprinting effect is sensitive to famine-CEOs’ age boundaries. We divide famine-CEOs into four groups based on their age cohort. In particular, we create four dummy variables, each equalling one if the CEO has experienced the intense GCF at the age cohorts of 0-5 ($Famine CEO^{0-5yrs}$), 6-11 ($Famine CEO^{6-11yrs}$), 12-16 ($Famine CEO^{12-16yrs}$) and 17 ($Famine CEO^{\geq 17yrs}$) years old onwards, otherwise the dummy variable equals zero.[[27]](#footnote-27)

Table 8 show the results of estimation of Equation (1) where *Famine\_CEO* is consequentially replaced by each of the four abovementioned variables that reflect famine-CEOs’ age cohort during the GCF. The coefficients on $Famine CEO^{6-11yrs}$ (-2.125 in Column (2)) and $Famine CEO^{12-16yrs}$ (-0.371 in Column (3)) are negative but statistically significant only for $Famine CEO^{6-11yrs}$ at the 5% level. Therefore, these results support our main findings as well as the imprinting theory. That is, the egoistic imprinting effect is amplified when a CEO experienced the large-scale disaster of famine during a more vulnerable childhood period.

[Table 8 about here]

## Conditional effects

The previous sections have shown that famine-CEOs carry an egoistic imprint that negatively affects CSR performance. However, it is unclear under what circumstances the negative impact of famine-CEOs’ egoistic imprint on CSR is amplified or lessened. This section examines whether the relation between famine-CEOs and CSR performance is conditional on CEOs’ hometown bias, decision-making power (i.e., their political connectedness and shareholdings) and government ownership.

First, based on the place attachment and identity concept in the environmental psychology literature (e.g., Hidalgo and Hernández, 2001; Scannell and Gifford, 2017), CEOs establish affective bonds with specific areas such as their hometowns. This hometown favouritism effect is stronger for individuals with a higher personal self-regard (Long et al., 2017). It is thus reasonable to expect that famine-CEOs who works in firms located at their hometowns implement favourable CSR policies to benefit the local community to the extent they gain personal satisfaction in doing so. Second, previous studies suggest that powerful CEOs through political connectedness or significant shareholdings exert greater influence of their personality on firm decisions and activities (e.g., Cao et al., 2017; Humphery-Jenner et al., 2022). Thus, we expect that the negative association between famine-CEOs and CSR performance could be magnified by famine-CEOs’ political connection and shareholdings[[28]](#footnote-28).Third, controlling government ownership in SOEs indicates that famine-CEOs face pressures to engage more in CSR activities, as it is deemed necessary for SOEs to be seen as social “role models” for their counterparts (McGuinness et al., 2017). In addition, CSR performance is part of the promotion criteria for CEOs of SOEs (Zhang et al., 2021). Thus, we anticipate that the negative relation between famine-CEOs and CSR performance turns positive for famine-CEOs in SOEs when their egoistic imprints are entangled with tournament incentives.

Table 9 reports the estimated results on whether and how CEO hometown bias, power and government ownership impact the relation between famine-CEOs and CSR performance. Consistent with our expectations, we find that the coefficient on *Famine\_CEO* $×$ *Hometown Bias* (2.068 in Column (1)) is positive and statistically significant at the 10% level. Similarly, the coefficients on both *Famine\_CEO* $×$ *Political Connection* (-2.632 in Column (2)) and *Famine\_CEO* $×$ *CEO Shareholding* (-0.278 in Column (3)) are significantly negative at the 5% level. Finally, the coefficient on *Famine\_CEO* $×$ *SOE* (2.299 in Column (4)) is positive and statistically significant at the 10% level. Overall, in support of our egoism hypothesis, we provide evidence that the negative impacts of famine-CEOs’ egoistic imprint on CSR performance is (1) weakened by famine-CEOs’ attachment to their hometown, (2) magnified by famine-CEOs’ strong decision-making power (i.e., CEO political connectedness and company shareholding), and (3) alleviated by SOEs’ social agendas as the promotion prospects of CEOs in SOEs are tied with CSR performance.

[Table 9 about here]

## Confounding events and effects during the test periods

We conduct four subsample analyses to mitigate the concerns that our results could be contaminated by CEOs’ experiences of confounding events such as the War of Resistance against Japanese Aggression (1937-1945), the Chinese Civil War (1927-1949), the Cultural Revolution (1966-1976) and the Tangshan Earthquake (1976). For each subsample analysis, we exclude the possible impact induced by each extreme event. The first subsample excludes CEOs who were born in 1945 or earlier, so that all CEOs in this subsample have not experienced the War of Resistance. Similarly, the second subsample excludes CEOs who were born in 1949 or earlier, because those CEOs lived through the Chinese Civil War. Following Hu et al. (2020), we exclude CEOs who were born after 1976 in the third subsample. Therefore, any observed differences in the level of CSR performance are not driven by CEOs’ experience of the Cultural Revolution, as all the CEOs in the third subsample have experienced the Cultural Revolution. In the fourth subsample, we exclude CEOs who were born in Hebei province and were born in 1976 or earlier, as these CEOs have experienced the Tangshan Earthquake. In the fifth subsample, we exclude the confounding effects from all four events. Table 10 reports the results of these five subsample analyses. Overall, the coefficients on *Famine\_CEO* remain negative and statistically significant across all the five subsample analyses, and hence confirm that our results are immune from other confounding events.

Finally, we test if our results are immune to princeling CEOs[[29]](#footnote-29), who are the descendants of prominent and influential senior communist officials in China and may be subject to different exposure to the GCF compared to common citizens.[[30]](#footnote-30) We re-estimate Equation (1) for the restricted sample that excludes princeling CEOs. The coefficient on *Famine\_CEO* in Column (6) of Table 10 remains negative and statistically significant, which indicates that the negative relation between famine-CEOs and CSR performance is robust to CEOs’ privileged family background.

A competing argument, risk averse, that challenging the egoism theory underpinning our empirical findings needs to be clarified. That is, Bernile et al. (2017) and Feng and Johansson (2018) suggest that CEOs who have experienced extremely adverse disasters are risk averse. However, Cheung (2016) indicates that CSR firms have lower idiosyncratic risk due to their higher social capital with stakeholders and lower systematic risk due to greater loyalty from investors, customers and employees. Therefore, it is unlikely that the negative relation between famine-CEOs and CSR is driven by famine-CEOs’ risk averse preference which should support CSR activities that lower both idiosyncratic and systematic risks.

[Table 10 about here]

# Economic outcomes

The results presented so far lend strong and robust support to the egoism hypothesis (H1b) that famine-CEOs negatively affect CSR ratings. Based on the egoism hypothesis, we theorize that famine-CEOs are driven by a stronger self-regard motive that places greater weight on their personal gains. In this section, we perform two supplementary tests to cross-validate the egoism argument underpinning our findings.

We expect self-interested famine-CEOs retain corporate resources for their own benefits. That is, famine-CEOs may be reluctant to distribute profits to shareholders and thus pay less dividends, and they misappropriate corporate surplus through excessive perks (Jensen and Meckling, 1976).[[31]](#footnote-31) Our results in Table 11 show that famine-CEOs are negatively associated with dividend payout and positively associated with excess perk consumption, which further attests our theoretical arguments.[[32]](#footnote-32)

[Table 11 about here]

# Conclusion

Our results show that firms managed by famine-CEOs exhibit poorer CSR performance. This finding suggests that the imprinting from man-made disasters contributes to a CEO’s heightened egoism and their documented CSR preferences. Additional tests indicate the negative relation between famine-CEOs and CSR is magnified by CEOs’ decision-making power and weakened by CEOs’ hometown attachment and firms’ government ownership. Our causal inference is further validated by five empirical design strategies: a DiD analysis in a quasi-natural empirical setting based on CEO turnovers, 2SLS-IV, the Lewbel approach, PSM, and placebo tests. Overall, our study suggests there is a causal relation between CEOs’ early-life experience of man-made disaster and CSR.

Our study contributes to literature examining the influence of CEO early-life experience on corporate decisions and outcomes by being the first to argue and present CEOs’ early-life experience of man-made disasters such as GCF negatively impact CSR. Our study also extends literature on the relation between CEO early-life adverse experience and CSR by explicitly verify the theoretical framework, i.e., heightened egoism stemming from human-induced suffering, and refute alternative theories. Further, this study adds to literature on CSR in an important emerging economy, China, and offers a potential reason behind the many negative social and environmental consequences of its rapid and enormous economic achievements.

This study has implications for managerial practices related to the executive selection process. The executive selection process often emphasizes the importance of candidates’ past successes and achievements and does not pay enough attention to their early-life adverse experiences. It is worthwhile to implement an executive selection process to unearth executives’ life histories – both personal and professional. Furthermore, boards should be mindful of the potential mismatch between CEOs’ imprints from early-life traumatic experiences and corporate culture. For example, famine-CEOs who are less concerned about their social obligations towards external stakeholders may not be fit for firms that expect to build good relationships with external parties through CSR. In addition, we offer suggestions to Chinese policy makers who aim to achieve a more sustainable economy to implement regulatory mechanisms that restrain corporate executives’ socially irresponsible tendencies.

Similar to prior studies, our research has limitations which offer directions for future research. We use demographic information to gauge CEOs’ early-life famine experience. While our results attest to the egoism theory, we do not examine the underlying psychological and neurobiological processes that transmit a CEO’s early-life famine experience into egoistic behaviours, as this is not feasible for large-scale quantitative analysis. Future research using qualitative research methods such as interviews or questionnaires, to uncover the psychological and neurobiological mechanisms underlying our findings, would be welcome.

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# Table 1 Summary statistics

|  |
| --- |
| Panel A: Sample distributions |
|  | No. of firm-year observations in the sample | Death ratio from National Bureau of Statistics  |  |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| Province | Firmslocated at | Chairmenborn in | Pre1956-58 | During1959-61 | Post1962-64 | Abnormal death ratio |
| Anhui | 133 | 178 | 0.119 | 0.311 | 0.083 | 0.210 |
| Beijing | 558 | 214 | 0.081 | 0.099 | 0.083 | 0.017 |
| Chongqing | 36 | 24 | 0.137 | 0.317 | 0.138 | 0.180 |
| Fujian | 334 | 291 | 0.083 | 0.119 | 0.082 | 0.037 |
| Gansu | 9 | 39 | 0.144 | 0.234 | 0.114 | 0.105 |
| Guangdong | 465 | 231 | 0.096 | 0.125 | 0.084 | 0.035 |
| Guangxi | 47 | 51 | 0.123 | 0.223 | 0.103 | 0.110 |
| Guizhou | 40 | 30 | 0.135 | 0.320 | 0.165 | 0.170 |
| Hainan | 31 | 11 | 0.096 | 0.125 | 0.084 | 0.035 |
| Hebei | 71 | 125 | 0.113 | 0.126 | 0.100 | 0.020 |
| Henan | 129 | 155 | 0.128 | 0.213 | 0.094 | 0.102 |
| Heilongjiang | 26 | 39 | 0.099 | 0.115 | 0.096 | 0.017 |
| Hubei | 102 | 155 | 0.100 | 0.149 | 0.098 | 0.050 |
| Hunan | 56 | 124 | 0.111 | 0.199 | 0.111 | 0.088 |
| Jilin | 60 | 80 | 0.086 | 0.119 | 0.107 | 0.022 |
| Jiangsu | 202 | 318 | 0.107 | 0.154 | 0.098 | 0.052 |
| Jiangxi | 66 | 93 | 0.118 | 0.135 | 0.105 | 0.024 |
| Liaoning | 94 | 175 | 0.083 | 0.136 | 0.086 | 0.052 |
| Inner Mongolia | 19 | 46 | 0.091 | 0.104 | 0.102 | 0.008 |
| Ningxia | 23 | 11 | 0.141 | 0.135 | 0.107 | 0.011 |
| Qinghai | 32 | 5 | 0.108 | 0.229 | 0.098 | 0.126 |
| Shandong | 226 | 330 | 0.123 | 0.200 | 0.121 | 0.079 |
| Shanxi | 68 | 92 | 0.120 | 0.131 | 0.123 | 0.010 |
| Shaanxi | 45 | 92 | 0.104 | 0.113 | 0.118 | 0.001 |
| Shanghai | 396 | 246 | 0.063 | 0.075 | 0.068 | 0.009 |
| Sichuan | 106 | 148 | 0.137 | 0.317 | 0.138 | 0.180 |
| Tianjin | 92 | 54 | 0.073 | 0.083 | 0.065 | 0.014 |
| Tibet | 4 | - | - | - | - | - |
| Xinjiang | 77 | 72 | 0.137 | 0.154 | 0.118 | 0.026 |
| Yunnan | 93 | 81 | 0.177 | 0.187 | 0.134 | 0.031 |
| Zhejiang | 338 | 468 | 0.093 | 0.108 | 0.086 | 0.019 |
| Panel B: Descriptive statistics  |
|  | Count | Mean | S.D. | P25 | P50 | P75 |
| *CSR* | 3978 | 38.13 | 12.27 | 29.68 | 35.48 | 43.78 |
| *Famine\_CEO* | 3978 | 0.15 | 0.35 | 0.00 | 0.00 | 0.00 |
| *Female* | 3978 | 0.04 | 0.19 | 0.00 | 0.00 | 0.00 |
| *Age* | 3978 | 52.71 | 6.60 | 48.00 | 53.00 | 57.00 |
| *Tenure* | 3978 | 4.53 | 3.89 | 1.42 | 3.17 | 7.00 |
| *Degree* | 3978 | 3.59 | 0.86 | 3.00 | 4.00 | 4.00 |
| *Top Ten* | 3978 | 56.88 | 16.15 | 45.63 | 57.45 | 67.60 |
| *Executive* | 3978 | 0.01 | 0.05 | 0.00 | 0.00 | 0.00 |
| *Independent* | 3978 | 0.37 | 0.05 | 0.33 | 0.33 | 0.40 |
| *Leverage* | 3978 | 0.52 | 0.19 | 0.38 | 0.53 | 0.66 |
| *Size* | 3978 | 22.93 | 1.35 | 21.95 | 22.80 | 23.78 |
| *ROA* | 3978 | 0.05 | 0.05 | 0.02 | 0.04 | 0.07 |
| *TQ* | 3978 | 1.90 | 1.14 | 1.17 | 1.52 | 2.15 |
| *ST* | 3978 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 |
| *SOE* | 3978 | 0.68 | 0.47 | 0.00 | 1.00 | 1.00 |
| *Development* | 3978 | 7.60 | 1.75 | 6.47 | 7.73 | 9.12 |

*Notes*: Panel A presents the distribution of the CEOs’ birthplaces and firm headquarters by province, and the statistics of average death ratios before, during and after the GCF. The death ratio is obtained from the China Statistical Yearbook. Following Hu et al. (2020), the abnormal death ratio is calculated as: {[(Average death ratio during the GCF (1959-1961)- Average death ratio for the three years prior to the GCF (1956-1958)] + [(Average death ratio during the GCF (1959-1961)- Average death ratio for the three years after the GCF (1962-1964)]}/2.

Panel B presents the descriptive statistics of dependent variable, independent variables and control variables. *CSR* is CSR performance score from RKS. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and zero otherwise. Detailed definitions of control variables are in Appendix A.

# Table 2 The effect of famine-CEOs on CSR performance

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) | (5) | (6) |
|   | *CSR* | *CSR* | *CSR Content* | *CSR Macrocosm* | *CSR Technique* | *CSR Industry* |
| *Famine\_CEO* | -1.964\*\*\* | -1.910\*\* | -1.031\*\* | -0.734\*\* | -0.197 | -0.220 |
|  | (-2.624) | (-2.319) | (-2.275) | (-2.333) | (-1.396) | (-1.587) |
| *Female* | -0.218 | -0.673 | -0.153 | -0.030 | -0.202 | -0.077 |
|  | (-0.218) | (-0.599) | (-0.270) | (-0.063) | (-1.063) | (-0.504) |
| *Age* | 0.046 | 0.031 | 0.041 | -0.030 | -0.017 | 0.002 |
|  | (0.514) | (0.309) | (0.767) | (-0.825) | (-0.890) | (0.106) |
| *Tenure* | -0.022 | -0.017 | 0.004 | -0.007 | 0.002 | -0.001 |
|  | (-0.397) | (-0.283) | (0.133) | (-0.376) | (0.148) | (-0.144) |
| *Degree* | -0.167 | -0.370 | -0.239 | -0.167 | -0.065 | -0.033 |
|  | (-0.549) | (-1.083) | (-1.359) | (-1.351) | (-1.053) | (-0.611) |
| *Top Ten* | 0.032\* | 0.015 | -0.008 | 0.006 | -0.003 | 0.003 |
|  | (1.798) | (0.728) | (-0.739) | (0.773) | (-0.791) | (0.764) |
| *Executive* | -1.933 | -1.173 | -3.919\* | 0.691 | 0.350 | 0.914 |
|  | (-0.554) | (-0.286) | (-1.705) | (0.350) | (0.478) | (1.264) |
| *Independent* | -4.335 | -4.119 | -2.259 | -0.721 | -0.949 | -0.329 |
|  | (-1.037) | (-0.892) | (-0.907) | (-0.469) | (-1.173) | (-0.410) |
| *Leverage* | -2.335\* | -0.876 | -1.102 | -0.330 | -0.342 | -0.039 |
|  | (-1.690) | (-0.573) | (-1.297) | (-0.568) | (-1.296) | (-0.126) |
| *Size* | 2.945\*\*\* | 1.825\*\*\* | 1.050\*\*\* | 0.535\*\*\* | 0.187\*\* | 0.232\*\* |
|  | (7.886) | (3.473) | (3.664) | (2.814) | (2.033) | (2.413) |
| *ROA* | 5.325 | 6.461\* | 4.400\*\* | 2.421 | 0.436 | 0.746 |
|  | (1.465) | (1.709) | (2.139) | (1.599) | (0.660) | (1.024) |
| *TQ* | 0.120 | 0.009 | -0.002 | -0.046 | 0.022 | 0.045 |
|  | (0.750) | (0.053) | (-0.018) | (-0.675) | (0.710) | (1.401) |
| *ST* | 0.912 | 0.688 | 0.201 | 0.510 | 0.443 | 0.000 |
|  | (0.701) | (0.532) | (0.324) | (1.030) | (1.392) | (0.002) |
| *SOE* | 0.261 | -1.170 | -0.110 | -0.846\* | -0.595\*\*\* | 0.146 |
|  | (0.343) | (-0.958) | (-0.169) | (-1.747) | (-2.909) | (0.661) |
| *Development* | -0.182 | -0.189 | -0.055 | 0.172 | 0.010 | 0.127\*\* |
|  | (-0.634) | (-0.640) | (-0.331) | (1.579) | (0.187) | (2.387) |
| *Constant* | -45.096\*\*\* | -19.879 | -12.615\* | -3.746 | 3.902\* | -6.252\*\*\* |
|  | (-4.233) | (-1.499) | (-1.711) | (-0.775) | (1.663) | (-2.588) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | No | No | No | No | No |
| Firm FE | No | Yes | Yes | Yes | Yes | Yes |
| Generation FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Birthplace FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Office Province FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 3978 | 3978 | 3746 | 3746 | 3746 | 3299 |
| adj. R-sq | 0.421 | 0.429 | 0.105 | 0.571 | 0.405 | 0.178 |

Notes: This table reports the OLS regression results of Equation (1). The dependent variable is the overall CSR scores from RKS in Columns (1) and (2); and either of the four constructs of RKS CSR score, “Content”, “Macrocosm”, “Technique” and “Industry”, in Columns (3), (4), (5), and (6), respectively. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definition of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 3 Difference-in-difference estimation

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | No to Yes | Yes to No |
|  | *CSR* | *CSR* |
| *CEO Change*$ 1 × $*Post Turnover* | -10.319\*\*\* |  |
|  | (-5.606) |  |
| *CEO Change*$ 2 × $*Post Turnover* |  | 5.484\*\* |
|  |  | (2.270) |
| Controls | Yes | Yes |
| Year FE | Yes | Yes |
| Firm FE | Yes | Yes |
| Generation FE | Yes | Yes |
| Birthplace FE | Yes | Yes |
| Office Province FE | Yes | Yes |
| N | 330 | 183 |
| adj. R-sq | 0.358 | 0.582 |

Notes: This table presents difference-in-difference analysis of changes in CSR performance around CEO turnover events. The dependent variable is the RKS CSR score. In Column (1), *CEO Change 1* equals one if a famine-CEO replaces an outgoing non-famine CEO, and zero if CEO turnovers do not involve changes in CEO famine experience and both CEOs have not experienced the famine. In Column (2), *CEO change 2* equals one if a non-famine CEO replaces an outgoing famine-CEO, and zero if CEO turnovers do not involve changes in CEO famine experience and both CEOs have experienced the famine. *Post Turnover* equals one for post-CEO-turnover window (i.e., t to t$+$2), and zero for pre-CEO-turnover window (i.e., t$-$2 to t$-$1). The interaction terms, *CEO Change 1* $× $*Post Turnover* and *CEO Change 2*$ × $*Post Turnover*, capture the causal effect of CEO early-life famine experience on CSR performance. The set of controls includes 14 variables and definitions of all variables are in Appendix A. *t*-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 4 Two-stage instrumental-variable estimation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) |
|  | Garden Variety 2SLS | Lewbel approach |
|  | First Stage | Second Stage | First Stage | Second Stage |
|   | *Famine\_CEO* | *CSR* | *Famine\_CEO* | *CSR* |
| *Famine\_CEO* |  | -5.481\*\*\* |  | -8.156\*\* |
|  |  | (-3.948) |  | (-2.317) |
| *Geographic IV* | 3.291\*\*\* |  |  |  |
|  | (17.475) |  |  |  |
| $$IV\_{1}$$ |  |  | 0.023\*\*\* |  |
|  |  |  | (2.800) |  |
| $$IV\_{2}$$ |  |  | 0.521\*\*\* |  |
|  |  |  | (5.120) |  |
| Controls | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | No | No | No |
| Firm FE | No | Yes | Yes | Yes |
| Generation FE | No | Yes | Yes | Yes |
| Birthplace FE | No | Yes | Yes | Yes |
| Office Province FE | No | Yes | Yes | Yes |
| N | 3680 | 3642 | 3932 | 3932 |
| Pseudo R-sq | 0.498 |  |  |  |
| adj. R-sq |  | 0.289 |  | -0.215 |
| First-stage *F*-test |  |  | 20.82 |  |
| Weak identification test: |  |  |  |  |
| Cragg-Donald F statistic |  | 364.055 |  | 74.229 |
| Under-identification test: |  |  |  |  |
| Anderson statistic ($Chi^{2}$*p*-value) |  | 0.001 |  |  |
| Kleibergen-Paap statistic ($Chi^{2}$*p*-value) |  |  |  | 0.001 |
| Over-identification test: |  |  |  |  |
| Sargan statistic ($Chi^{2}$*p*-value) |  | 0.347 |  |  |
| Hansen J statistic ($Chi^{2}$*p*-value) |  |  |  | 0.839 |

*Notes:* This table presents the estimation results of the Garden Variety two-stage least squares regression with instrumental variable in Columns (1) and (2), and the two-stage regression results of Lewbel’s (2012) approach in Columns (3) and (4). *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. *Geographic IV* is a 5-year lagged percentage of firms with famine-CEOs that are in the same region as the focus firm but are not in the same industry. $IV\_{1}$and$ IV\_{2} $are two generated instrumental variables based on Lewbel’s (2012) approach. The set of controls includes 14 variables and definitions of all variables are in Appendix A. *t*-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 5 Propensity score matching (PSM) method

|  |
| --- |
| Panel A: Mean of variables  |
|   | Before PSM |   | After PSM |
|   | Control | Treatment | Difference |   | Control | Treatment | Difference |
| *Female* | 0.042 | 0.024 |  0.018\*\* |  | 0.026 | 0.024 | 0.002 |
| *Age* | 51.522 | 59.612 |  -8.090\*\*\* |  | 59.856 | 59.612 | 0.244 |
| *Tenure* | 4.286 | 5.916 | -1.630\*\*\* |  | 5.726 | 5.916 | -0.190 |
| *Degree* | 3.660 | 3.214 |  0.446\*\*\* |  | 3.181 | 3.214 | -0.032 |
| *Top Ten* | 57.064 | 55.805 | 1.259\* |  | 57.520 | 55.805 | 1.715\* |
| *Executive* | 0.013 | 0.006 |  0.007\*\*\* |  | 0.007 | 0.006 | 0.001 |
| *Independent* | 0.371 | 0.370 | 0.001 |  | 0.370 | 0.370 | 0.000 |
| *Leverage* | 0.518 | 0.503 | 0.015\* |  | 0.509 | 0.503 | 0.006 |
| *Size* | 22.897 | 23.090 | -0.192\*\*\* |  | 23.138 | 23.090 | 0.048 |
| *ROA* | 0.044 | 0.059 | -0.016\*\*\* |  | 0.055 | 0.059 | -0.004 |
| *TQ* | 1.892 | 1.943 | -0.051 |  | 1.849 | 1.943 | -0.095 |
| *ST* | 0.009 | 0.002 |  0.008\* |  | 0.000 | 0.002 | -0.002 |
| *SOE* | 0.684 | 0.663 | 0.021 |  | 0.689 | 0.663 | 0.026 |
| *Development* | 7.661 | 7.241 |  0.420\*\*\* |   | 7.188 | 7.241 | -0.053 |
| Panel B: PSM-matched regression result  |
|   | (1) |
|   | *CSR* |
| *Famine\_CEO* | -6.146\*\*\* |
|  | (-2.706) |
| Controls | Yes |
| Year FE | Yes |
| Firm FE | Yes |
| Generation FE | Yes |
| Birthplace FE | Yes |
| Office Province FE | Yes |
| N | 1170 |
| adj. R-sq | 0.435 |

Notes: This table reports the OLS regression results of PSM matched samples. The matching procedure employed is one-to-one nearest neighbour matching with no replacement. The dependent variable is the overall CSR scores from RKS. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definitions of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 6 Placebo tests

|  |  |
| --- | --- |
|  | Panel A: Placebo tests with pseudo GCF period |
|  |   | (1) | (2) |
|  |   | *CSR* | *CSR* |
|  | *Famine\_CEO1949 – 1951* | -1.572 |  |
|  |  | (-0.936) |  |
|  | *Famine\_CEO1969 – 1971* |  | 0.646 |
|  |  |  | (0.951) |
|  | Controls | Yes | Yes |
|  | Year FE | Yes | Yes |
|  | Firm FE | Yes | Yes |
|  | Generation FE | Yes | Yes |
|  | Birthplace FE | Yes | Yes |
|  | Office Province FE | Yes | Yes |
|  | N | 3978 | 3978 |
|  | adj. R-sq | 0.417 | 0.417 |
| Panel B: Placebo tests with *pseudo-famine* |  |
|  | Coefficient |
| Actual value for *Famine\_CEO* in Table 2 | -1.910 |
| Min value for pseudo-famine severity | -1.383 |
| 1% percentile value for pseudo-famine severity | -1.222 |
| 5% percentile value for pseudo-famine severity | -0.917 |
| 25% percentile value for pseudo-famine severity | -0.607 |
| Mean value for pseudo-famine severity | -0.371 |
| Median value for pseudo-famine severity | -0.366 |
| 75% percentile value for pseudo-famine severity | -0.144 |
| 95% percentile value for pseudo-famine severity | 0.182 |
| 99% percentile value for pseudo-famine severity | 0.463 |
| Max value for pseudo-famine severity | 0.561 |

*Notes:* This table presents the OLS regression results of placebo tests. In Panel A, we assume the GCF happens ten years before or after its actual occurrence. In Panel B, we present the empirical distribution of placebo tests in which we randomly assign CEOs’ birthplace for 500 times. The dependent variable is the CSR score from RKS. *Famine\_CEO1949 - 1951* is a dummy variable which equals one if the CEO was six to sixteen years old during the hypothetical GCF (1949-1951) and was born in a province that was severely impacted by the GCF, and otherwise zero. *Famine\_CEO1969 – 1971* is a dummy variable which equals one if the CEO was six to sixteen years old during the hypothetical GCF (1969-1971) and was born in a province that was severely impacted by the GCF, and otherwise zero. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definitions of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 7 Internal and external CSR

|  |  |  |
| --- | --- | --- |
|   | (1) | (2) |
|   | *Internal CSR* | *External CSR* |
| *Famine\_CEO* | -0.008 | -0.042\*\* |
|  | (-0.720) | (-2.558) |
| Controls | Yes | Yes |
| Year FE | Yes | Yes |
| Firm FE | Yes | Yes |
| Generation FE | Yes | Yes |
| Birthplace FE | Yes | Yes |
| Office Province FE | Yes | Yes |
| N | 3929 | 3929 |
| pseudo R-sq | 0.003 | 0.023 |

*Notes:* This table presents the regression results of the impact of famine-CEOs on different dimensions of CSR: internal CSR and external CSR. The dependent variable is *Internal CSR* in Column (1) and *External CSR* in Column (2). *Internal CSR* measures protection towards internal stakeholders including employees and shareholders. *External CSR* measure protection towards external stakeholders including customers and consumers, suppliers, environment and society. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definitions of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 8 Different age cohorts

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) |
|   | *CSR* | *CSR* | *CSR* | *CSR* |
| $$Severe Famine^{0-5yrs} $$ | 1.220 |  |  |  |
|  | (1.548) |  |  |  |
| $$Severe Famine^{6-11yrs} $$ |  | -2.125\*\* |  |  |
|  |  | (-2.387) |  |  |
| $$Severe Famine^{12-16yrs} $$ |  |  | -0.371 |  |
|  |  |  | (-0.212) |  |
| $$Severe Famine^{\geq 17yrs} $$ |  |  |  | 2.697 |
|  |  |  |  | (0.793) |
| Controls | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes |
| Generation FE | Yes | Yes | Yes | Yes |
| Birthplace FE | Yes | Yes | Yes | Yes |
| Office Province FE | Yes | Yes | Yes | Yes |
| N | 3978 | 3978 | 3978 | 3978 |
| adj. R-sq | 0.418 | 0.419 | 0.417 | 0.417 |

*Notes:* This table presents the results from the panel regression of the relation between CEOs’ GCF experience and CSR performance when CEOs experienced the GCF at different age cohorts. The dependent variable is the CSR score from RKS. $Severe Famine^{0-5yrs}$ is a dummy variable which equals one if the CEO was zero to five years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. $Severe Famine^{6-11yrs}$ is a dummy variable which equals one if the CEO was six to eleven years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. $Severe Famine^{12-16yrs}$ is a dummy variable which equals one if the CEO was twelve to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. $Severe Famine^{\geq 17yrs}$ is a dummy variable which equals one if the CEO was greater than seventeen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definitions of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 9 Conditional effects

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) |
|   | *CSR* | *CSR* | *CSR* | *CSR* |
| *Famine\_CEO* $×$ *Hometown Bias* | 2.068\* |  |  |  |
|  | (1.803) |  |  |  |
| *Famine\_CEO* $×$ *Political Connection* |  | -2.632\*\* |  |  |
|  |  | (-2.104) |  |  |
| *Famine\_CEO* $×$ *CEO Sharedholding* |  |  | -0.278\*\* |  |
|  |  |  | (-2.060) |  |
| *Famine\_CEO* $×$ *SOE* |  |  |  | 2.299\* |
|  |  |  |  | (1.676) |
| *Famine\_CEO* | -3.291\*\*\* | -1.178 | -1.848\*\* | -3.893\*\*\* |
|  | (-2.987) | (-1.258) | (-2.194) | (-2.924) |
| *Hometown Bias* | 0.287 |  |  |  |
|  | (0.527) |  |  |  |
| *Political Connection* |  | 0.885 |  |  |
|  |  | (1.325) |  |  |
| *CEO Shareholding* |  |  | 0.106\* |  |
|  |  |  | (1.708) |  |
| *SOE* | -1.183 | -1.132 | -1.263 | -1.581 |
|  | (-0.973) | (-0.929) | (-1.016) | (-1.270) |
| Controls | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes |
| Generation FE | Yes | Yes | Yes | Yes |
| Birthplace FE | Yes | Yes | Yes | Yes |
| Office Province FE | Yes | Yes | Yes | Yes |
| N | 3978 | 3978 | 3884 | 3978 |
| adj. R-sq | 0.420 | 0.420 | 0.413 | 0.419 |

*Notes:* This table presents the results from the OLS regression of the conditional effects of famine-CEOs on CSR performance. The dependent variable is the CSR score from RKS. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. *Famine\_CEO* $×$ *Hometown Bias* is a dummy variable which equals one if a famine-CEO works in a firm that locates at his or her hometown., and otherwise zero. *Famine\_CEO* $×$ *Political Connection* is a dummy variable which equals one if a CEO had an intense GCF experience and is politically connected, and otherwise zero. *Famine\_CEO* $×$ *CEO Shareholding* is the interaction between CEOs’ intense GCF experience and their shareholding ratio. *Famine\_CEO* $×$ *SOE* is a dummy variable which equals one if a CEO had an intense GCF experience and the firm is SOE, and otherwise zero. The set of controls includes 16 variables and definitions of all variables are in Appendix A. *t*-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 10 Excluding confounding events and effects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) | (5) | (6) |
|  | War of Resistance | Civil War | Cultural Revolution | Tangshan Earthquake | All Four Events | Princeling CEOs |
|   | *CSR* | *CSR* | *CSR* | *CSR* | *CSR* | *CSR* |
| *Famine\_CEO* | -2.107\*\* | -2.265\*\* | -1.906\*\* | -1.590\* | -1.772\* | -1.823\*\* |
|  | (-2.365) | (-2.395) | (-2.264) | (-1.832) | (-1.724) | (-2.192) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Generation FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Birthplace FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Office Province FE | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 3876 | 3723 | 3925 | 3853 | 3552 | 3961 |
| adj. R-sq | 0.410 | 0.413 | 0.415 | 0.429 | 0.418 | 0.420 |

*Notes:* This table presents OLS regression results of Equation (1) using six subsamples to exclude the confounding effects from the War of Resistance against Japanese Aggression, the Chinese Civil War, the Cultural Revolution, the Tangshan Earthquake, and CEOs’ princeling background. The subsample of Column (1) excludes CEOs who were born in 1945 or earlier to exclude the confounding effects from the War of Resistance against Japanese Aggression. The subsample of Column (2) excludes CEOs who were born in 1949 or earlier to exclude the confounding effects from the Chinese Civil War. Following Hu et al. (2020), the subsample of Column (3) excludes CEOs who were born after 1976 to control for the impacts from the Cultural Revolution. The subsample of Column (4) excludes CEOs who were born in Hebei province and were born in 1976 or earlier, to exclude the confounding effects of the Tangshan Earthquake. The result of Column (5) controls for the potential influence of all four events. In particular, the fifth subsample includes all the CEOs who were born between 1949 and 1976 and were not born in Hebei province in 1976 or earlier. The subsample of Column (6) excludes famine-CEOs who have a princeling background. The dependent variable is the CSR score from RKS. *Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 14 variables and definitions of all variables are in Appendix A. t-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

# Table 11 Economic outcomes

|  |  |  |
| --- | --- | --- |
|   | (1) | (2) |
|   | *Dividend Payout* | *Excess Perk* |
| *Famine\_CEO* | -0.054\*\* | 0.006\*\*\* |
|  | (-2.064) | (2.714) |
| *Size* | 0.075\*\*\* | 0.000 |
|  | (3.293) | (0.151) |
| *ROA* | -0.026 | 0.000 |
|  | (-0.132) | (0.065) |
| *Leverage* | -0.449\*\*\* | 0.003 |
|  | (-5.363) | (0.943) |
| *TQ* | -0.008 | 0.000 |
|  | (-1.015) | (0.090) |
| *Duality* | 0.014 | -0.002 |
|  | (0.807) | (-1.011) |
| *Independent* | -0.208 | 0.013 |
|  | (-1.156) | (1.292) |
| *Board*  | -0.031 |  |
|  | (-0.501) |  |
| *ST* | -0.038 |  |
|  | (-1.140) |  |
| *SOE* | -0.065 | -0.010\* |
|  | (-0.963) | (-1.848) |
| *CFO* | -0.093 | -0.001 |
|  | (-1.161) | (-0.273) |
| *Listed Age* | -0.014 |  |
|  | (-0.348) |  |
| *Investment*  | 0.206\* |  |
|  | (1.718) |  |
| *HERF10* | 0.126 |  |
|  | (0.875) |  |
| *Compensation* |  | 2.598\*\* |
|  |  | (2.471) |
| *Executive Compensation* |  | -0.001 |
|  |  | (-0.088) |
| *Development* |  | -0.001 |
|  |  | (-1.219) |
| *Constant* | -0.992\* | -0.002 |
|  | (-1.937) | (-0.074) |
| Year FE | Yes | Yes |
| Firm FE | Yes | Yes |
| Generation FE | Yes | Yes |
| Birthplace FE | Yes | Yes |
| Office Province FE | Yes | Yes |
| N | 3289 | 1550 |
| adj. R-sq | 0.045 | 0.119 |

*Notes:* This table presents the OLS regression results of our additional tests. The dependent variables are *Dividend Payout* (Column (1)) and *Excess Perk* (Column (2)). *Dividend Payout* is annual cash dividend per share divided by earnings per share following Yang et al. (2020). *Excess Perk* is calculated following Dong et al. (2021) which is based on eight categories of perks: office-related expenses, communication expenses, travel expenses, entertainment expenses, training expenses, board expenses, company car expenses, and conference expenses. *. Famine\_CEO* is a dummy variable which equals one if the CEO was six to sixteen years old during the GCF and was born in a province that was severely impacted by the GCF, and otherwise zero. The set of controls includes 13 variables in Column (1) following Firth et al. (2016) and 11 variables in Column (2) following Rajan and Wulf (2006), Yermack (2006) and Dong et al. (2021). Definitions of all variables are in Appendix A. *t*-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Appendix A: Variable definitions

|  |  |
| --- | --- |
| **Variables** | **Definition** |
| *Age* | The age of a CEO |
| *Board* | The natural log of the total number of directors on the board |
| *CSR* | A firm’s CSR rating score from Rankins (RKS), a leading independent CSR-rating entity in China |
| *CSR Content* | The subcomponent of RKS CSR score that measures a firm’s CSR performance in areas of economic performance, labour and human rights, environment, fair operation, consumers, and community participation and development |
| *CSR Macrocosm*  | The subcomponent of RKS CSR score that measures a firm’s overall strategy, governance and communication mechanisms to stakeholders in relation to CSR activities |
| *CSR Technique* | The subcomponent of RKS CSR score that measures a firm’s CSR reporting quality |
| *CSR Industry* | The subcomponent of RKS CSR score that measures a firm’s CSR performance based on its industry |
| *CEO shareholding* | The ratio of shares holds by a CEO |
| *CFO* | Net operating cash flow scaled by total assets |
| *Compensation*  | The log of the total compensation of a CEO |
| *Degree* | The education level of a CEO, which equals one if a CEO’s education level is high school and below, two if a CEO has completed a diploma, three if a CEO has completed a bachelor’s degree, four if a CEO has completed a master’s degree, and five if a CEO has completed a PhD |
| *Development*  | An index which measures the development level of each province in China |
| *Dividend Payout* | Annual cash dividend per share divided by earnings per share  |
| *Duality* | A dummy variable equalling one if both the titles of Chairman and General Manager of a firm are held by the same person, and zero otherwise |
| *Executive* | The percentage of shares held by senior executives |
| *Executive Compensation* | Top three executives’ compensation standardised by total sales |
| *Excess Perk* | Excess perk consumption following the measure of Gul, Cheng, and Leung (2011), Xu, Li, Yuan, and Chan (2014), and Dong et al. (2021) |
| *External CSR* | The total sum of the dummy variables concerning suppliers, customers and consumers, environment and society |
| *Famine\_CEO* | A dummy variable which equals one if the CEO was six to sixteen years old during the GCF and was born in a province that was severely impacted by the GCF, and otherwise zero |
| $$Famine\\_CEO^{0-5yrs}$$ | A dummy variable which equals one if the CEO was zero to five years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| $$Famine\\_CEO^{6-11yrs}$$ | A dummy variable which equals one if the CEO was six to eleven years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| $$Famine\\_CEO^{12-16yrs}$$ | A dummy variable which equals one if the CEO was twelve to sixteen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| $$Famine\\_CEO^{\geq 17yrs}$$ | A dummy variable which equals one if the CEO was greater than seventeen years old during the GCF (1959-1961) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| *Famine\_CEO1949 - 1951* | A dummy variable which equals one if the CEO was six to sixteen years old during the hypothetical GCF (1949-1951) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| *Famine\_CEO1969 – 1971* | A dummy variable which equals one if the CEO was six to sixteen years old during the hypothetical GCF (1969-1971) and was born in a province that was severely impacted by the GCF, and otherwise zero |
| *Female* | A dummy variable which equals one if the CEO is female, and otherwise zero |
| *Geographic IV* | A 5-year lagged percentage of firms with famine-CEOs that are in the same region as the focus firm but are not in the same industry |
| *GDP* | The natural log of GDP per capita of the province where a firm is located |
| *HERF10* | The sum of the squared percentage of the top ten shareholders’ shareholding |
| *Hometown Bias* | A dummy variable which equals one if a CEO works in a firm that locates at his or her hometown., and otherwise zero |
| *Independent* | The ratio of the number of independent directors on the board to the total number of directors on the board |
| *Internal CSR* | The total sum of dummy variables concerning employees and shareholders |
| *Investment* | The total investment expenditure scaled by total assets |
| *Leverage* | The ratio of total debt to total assets |
| *Listed Age*  | The natural log of the years a firm is listed on stock exchanges |
| *LnTotalComp* | The natural log of all employees’ compensation |
| *Perk* | The aggregate amount of eight categories of perks: office-related expenses, communication expenses, travel expenses, entertainment expenses, training expenses, board expenses, company car expenses, and conference expenses |
| *Political Connection* | A dummy variable which equals one if a CEO is a current or former government or military officer, a current or former member of the Chinese People’s Congress (CPC), or a current or former member of the Chinese People's Political Consultative Conference (CPPCC), and otherwise zero |
| *ROA* | Net income divided by total assets |
| *Size* | The natural logarithm of total assets |
| *SOE* | A dummy variable equals one if the ultimate controlling shareholder is the Chinese government, whether at the central, provincial or local level, and otherwise zero |
| *ST* | A firm which is identified by CSRC as experiencing financial distress |
| *Tenure* | The tenure of a CEO |
| *TQ* | Market value divided by replacement value |
| *Top Ten* | The percentage of shares held by the largest ten shareholders |

Appendix B: Measuring excess perk consumption

|  |  |
| --- | --- |
|   | (1) |
|   | *Perk* |
| *LnTotalComp* | 0.001 |
|  | (1.314) |
| *Size* | -0.003\*\*\* |
|  | (-6.485) |
| *GDP* | 0.001 |
|  | (0.434) |
| Year FE | Yes |
| Industry FE | Yes |
| N | 2483 |
| adj. R-sq | 0.052 |

Notes: This table reports the OLS regression results of the regression model that estimates excess perk consumption (*Excess Perk*). The dependent variable, *Perk*, is measured as the sum of the eight categories of perk expenditure (i.e., office-related expenses, communication expenses, travel expenses, entertainment expenses, training expenses, board expenses, company car expenses, and conference expenses) scaled by total revenue. Following Dong et al. (2021), we control for the natural log of all employees’ compensation (*LnTotalComp*), the natural log of total assets (*Size*), and the natural log of GDP per capita of the province where a firm is located (*GDP*). All variables are defined in Appendix A. *t*-statistics are in parentheses. Standard errors are robust and clustered at firm levels. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

1. CEOs’ traumatic experiences of the Great Depression (Malmendier et al., 2011), military experiences (Benmelech and Frydman, 2015), natural disasters with extreme consequences (Bernile et al., 2017) and the Great Chinese Famine (e.g., Zhang, 2017; Feng and Johansson, 2018) impact their risk preference. The risk averse imprint leads to conservative financial decisions such as lower debt (Malmendier et al., 2011), higher cash holdings (Zhang, 2017) and fewer takeovers (Bernile et al., 2017). [↑](#footnote-ref-1)
2. CSR is positively correlated with employee commitment (Rupp et al., 2018), relationship with government (Campbell, 2007; Wang and Qian, 2011), social legitimacy (Fombrun, 1996), and long-term market performance (Edmans, 2011, 2012). [↑](#footnote-ref-2)
3. Our study is similar to O’Sullivan et al. (2021) as they present that U.S. CEOs’ early-life natural disaster (e.g., earthquakes, hurricanes) experiences is positively related to CSR, compatible to altruism theory. However, our study differs and extends O’Sullivan et al. (2021) in three important ways. First, our finding of a negative relation between famine-CEOs and CSR performance is unique and substantiates the egoism imprints. Second, we prove that famine-CEOs pay less dividend but negotiate higher excess perks validating the egoism effects of individuals who experience early-life human-made disaster. Finally, our empirical setting is stronger to offer robust results as we include high-dimensional fixed-effects to control for unobserved omitted variables at micro-levels including firms, birthplace, consider CEO traits, corporate governance features, firm characteristics, and geographical conditions, and adopt several approaches to address endogeneity. [↑](#footnote-ref-3)
4. McGuinness et al. (2017) show that greater board gender diversity is associated with stronger CSR performance. Chen et al. (2018) find that China’s 2008 CSR disclosure mandate generates positive social externalities (i.e., a decrease in wastewater and $SO\_{2}$ emission levels) at the expense of firm profitability. [↑](#footnote-ref-4)
5. A famous example is the 2008 Chinese milk scandal which involved the Sanlu Group contaminating milk and infant formula with melamine to lower production costs. This resulted in an estimated 300,000 babies falling sick, and the associated kidney damage led to six fatalities. Tian Wenhua, the chairman of Sanlu Group, was 17 years old when the GCF started. See also, https://www.forbes.com/sites/yanzhonghuang/2014/07/16/the-2008-milk-scandal-revisited/?sh=7643b9124105. [↑](#footnote-ref-5)
6. See also, https://www.theguardian.com/world/2013/jan/01/china-great-famine-book-tombstone. [↑](#footnote-ref-6)
7. As a comparison, the Irish Potato Famine and World War I had estimated deaths of 1 million and 20 million (9.7 million combatants and about 10 million civilians), respectively. See also, https://www.theirishstory.com/2016/10/18/the-great-irish-famine-1845-1851-a-brief-overview/#.Yfsv-6gzabg and <http://www.centre-robert-schuman.org/userfiles/files/REPERES%20%E2%80%93%20module%201-1-1%20-%20explanatory%20notes%20%E2%80%93%20World%20War%20I%20casualties%20%E2%80%93%20EN.pdf>. [↑](#footnote-ref-7)
8. Liu Shaoqi, Chairman of the People’s Republic of China at the time, publicly stated that the tragic famine was caused “70% by man-made errors and 30% by natural disasters” (Chang, 2003, p.234). The central government of China also stated in an official document *Resolution on Several Historical Issues of the Party Since the Founding of the People’s Republic of China* that the three years of difficulties from 1959 to 1961 was mainly caused by the Great Leap Forward and the Anti-Rightist Campaigns, in addition to some natural disasters and the Sino-Soviet split. See also, http://www.gov.cn/test/2008-06/23/content\_1024934\_2.htm. [↑](#footnote-ref-8)
9. For example, Malmendier et al. (2011) find that CEOs who have lived through the Great Depression prefer internal finance instead of external debt. Bernile et al. (2017) show that CEOs who have experienced the extreme downside of fatal disasters are risk-averse and tend to adopt conservative corporate policies (i.e., lower leverage, higher cash holdings), while those CEOs who have experienced fatal disasters without witnessing extremely negative consequences are risk-loving and prefer aggressive corporate policies (i.e., higher leverage, lower cash holdings). [↑](#footnote-ref-9)
10. See, for example, https://www.theguardian.com/world/2013/jan/01/china-great-famine-book-tombstone. [↑](#footnote-ref-10)
11. Some studies document a positive correlation between CSR and short-term firm performance (e.g., ROA). However, the positive relation between CSR and short-term firm performance may subject to reversed causality (Edmans, 2011, 2012). [↑](#footnote-ref-11)
12. See, http://www.xinhuanet.com/2020-03/31/c\_1125794120.htm. [↑](#footnote-ref-12)
13. See also: https://www.maigoo.com/goomai/256680.html (in Chinese). [↑](#footnote-ref-13)
14. Following Hu et al. (2020), we calculate the abnormal death ratio as: {[(Average death ratio during GCF (1959-1961) *minus* Average death ratio for the three years prior to GCF (1956-1958)] *plus* [(Average death ratio during GCF (1959-1961) *minus* Average death ratio for the three years after GCF (1962-1964)]}/2. The death ratio for each province is available from the China Statistical Yearbook. [↑](#footnote-ref-14)
15. The China Securities Regulatory Commission (CSRC) defines Chinese special treatment (ST) firms as inefficient and financially distressed firms that have experienced negative net profits for two consecutive fiscal years. [↑](#footnote-ref-15)
16. CEOs in the same generation may have similar preferences that affect CSR activities due to common social, environmental and economic experiences (e.g., Malmendier and Nagel, 2011; Hu et al., 2020). CEOs who share the same hometown could also develop similar social preferences which reflect their local culture (Rupp et al., 2018; Fan et al., 2022). Thus, we control for CEO age cohorts and hometown fixed effects. We also control for office location-fixed effects to account for the potential effects of unobservable provincial-level geographic trends. [↑](#footnote-ref-16)
17. The estimated coefficient on *Famine\_CEO* is -1.964, and the median and standard deviation of the overall CSR scores are 35.48 and 12.27, respectively. We facilitate our interpretation of regression coefficient estimates following Cronqvist and Yu (2017) and Hegde and Mishra (2019). [↑](#footnote-ref-17)
18. “Macrocosm”, “Content”, “Technique” and “Industry” weights account for 30%, 45%, 15%, and 10%, respectively. See detailed information in this documentation: <http://www.rksratings.cn/ueditor/php/upload/file/20201101/1604217870886834.pdf> (in Chinese). [↑](#footnote-ref-18)
19. Endogenous CEO turnovers are turnover events where the board members elect a CEO who matches with their expectations. By contrast, exogenous turnovers involve retirements due to deaths, illness and, due to the limited observations, voluntary retirements where the departing CEOs are aged 60 years old and older (Urban, 2019). [↑](#footnote-ref-19)
20. The MIT Professor Jerry Hausman used this term in 1975 to describe the problem of replacing a nonlinear function of an endogenous explanatory variable with the same nonlinear function of fitted values from a first-stage estimation (Wooldridge, 2002). [↑](#footnote-ref-20)
21. For example, technology-based firms are more likely to select CEOs who are high in propensity for or receptivity to innovation (Datta and Guthrie, 1994). [↑](#footnote-ref-21)
22. More specifically, we resolve the concern that common industry trends drive both the appointment of famine-CEOs and CSR performance among geographically proximate firms. [↑](#footnote-ref-22)
23. In the presence of heterogenous treatment effect across a population, it is plausible that the “local average treatment effect” (LATE) uncovered by the 2SLS-IV estimate is larger than the average treatment effect (ATE) estimated by the OLS regression over the entire population (Jiang, 2017). This is because an exogenous shock may substantially affect the probability of a treatment but is limited in assigning the treatment status completely randomly. [↑](#footnote-ref-23)
24. Our baseline results remain robust when using the Heckman two-stage selection model with the same instrument variable (*Geographic IV*) to address potential sample selection bias. [↑](#footnote-ref-24)
25. We use probit regression to estimate the propensity score. [↑](#footnote-ref-25)
26. For example, CBS employees leaked their former CEO Leslie Moonves’ misconduct report to the press ahead of its official release to CBS board members. See also, https://www.hollywoodreporter.com/tv/tv-news/cbs-ceo-press-reports-leslie-moonves-leaked-report-are-troubling-1167183/. [↑](#footnote-ref-26)
27. The numbers of CEOs who experienced the intense GCF at the age cohorts of 0-5, 6-11, 12-16 and 17 years old onwards are 458, 482, 90, and 38, respectively. [↑](#footnote-ref-27)
28. Following Fan et al. (2007), we define a CEO as having political connection (*Political Connection*) if he or she is a current or former government or military officer, a current or former member of the Chinese People’s Congress (CPC), or a current or former member of the Chinese People's Political Consultative Conference (CPPCC). While *CEO shareholding* is the ratio of shares holds by a CEO. [↑](#footnote-ref-28)
29. Princelings are also referred to as the “red nobility”. Following Li et al. (2019), we identify a princeling CEO as a direct descendant of: (1) a former senior bureaucrat of the Chinese Communist Party; and (2) a former senior bureaucrat in a provincial or higher-level position. [↑](#footnote-ref-29)
30. Given the continuous rule of Chinese Community Party since the establishment of the nation, princelings can benefit from nepotism and cronyism (Li et al., 2019). They may have enjoyed the privilege of sufficient food or moving to provinces that were less exposed to the GCF. See also, https://www.nytimes.com/2012/05/18/world/asia/china-princelings-using-family-ties-to-gain-riches.html. [↑](#footnote-ref-30)
31. This phenomenon is likely to be more pronounced in China. This is because Chinese executives have the authority to decide perk consumption level, as perks are classified as expenditure in China, such as catering, entertainment and travel expenses (Dong et al., 2021). [↑](#footnote-ref-31)
32. We follow Gul et al. (2011), Xu et al. (2014) and Dong et al. (2021) in measuring excess perk consumption. From a special item in the column of “other cash payment related to operating activities” in the cash flow statement, we manually identify eight categories related to perks: (1) office-related expenses, (2) communication expenses, (3) travel expenses, (4) entertainment expenses, (5) training expenses, (6) board expenses, (7) company car expenses, and (8) conference expenses. The standardised perk consumption (*Perk*) of a firm is measured as the sum of the above eight categories of perk expenditure scaled by its revenue. Excess perk consumption (*Excess Perk*) is the residual term from a regression model with perk consumption (*Perk*) as the dependent variable, and employee compensation (*LnTotalComp*), firm size (*Size*) and provincial GDP per capita (*GDP*) as the independent variables. Year- and industry-fixed effects are also included in the regression model. See Appendix B for the result of the OLS regression model which estimates excess perk consumption. [↑](#footnote-ref-32)