

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/363675489>

The mediating role of corporate social responsibility in corporate governance and firm performance

Article in *Journal of Cleaner Production* · September 2022

DOI: 10.1016/j.jclepro.2022.134165

CITATIONS

0

READS

113

4 authors:



Ella Guangxin Xu

University of Western Australia

3 PUBLICATIONS 3 CITATIONS

SEE PROFILE



Chris Graves

University of Adelaide

28 PUBLICATIONS 1,269 CITATIONS

SEE PROFILE



Yuan George Shan

University of Western Australia

28 PUBLICATIONS 194 CITATIONS

SEE PROFILE



Joey Wenling Yang

University of Western Australia

61 PUBLICATIONS 269 CITATIONS

SEE PROFILE

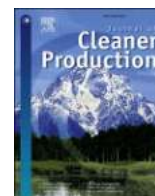
Some of the authors of this publication are also working on these related projects:



I am a Blockchain too... [View project](#)



wermer [View project](#)



The mediating role of corporate social responsibility in corporate governance and firm performance

Ella Guangxin Xu^a, Chris Graves^b, Yuan George Shan^{a,*}, Joey W. Yang^a

^a Department of Accounting and Finance UWA Business School, The University of Western Australia, Australia

^b Adelaide Business School, The University of Adelaide, Australia

ARTICLE INFO

Handling Editor: Zhifu Mi

JEL classification:

G34

M14

M41

Keywords:

CSR

Corporate governance

Firm performance

Family business

Mediation effect

ABSTRACT

This study investigates the mediating effect of corporate social responsibility on the relationship between corporate governance and firm performance and whether this effect varies between family and non-family businesses. Based on a cross-national sample of the 500 largest family businesses matched to a non-family business sample from 2009 to 2018, it has been found that corporate social responsibility partially mediates the relationship between corporate governance and firm performance in the full sample. Further, the mediation effect is stronger in family businesses than in non-family businesses. This supports the conjecture that in their pursuit of socioemotional wealth, family businesses are more likely to implement corporate governance to ensure corporate social responsibility, thus enhancing future firm performance. These findings provide insights for all stakeholders, from business owners to regulators and policymakers, aiming to improve and sustain business performance.

1. Introduction

Corporate social responsibility (CSR) has attracted the attention of both academia and businesses for more than three decades (Hasan et al., 2018; Javed et al., 2016; Okafor et al., 2021; Ye et al., 2021; Zaman et al., 2022). CSR is an important corporate activity that integrates environmental and social considerations into business strategies (Benlemlih and Bitar, 2018; Harjoto and Jo, 2011). The firms that prefer to engage in CSR may go beyond the basic legal requirements (Harjoto and Jo, 2011). When businesses owners believe that CSR pays off financially (Hasan et al., 2018; Javed et al., 2016) or brings financial improvement to organisations (Jeong et al., 2018; Okafor et al., 2021), they will implement CSR activities or signal their CSR engagement externally.

Despite the recognition that CSR plays a vital role in business performance, the fundamental rationale of how CSR acts remains a puzzle (Ye et al., 2021; Zaman et al., 2022). One of the schools of thought is that CSR is an extension of corporate governance (CG), which functions as an external mechanism that takes into consideration the concerns of

broader stakeholders (i.e. social or environmental activists), thereby meeting the fundamental goal of firms, which is to maximise firm performance (FP) (Harjoto and Jo, 2011). Others suggest that CG is a mechanism that effectively executes CSR (Okafor et al., 2021).¹ To the extent that CG determines organisational systems, procedures to align the incentives of managers with those of stakeholders and thereby reduce agency problems (Jensen and Meckling, 1976), both sides agree that effective CG could likewise signal a firm's CSR commitment to a broad range of stakeholders, enhancing firm's reputation (Harjoto and Jo, 2011) and maximising FP (Jo and Harjoto, 2011). While intuitive, research concerning a three-way examination of the relationship between CSR, CG and FP has been scant. For instance, recent study of Okafor et al. (2021) finds that CG moderates CSR's positive effect on Tobin's Q, but this finding is limited to a small number of 97 tech firms.

While the relationships between CSR and CG, between CG and FP, and between CSR and FP have been essential topics since 1960 (Jo and Harjoto, 2012), the investigation of these relationships has been mainly paused at the stage of direct relationships between CG, CSR and F, that

* Corresponding author.

E-mail addresses: ella.xu@research.uwa.edu.au (E.G. Xu), chris.graves@adelaide.edu.au (C. Graves), george.shan@uwa.edu.au (Y.G. Shan), joeywenling.yang@uwa.edu.au (J.W. Yang).

¹ Executing CSR includes a broad range of CSR activities including implementing CSR strategies, promoting CSR initiatives, improving CSR performance, etc.

is, prior studies have focused primarily on the relationships between two of these three constructs of CG, CSR or FP, respectively (Zaman et al., 2022).² The interrelations among CSR, CG and FP are still largely inconclusive (Liu and Zhang, 2017; Ye et al., 2021). Jo and Harjoto (2012) suggested that CG directly influences FP if there is no conflict of interest between stakeholders (i.e. agents) and shareholders (i.e. business owners). However, the existing conflict of interests may need CSR to act as a conflict-resolution mechanism between stakeholders and shareholders. In other words, CSR may play a mediating role in the relationship between CG and FP (i.e. CG → CSR → FP). This study fills this gap by investigating these complicated relationships.

The literature suggests that a firm's ownership type may influence its commitment to CSR (Cennamo et al., 2012). Supporting socioemotional wealth (SEW) theory, Berrone et al. (2012) argue that, family businesses (FBs) are more inclined to actively engage in CSR to enhance their SEW in comparison to non-family businesses (NFBs) (Cennamo et al., 2012; Cruz et al., 2014; Labelle et al., 2018). On the other hand, although publicly listed firms are expected to disclose their CSR activities in their annual reports and/or standalone sustainability reports (Servaes and Tamayo, 2013), these reports do not reveal whether firms are actually 'walking the talk' or are simply 'window dressing'. In that sense, FBs are more responsive to external stakeholders who do not have direct links to the business (Gomez-Mejia et al., 2011). This suggests that the ownership type of a firm also affects the nexus of CSR, CG and FP. As such, whether and how CSR mediates CG-FP relation may vary in FBs as opposed to NFBs.

To test our hypotheses, we use cross-national data from the top 500 FBs in the Global Family Business Index from 2009 to 2018.³ This index includes 500 largest firms owned by families worldwide, out of which 243 firms, across 30 countries, are publicly listed, worldwide with maximum representation of them from the U.S. After applying a propensity score matching procedure to FBs, a total of 3,286 firm-year observations including all FBs from the index and matched NFBs are employed in the regression analyses. We find that CSR partially mediates the relationship between CG and FP in the entire sample and the FB sample but not in the NFB sample.

This study contributes to the extant literature in several ways. First, it adds to previous findings on the traditional relationship between CG and FP by investigating the mediating effect of CSR and exploring the differences of such effects between FBs and NFBs using cross-national data. The findings highlight the value of incorporating CSR into long-term business strategies to assist firms in achieving superior performance. Second, most previous studies have employed structural equation modelling to analyse the mediation effects. We capture the mediation effect using a combination of analytical techniques, including the channels proposed by Baron and Kenny (1986), the three-stage procedure suggested by Wu et al. (2020) and the Sobel (1982, 1986) test (see Fig. 1B). These approaches clearly demonstrate the total, direct and indirect effects using simultaneous equations. Third, this study addresses CSR heterogeneity, which has not been well studied in cross-sectional samples (Javed et al., 2016; Zaman et al., 2022). After correcting for endogeneity bias, the results will be useful to explain how and why businesses are heterogeneous concerning diverse ownership types (i.e. FBs vs NFBs) in analysing FP. With theoretical support from the complementary perspective of agency and stakeholder, this study provides empirical evidence to aid other studies in explaining

conflicting findings that relate to stakeholders and shareholders.

The remainder of the chapter is structured as follows. Section 2 provides a brief overview of agency and stakeholder theories and develops the hypotheses. Section 3 outlines the sample selection and research design. Section 4 presents the results of the study. Section 5 presents the robustness tests. Section 6 discusses the results, and Section 7 concludes the study.

2. Theoretical framework and hypothesis development

We draw on a number of theories from neoclassical corporate finance and management to develop our hypotheses. We anchor on agency theory and stakeholder theory to develop our first hypothesis. Specifically, agency theory explains how CG upholds and balances the interests of shareholders and managers by mitigating agency conflicts and reducing agency costs (Jensen and Meckling, 1976), thus maximising firm value (Shankman, 1999). Effective CG will facilitate the implementation of CSR strategies and help employees become aware of the benefits of CSR for sustaining and increasing firm value, ensuring that firms become more socially responsible (Jo and Harjoto, 2012). We strengthen this view using stakeholder theory, whereby an organisation is seen as an assembly of stakeholders who can affect or be affected by organisational activities (Clarkson, 1995; Freeman, 1984). This theory considers the interests of all stakeholders, including internal stakeholders (i.e. employees or managers) and external stakeholders (i.e. communities). A firm committing to CSR will bring all stakeholders together to share and enhance firm value (Freeman et al., 2004) and balance short-term value creation with long-term value protection (Bingham et al., 2011; Cennamo et al., 2012). In contrast to the traditional competing views of agency and stakeholder theories in management studies, this study borrows the presumption that agency theory can be complementary or incorporated into a general stakeholder model. In this view, agency theory recognises partial stakeholders (i.e. shareholders (Freeman et al., 2004) and places duties and obligations above stakeholders' interests, whereas stakeholder theory infuses the assumptions of trust and loyalty into the agency relationship (Shankman, 1999). In short, agency theory mainly focuses on the interest of the shareholders and recognises that CG acts as a mechanism that affects both CSR and FP, whereas stakeholder theory includes the entire range of stakeholders and focuses on the moral role of CSR in assisting firms to achieve better FP.

Our second hypothesis that supports the role of firm ownership type is developed based on SEW theory, emphasizes the benefit of family firms' non-financial aspects, such as identity, the ability to exercise family influence, etc., that meet the family's affective needs (Gomez-Mejia and colleagues (2007). We discuss SEW theory in detail in Section 2.2.

2.1. Corporate governance, CSR and financial performance

Previous studies have demonstrated that CG plays an essential role in firm survival and growth by facilitating the implementation of sustainable CSR (Jo and Harjoto, 2011; Wang and Sarkis, 2017). Engaging in CSR can effectively promote firms' accountability, transparency and sustainability because CSR embraces environmental and social considerations within business strategies and activities (Benlemlih and Bitar, 2018; Jo and Harjoto, 2011). The effect of CG facilitating firms adopting CSR and the consequences of better FP can be explained through agency and stakeholder theoretical perspectives. First, according to agency theory, as an organisational mechanism, CG clarifies the roles, rights and responsibilities of shareholders and various stakeholders, and ensures that business decisions align with firm objectives (Jensen and Meckling, 1976), which include financial objectives (i.e. FP) and non-financial objectives (i.e. CSR performance). CG upholds and balances the interests of both shareholders and managers by mitigating agency conflicts and consequently reducing agency costs (Jensen and

² For example, CG is positively associated with CSR (Harjoto et al., 2015; Jo and Harjoto, 2012), and CG positively affects FP (Jo and Harjoto, 2011), while CSR positively influences FP (Hasan et al., 2018; Javed et al., 2017; Okafor et al., 2021).

³ The Global Family Business Index includes 500 largest FBs globally. The index was established by the Family Business Center at the University of St. Gallen, Switzerland, in cooperation with the Global Family Business Center of Excellence at Ernst & Young Global Limited (Xu et al., 2021, 2022).

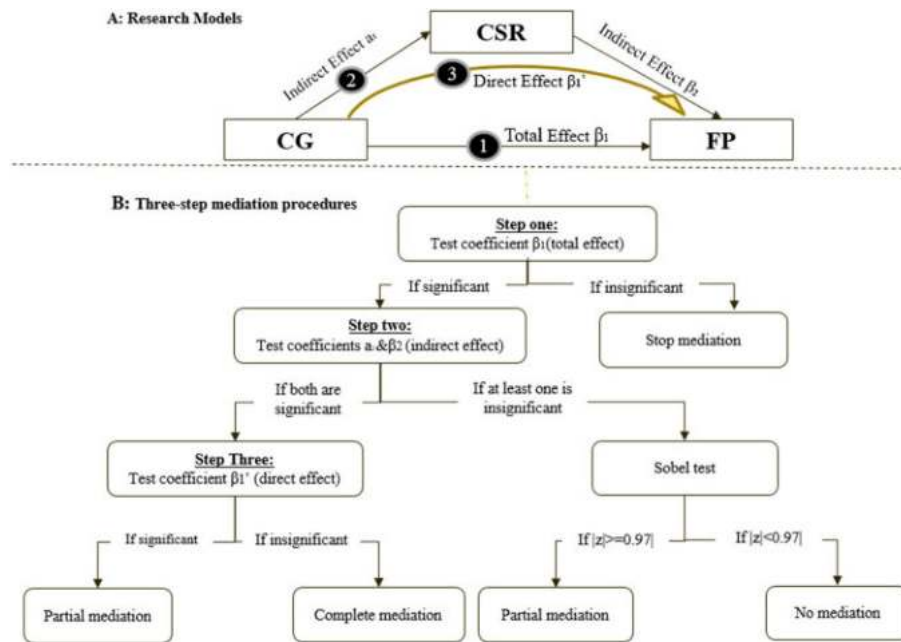


Fig. 1. Research design and mediation procedure.

Meckling, 1976), thus maximising FP (Shankman, 1999). CG also effectively monitors the choice and degree of engagement in CSR activities (Jo and Harjoto, 2011) and balances short-term value creation with long-term value protection (Bingham et al., 2011; Cennamo et al., 2012; Liu and Zhang, 2017).

Second, beyond the agency paradigm of conflicts between shareholders and agents, stakeholder theory provides a corresponding view of the relationship between CSR and FP. According to stakeholder theory, engagement in CSR will create firms' values (i.e. higher productivity) with its internal stakeholders and maintain its values (i.e. good reputation) with its external stakeholders (Cennamo et al., 2012). However, a firm commits to CSR to address broader stakeholders' expectations, which may scarify its short-term benefits of shareholders (Cennamo et al., 2012). Under such circumstances, CSR may act as an extension mechanism that takes broader stakeholders' concerns into account, to meet the fundamental goal of maximising financial FP (Harjoto and Jo, 2011; Rees and Rodionova, 2015).

In summary, sound CG enables the firm to engage CSR (i.e. execute CSR strategies and improve CSR performance) (Harjoto et al., 2015), signals to stakeholders their commitment to CSR, supports their claims of legitimacy, and creates an environment conducive to business development, in turn promoting FP (Wang and Sarkis, 2017). On the basis of the above discussion, we argue that CSR plays a mediating role in the relationship between CG and FP, improving the firm's legitimacy in the eyes of stakeholders. Thus, we hypothesise the following:

Hypothesis 1. CSR mediates the relationship between CG and FP.

2.2. CSR: family-owned businesses versus non-family businesses

According to agency and stakeholder theories, firms implement CG to increase their CSR engagement and achieve superior FP. Although some firms adopt CG to pursue CSR sincerely (i.e. walking the talk), others may do so to simply give the impression to stakeholders that they are pursuing CSR, a strategy known as 'greenwashing' (Seele and Gatti, 2017; Sekerci et al., 2022) or 'window dressing' (Wang and Sarkis, 2017). In other words, firms selectively disclose positive information on CSR performance while reserving negative information to boost their corporate image in the public eye. For instance, companies' advertising and enlarging of green characteristics mislead stakeholders' perceptions

(Du, 2015). This might be a benefit in the short term; however, it will harm the firm's reputation in the long run. As a consequence, the mediation effect of CSR hypothesised in H1 will differ. Considering that CSR engagement differs according to ownership type (Oh et al., 2011) and that FBs engage more proactively with broader stakeholders (Cennamo et al., 2012), we reassess H1 and argue that FBs may be more likely to 'walk the talk' when implementing CG to adopt CSR because families have been found to pursue non-economic objectives often referred to as SEW (Berrone et al., 2012; Cruz et al., 2014; Labelle et al., 2018).

SEW reflects the affective endowments of family owners. It comprises five dimensions: Family control, Identification of family members with the firm, Binding social ties, Emotional cohesiveness and Renewal of family bonds through dynastic succession (denoted by *FIBER*) (Berrone et al., 2012). Some of these SEW dimensions, such as *I* and *B*, are more aligned with FBs in achieving CSR objectives. The identity and social ties dimensions are most relevant to CSR. First, FB owners tie their identities closely with the business; they take a long-term orientation of business decisions and derive significant affective value from the business (Zellweger et al., 2013). To sustain their identity, FB owners are highly concerned about how they are perceived in the community (Bingham et al., 2011); thus, they strive to be good corporate citizens and uphold their reputations (Berrone et al., 2012; Cennamo et al., 2012). Second, FB owners are more willing to engage with external stakeholders (i.e. investors, suppliers and customers), fostering deep social ties and forming healthy, long-term social relationships by actively undertaking CSR or engaging in social activities in the community (Berrone et al., 2012; Labelle et al., 2018). Therefore, compared with NFBs, FBs are more committed to sincerely and actively engaging in CSR in order to build sustainable relationships with their external stakeholders (Gomez-Mejia et al., 2011).

In summary, the engagement of FBs in CSR is motivated by the family's desire to pursue SEW, which includes protecting the family's identity and strengthening its social ties with external stakeholders (Cennamo et al., 2012). Thus, compared with NFBs, FBs are more likely to adopt CG to monitor their CSR activities in pursuit of SEW and improved FP. Overall, it is expected that CSR plays a more substantial mediating role in FBs than in NFBs, which may engage in CSR activities merely to appease their stakeholders. Thus, we hypothesise the following:

Hypothesis 2. The mediating effect of CSR in the relationship between CG and FP is more likely to occur in FBs than in NFBs.

3. Research design

3.1. Sample and data

This study uses a sample of 243 publicly listed FBs sourced from the Top 500 Global Family Business Index from 30 countries worldwide from 2009 to 2018, with maximum representation of firms from the U.S. This sample has been used in recent studies of Xu et al. (2021, 2022). These FBs have been operated or controlled by families with constant ownership for more than two generations. At least one family member is a member of either the board of directors or the senior management team (Chua et al., 1999). Accounting and governance data are captured from global exchange markets via Refinitiv (previously known as Thomson Reuters), covering the 10-year period from 2009 to 2018. CSR data are sourced from Morningstar, with the monthly CSR value converted to a yearly value. Data from all databases are matched using International Securities Identification Numbers. To ensure that the FB and NFB samples have similar observable characteristics and yield an unbiased estimation, propensity score matching (PSM) is performed. A total of 3,286 firm-year observations are employed in the analysis. The sample selection procedure is summarised in Table 1.

3.2. Propensity score matching

To mitigate the possibility of endogenous variables existing in the regressions, PSM is applied prior to the main regressions. PSM is extensively used to create parallel samples by applying logit estimations (Rubin, 1997). PSM can efficiently remove overt bias (Rosenbaum and Rubin, 1984) to ensure exogenous data involved in an analysis by generating a control group (Rees and Rodionova, 2015). In this study, FBs are formed as the treatment group and NFBs are formed as the control group. The treatment and control groups are matched with the matching criteria of firm size, firm age, firm leverage, industry, year and within their countries. Using PSM strategies of one-to-one nearest without replacement, a total of 3,286 paired firm-year observations are employed in the regressions. Because the sample extends across 30 countries, we repeatedly apply the PSM procedure within the same countries, for example, identifying matching observations for FBs in the New York Stock Exchange (see Appendix A). In the first step, we apply a logit regression (see Panel A, Logit regression estimates) using the binary dependent variable *TREATMT*, which equals 1 for FBs and 0 for NFBs. In the second step, we estimate whether the covariate in balanced in the whole sample (treatment and control groups) by assessing the conditional independence assumption (CIA) (see Panel B, CIA). In the third step, we check the common support between treatment and control groups (see Panel C, Common support). At the end of this process, 356 matched observations that are satisfactory for regression analysis are

Table 1
Data and sample.

Criteria	Firm-year Observations
Initial FBs sample of Top 500 FBs list, during 2009–2018	5,000
Less: 257 Private FBs	(2,570)
Less: Publicly listed FBs with unavailable data	(426)
Obtained observations on global stock markets	1,904
Less: FBs observations without matched ones via PSM 1:1 procedure	(261)
Publicly listed FB observations in the treatment group	1,643
Generated NFB observations in the control group	1,643
Total observations (control group & treatment group)	3,286

Note: This table explains the sample selection process applied in this study. FB = family business; NFB = non-family business; PSM = propensity score matching.

obtained.

3.3. Variables and measurements

The definitions and measurements of the variables included in this study are outlined below and summarised in Appendix B.

3.3.1. Dependent variable

The dependent variable, FP, is a firm-level market-based performance, measured by using Tobin's Q, which is obtained from Refinitiv. As a forward-looking measurement, Tobin's Q serves as a proxy of an organisation's future growth opportunities and long-term investments (Sun et al., 2019; Xu et al., 2021, 2022) to estimate its market efficiency and FP (Jo and Harjoto, 2011; Tobin, 1969). Tobin's Q is computed as the sum of long-term debt and market capitalisation, divided by total assets (Shan, 2013; Surroca et al., 2010; Xu et al., 2021, 2022).

3.3.2. Independent variable

The independent variable, CG, is obtained from Refinitiv environmental, social and governance (ESG) data. CG is measured using a comprehensive measurement of CG mechanisms and behaviours that provide a solid organisational structure in the delegation of responsibility of daily management and embrace the three weighted pillars of management, shareholders and CSR strategy (Widyawati, 2021). The management pillar indicates the commitment to and effectiveness of the best practice CG principles; the shareholders' pillar specifies the effectiveness in the equal treatment of shareholders and the use of anti-takeover devices; and the CSR strategy pillar reflects the degree of incorporation of financial, social and environmental dimensions in the day-to-day decision-making processes. Each pillar consists of a different number of measures, and the count of the measures determines the weight of the respective pillars. Because of the consistency of CG within countries, the country's headquarters is used as the benchmark for calculating the CG score (Refinitiv, 2019).

3.3.3. Mediating variable

The mediating variable, CSR, is calculated as the annual average environmental and social performance scores sourced from Morningstar, which rates firms according to a comprehensive set of generic and industry-specific indicators applied to a particular peer group into three pillars of ESG performance (Xu et al., 2022). The environmental pillar assesses the impacts of products, services and production processes, and the social pillar evaluates communities. In terms of the purpose of the study, we convert the frequency of CSR data from the monthly initial CSR data into the yearly average.

CG and CSR performance proxies are obtained from more than one database to attain a more balanced and complete analysis, as recommended by Widyawati (2021). Both Refinitiv and Morningstar are recognised as world-leading CSR databases (Xu et al., 2022). They specialise in collecting industry-specific subjective and objective information on ESG performance. According to the type of indicator being assessed, both databases provide in-depth ESG ratings. The Refinitiv database offers access to reliable, up-to-date and accurate information from over 400 stock exchange and over-the-counter markets. Specifically, Refinitiv contains the highest number of indicators on the CG dimension, in which different units of measurement (including categorical and continuous) are converted to data points. Morningstar uses customised weights from the peer group to calculate the total ESG rating for an individual firm (Widyawati, 2021).

3.3.4. Control variables

Several levels of control variables are used in this study to enhance the internal validity of the analysis. First, we control the country-level variance, which includes economic, cultural and institutional variables. These variables are correlated to some degree of CSR engagement (Cahan et al., 2016) and are crucial in understanding CG. The economic

development status is controlled, which is measured by the gross domestic product (GDP) per capita obtained from the World Bank.⁴ Because a higher level of national wealth increases the awareness of CSR engagement, costly CSR is favoured more in a smoothly growing economy than in a rapidly growing economy (Zamir and Saeed, 2020). In this study, the natural logarithm value of GDP (LGDP) is applied. We also control for the most relevant national economic culture variables affecting CSR (Zamir and Saeed, 2020), such as uncertainty avoidance index (UAI), indulgence versus restraint (IVR) and long-term orientation versus short-term orientation (LTO). UAI is defined as ‘a society’s tolerance for ambiguity’, which reflects the practice of adhering to rules and structure and the degree to which people embrace or avert an event that is unexpected, unknown or away from the status quo. LTO is associated with the connection of the past with future actions. IVR refers to the preponderance of optimistic emotions or negative emotions. Because the institutional environment influences the health of CG within a nation, we control the institutional environment variables, such as voice and accountability (VOA) and political stability (POS). VOA captures the perceptions of citizens regarding their participation in selecting their government and relevant freedom. POS indicates the perceptions of the likelihood of political stability (Cahan et al., 2016).

Second, we control the industry-level variable. A 2-Digit Standard Industrial Classification (DSIC) (OSHA, 2018; Xu et al., 2021, 2022) is used to control industry fixed effects. This is because firms within the same industry are exposed to similar risks and opportunities but with individual variations.

Third, we control the firm-level variables, which included price-to-earnings (PE) ratio, price volatility (PCVT), firm size, firm leverage, firm age and time period. In detail, the PE ratio indicates the potential market growth and is stated as the stock price to earnings per share (Easton, 2004). PCVT is measured as daily stock return volatility over the fiscal year and estimated each year (Zamir and Saeed, 2020). Firm size is calculated as the natural logarithm of total assets because firms of different sizes differ in their distance from stakeholders, meaning that they conduct CSR in diverse ways (Cruz et al., 2014). Firm leverage is measured as the natural logarithm of long-term liabilities to total assets (Rees and Rodionova, 2015; Shan et al., 2019) because firms with a higher leverage ratio may be subject to higher financial risk, resulting in poorer FP (Wang and Sarkis, 2017). To correct skewness in multivariate analyses, the logarithm transformation applies to both firm size and leverage. Firm age is controlled because more mature firms are more likely to have more social and environmental resources to manage their businesses, which may significantly influence their FP. It is more economically meaningful to control for firm listing age than incorporation age (Xu et al., 2021, 2022). Being publicly listed is a major turning point in a firm’s life cycle and may lead to a change in CG structure (Sun et al., 2019). A dummy variable is also used to control for year fixed effects to minimise differences in economic conditions over the observation period of 2009–2018.

3.4. Model specification

Following Sobel (1982, 1986) and Baron and Kenny (1986), a three-step procedure (Preacher and Hayes, 2004; Wu et al., 2020) is adopted to estimate the mediating effect of CSR on the relationship between CG and FP. The first step is to examine whether a causal relationship exists between CG and FP, estimated using Model (1). The second step examines whether a significant relationship exists between

the independent variable (CG) and the mediator variable (CSR performance), estimated using Model (2). The third step is to examine the effect of the independent variable (CG) on the dependent variable (FP) when controlling for the mediator (CSR performance), estimated using Model (3). The regression models are presented as follows:

$$FP_{i,t} = \beta_0 + \beta_1 CG_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \varepsilon_{i,t} \quad (1)$$

$$CSR_{i,t} = a_0 + a_1 CG_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \varepsilon_{i,t} \quad (2)$$

$$FP_{i,t} = \beta'_0 + \beta'_1 CG_{i,t} + \beta_2 CSR_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \varepsilon_{i,t} \quad (3)$$

where $FP_{i,t}$ denotes FP, measured using Tobin’s Q (denoted *TOBINQ*), calculated as market capitalisation and long-term debt to total assets; $CG_{i,t}$ denotes the CG score sourced from Refinitiv; and $CSR_{i,t}$ denotes the CSR score calculated as the yearly average of the firm-level environmental and social scores (excluding the governance score) sourced from Morningstar. Control variables include country-level economic indicators of LGDP, national culture variables UAI, IVR and LTO, institutional environment variables VOA and POS, firm-level controls, including firm size, leverage, and age and industry classification. *Industry FE* and *Year FE* represent the industry and year fixed effects, respectively.

The mediating effect of CSR on the relationship between CG and FP is examined (see Fig. 1A). The detailed three-step mediation procedure is presented in Fig. 1B. Model (1) tests the total effect of CG on FP (β_1). If β_1 is significant (otherwise, the analysis is terminated), then the process proceeds to Models (2) and (3), which examine the indirect effect of CG on FP mediated by CSR. If both the indirect effects (a_1 and β_2) and the direct effect (β'_1) are significant, then a partial mediation effect exists (Preacher and Hayes, 2004). Otherwise, if the direct effect (β'_1) is insignificant, but the indirect effects (a_1 and β_2) are significant, a complete mediation effect exists. If either a_1 or β_2 is not significant, the Sobel (1982) test⁵ must be conducted. If the absolute z-value of the Sobel test is greater than the critical value of 0.97 (MacKinnon et al., 2002), a partial mediating effect of CSR can be confirmed; otherwise, no mediation effect exists.

4. Results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for the key variables in the FB and NFB samples. All variables are winsorised at the 1% and 99% levels to avoid extreme outliers. On the left side of Panel A, the mean (median) of *TOBINQ* is 1.30 (0.90), with a range of 0.08–6.76. The mean (median) of *CG* is 47.57% (48.05%), with a range of 2.28%–96.12%. The mean (median) of *CSR* is 56.56% (55.00%), with a range of 36%–84.41%. The key variables of the NFB sample are presented on the right-hand side of Panel A. The mean (median) of *TOBINQ* is 1.13 (0.78), with a range of 0.08–6.76. The mean (median) of *CG* is 54.66% (57.35%), with a range of 2.64%–98.27%. The mean (median) of *CSR* is 57.64% (57.00%), with a range of 36%–84.41%. Most variables employed in the study (i.e. *TOBINQ*, *CSR*, *FIRMAGE* and *SIZE*) fall within the same range. We also present the main variables in the FB sample by country: Singapore has the lowest *CSR* (42.30%), Norway has the lowest *CG* (25.04%) and Colombia has the lowest *TOBINQ* (0.27) (see Appendix C).

⁴ GDP is used to indicate the economic development status, which is sourced from World Bank. World Bank contains (<https://databank.worldbank.org/indicator/NY.GDP.PCAP.CD/1ff4a498/Popular-Indicators>) the primary collection of countries’ development indicators, compiled from officially recognised international sources. It presents the most current and accurate global development data available, and includes national, regional and global estimates.

⁵ Following Sobel (1982) and Preacher and Hayes (2004), the standard error of the indirect effect is calculated as: $S_{a_1\beta_2} = \sqrt{\beta_2^2 S_{a_1}^2 + a_1^2 S_{\beta_2}^2 + S_{a_1}^2 S_{\beta_2}^2}$. The critical ratio z for a two-tailed normal distribution is calculated as $Z = (a_1 * \beta_2) / S_{a_1\beta_2}$.

Table 2
Descriptive statistics, correlations and variance inflation factors (VIF) for key variables ^{a,b,c}.

Panel A: Descriptive statistics																
Variable	FBs sample								NFBs sample							
	N	SD	MEAN	MIN	MAX	P25	P50	P75	N	SD	MEAN	MIN	MAX	P25	P50	P75
TOBINQ	1,604	1.12	1.30	0.08	6.76	0.61	0.90	1.57	1,578	1.14	1.13	0.08	6.76	0.49	0.78	1.27
ROA	1,632	0.07	0.09	-0.16	0.36	0.05	0.08	0.12	1,626	0.08	0.07	-0.16	0.36	0.03	0.06	0.10
CG	1,329	21.56	47.57	2.28	96.12	30.70	48.05	64.46	991	22.57	54.66	2.64	98.27	36.65	57.35	73.60
CSR	1,196	12.33	56.56	36.00	84.41	46.50	55.00	66.00	892	11.28	57.64	36.00	84.41	49.00	57.00	65.50
LGDP	1,643	1.74	27.20	16.94	30.68	27.53	28.32	28.88	1,642	1.74	27.20	16.94	30.68	27.53	28.27	28.94
PE	1,451	23.21	21.71	2.50	223.00	11.80	17.10	24.30	1,290	31.25	23.89	2.50	223.00	10.60	16.30	25.30
PCVT	1,622	11.09	25.93	0.00	51.75	19.49	25.90	32.97	1,567	12.14	25.34	0.00	51.75	18.44	25.60	33.64
UAI	1,643	22.50	62.28	29.00	112.00	44.00	65.00	85.00	1,642	22.46	62.24	29.00	112.00	44.00	65.00	85.00
LTO	1,643	22.88	57.46	24.18	100.00	37.53	60.96	81.36	1,642	22.86	57.44	24.18	100.00	37.53	60.96	81.36
IVR	1,623	21.08	48.56	16.96	97.32	29.46	47.77	68.08	1,622	21.07	48.58	16.96	97.32	29.46	47.77	68.08
POS	1,643	0.78	0.14	-1.38	1.40	-0.55	0.38	0.78	1,642	0.79	0.14	-1.38	1.40	-0.55	0.40	0.78
VOA	1,643	1.00	0.55	-2.24	1.63	0.20	0.99	1.22	1,642	1.00	0.55	-2.24	1.63	0.20	0.99	1.22
FIRMAGE	1,617	12.17	21.67	0.00	45.00	12.00	20.00	30.00	1,597	12.06	21.36	0.00	45.00	12.00	20.00	29.00
LEVERAGE	15,54	1.52	-2.168	-7.97	-0.34	-2.47	-1.64	-1.24	1,534	1.41	-2.08	-7.97	-0.34	-2.43	-1.68	-1.22
SIZE	1,632	1.11	16.138	12.21	19.42	15.36	15.96	16.84	1,626	1.65	15.99	12.21	19.42	14.84	16.05	17.28

Panel B: Correlation and VIF																
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)		
VIF		1.17	1.65	2.14	1.06	1.31	1.78	3.37	2.5	3.14	4.27	1.49	1.28	1.30		
(1) TOBINQ	1.000															
(2) CG	-0.021	1.000														
(3) CSR	0.017	0.301***	1.000													
(4) LGDP	0.088***	0.051**	0.054**	1.000												
(5) PE	0.121***	0.007	0.039*	0.029	1.000											
(6) PCVT	-0.190***	0.024	-0.153***	-0.008	-0.007	1.000										
(7) UAI	-0.116***	-0.019	0.187***	-0.158***	0.027	-0.037**	1.000									
(8) LTO	-0.092***	-0.052**	0.048**	-0.199***	0.010	0.032*	0.187***	1.000								
(9) IVR	0.122***	0.029	0.093***	0.068***	0.039**	-0.179***	0.165***	-0.618***	1.000							
(10) POS	-0.011	-0.027	0.114***	-0.044**	-0.032*	-0.194***	-0.056***	0.112***	0.215***	1.000						
(11) VOA	0.030*	0.030	0.273***	-0.012	-0.014	-0.170***	0.053***	-0.332***	0.387***	0.621***	1.000					
(12) FIRMAGE	0.027	0.051**	0.267***	0.032*	-0.035*	-0.061***	-0.077***	-0.243***	0.288***	0.316***	0.317***	1.000				
(13) LEVERAGE	-0.233***	0.056***	0.000	-0.028	-0.001	0.070***	-0.032*	-0.198***	0.122***	-0.052***	-0.039**	0.079***	1.000			
(14) SIZE	-0.213***	0.235***	0.254***	-0.025	-0.075***	-0.003	-0.039**	-0.005	-0.013	0.008	0.015	0.215***	0.177***	1.000		

Note.

^a See Appendix B for the variables' definitions; FB = family business; NFB = non-family business.

^b No variance inflation factor value in this study exceeds 10 (Gujarati, 2003), and no correlations are above 0.8.

^c *** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.1$, two-tailed.

The correlations and variance inflation factors (VIFs) for the key variables are presented in Panel B of Table 2. None of the pairwise correlations exceed 0.387 and thus are lower than the critical value of 0.80. The highest VIF value is 4.27, which is lower than the critical value of 10. Thus, multicollinearity is not a major concern in the regression models (Gujarati, 2003).

4.2. Regression results for Hypothesis 1

H1 hypothesises that CSR mediates the relationship between CG and FP. The regression results are reported in Columns (1), (2) and (3) of Table 3. The results indicate that CSR partially mediates the positive effect of CG on Tobin's Q (market-based FP).

The overall effect of CG on TOBINQ is positive and significant ($\beta_1 =$

0.0038, $t = 3.74$, $p < 0.01$), as shown in Column (1), Panel A of Table 3. The indirect effect is also positive and significant ($\alpha_1 = 0.1180$, $t = 10.70$, $p < 0.01$) (see Column (2)). The significant indirect effect of CSR on TOBINQ ($\beta_2 = 0.0087$, $t = 3.53$, $p < 0.01$) along with the direct effect ($\beta_1' = 0.0027$, $t = 2.38$, $p < 0.01$) are displayed in Column (3). These significant and positive results indicate that stronger CG is associated with better CSR and FP. Remarkably, the direct effect (β_1') is notably lower than the total effect (β_1) because CSR positively affects Tobin's Q. According to the three-step procedure, based on the significant coefficients for β_1 , α_1 , β_2 and β_1' , it is concluded that CSR partially mediates the relationship between CG and FP by 27.81%. Thus, H1 is supported.

Table 3
Main regression results and mediation tests for Hypotheses 1 and 2 ^{a,b,c}.

Variable	H1: CSR mediates CG and FP			H2: The mediating role of CSR is more pronounced in FBs than NFBs					
	Full sample		FBs sample	FBs sample			NFBs sample		
	(1)	(2)		(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
TOBINQ	CSR	TOBINQ	TOBINQ	CSR	TOBINQ	TOBINQ	CSR	TOBINQ	
CSR			0.0087*** [β_2] (3.53)			0.0117*** [β_2] (3.60)			0.0074* [β_2] (1.81)
CG	0.0038*** [β_1] (3.74)	0.1180*** [α_1] (10.70)	0.0027** [β_1'] (2.38)	0.0056*** [β_1] (4.04)	0.1241*** [α_1] (8.30)	0.0036** [β_1'] (2.36)	0.0018[β_1] [α_1] (1.17)	0.1110*** [α_1] (6.70)	0.0014[β_1'] (0.79)
LGDP	-0.0001 (-0.02)	-0.2743*** (-4.19)	0.0019 (0.29)	0.0035 (0.48)	-0.2014** (-2.37)	0.0023 (0.27)	-0.0090 (-1.03)	-0.4295*** (-4.13)	-0.0005 (-0.04)
PE	0.0036*** (4.29)	0.0016 (0.18)	0.0035*** (3.84)	0.0049*** (3.96)	-0.0227 (-1.63)	0.0055*** (3.94)	0.0019* (1.76)	0.0249** (2.20)	0.0013 (1.16)
PCVT	-0.0232*** (-9.22)	-0.0992*** (-3.19)	-0.0265*** (-8.61)	-0.0245*** (-7.20)	-0.1613*** (-3.88)	-0.0255*** (-6.10)	-0.0232*** (-6.16)	0.0104 (0.23)	-0.0293*** (-6.39)
UAI	-0.0076*** (-6.19)	0.0510*** (3.57)	-0.0069*** (-4.89)	-0.0061*** (-3.74)	0.0200 (1.07)	-0.0044** (-2.35)	-0.0090*** (-4.65)	0.0719*** (3.32)	-0.0097*** (-4.33)
POS	-0.1888*** (-3.98)	-4.4079*** (-8.17)	-0.1324** (-2.44)	-0.2145*** (-3.43)	-3.9327*** (-5.63)	-0.1580** (-2.23)	-0.1097 (-1.41)	-6.1005*** (-6.99)	-0.0451 (-0.49)
VOA	0.0882** (2.06)	7.0920*** (14.18)	0.0712 (1.36)	0.0984* (1.76)	7.2922*** (11.58)	0.0794 (1.18)	0.0853 (1.20)	7.6187*** (8.91)	0.0342 (0.37)
IVR	-0.0023 (-1.41)	0.0329* (1.77)	-0.0050*** (-2.72)	-0.0029 (-1.31)	0.0074 (0.30)	-0.0059** (-2.41)	0.0004 (0.17)	0.0981*** (3.52)	-0.0018 (-0.62)
LTO	-0.0037** (-2.18)	0.1120*** (5.90)	-0.0064*** (-3.38)	0.0003 (0.13)	0.1242*** (4.85)	-0.0030 (-1.18)	-0.0090*** (-3.63)	0.1170*** (4.25)	-0.0105*** (-3.69)
LEVERAGE	-0.2244*** (-13.80)	-0.1752 (-0.97)	-0.2174*** (-12.20)	-0.2174*** (-10.23)	-0.0934 (-0.40)	-0.2004*** (-8.66)	-0.2259*** (-8.60)	-0.0402 (-0.14)	-0.2227*** (-7.46)
FIRMAGE	0.0047** (2.30)	0.1652*** (7.06)	0.0026 (1.12)	0.0086*** (3.05)	0.1607*** (5.02)	0.0064** (1.98)	-0.0003 (-0.09)	0.1203*** (3.59)	-0.0016 (-0.48)
SIZE	-0.3362*** (-16.96)	1.7965*** (7.99)	-0.3808*** (-16.85)	-0.3922*** (-13.32)	1.6714*** (5.07)	-0.4358*** (-13.11)	-0.2598*** (-9.38)	1.9471*** (6.38)	-0.3211*** (-10.01)
YEAR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDSTR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.2848*** (17.27)	4.1912 (0.86)	8.1017*** (16.87)	7.8633*** (13.08)	9.0874 (1.32)	8.2835*** (12.12)	6.7398*** (11.32)	-2.2701 (-0.33)	7.7547*** (11.14)
N			1,618			965		653	
Adjusted R2			0.362			0.361		0.395	
F-statistic			32.70***			19.79***		15.67***	
Coefficients & Sobel test	$\beta_1 = 0.0038***$ $\alpha_1 = 0.1180***, \beta_2 = 0.0087***$ $\beta_1' = 0.0027**$ No Sobel test is required			$\beta_1 = 0.0056***$ $\alpha_1 = 0.1241***, \beta_2 = 0.0117***$ $\beta_1' = 0.0036***$ No Sobel test is required			$\beta_1 = 0.0018$ $\alpha_1 = 0.1110***, \beta_2 = 0.0074*$ $\beta_1' = 0.0014$ No Sobel test is required		
Mediation effect	Partial			Partial			Stop		
Total effect mediated	27.81%			28.55%					

Table 3 presents the mediation effect of corporate social responsibility (CSR) in the relationship between corporate governance (CG) and firm performance (FP) by estimating Models (1), (2) and (3) simultaneously. See Appendix B for the variables' definitions. FB = family business; NFB = non-family business; Partial = partial mediation effect; Stop = the mediation analysis stops at Model (1) stage.

Note.

^a The estimated coefficient displays on the first row; the t-value of significance is in parentheses.
^b All of the continuous variables are winsorised at the 1st and 99th percentiles, to mitigate the possibility of outliers effect.
^c All tests are two-tailed, *** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.1$.

4.3. Regression results for Hypothesis 2

H2 hypothesises that the mediating role of CSR is more pronounced in FBs compared with NFBs. The results show that the partial medication effect holds in FBs but not in NFBs. The regression results for the FB sample are reported in Columns (4), (5) and (6) in Table 3. Following the three-step procedure, the significant total effect of CG on Tobin's Q ($\beta_1 = 0.0056, t = 4.04, p < 0.01$) is displayed in Column (5) in Table 3, and the indirect effect ($\alpha_1 = 0.1241, t = 8.30, p < 0.01$) is displayed in Column (6). These positive direct and indirect effects suggest that CG positively influences CSR performance and FP. The significant indirect effect of CSR on Tobin's Q ($\beta_2 = 0.0117, t = 3.60, p < 0.01$) and the direct effect ($\beta_1' = 0.0036, t = 2.36, p < 0.01$) are displayed in Column (6). The significant coefficients for $\beta_1, \alpha_1, \beta_2$ and β_1' all demonstrate

that CSR partially mediates the relationship between CG and FP in FBs by 28.55%.

The regression results for the NFB sample are displayed in Columns (7), (8) and (9) of Table 3. The effect of CG on Tobin's Q ($\beta_1 = 0.0018, t = 1.17, p > 0.10$) is insignificant (see Column (7)). Therefore, no further analysis is necessary for the three-step procedure because there is no relationship between CG and FP at the first step. Therefore, we conclude that CSR partially mediates the positive effect of CG on FP in FBs but not in NFBs. Therefore, H2 is supported.

5. Robustness tests

To ensure that the baseline results are accurate, several robustness tests are conducted. These include (i) an additional mediation test on the

Table 4
Regression results and mediation tests (excluding financial observations) ^{a,b,c}.

Variable	H1: CSR mediates CG and FP			H2: The mediating role of CSR is more pronounced in FBs than NFBs					
	Full sample			FBs sample			NFBs sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	TOBINQ	CSR	TOBINQ	TOBINQ	CSR	TOBINQ	TOBINQ	CSR	TOBINQ
CSR			0.0072*** [β_2] (2.81)			0.0102*** [β_2] (3.06)			0.0062[β_2] (1.46)
CG	0.0037*** [β_1] (3.60)	0.1211*** [α_1] (10.65)	0.0028**[β_1'] (2.39)	0.0056*** [β_1] (3.98)	0.1299*** [α_1] (8.53)	0.0038**[β_1'] (2.42)	0.0017[β_1] (1.07)	0.1100*** [α_1] (6.43)	0.0012[β_1'] (0.68)
LGDP	0.0026 (0.45)	-0.2556*** (-3.78)	0.0050 (0.75)	0.0062 (0.81)	-0.1310 (-1.50)	0.0037 (0.42)	-0.0123 (-1.37)	-0.5360*** (-5.00)	-0.0014 (-0.13)
PE	0.0036*** (4.13)	0.0024 (0.25)	0.0035*** (3.77)	0.0050*** (3.98)	-0.0222 (-1.57)	0.0056*** (3.91)	0.0015 (1.38)	0.0249** (2.12)	0.0012 (1.01)
PCVT	-0.0238*** (-9.19)	-0.0893*** (-2.80)	-0.0278*** (-8.77)	-0.0255*** (-7.39)	-0.1661*** (-3.94)	-0.0270*** (-6.34)	-0.0189*** (-4.78)	0.0586 (1.24)	-0.0260*** (-5.41)
UAI	-0.0076*** (-5.93)	0.0534*** (3.59)	-0.0068*** (-4.60)	-0.0061*** (-3.60)	0.0299 (1.53)	-0.0045** (-2.27)	-0.0104*** (-5.10)	0.0570** (2.50)	-0.0107*** (-4.61)
POS	-0.2487*** (-5.08)	-4.5899*** (-8.26)	-0.1876*** (-3.33)	-0.2373*** (-3.75)	-3.8949*** (-5.51)	-0.1831** (-2.54)	-0.3170*** (-3.73)	-7.2996*** (-7.66)	-0.2224** (-2.19)
VOA	0.0764* (1.73)	6.8787*** (13.28)	0.0632 (1.17)	0.0722 (1.25)	6.6362*** (10.17)	0.0713 (1.03)	0.1541** (2.08)	8.4666*** (9.51)	0.0827 (0.85)
IVR	-0.0015 (-0.91)	0.0385** (2.01)	-0.0041** (-2.14)	-0.0021 (-0.93)	0.0160 (0.64)	-0.0052** (-2.10)	0.0002 (0.09)	0.0939*** (3.24)	-0.0011 (-0.38)
LTO	-0.0049*** (-2.81)	0.1074*** (5.52)	-0.0072*** (-3.69)	-0.0003 (-0.14)	0.1121*** (4.32)	-0.0032 (-1.21)	-0.0107*** (-4.22)	0.1153*** (4.08)	-0.0119*** (-4.09)
LEVERAGE	-0.2576*** (-15.08)	-0.3143* (-1.67)	-0.2451*** (-13.11)	-0.2546*** (-11.33)	-0.3312 (-1.36)	-0.2253*** (-9.21)	-0.2578*** (-9.60)	-0.0859 (-0.29)	-0.2531*** (-8.28)
FIRMAGE	0.0039* (1.85)	0.1610*** (6.75)	0.0024 (1.02)	0.0074** (2.56)	0.1522*** (4.69)	0.0056* (1.69)	0.0005 (0.15)	0.1205*** (3.53)	-0.0004 (-0.12)
SIZE	-0.2754*** (-12.63)	2.2093*** (8.90)	-0.3231*** (-12.82)	-0.3390*** (-10.55)	2.2492*** (6.29)	-0.3930*** (-10.73)	-0.1861*** (-6.22)	2.3344*** (6.93)	-0.2394*** (-6.73)
YEAR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDSTR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	6.4932*** (14.51)	-1.6765 (-0.32)	7.3066*** (14.15)	7.0278*** (11.07)	-0.1931 (-0.03)	7.6668*** (10.61)	6.4681*** (10.22)	-2.4357 (-0.34)	6.9331*** (9.74)
N			1527			927			600
Adjusted R ²			0.358			0.355			0.416
F-statistic			30.33***			18.59***			15.73***
Coefficients & Sobel test	$\beta_1 = 0.0037^{***}$ $\alpha_1 = 0.1211^{***}, \beta_2 = 0.0072^{***}$ $\beta_1' = 0.0028^{**}$ No Sobel test is required			$\beta_1 = 0.0056^{***}$ $\alpha_1 = 0.1299^{***}, \beta_2 = 0.0102^{***}$ $\beta_1' = 0.0038^{***}$ No Sobel test is required			$\beta_1 = 0.0017$ $\alpha_1 = 0.1100^{***}, \beta_2 = 0.0062^*$ $\beta_1' = 0.0012$ No Sobel test is required		
Mediation effect	Partial			Partial			Stop		
Total effect mediated	23.81%			25.70%					

Table 4 presents the mediation effect of corporate social responsibility (CSR) in the relationship between corporate governance (CG) and firm performance (FP) by estimating Models (1), (2) and (3) simultaneously. See Appendix B for the variables' definitions. FB = family business; NFB = non-family business; Partial = partial mediation effect; Stop = the mediation analysis stops at Model (1) stage.

Note.

- ^a The estimated coefficient displays on the first row; the t-value of significance is in parentheses.
- ^b All of the continuous variables are winsorised at the 1st and 99th percentiles, to mitigate possibility of outliers effect.
- ^c All tests are two-tailed, *** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.1$.

dataset excluding financial firms; (ii) an additional FP measurement using return on assets (ROA); and (iii) the two-stage least squares (2SLS) method to check for the potential endogeneity of CG and CSR.

5.1. Mediation effect test excluding financial firms

To ensure the quality of the main test results, financial firms are excluded from the matched dataset (Jo and Harjoto, 2011). Firms with a DSIC code of 60–67 (i.e. finance, insurance and real estate) are excluded, reducing firm-year observations to 3,068. All regression results are consistent with the primary test (see Table 4), including the partial mediating effect of CSR on the relationship between CG and FP in the whole sample and the FB sample but not the NFB sample (see Table 4). Therefore, we conclude that the inclusion of financial firms in the primary analysis is acceptable.

5.2. Mediation test using return on assets as an additional outcome variable

To validate the results of the main tests, an additional measure of firm-level performance, ROA, is applied to the analysis. As a backward-looking measurement, ROA reflects an organisation’s profitability or productivity and is computed as earnings before interest and tax, divided by total assets (Miller et al., 2017). ROA also indicates how well CG has motivated internal stakeholders, such as managers or employees, to operate the business (Graves and Shan, 2013). Using the three-step mediation procedure, the relatively similar results (reported in Table 5) confirm the validity of the main tests. The noticeable difference is that CSR mediates the link of CG–ROA with a higher proportion than that of CG–TOBINQ in the FBs sample; this supports that ‘doing good-doing well’ with internal stakeholders (i.e. managers or employees) (Wang and Sarkis, 2017). This also confirms that the FB owners

Table 5
Additional test regression results for using return on assets (ROA) as outcome variable ^{a,b,c}.

Variable	Full sample			FBs sample			NFBs sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	ROA	CSR	ROA	ROA	CSR	ROA	ROA	CSR	ROA
CSR			0.0004*** [β ₂] (2.62)			0.0006*** [β ₂] (3.45)			0.0001[β ₂] (0.23)
CG	0.0002*** [β ₁] (2.68)	0.1180*** [α ₁] (10.70)	0.0001** [β ₁] (1.99)	0.0002*** [β ₁] (3.03)	0.1241*** [α ₁] (8.30)	0.0001[β ₁] (1.64)	0.0002** [β ₁] (2.04)	0.1110*** [α ₁] (6.70)	0.0003** [β ₁] (2.35)
LGDP	0.0003 (0.75)	-0.2743*** (-4.19)	0.0005 (1.35)	0.0007 (1.62)	-0.2014** (-2.37)	0.0008* (1.69)	-0.0002 (-0.38)	-0.4295*** (-4.13)	0.0006 (0.83)
PE	-0.0002*** (-3.12)	0.0016 (0.18)	-0.0002*** (-2.96)	-0.0002*** (-2.65)	-0.0227 (-1.63)	-0.0002** (-2.36)	-0.0001* (-1.68)	0.0249** (2.20)	-0.0001 (-1.57)
PCVT	-0.0010*** (-6.28)	-0.0992*** (-3.19)	-0.0011*** (-5.96)	-0.0008*** (-4.22)	-0.1613*** (-3.88)	-0.0008*** (-3.45)	-0.0013*** (-5.32)	0.0104 (0.23)	-0.0017*** (-5.43)
UAI	-0.0004*** (-5.73)	0.0510*** (3.57)	-0.0005*** (-5.72)	-0.0004*** (-4.63)	0.0200 (1.07)	-0.0005*** (-4.30)	-0.0004*** (-3.04)	0.0719*** (3.32)	-0.0005*** (-3.08)
POS	-0.0117*** (-3.98)	-4.4079*** (-8.17)	-0.0100*** (-3.01)	-0.0150*** (-4.09)	-3.9327*** (-5.63)	-0.0138*** (-3.40)	-0.0046 (-0.88)	-6.1005*** (-6.99)	-0.0013 (-0.21)
VOA	0.0021 (0.80)	7.0920*** (14.18)	0.0009 (0.27)	0.0064* (1.95)	7.2922*** (11.58)	0.0049 (1.29)	-0.0043 (-0.90)	7.6187*** (8.91)	-0.0078 (-1.25)
IVR	-0.0002** (-2.06)	0.0329* (1.77)	-0.0002** (-2.18)	-0.0000 (-0.02)	0.0074 (0.30)	-0.0000 (-0.36)	-0.0004** (-2.28)	0.0981*** (3.52)	-0.0004** (-2.06)
LTO	-0.0003*** (-2.79)	0.1120*** (5.90)	-0.0003*** (-2.65)	-0.0001 (-0.58)	0.1242*** (4.85)	-0.0001 (-0.75)	-0.0005*** (-3.14)	0.1170*** (4.25)	-0.0005** (-2.51)
LEVERAGE	-0.0128*** (-12.69)	-0.1752 (-0.97)	-0.0126*** (-11.58)	-0.0114*** (-9.20)	-0.0934 (-0.40)	-0.0108*** (-8.13)	-0.0139*** (-7.84)	-0.0402 (-0.14)	-0.0138*** (-6.84)
FIRMAGE	0.0005*** (3.94)	0.1652*** (7.06)	0.0004*** (3.08)	0.0006*** (3.48)	0.1607*** (5.02)	0.0005*** (2.81)	0.0005** (2.36)	0.1203*** (3.59)	0.0005** (2.02)
SIZE	-0.0175*** (-14.22)	1.7965*** (7.99)	-0.0200*** (-14.48)	-0.0206*** (-11.92)	1.6714*** (5.07)	-0.0233*** (-12.25)	-0.0135*** (-7.26)	1.9471*** (6.38)	-0.0164*** (-7.57)
YEAR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDSTR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.3953*** (15.14)	4.1912 (0.86)	0.4498*** (15.35)	0.4346*** (12.35)	9.0874 (1.32)	0.4423*** (11.31)	0.3504*** (8.75)	-2.2701 (-0.33)	0.4001*** (8.52)
N	1,618			965			653		
Adjusted R ²	0.311			0.3359			0.2624		
F-statistic	26.16***			18.41***			9.28***		
Coefficients & Sobel test	β ₁ = 0.0002** α ₁ = 0.1180***, β ₂ = 0.0004** β ₁ = 0.0001* No Sobel test is required			β ₁ = 0.0002*** α ₁ = 0.1241***, β ₂ = 0.0006*** β ₁ = 0.0001 No Sobel test is required			β ₁ = 0.0002** α ₁ = 0.1110***, β ₂ = 0.0001 β ₁ = 0.0003** z-stat = 0.227 < 0.97		
Total effect mediated	20.30%			35.51%					

Table 5 presents the mediation effect of corporate social responsibility (CSR) in the relationship between corporate governance and firm performance by estimating Models (1), (2) and (3) simultaneously. See Appendix B for the variables’ definitions. FB = family business; NFB = non-family business.

Note.

- ^a The estimated coefficient displays on the first row; the t-value of significance is in parentheses.
- ^b All of the continuous variables are winsorised at the 1st and 99th percentiles, for mitigating the possibility of outliers effect.
- ^c All tests are two-tailed, *** if p < 0.01, ** if p < 0.05, * if p < 0.1.

achieve better operating performance by caring about their SEW with internal stakeholders. In other words, doing good things alone may not be enough to achieve better performance (Wang and Sarkis, 2017). Rather, ‘doing good things well’ will increase employee engagement, commitment and organisational loyalty, assisting CG in enhancing organisational legitimacy (Seele and Gatti, 2017), thus improving productivity and FP (Hasan et al., 2018; Jo and Harjoto, 2011). In the NFBs sample, following the three-stage procedure, the Sobel (1982) test is applied to test whether the z-value is greater than critical values 0.97 (MacKinnon et al., 2002). Because the z-value = 0.227 is less than 0.97, no mediation effect of CSR exists in the link of CG–ROA.

5.3. Two-stage least squares regression

Endogeneity is a commonly observed and yet challenging issue in CSR and CG literature because these two variables can be determined by

other underlying firm- or manager-specific factors. In order to address endogeneity in CSR and CG, we follow previous studies (e.g., Benlemlih and Bitar, 2018; Harjoto et al., 2015; Jo and Harjoto, 2012; Miller et al., 2017; Wu et al., 2020) to employ a two-stage least squares regression (2SLS) using instrumental variables (IVs). We also test the chosen IVs’ appropriateness by estimating F-statistics and Chi-square.

Specifically, we employ two IVs related to CG or CSR practices but unrelated to FP. The IVs are one-period lag of the CG score (CG_LAG) and the initial CSR score (CSR_INI). First, we regress CG_LAG sourced from Refinitiv on Model (1) and (2). These lagged values of the CG are appropriate to be chosen as the IV, because both CG_LAG and CG are derived from the same estimator and contain similar information and characteristics. Also, CG_LAG has existing deferrals from CG, which is very unlikely to influence FP, together with the uncorrelated relationship with the error terms (Jo and Harjoto, 2012; Miller et al., 2017). Second, we apply CSR_INI from Morningstar as an instrument of CSR on

Table 6 Two-stage least squares results (2SLS) for corporate governance (CG) and corporate social responsibility (CSR) ^{a,b,c,d}.

Models	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	For Model (1)		For Model (2)		For Model (2)		For Model (3)		For Model (3)		For Model (3)		For Model (3)	
	First stage	Second stage	First stage	Second stage	First stage	Second stage	First stage	Second stage	First stage	Second stage	First stage	Second stage	First stage	Second stage
Variable	CG	TOBINQ	CG	CSR	CG	CSR	CSR	CG	CSR	CG	TOBINQ	CSR	CG	TOBINQ
CSR														0.0216*** (5.71)
CSR_INI									0.8052*** (39.44)	0.0959*** (2.58)				
CG_LAG	0.8325*** (57.9)				0.8381*** (54.54)				0.0139 (1.58)	0.8259*** (51.48)				
CG		0.0061*** (4.38)				0.1389*** (9.24)								0.0029* (1.85)
LGDP	-0.0050 (-0.06)	-0.0003 (-0.05)	0.0585 (0.63)	-0.1864*** (-2.43)	-0.0642 (-1.25)	0.0722 (0.77)	-0.0005 (-0.06)							
PE	-0.0010 (-0.08)	0.0038*** (3.92)	0.0041 (0.32)	-0.0075 (-0.72)	-0.0091 (-1.3)	0.0039 (0.3)	0.0038*** (3.69)							
PCVT	0.0152 (0.40)	-0.0246*** (-8.09)	-0.0265 (-0.61)	-0.1070*** (-2.99)	-0.0661*** (-2.76)	-0.0213 (-0.49)	-0.0235*** (-6.67)							
UAI	-0.0322* (-1.77)	-0.0073*** (-4.99)	-0.0215 (-1.04)	0.0410*** (2.42)	0.0331*** (2.92)	-0.0221 (-1.07)	-0.0060*** (-3.59)							
LTO	0.0165 (0.66)	-0.0031 (-1.55)	0.0115 (0.41)	0.1098*** (4.82)	0.0382*** (2.49)	0.0027 (0.1)	-0.0084*** (-3.72)							
IVR	0.0321 (1.35)	-0.0040** (-2.08)	0.0261 (0.99)	0.0343 (1.58)	-0.0537*** (-3.66)	0.0152 (0.57)	-0.0078*** (-3.69)							
POS	-1.2487* (-1.82)	-0.1881*** (-3.38)	-1.041 (-1.38)	-4.4489*** (-7.16)	-0.2806 (-0.65)	-0.5271 (-0.68)	-0.0529 (-0.84)							
VOA	0.7708 (1.24)	0.1030** (2.05)	0.2089 (0.3)	7.1276*** (12.62)	3.0580*** (7.81)	-0.2794 (-0.39)	0.0072 (0.12)							
SIZE	0.5873* (1.97)	-0.3989*** (-16.49)	0.4924 (1.5)	1.5107*** (5.59)	0.7585*** (4.19)	0.3946 (1.2)	-0.4449*** (-16.49)							
FIRMAGE	-0.0310 (-1.02)	0.0059*** (2.41)	-0.0321 (-0.96)	0.1635*** (5.94)	0.0721*** (3.89)	-0.0425 (-1.26)	0.0018 (0.65)							
LEVERAGE	-0.0358 (-0.15)	-0.2109*** (-11.05)	0.0568 (0.22)	-0.1094 (-0.52)	0.1960 (1.4)	0.0922 (0.36)	-0.2082*** (-10.15)							
YEAR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes							
INDSTR FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes							
Constant	0.3413 (0.05)	8.06*** (15.57)	1.28 (0.18)	15.08*** (2.58)	3.556 (0.91)	-0.1099 (-0.025)	8.37*** (14.57)							
N	1,426	1,426	1,246	1,246	1,246	1,246	1,246							
Adjusted R ²		0.3726		0.3995			0.3876							
F-statistic	3352.79***	29.60***	2974.94***	29.09***	1406.26***	2117.62***	27.46***							
Chi-square	3422.79***	1006.59***	3045.83***	884.26***	1440.95***	2169.86***	652.66***							

Table 6 presents 2SLS robustness tests for the mediation effect of Models (1), (2) and (3). The robustness results of CG in Model (1) are displayed in Columns (1) and (2). The robustness results of CG Model (2) are displayed in Columns (3) and (4). The robustness results of CSR in Model (3) are displayed in Columns (5), (6) and (7).

$$FP_{i,t} = \beta_0 + \beta_1 CG_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \epsilon_{i,t} \text{ Model (1)}$$

$$CSR_{i,t} = a_0 + a_1 CG_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \epsilon_{i,t} \text{ Model (2)}$$

$$FP_{i,t} = \beta'_0 + \beta'_1 CG_{i,t} + \beta'_2 CSR_{i,t} + \sum Controls_{i,t} + Year FE + Industry FE + \epsilon_{i,t} \text{ Model (3)}$$

Note.

^a For the variables’ definitions, see Appendix B.

^b The estimated coefficient displays on the first row; the t-value of significance is in parentheses.

^c All of the continuous variables are winsorised at the 1st and 99th percentiles, to mitigate the possibility of outliers effect.

^d All tests are two-tailed, *** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.1$.

Model (3). This instrument is highly exogenous to the overall CSR score (Benlemlih and Bitar, 2018). After regressing CG_LAG on CG practices at the first stage, we obtain an estimated value for CG scores. We then observe that such estimated CG still positively relates to FP at the second stage of the regression. The 2SLS regression results on $TOBINQ$ are shown in Columns (1) and (2) in Table 6. The most important is that the estimated CG is still positively related to $TOBINQ$. In addition, the explanation power of the chosen IVs are estimated. The reasonable adjusted R^2 values with significant F-statistics and Chi-square suggest that CG_LAG and CSR_INI serve as good instruments (Larcker and Rusticus, 2010). Therefore, the concern about the endogeneity of CG on FP (in Model (1)) is lowered in this study. We repeat the same 2SLS regressions analysis on Model (2), by using CG_LAG instrument CSR; the results are displayed in Columns (3) and (4). The positive effects of CG_LAG on CG, CG on CSR, along with the explanation power of the IVs show that the concern about the endogeneity of CG on CSR (in Model (2)) is, therefore, dropped in this study. We employ both CG_LAG and CSR_INI to regress the CG and CSR in Model (3); the results are presented in Columns (5), (6) and (7) in Table 6. The positive relationships between CSR_INI and CSR, CG_LAG and CG, CSR on $TOBINQ$, as well as the relatively strong explanation power of the IVs indicate that there is significantly less concern of endogeneity in Model (3).

Overall, these results suggest that the chosen IVs for CSR and CG are appropriate; and more importantly, the mediating effect of CSR on CG and FP is unchanged after we correct for endogeneity.

6. Discussion

The results demonstrate that CG positively affects FP, partially mediated by CSR performance, supporting H_1 . Specifically, the mediating pathways of CSR derive from all positive effects (e.g. total effect of CG on FP (β_1), indirect effect of CG on CSR (α_1), indirect effect of CSR on FP (β_2), and the direct effect of CG and CSR on FP (β_1'). This suggests that a stronger FP can be achieved through better CSR performance, with CSR acting as a mediator between CG and FP. This can be explained as the firms with stronger CG can effectively mitigate conflicts among stakeholders, especially business owners and agents, and adequately align their business objectives (i.e. long term and short term), thereby enhancing FP. The result also confirms that sound CG can result in the effective implementation of CSR strategies and monitoring of the firm to ensure that its promises to external stakeholders are fulfilled, supporting its claims of legitimacy and improving CSR outcomes. An improved CSR performance will generate positive signals about the firm's reputation, engendering a trustworthy atmosphere for business development and consequently improving FP. As Liu and Zhang (2017) demonstrated, a high level of CG is favourable for legitimacy management and releasing CSR information to enhance long-term value (Bingham et al., 2011; Cennamo et al., 2012), which also confirms the findings of Wang and Sarkis (2017).

The partial mediating effect of CSR on the CG–FP nexus occurs in FBs but not in NFBs (H_2), supporting the argument that FBs are more naturally oriented towards CSR in the pursuit of SEW. FBs will implement CG to actively pursue CSR in order to uphold their identity and strengthen their social ties with external stakeholders. FBs tend to 'walk the talk' beyond the legitimate requirement of CSR engagement or signalling green messages purely to attract more stakeholders. Compared with NFBs, FBs are more likely to focus on a long-term goal and retain a solid reputation with external stakeholders by engaging in CSR. FBs have a more substantial presence in local communities and uphold their identities by respecting their communities and behaving genuinely as good corporate citizens. In contrast, NFBs may engage in symbolic CSR to attract the support of the community. While this may temporarily mislead stakeholders, there is a risk of a boomerang effect in the long

term, subsequently reducing corporate legitimacy.

7. Conclusion

This study examines the mediating effect of CSR on the relationship between CG and FP and the differences in this effect between FBs and NFBs. On the basis of agency and stakeholder theories, we collected cross-national data on numerous CSR dimensions to develop a thorough understanding of CSR performance. The empirical results suggest that CSR partially mediates the relationship between CG and FP in the whole sample and in the FBs sample; nevertheless, the mediation effect does not occur in the NFBs sample.

Our research provides several theoretical implications. First, this study extends existing literature on the relationships between CG and FP, CSR and FP, and CG and CSR by investigating a three-way relationship amongst all three of them, and identifies a mediating role of CSR between CG and FP. Second, we add insight into the competing views of agency and stakeholder theories by adopting a complementary perspective of these two theories, and provide empirical evidence to support the complementary view. Third, this study incorporates SEW theory to investigate and substantiate the role of firms' ownership type in determining the extent of CSR's mediating effect.

This study provides practical implications for business owners, investors, policymakers and regulators. For business owners, this study shows the importance of applying CG to actually engage the firm in CSR to improve FP in the long term. For investors, the study delivers valuable insights into how to increase investment efficiency and avoid over-or under-investment by showing that the mediating effect of CSR is different for FBs and NFBs. For policymakers and regulators, the study shows that firms that appear to have a stronger CSR performance may not actually walk the talk. Feasible CSR policies and regulations are needed to assess the actual implementation of CSR to close legitimacy gaps.

This study has some limitations. Given the complexity of the mediating effect of CSR on the link between CG and FP, other more sophisticated factors may need to be considered. First, the results of this study are based on the largest publicly-listed FBs. Therefore, future research could extend the sample to include smaller FBs. Second, given the limitations of the FB data, the analysis could not be divided into individual economies or regions. Future research could benefit from employing more specific FB data.

Author contribution

All authors contributed equally for this article.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Acknowledgement

The authors are grateful to the two anonymous reviewers for their constructive comments and suggestions in the review process. Ella Guangxin Xu has received a scholarship and other financial support from The University of Western Australia.

Appendix A Propensity score matching procedures

Panel A: First-stage logit regression estimates.

Variable	First-stage FBs DUMMY
SIZE	-0.118(-1.04)
LEVERAGE	0.802***(3.23)
FIRMAGE	0.000(0.01)
YEAR FE	Yes
INDSTR FE	Yes
N	356

Note.

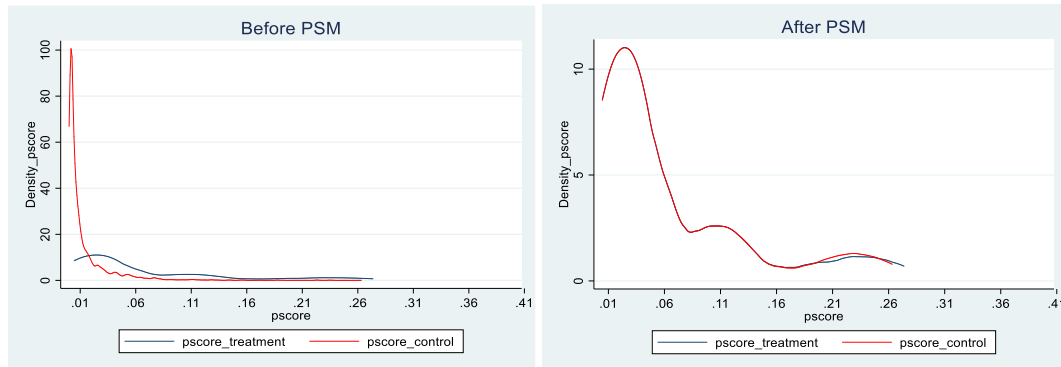
Panel A reports the results for the first-stage probit model. The first row (number) represents the estimated coefficient and the second row (number in parentheses) represents the z-value of significance. See Appendix B for the variables' definitions. FB = family business.

***if $p < 0.01$. All tests are two-tailed.

Panel B: Conditional independence assumption (CIA).

Variable	Unmatched		Mean		% reduce		t-test	
	Matched	U	Treated	Control	%bias	bias	t	P > t
SIZE	U		15.827	14.726	83.4		8.66	0.000
	M		15.827	15.864	-2.8	96.7	-0.30	0.767
LEVERAGE	U		0.575	0.337	28.6		4.59	0.000
	M		0.575	0.346	27.5	3.7	2.70	0.007
FIRMAGE	U		31.393	17.966	94.0		11.39	0.000
	M		31.393	33.871	-17.3	81.5	-1.90	0.058

Panel C: Kernel density estimates plots (common support).



Appendix B. Definitions of variables

Variable	Definitions and Measurements	References
TOBINQ	Tobin's Q, calculated as the market capitalisation and long-term debt to total asset	Shan (2013); Surroca et al. (2010); Xu et al. (2021), 2022
CSR	Total score, calculated as the yearly average of environmental score and social score	From Morningstar
CG	Governance score, obtained from Refinitiv ESG	Refinitiv (2019)
SIZE	Firm size, calculated as the natural logarithm of total assets	Cruz et al. (2014)
LEVERAGE	Firm leverage, calculated as the natural logarithm of the ratio of long-term debt to total asset	Rees and Rodionova (2015); Shan et al. (2019)
FIRMAGE	Firm age, calculated as the number of years since a firm has listed publicly	Sun et al. (2019)
PE	PE ratio, indicating firm potential market growth, stated as stock price to earnings per share	Easton (2004)
PCVT	Price volatility, measured as daily stock return volatility over the fiscal year and measured each year	Zamir and Saeed (2020)
LGDP	GDP per capita, used as country-level economic CV, controls for the national wealth that reflects a national economic development, calculated as the natural logarithm value of GDP	Zamir and Saeed (2020)
UAI	Uncertainty avoidance index, a national culture variable defined as 'a society's tolerance for ambiguity', in which people embrace or avert an event of something unexpected, unknown or away from the status quo	Cahan et al. (2016)

(continued on next page)

(continued)

Variable	Definitions and Measurements	References
LTO	Long-term orientation versus short-term orientation, associating the past with current and future actions/challenges—long-term orientation tends to be more future oriented, accepting delayed gratification of material and social needs, whereas short-term oriented value respects more past and current tradition and social obligations	Cahan et al. (2016)
IVR	Indulgence versus restraint, referring to the preponderance of leisure, optimism and positive emotions versus control, pessimism, and negative emotions	Cahan et al. (2016)
POS	Political stability and absence of violence/terrorism, measuring the perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism	Cahan et al. (2016)
VOA	Voice and accountability, capturing citizens' perceptions of their ability to participate in selecting their government, freedom of expression, freedom of association and a free media	Cahan et al. (2016)
DSIC	2-Digit Standard Industrial Classification	OSHA, 2018; Xu et al. (2021), 2022
YEAR	The firms' operational year of 2009–2018	
ROA	Return on assets, calculated as the earnings before interest and taxes divided by total assets	Wu et al. (2020); Miller et al. (2017)
CG_LAG	The one-year period lagged value of corporate governance, obtained from Refinitiv	Refinitiv (2019)
CSR_INI	Average of the environmental score and social score, at the initial year	From Morningstar

Appendix C. The mean of the main variables' breakdown by country

Country	Family business observations	TOBINQ	CG	CSR
Belgium	46	1.16	48.55	62.31
Brazil	54	0.73	41.78	53.97
Canada	60	0.97	51.12	58.80
Colombia	10	0.27	45.01	47.23
China	98	1.48	43.46	43.56
Germany	116	1.15	44.34	67.29
Spain	40	0.65	57.76	65.76
France	166	1.32	40.15	61.20
Greece	20	0.60	37.44	58.90
Netherlands	29	0.93	41.70	58.35
Italy	58	0.87	52.76	47.98
Indonesia	19	1.30	44.99	43.98
India	150	1.74	59.16	57.65
Israel	20	1.34	65.59	55.30
Japan	40	1.86	42.64	51.56
Hong Kong	80	1.25	49.04	53.53
South Korea	67	0.90	44.74	52.60
Malaysia	30	1.12	46.08	48.65
Mexico	95	1.36	48.53	57.26
Norway	10	0.59	25.04	57.65
Portugal	7	1.51	54.90	64.59
Philippines	17	1.01	60.47	50.08
Russia	49	1.16	52.27	47.12
Switzerland	70	1.79	40.07	59.64
Singapore	10	0.56	50.00	42.30
Turkey	20	0.56	41.76	50.42
Taiwan	20	1.29	30.56	46.16
US	211	1.53	47.46	54.64
UK	21	1.14	63.20	60.61
Sweden	10	5.55	49.96	70.29
Total	1,643	1.30	47.57	56.56

References

- Baron, R.M., Kenny, D.A., 1986. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* 51 (6), 1173.
- Benlemlih, M., Bitar, M., 2018. Corporate social responsibility and investment efficiency. *J. Bus. Ethics* 148 (3), 647–671.
- Berrone, P., Cruz, C., Gomez-Mejia, L.R., 2012. Socioemotional wealth in family firms: theoretical dimensions, assessment approaches, and agenda for future research. *Fam. Bus. Rev.* 25 (3), 258–279.
- Bingham, W.G., Gibb Dyer, W., Smith, I., Adams, G.L., 2011. A stakeholder identity orientation approach to corporate social performance in family firms. *J. Bus. Ethics* 99 (4), 565–585.
- Cahan, S.F., De Villiers, C., Jeter, D.C., Naiker, V., Van Staden, C.J., 2016. Are CSR disclosures value relevant? Cross-country evidence. *Eur. Account. Rev.* 25 (3), 579–611.
- Cennamo, C., Berrone, P., Cruz, C., Gomez-Mejia, L.R., 2012. Socioemotional wealth and proactive stakeholder engagement: why family-controlled firms care more about their stakeholders. *Enterpren. Theor. Pract.* 36 (6), 1153–1173.
- Chua, J.H., Chrisman, J.J., Sharma, P., 1999. Defining the family business by behavior. *Enterpren. Theor. Pract.* 23 (4), 19–39.
- Clarkson, M.E., 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Acad. Manag. Rev.* 20 (1), 92–117.
- Cruz, C., Larraza-Kintana, M., Garcés-Galdeano, L., Berrone, P., 2014. Are family firms really more socially responsible? *Enterpren. Theor. Pract.* 38 (6), 1295–1316.
- Du, X., 2015. Is corporate philanthropy used as environmental misconduct dressing? Evidence from Chinese family-owned firms. *J. Bus. Ethics* 129 (2), 341–361.
- Easton, P.D., 2004. PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. *Account. Rev.* 79 (1), 73–95.
- Freeman, R.E., 1984. *Strategic Management: A Stakeholder Approach*. Pitman.
- Freeman, R.E., Wicks, A.C., Parmar, B., 2004. Stakeholder theory and “the corporate objective revisited”. *Organ. Sci.* 15 (3), 364–369.
- Gomez-Mejia, L.R., Cruz, C., Berrone, P., De Castro, J., 2011. The bind that ties: socioemotional wealth preservation in family firms. *Acad. Manag. Ann.* 5 (1), 653–707.
- Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J., Moyano-Fuentes, J., 2007. Socioemotional wealth and business risks in family-controlled firms: evidence from Spanish olive oil mills. *Adm. Sci. Q.* 52 (1), 106–137.
- Graves, C., Shan, Y.G., 2013. An empirical analysis of the effect of internationalization on the performance of unlisted family and nonfamily firms in Australia. *Fam. Bus. Rev.* 27 (2), 142–160.
- Gujarati, D., 2003. *Basic Econometrics*, fourth ed. McGraw-Hill, Boston.

- Harjoto, M., Jo, H., 2011. Corporate governance and CSR nexus. *J. Bus. Ethics* 100 (1), 45–67.
- Harjoto, M., Laksmana, I., Lee, R., 2015. Board diversity and corporate social responsibility. *J. Bus. Ethics* 132 (4), 641–660.
- Hasan, I., Kobeissi, N., Liu, L., Wang, H., 2018. Corporate social responsibility and firm financial performance: the mediating role of productivity. *J. Bus. Ethics* 149 (3), 671–688.
- Javed, M., Rashid, M.A., Hussain, G., 2016. When does it pay to be good—A contingency perspective on corporate social and financial performance: would it work? *J. Clean. Prod.* 133, 1062–1073.
- Javed, M., Rashid, M.A., Hussain, G., 2017. Well-governed responsibility spurs performance. *J. Clean. Prod.* 166, 1059–1073.
- Jensen, W.H., Meckling, W.H., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* 3 (4), 305–360.
- Jeong, K.H., Jeong, S.W., Lee, W.J., Bae, S.H., 2018. Permanency of CSR activities and firm value. *J. Bus. Ethics* 152 (1), 207–223.
- Jo, H., Harjoto, M., 2012. The causal effect of corporate governance on corporate social responsibility. *J. Bus. Ethics* 106 (1), 53–72.
- Jo, H., Harjoto, M.A., 2011. Corporate governance and firm value: the impact of corporate social responsibility. *J. Bus. Ethics* 103 (3), 351–383.
- Labelle, R., Hafsi, T., Francoeur, C., Amar, W.B., 2018. Family firms' corporate social performance: a calculated quest for socioemotional wealth. *J. Bus. Ethics* 148 (3), 511–525.
- Larcker, D.F., Rusticus, T.O., 2010. On the use of instrumental variables in accounting research. *J. Account. Econ.* 49 (3), 186–205.
- Liu, X., Zhang, C., 2017. Corporate governance, social responsibility information disclosure, and enterprise value in China. *J. Clean. Prod.* 142, 1075–1084.
- MacKinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G., Sheets, V., 2002. A comparison of methods to test mediation and other intervening variable effects. *Psychol. Methods* 7 (1), 83.
- Miller, D., Le Breton-Miller, L., Amore, M.D., Minichilli, A., Corbetta, G., 2017. Institutional logics, family firm governance and performance. *J. Bus. Ventur.* 32 (6), 674–693.
- Okafor, A., Adeleye, B.N., Adusei, M., 2021. Corporate social responsibility and financial performance: evidence from US tech firms. *J. Clean. Prod.* 292, 126078.
- Oh, W.Y., Chang, Y.K., Martynov, A., 2011. The effect of ownership structure on corporate social responsibility: empirical evidence from Korea. *J. Bus. Ethics* 104 (2), 283–297.
- OSHA, 2018. Standard Industrial Classification (SIC) manual: division structure. available at: https://www.osha.gov/pls/imis/sic_manual.html.
- Preacher, K.J., Hayes, A.F., 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behav. Res. Methods Instrum. Comput.* 36 (4), 717–731.
- Rees, W., Rodionova, T., 2015. The influence of family ownership on corporate social responsibility: an international analysis of publicly listed companies. *Corp. Govern.* 23 (3), 184–202.
- Refinitiv, 2019. Environmental, social and governance (ESG) scores from Refinitiv available at: https://www.refinitiv.com/content/dam/marketing/en_us/document/s/methodology/refinitiv-esgscores-methodology.pdf.
- Rosenbaum, P.R., Rubin, D.B., 1984. Reducing bias in observational studies using subclassification on the propensity score. *J. Am. Stat. Assoc.* 79 (387), 516–524.
- Rubin, D.B., 1997. Estimating causal effects from large data sets using propensity scores. *Ann. Intern. Med.* 127 (8 Part 2), 757–763.
- Seele, P., Gatti, L., 2017. Greenwashing revisited: in search of a typology and accusation-based definition incorporating legitimacy strategies. *Bus. Strat. Environ.* 26 (2), 239–252.
- Sekerci, N., Jaballah, J., van Essen, M., Kammerlander, N., 2022. Investors' reactions to CSR news in family versus nonfamily firms: a study on signal (in) credibility. *Enterpren. Theor. Pract.* 46 (1), 82–116.
- Servaes, H., Tamayo, A., 2013. The impact of corporate social responsibility on firm value: the role of customer awareness. *Manag. Sci.* 59 (5), 1045–1061.
- Shan, Y.G., 2013. Can internal governance mechanisms prevent asset appropriation? Examination of type I tunneling in China. *Corp. Govern.* 21 (3), 225–241.
- Shan, Y.G., Troshani, I., Tarca, A., 2019. Managerial ownership, audit firm size, and audit fees: Australian evidence. *J. Int. Account. Audit* 35, 18–36.
- Shankman, N.A., 1999. Reframing the debate between agency and stakeholder theories of the firm. *J. Bus. Ethics* 19 (4), 319–334.
- Sobel, M.E., 1982. Asymptotic confidence intervals for indirect effects in structural equation models. *Soc. Methodol.* 13, 290–312.
- Sobel, M.E., 1986. Some new results on indirect effects and their standard errors in covariance structure models. *Soc. Methodol.* 16, 159–186.
- Sun, W., Yao, S., Govind, R., 2019. Reexamining corporate social responsibility and shareholder value: the inverted-U-shaped relationship and the moderation of marketing capability. *J. Bus. Ethics* 160 (4), 1001–1017.
- Surroca, J., Tribó, J.A., Waddock, S., 2010. Corporate responsibility and financial performance: the role of intangible resources. *Strat. Manag. J.* 31 (5), 463–490.
- Tobin, J., 1969. A General Equilibrium Approach to Monetary Theory.
- Wang, Z., Sarkis, J., 2017. Corporate social responsibility governance, outcomes, and financial performance. *J. Clean. Prod.* 162, 1607–1616.
- Widyawati, L., 2021. Measurement concerns and agreement of environmental social governance ratings. *Account. Finance* 61 (S1), 1589–1623.
- Wu, W., Peng, F., Shan, Y.G., Zhang, L., 2020. Litigation risk and firm performance: the effect of internal and external corporate governance. *Corp. Govern.* 28 (4), 210–239.
- Xu, E.G., Graves, C., Shan, Y.G., Yang, J.W., 2021. Corporate governance and innovation investment in publicly listed firms: the moderating effect of ownership type and legal jurisdiction. *Int. J. Manag. Finance*. <https://doi.org/10.1108/IJMF-08-2021-0381>. In press.
- Xu, E.G., Yang, J.W., Shan, Y.G., Graves, C., 2022. The influence of corporate governance on the performance of family-controlled firms: exploring the effects of legal jurisdiction. *Int. J. Manag. Finance*. <https://doi.org/10.1108/IJMF-12-2021-0598>. In press.
- Ye, M., Wang, H., Lu, W., 2021. Opening the “black box” between corporate social responsibility and financial performance: from a critical review on moderators and mediators to an integrated framework. *J. Clean. Prod.* 313, 127919.
- Zaman, R., Jain, T., Samara, G., Jamali, D., 2022. Corporate governance meets corporate social responsibility: mapping the interface. *Bus. Soc.* 61 (3), 690–752.
- Zamir, F., Saeed, A., 2020. Location matters: impact of geographical proximity to financial centers on corporate social responsibility (CSR) disclosure in emerging economies. *Asia Pac. J. Manag.* 37 (1), 263–295.
- Zellweger, T.M., Nason, R.S., Nordqvist, M., Brush, C.G., 2013. Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Enterpren. Theor. Pract.* 37 (2), 229–248.