



Kent Academic Repository

Ahmed, Rizwan, Abweny, Mohammad, Benjasak, Chonlakan and Nguyen, Dung T.K. (2024) *Financial sanctions and environmental, social, and governance (ESG) performance: a comparative study of ownership responses in the Chinese context*. *Journal of Environmental Management*, 351 . ISSN 0301-4797.

Downloaded from

<https://kar.kent.ac.uk/104371/> The University of Kent's Academic Repository KAR

The version of record is available from

<https://doi.org/10.1016/j.jenvman.2023.119718>

This document version

Author's Accepted Manuscript

DOI for this version

Licence for this version

CC BY-NC-ND (Attribution-NonCommercial-NoDerivatives)

Additional information

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in **Title of Journal** , Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

Financial Sanctions and Environmental, Social, and Governance (ESG) Performance: A Comparative Study of Ownership Responses in the Chinese Context

Abstract

This study undertakes a comprehensive examination of the relationships between strategic investors, financial sanctions, and ESG performance in Chinese non-financial firms from 2011 to 2022. The study demonstrates a positive relationship between ESG performance and foreign and government ownership, while indicating a negative impact from family ownership, using data from the ASSET4 and the Global Sanction Database (GSDB). Financial sanctions serve as a moderating factor, demonstrating that foreign and family ownership are associated with an higher level of ESG involvement during sanctions. Conversely, government ownership is connected to a decrease in ESG performance. Our results contribute to several fields, including ownership literature, agency theory, and sanctions literature. Additionally, they have practical implications for multiple groups of stakeholders, such as investors, managers, and policymakers.

Key Words: *ESG performance; Financial Sanctions; strategic investors; and comparative study.*

1. Introduction

The integration of environmental, social, and governance (ESG) principles into business practices has increasingly become a strategy that generates various benefits, including the creation of firm value, reduction in the cost of capital, enhancement of credit ratings, improvement in earnings quality, and reductions in risk (Godfrey et al., 2009, Kim et al., 2012, Attig et al., 2013, Dhaliwal et al., 2014, Ghoul et al., 2017). Consequently, a substantial body of literature has investigated the factors that drive ESG engagement, with a specific focus on large investors¹ (Oh et al., 2011, El Ghoul et al., 2016, McGuinness et al., 2017, Boubakri et al., 2019). According to agency theory, large investors can exercise their influence over corporate investment decisions through their representation on the board of directors and voting power (Boyd, 1994, Hadani, 2012). However, The tendency toward ESG investment varies among different ownership types because each of them creates varying levels of information asymmetry, agency problems, and corporate governance efficiency, leading to diverse investment orientations (Chen et al., 2017). Thus, conducting a comparative analysis to examine the influence of different investor types on ESG performance is a fundamental research question.

Furthermore, large investors have different investment priorities in the context of economic and political uncertainty. The majority of previous studies have primarily concentrated on financial crises as uncertain periods when investigating the determinants of ESG engagement, with overlooking the context of financial sanctions (Charitoudi et al., 2011, Giannarakis and Theotokas, 2011, Bouslah et al., 2018). Research on financial sanctions has usually cantered around their impacts on economic indicators, political dynamics, and market behaviours (Neuenkirch and Neumeier, 2015, McLean et al., 2018, Crozet et al., 2021, Gutmann et al., 2023). Thus, the moderating effects of financial sanctions on the relationship between various investor types and ESG performance remain largely unexplored.

Our study, therefore, aims to address this significant research gap by investigating how different types of investors (i.e., government, foreign, and family investors) respond to financial sanctions in terms of ESG performance in the context of Chinese firms. Chinese firms are known for their concentrated ownership, which differs from firms in other countries (Zhang, 2022). Moreover, China has subjected to significant sanctions imposed by the United

¹ Based on DataStream, a large investor is marked as a strategic investor who owns more than 5 percent of the firm's outstanding shares. Thus, strategic investor and large investor are used interchangeably in this study.

States, United Nations, European Union, and other countries (Felbermayr et al., 2020). The extensive sanctions and concentrated ownership structure within Chinese firms provide a unique and valuable setting for examining our research questions.

Using comprehensive sanction data from the Global Sanctions Database (GSDB) developed by Felbermayr et al. (2020), we find that government and foreign ownership have a significantly positive impact on ESG performance within the Chinese context during the period from 2011 to 2022. In contrast, family ownership demonstrates a negative influence on ESG performance. The findings also shed light on the varied responses of government, foreign, and family ownership to financial sanctions. More precisely, the results suggest that both foreign and family ownership are associated with increased engagement in CSR activities during financial sanctions. In contrast, government ownership is linked to a decline in ESG performance during these periods. Our findings remain consistent when employing various regression methods (i.e., the Heckman two-stage method and Two-Stage Least Squares (2SLS) method), indicating that they are not affected by endogeneity concerns.

This study makes several novel contributions. First, it adds to the ownership literature by illustrating that each type of ownership exhibits unique patterns in ESG engagement, influenced by factors such as asymmetrical access to information, conflicts of interest, and the effectiveness of corporate governance. Second, to the best of our knowledge, this is the first study to empirically examine the response of various forms of ownership to financial sanctions in relation to ESG performance. Thus, we contribute to the agency theory literature by providing evidence that large investors influence a firm's spending priorities during times of financial sanctions. Third, our results indicate that various ownership types exhibit distinct approaches to ethical and sustainable business practices. Particularly, foreign investors consistently prioritize ethical considerations, while family investors show sensitivity during financial sanctions. Government investors adapt their priorities based on unique challenges. Fourth, conducting this study in the Chinese context contributes to the literature by enhancing our understanding of the Chinese business environment, which has unique characteristics of being heavily subjected to sanctions and having concentrated ownership. Finally, we contribute to the sanctions literature by considering the most recent and comprehensive sanction data provided by the GSDB and examining their consequences on business practices.

The following sections of this paper will be structured as follows: Section 2 will review previous studies and develop hypotheses, Section 3 will describe the research design and methodology, Section 4 will discuss the results, and Section 5 will provide the final conclusion.

2. Literature Review and hypotheses development

2.1 ESG performance and strategic investors

Our theoretical foundation for the relationship between ESG performance and different investor types is based on the assumption that ESG engagement is a corporate investment decision made by managers under the influence of large shareholders. This assumption is rooted in agency theory, which posits that large shareholders can influence corporate investments through their presence on the board (Boyd, 1994) and voting power (Hadani, 2012). Empirical evidence also supports the observation that large shareholders significantly impact the decision-making process (Kochhar and David, 1996). Large ownership investors are marked as strategic investors due to their significant influence on corporate decisions (Buchanan et al., 2018). Following the investment literature (Chen et al., 2011, Boubakri et al., 2013, Chen et al., 2017, Ho et al., 2020), we focus on three large categories of investor ownership: government ownership, foreign ownership, and family ownership.

The association between government investors and ESG performance is a multifaceted area that is shaped by a variety of factors, including government influence, governance structures, trade-offs between economic and societal goals, and the regulatory environment (Chen et al., 2023). Thus, a meta-analysis conducted by Gillan et al. (2021) shows that previous studies yield mixed results in examining the relationship between government investors and ESG performance. The negative influence of government-owned firms on ESG performance can be attributed to challenges related to political influences, trade-offs between profitability and ESG goals, lack of market discipline, regulatory capture, and limited innovation due to reduced competition (Haider et al., 2018, Beck et al., 2005). Moreover, state-owned firms are often characterised by higher information asymmetry and less corporate governance efficiency (Chen et al., 2017). Therefore, privately owned firms outperform state-owned firms in ESG performance as they seek to avoid market risks, gain a competitive advantage, and enhance their legitimacy and reputation (Jiang et al., 2014, Maung et al., 2016). Additionally, Boubakri et al. (2019) find that privately owned firms generally have superior ESG ratings compared to their equivalent state-owned firms.

However, others argue that state-owned firms play vital roles in society to promote ESG performance because it can more readily allocate resources toward sustainability efforts. State-owned firms are more likely to adopt environmentally friendly practices and prioritize social welfare due to government influence (Bai et al., 2006, Deng et al., 2020). In addition, the state ownership can create incentives for firms to align with ESG benchmarks to maintain government support and legitimacy, resulting in improved ESG practices. Zahid et al. (2023) demonstrate that state-owned firms perform better in ESG than non-state-owned firms, primarily due to their easy access to equity funding via stock markets. This is in line with He et al. (2023), who find that ESG rating significantly reduces corporate risk-taking of Chinese publicly listed firms.

Although there is ambiguous association between the state-owned firms and the ESG performance, this paper posits the following hypothesis:

Hypothesis 1: A positive association between government investors and ESG performance.

Foreign investors play a vital role in improving corporate governance and financial transparency, thereby mitigating agency problems and information asymmetry (Chen et al., 2017). Foreign-owned firms are subject to rigorous monitoring by regulators, analysts, and institutions, leading to an encouragement of disclosure quality, including voluntary disclosure (Hope et al., 2013, Karolyi, 2006). Therefore, the existing literature on foreign institutions indicates a positive relationship between foreign investors and ESG performance. For instance, Cheung et al. (2015) and Li et al. (2015) find that foreign investors contribute to demanding compliance with CSR norms and improving governance. Additionally, Li et al. (2021) demonstrate that the presence of foreign investors is positively related to increasing ESG performance. Similarly, Oh et al. (2011) find that foreign investors promote ESG engagement due to its effectiveness as a signalling mechanism in reducing information asymmetry. Thus, we propose the following hypothesis:

Hypothesis 2: A positive association between foreign investors and ESG performance.

Family investors typically have a long-term horizon and are involved in the day-to-day activities of firms (Chen et al., 2010). Consequently, they acquire specific knowledge to efficiently monitor corporate executives and exercise their influence on the firm's decisions (Anderson and Reeb, 2003). In terms of ESG investment, many scholars have studied the impact of family investors on ESG activities; however, their results are inconsistent (Rees and Rodionova, 2015, Le Breton-Miller and Miller, 2016). Thus, the associations between family

firms and ESG performance remain unclear. According to the socioemotional wealth theory (SEW), family firms tend to shape an organizational environment to foster ESG criteria (Gomez-Mejia et al., 2011, Kraus et al., 2020, Cordeiro et al., 2021, Al Natour et al., 2022). In addition, family managers tend to pursue the continuity of the family business, which they oversee with the intention of growing and passing it down to the following generation of family members (Cordeiro et al., 2020). Thus, family managers will tend to make long-term investments and establish long-lasting relationships with stakeholders (Ho et al., 2020). Recently, Le Breton-Miller and Miller (2016) report a positive correlation between the overall ESG score and family-owned firms. Similarly, Sun et al. (2023) demonstrate a positive association between family ownership and ESG scores. However, this positive association is negatively moderated by market competition.

In contrast, family firms are usually formed by several family members with different powers, influences, and goals. For this reason, some families may underestimate the importance of ESG performance and may not have the proper incentives to adopt and implement ESG practices (Kellermanns et al., 2012). According to previous studies, dominating shareholders in family businesses may expropriate minority shareholders to promote tactics that profit them personally rather than those that promote environmental preservation and long-term growth. This can lead to agency problems between controlling shareholders and minority shareholders (Boubakri et al., 2013, Bae et al., 2002). Consistent with this assertion, El Ghouli et al. (2016) indicate that family-owned firms in East Asian countries have weaker ESG performance compared to non-family-owned firms. They also argue that the negative association between family ownership and ESG performance is attributed to the conflict arising between family investors and minority investors (i.e., expropriation view of family control). Similarly, Fan et al. (2021) suggest that family-owned businesses allocate less investment towards pollution prevention strategies compared to non-family firms, especially in cases where the CEO is not the company's founder.

Although there is no consensus on whether the family-owned firms are more likely to have positive or negative relationship with the ESG performance, this paper put forward the following hypothesis:

Hypothesis 3: A negative association between family investors and ESG performance.

2.2 The role of financial sanctions

Financial sanctions are quickly replacing military force projection as an effective and popular tool for international diplomacy (Ghasseminejad and Jahan-Parvar, 2021). The United States and the European Union are regarded as the primary contributors to global sanctions, accounting for nearly 80% of sanctions imposed worldwide (Felbermayr et al., 2020, Kirikakha et al., 2021). Previous research indicates that financial sanctions are associated with heightened risks and increased costs of doing business in the targeted country. Additionally, financial sanctions lead to a reduction in the domestic gross product and foreign direct investment in the affected country (Neuenkirch and Neumeier, 2015, McLean et al., 2018, Crozet et al., 2021, Gutmann et al., 2023). Financial sanctions have a harmful impact on the financial sector, as Köster and Pelster (2017) and Danisewicz et al. (2018) document a negative connection between financial penalties and both efficiency and productivity of banks. Delis et al. (2017) also find that banks' enforcement actions are less effective in periods of financial uncertainty. Apart from the banking sector, Ghasseminejad and Jahan-Parvar (2021) find that sanctions have adverse impacts on profitability measures for publicly traded Iranian firms, particularly for those with political connections.

Given the negative impact of financial sanctions, firms typically respond by reducing their leverage and increasing their cash reserves to mitigate the adverse effects of financial sanctions (Ghasseminejad and Jahan-Parvar, 2021). ESG engagement is also employed as a risk management tool during periods of financial uncertainty. This aligns with Bouslah et al. (2018), who find that firms are more likely to engage in ESG activities during financial crises to create protection from the negative effects caused by such crises. Similarly, Murè et al. (2021) demonstrate a positive impact of the probability of sanctions on ESG scores for a sample of 13 Italian banks. The theoretical foundation behind such a positive relationship is that ESG performance creates a moral capital (goodwill) among stakeholders, providing an insurance-like protection against negative events (Godfrey et al., 2009). Moreover, ESG performance mitigates reputational damages and improves competitive advantages. (Ioannou and Serafeim, 2017, Deng et al., 2013, Murè et al., 2021).

Considering ESG investment as a risk management tool is inconsistent across firms with different ownership structures. This inconsistency is attributed to the varying levels of information asymmetry, agency problems, and corporate governance efficiency within these firms. More specifically, government-owned firms are characterised by high level of

information asymmetry and agency problems (Chen et al., 2017). Therefore, they may make decisions during periods of sanctions that do not align with stakeholder expectations. This argument is consistent with McGuinness et al. (2017), who find that government-owned firms tend to allocate their resources to support other areas rather than focusing on ESG activities during financial instability. However, the presence of foreign investors is associated with lower information asymmetry and agency problems, thereby improving corporate governance effectiveness (Chen et al., 2017). Similarly, family members are keen to reduce the probability of failure and the level of risk exposure because they are interested in passing their investment to the next generation of their family (Cordeiro et al., 2020, Ho et al., 2020). Thus, foreign and family investors may encourage ESG engagement during financial sanctions to reduce the negative consequences of such sanctions.

Accordingly, this study aims to address a notable research gap by examining the reactions of various investor categories to financial sanctions, particularly in terms of their influence on ESG performance. This is achieved by investigating the following hypotheses:

***Hypothesis 4:** Financial sanctions negatively moderate the relationship between government investors and ESG performance.*

***Hypothesis 5:** Financial sanctions positively moderate the relationship between foreign investors and ESG performance.*

***Hypothesis 6:** Financial sanctions positively moderate the relationship between family investors and ESG performance.*

3. Research design

3.1 Sample and data

Our sample begins with all Chinese firms that have available ESG data from ASSET4 database during the period of 2011-2022, which yields an initial total of 5,256 firm-year observations. We subsequently merge this dataset with ownership data and other financial data provided by DataStream and Worldscope. We follow the common practice of eliminating the financial firms (SIC codes 6000-6999) because of their rigorous regulatory requirements and distinct financial reporting structure. We also eliminate firm-year observations with missing data for main variables, resulting in a final dataset of 3,768 observations. Table 1 summarises the sample selection process.

(Insert Table 1 about here)

3.2 Definition of variables

ESG performance is our dependent variable collected from ASSET4, which is a widely used database as it provides auditable and relevant ESG information (Cheng et al., 2014, Dwekat et al., 2022, Mardawi et al., 2023). The ESG is a weighted average score ranging from 0 to 100, based on the evaluation of a firm's performance across three main areas: environmental, social, and governance. The environmental score reflects a firm's capacity to produce innovative eco-friendly products using fewer resources and lower carbon emissions. The social score covers the firm's achievements in terms of human rights, health and safety, employment quality, product responsibility, training and development, diversity, and community. Lastly, the governance score reflects the firm's improvements in terms of board functions, board structure, compensation policy, shareholders' rights, and vision and strategy.

With regards to the independent variable, we follow the investment literature (Chen et al., 2011, Boubakri et al., 2013, Chen et al., 2017, Ho et al., 2020) and focus on three categories of investor ownership: government ownership, foreign ownership, and family ownership. Data on these ownership categories are collected from DataStream, which defines them as strategic ownership. These ownership categories create distinct degree of information asymmetry, agency problems, and corporate governance efficiency, leading to different investment orientations (Chen et al., 2017). Given these differences, their responses to financial sanctions in terms of ESG performance may differ.

Finally, financial sanctions are our moderating variable, identified based on the Global Sanctions Database (GSDB). The GSDB classifies sanctions into three key dimensions: type, objective, and success of sanctions (Felbermayr et al., 2020). The recent update of GSDB covers 1325 publicly traceable sanction cases, involving multilateral, plurilateral and purely bilateral sanctions over the period of 1950 -2022. The GSDB relies on alternative sources that are verified across various dimensions, which ensures a high level of consistency, reliability, and maximum coverage (Felbermayr et al., 2020). Based on the GSDB, China faced various sanctions imposed by the United States, United Nations, European Union, and other countries. These sanctions were imposed because of several concerns such as human rights and democracy, and they came to an end in 1997. However, the recent ongoing sanctions imposed on China began in 2017 by the United States aimed at achieving policy change and addressing human right issues.

3.3 Model specification

We develop two regression models to test our hypotheses. Model one examines the effects of government ownership, foreign ownership, and family ownership on ESG performance. Model two examines how these investor types respond to financial sanctions in terms of ESG performance. These regression models are estimated using a fixed effect approach, with standard errors clustered at the firm level.

$$ESG_{it} = \alpha_0 + \beta_w OOWNV_{it} + \sum_k \beta_e X_{eit} + \sum_t \beta_t YEAR_t + \varepsilon_{it} \quad (1)$$

$$ESG_{it} = \alpha_0 + \beta_w OOWNV_{it} + \beta_p OOWNV_{it} \times FSANC_{it} + \sum_e \beta_e X_{eit} + \sum_t \beta_t YEAR_t + \varepsilon_{it} \quad (2)$$

In equations 1-2, ESG_{it} represents ESG performance of firm (i) in year (t); $OOWNV$ represents the firm's ownership type and takes three values: government ownership (GOVOWN), foreign ownership (FOROWN), and family ownership (FAMOWN); X_e is a vector of nine control variables: firm size (FSIZE), leverage (LEV), market to book ratio (MTB) ratio, net property plant and equipment to net assets (PPT) ratio, CSR committee (COCSR), board diversity (BDIV), board size (BSIZE), board independence (BIND), and board experience (BEXP); and $FSANC$ represents financial sanctions.

Firm size is measured by the natural logarithm of total assets; leverage is the ratio of long term debt to total assets; market to book is the ratio of market value of equity to book value of equity; property plant and equipment to net assets is the ratio of net property plant and equipment to net assets; CSR committee is a dummy variable coded as 1 if a CSR committee exists, and 0 otherwise; board diversity is the percentage of women directors on the board; board size is the total number of directors on the board; board independence is the percentage of independent directors on the board; and board experience is the average number of years that board directors have served. Appendix A provides the definitions and data sources of variables.

We estimate equations 1 and 2 using the fixed effect method. This approach addresses potential issues associated with panel data, such as individual heterogeneity. By introducing firm-specific fixed effects, we can control for unobservable firm-specific characteristics that may vary among firms but remain constant over time. Year fixed effects are also included to account for changes in economic conditions, regulations, and the common CSR trend over time. Additionally, all continuous variables in our equations are winsorised at the 1st and 99th percentiles to handle potential outliers.

Moreover, we acknowledge the possibility of endogeneity issues, which are common concerns in CSR literature (Gull et al., 2023, Liu et al., 2021). Therefore, in section 5.4, we employ alternative regression methods, specifically the Heckman two-stage method and Two-Stage Least Squares (2SLS) method, to address various endogeneity concerns, including reverse causality, sample self-selection bias, and omitted variables bias (Ullah et al., 2021). In the 2SLS method, we incorporate fixed effects for both industries and years to account for variations specific to each industry and changes over time.

4. Empirical results

4.1 Descriptive analysis

Table 2 presents the descriptive statistics for variables in the study. On average, Chinese firms have an ESG performance score of around 36. This score ranges between 0.6 and 92.6, with a standard deviation of 16.6. Furthermore, Table 3 presents the annual average of ESG performance, in which the highest value is 42.2 in 2022 and the lowest value is 23.8 in 2012. In terms of percentages of investor ownership, Table 2 shows that the mean (SD) of government ownership is 0.5% (3.7), foreign ownership is 9% (19.2) and family ownership is 7.2% (15.5). In Table 3, the annual average of percentage ownership shows that the percentages of government ownership and foreign ownership experienced significant declines since China was subjected to sanctions starting in 2017. However, the family ownership did not have the same pattern of decrease during this period.

With regard to the control variables, Table 2 shows that the size of Chinese firms, calculated by the natural logarithm of total assets, ranges from 4.6 to 14.8, with a mean of 10.3 and a standard deviation of 1.3. These figures indicate that our sample includes small, medium and large firms, which mitigates concerns of size bias. On average, Chinese firms have a financial leverage of 0.10, a market to book ratio of 3.4, and a property, plant, and equipment ratio of 0.35. Table 2 also shows that 36% of Chinese firms have a CSR committee, 12.5% of board members are women, and 38.9% of board members are independent. Additionally, the average board size is 9 members, and the average board experience is 5 years.

(Insert Tables 2 and 3 about here)

Table 4 shows that correlation coefficients among independent variables are all below 0.6, which is the threshold of multicollinearity concern (Gujarati, 2022). The highest value is 0.43 between firm size and leverage and the lowest value is around 0 between board independence

and both board size and board diversity. These findings demonstrate the absence of multicollinearity issues among the variables in the study.

(Insert Table 4 about here)

4.2 Main analysis

The regression analysis findings of equation 1 are depicted in Table 5. Beginning with the control variables in Model 1, the results show a positive relationship between firm size and ESG performance at the 1% significance level. This finding is consistent with the resources-based view that large firms have more resources and capabilities to engage in ESG activities which ultimately improves their image and customer loyalty (Orlitzky et al., 2003). Conversely, PPT ratio is negatively correlated with ESG performance at the 1% significance level. However, leverage and MTB ratio do not show statistically significant effects on ESG performance. Furthermore, Model 1 demonstrates that governance factors, i.e., CSR committee, board diversity, board independence, and board experience, positively contribute in improving ESG performance. However, board size is negatively related to ESG performance. This is in line with the argument that a large board of directors is less efficient than a small one because it becomes symbolic (Jensen, 1993).

The effect of ownership types (government, foreign, and family) on ESG performance is presented in Table 5, Models 2-4 respectively. Model 2 shows that government investors have a positive influence ($\beta = 0.280$, $p < 0.01$) on ESG performance. This result is consistent with previous studies conducted by Hsu et al. (2021) and Boubakri et al. (2019), which argue that governments have superior abilities and a better position to address ESG issues. Similarly, Model 3 shows that foreign investors exhibit a positive contribution ($\beta = 0.102$, $p < 0.01$) to ESG performance. This supports previous studies' findings that foreign investors contribute to demanding compliance with CSR norms (Cheung et al., 2015) and improving governance (Li et al., 2015). However, Model 4 displays that family ownership has a negative impact ($\beta = -0.054$, $p < 0.05$) on ESG performance. This finding provides support to El Ghouli et al. (2016) study, indicating that family-owned firms in East Asian countries have weaker ESG performance compared to non-family-owned firms. El Ghouli et al. (2016) argue that the negative association between family ownership and ESG performance is attributed to the conflict arising between family investors and minority investors (i.e., expropriation view of family control).

(Insert Table 5 about here)

Table 6 presents results of equation 2 on how different types of ownership investors respond to financial sanctions in terms of ESG performance. More specifically, Model 1 shows that the coefficient of interaction term between government ownership and financial sanctions is significantly negative ($\beta = -0.339$, $p < 0.01$). This result is elaborated in Figure 1, indicating that the relationship between government ownership and ESG performance is significantly positive at the 1% significance level, with a simple slope of 0.389 when financial sanctions are not imposed, while this slope is negatively moderated to 0.05 (i.e., $0.389 - 0.339 = 0.05$) when financial sanctions are effective. This suggests that government-owned firms incline to decrease ESG performance in times of financial sanctions. In other words, the priority of resource allocation by government investors does not lie towards ESG activities during the financial sanction period. This confirms McGuinness's et al. (2017) finding that ESG is not a top priority of government-owned firms. This could be attributed to the fact that government-owned firms are characterized by a high degree of information asymmetry and less corporate governance efficiency (Chen et al., 2017).

However, Model 2 in Table 6 demonstrates that foreign ownership contributes to more CSR engagement during financial sanctions, in which the interaction between foreign ownership and financial sanctions is significantly positive ($\beta = 0.061$, $p < 0.01$). Figure 2 also confirms that the slope of relationship between foreign ownership and ESG performance is significantly steeper during times of financial sanctions (i.e., $0.064 + 0.061 = 0.125$) compared to the period before sanctions (0.064). This result is in line with the argument that ESG performance is used as a risk management tool during periods of uncertainty (Bouslah et al., 2018). Therefore, since foreign investors contribute to higher information transparency and corporate governance efficiency (Chen et al., 2017), they are more likely to engage in additional ESG activities to control the risk arisen by financial sanctions.

Interestingly, Model 3 shows that while family ownership has a negative effect on ESG performance ($\beta = -0.091$, $p < 0.01$), the coefficient on the interaction between family ownership and financial sanctions is significantly positive ($\beta = 0.048$, $p < 0.10$). That is, family investors encourage ESG engagement during the financial sanctions but they do not show the same inclination when financial sanctions are not effective. This result is also illustrated in Figure 3, which indicates that the negative slope between family ownership and ESG performance is less steep during financial sanctions ($-0.091 + 0.048 = -0.043$) in comparison to the period before financial sanctions (-0.091). As ESG performance serves as a risk management tool during periods of uncertainty (Bouslah et al., 2018), family members may promote ESG performance

during financial sanctions due to the fact that they are keen to protect their investment and transfer it to the next generation of their family (Cordeiro et al., 2020, Ho et al., 2020).

(Insert Table 6 about here)

(Insert Figures 1, 2, and 3 about here)

4.3 Robustness Check—controlled for endogeneity

The endogeneity problem is a potential concern in ESG and corporate governance research (Liu et al., 2021). This problem arises due to several issues, including reverse causality, sample self-selection bias, omitted variables bias (Ullah et al., 2018). To address these endogeneity concerns, we re-estimate the equations 1-2 using two different regression methods: the Heckman two-stage method and Two-Stage Least Squares (2SLS) method. Following previous ownership literature (Boubakri et al., 2019, Chen et al., 2017), we employ the Heckman two-stage method to address the sample self-selection bias. Using this method allows us to correct the model specification for endogeneity (Jo and Harjoto, 2011) and accurately examine how investors would respond to financial sanctions in terms of ESG performance. We run in the first stage a probit regression model using a dummy variable that is coded 1 if a firm issues an ESG report, 0 otherwise to predict the inverse Mills ratio (IMR)². In the second stage, we re-estimate equation 2 using the fixed effect method, including the inverse Mills ratio (IMR) as a control variable. Table 7 presents the results of the Heckman two-stage method, which are consistent with the findings reported in Table 6. This provides robustness to our results that they are not influenced by endogeneity issues.

(Insert Table 7 about here)

Moreover, we employ the 2SLS method to tackle the issues of reverse causality and omitted variables bias (Gull et al., 2023, Ullah et al., 2018). In accordance with Boubakri et al. (2018), we use the average industry-region ownership types as instrumental variables (INSTVAR). The average industry-region ownership (based on Fama-French 12 industries and the city where the headquarters are located) is directly related to ownership variables but it does not have a direct relationship with ESG performance, which makes it an appropriate instrumental variable. In the first stage, we use the OLS regression model to predict the fitted value of government ownership (PRDGOVOWN), foreign ownership (PRDFOROWN), and family

² Following Chen et al., (2017), we include year and industry fixed effects (Fama-French 12 industries classification) in the probit regression model.

ownership (PRDFAMOWN) based on the instrumental variable and various control variables. In the second stage, we regress ESG performance on the interaction between the fitted values obtained from the first stage and financial sanctions, along with various control variables. The second-stage results in Table 8 suggest that the fitted value of foreign ownership (Model 4) and family ownership (Model 6) promote ESG performance during times of sanctions. In contrast, the fitted value of government ownership (Model 2) mitigates ESG performance in such periods. These results from the 2SLS estimation regressions align with the findings presented in Tables 6 and 7, which provide additional support for the validity of our results.

(Insert Table 8 about here)

5. Conclusion

In this study, we examine the influence of different ownership types (government, foreign, and family) on firms' decisions to engage in ESG performance. Furthermore, we examine how these ownership types respond to financial sanctions in relation to ESG performance. The tendency toward ESG investment varies among different ownership types because each of them creates varying levels of information asymmetry, agency problems, and corporate governance efficiency, leading to diverse investment orientations (Chen et al., 2017). In line with this argument, we find that the government and foreign ownership have a significant and positive impact on ESG performance within the Chinese context during the period of 2011-2022. However, family ownership demonstrates a negative influence on ESG performance. This negative relationship between family ownership and ESG performance is attributed to the conflict arising between family investors and minority investors (i.e., expropriation view of family control) (El Ghoul et al., 2016).

The findings also highlight distinct responses among government, foreign, and family ownership to financial sanctions. Specifically, the results indicate that the presence of both foreign and family ownership correlates with increased engagement in CSR activities during periods of financial sanctions. In contrast, government ownership is associated with a decline in ESG performance during such periods. Foreign-owned firms, which are known for being transparent and efficient in governance, increase their CSR activities to reduce risks from financial sanctions. Similarly, family-owned firms promote their ESG performance during sanctions, as they aim to protect their investments and plan for the next (Cordeiro et al., 2020, Ho et al., 2020). However, government-owned firms tend to allocate their resources to support

other areas rather than focusing on ESG activities during financial sanctions (McGuinness et al., 2017).

The results of our study reveal distinct patterns in ethical and sustainable business practices associated with different ownership types. For instance, foreign investors consistently demonstrate a strong commitment to ethical considerations by actively engaging in ESG performance both before and during times of economic sanctions. However, family and government investors exhibit dynamic approaches. Particularly, family-owned firms shift their focus toward sustainability during financial sanctions, which shows a sensitivity to ethical considerations that align with long-term objectives. In contrast, government-owned firms prioritize sustainable practices before financial sanctions but shift their focus to address other unique challenges that arise during such periods.

Given the findings and contributions of our study, there are several practical implications for various stakeholders, including managers, investors, and policymakers. Managers can benefit from this study by gaining insights into the preferences and inclinations of various groups of shareholders when it comes to ESG activities. Furthermore, managers can gain insights into the reasons behind the heterogeneous responses of different ownership types in coping with financial sanctions. By gaining these insights and understanding, managers can align with the expectations of major shareholders and work efficiently to mitigate the negative consequences of financial sanctions. The study provides empirical evidence that ownership structure plays an important role in shaping the firms' investment decision and expenditure priorities during financial sanctions, which lead to varying level of risk. Thus, investors can benefit from this study by evaluating their future investments and choosing firms with ownership structures aligning with their risk preferences. Policymakers can also benefit from the empirical evidence presented in our study regarding the heterogeneous behaviour of owners in relation to ESG engagement before and during financial sanctions. This knowledge can assist them in formulating policies that promote responsible behaviour, even in the presence of economic uncertainties like sanctions. Furthermore, our results confirm that information asymmetry and agency problems vary based on ownership structure. For example, conflicts between majority shareholders (family) and minority shareholders lead to reduced ESG performance. Thus, policymakers may benefit from our results to implement regulations that strengthen the corporate governance efficiency and mitigate the agency problems caused by the expropriation view of large shareholders.

While this study makes significant contributions, it has some limitations that could be seen as opportunities for future research. In particular, our sample is limited to non-financial Chinese firms, which restricts the generalisation of the results. This is due to the fact that Chinese firms are characterised by concentrated ownership compared to firms in other countries like the US and UK, where ownership is more widely dispersed (Sun et al., 2016, Zhang, 2022). Furthermore, our study focuses on a particular type of sanction (i.e., financial sanctions). However, considering other types of sanctions may yield different responses from shareholders. Therefore, future research may expand upon our study by incorporating international samples and investigating the responses to various types of sanctions.

Table 1 Sample selection process

	Obs.	%
All Chinese firms with ESG data from ASSET4 2011-2022	5,256	100
Less		
Financial firms (SIC codes 6000-6999)	1,026	19.52
Observations with missing variables	462	8.79
Final sample	3,768	71.69

This table shows the sample selection process.

Table 2 Descriptive statistics

	Obs.	Mean	Median	SD	Min	Max
ESG	3768	36.115	34.125	16.696	0.660	92.680
GOVOWN	3768	0.572	0.000	3.705	0.000	51.000
FOROWN	3768	9.079	0.000	19.278	0.000	79.000
FAMOWN	3768	7.223	0.000	15.563	0.000	79.000
FSANC	3768	0.856	1.000	0.351	0.000	1.000
FSIZE	3768	10.373	10.225	1.337	4.695	14.821
LEV	3768	0.101	0.064	0.114	0.000	0.755
MTB	3768	3.497	2.180	3.800	-3.000	22.800
PPT	3768	0.355	0.313	0.232	0.000	0.931
COCSR	3768	0.360	0.000	0.480	0.000	1.000
BDIV	3768	12.714	11.110	12.095	0.000	53.850
BSIZE	3768	9.372	9.000	2.509	4.000	21.000
BIND	3768	38.909	37.500	8.742	0.000	80.000
BEXP	3768	5.072	4.665	2.301	1.330	18.000

This table shows the descriptive statistics for all variables. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A.

Table 3 The annual averages of the main variables

Year	Obs.	ESG	GOVOWN	FOROWN	FAMOWN	FSANC
2011	80	24.032	1.388	23.300	3.975	0.000
2012	78	23.844	2.346	23.013	4.385	0.000
2013	86	24.084	1.930	23.198	4.953	0.000
2014	93	25.836	1.387	22.968	5.914	0.000
2015	99	27.899	1.242	21.444	4.798	0.000
2016	105	35.164	1.171	21.467	3.895	0.000
2017	211	34.846	0.645	12.848	4.043	1.000
2018	257	34.915	0.541	10.934	4.440	1.000
2019	463	33.825	0.503	8.127	5.810	1.000
2020	650	35.433	0.458	6.262	7.529	1.000
2021	819	38.349	0.326	5.745	9.145	1.000
2022	827	42.257	0.301	4.816	9.222	1.000

This table shows the annual averages of the main variables. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A.

Table 4 Correlation matrix

	GOVOWN	FOROWN	FAMOWN	FSIZE	LEV	MTB	PPT	COCSR	BDIV	BSIZE	BIND	BEXP
GOVOWN	1.000											
FOROWN	-0.006	1.000										
FAMOWN	-0.043*	0.106*	1.000									
FSIZE	0.013	-0.088*	-0.295*	1.000								
LEV	0.026	0.044*	-0.102*	0.430*	1.000							
MTB	-0.051*	-0.076*	0.237*	-0.391*	-0.197*	1.000						
PPT	0.104*	0.070*	-0.016	0.135*	0.400*	-0.093*	1.000					
COCSR	-0.017	0.097*	-0.054*	0.278*	0.122*	-0.055*	0.088*	1.000				
BDIV	-0.093*	-0.064*	0.114*	-0.242*	-0.093*	0.137*	0.002	-0.024	1.000			
BSIZE	-0.034*	-0.071*	-0.219*	0.237*	0.147*	-0.124*	0.124*	-0.004	-0.103*	1.000		
BIND	0.012	0.067*	0.138*	0.002	-0.050*	0.021	-0.004	0.027	0.002	-0.331*	1.000	
BEXP	-0.068*	0.145*	0.123*	-0.118*	-0.112*	0.007	-0.034*	-0.005	0.074*	-0.060*	0.103*	1.000

This table shows the correlation among independent variables. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A. * indicates statistical significance at 5% level.

Table 5 ESG performance and investors ownership (Fixed-Effect method)

	ESG performance			
	Model 1	Model 2	Model 3	Model 4
GOVOWN		0.280*** (2.66)		
FOROWN			0.102*** (3.24)	
FAMOWN				-0.054** (-2.28)
FSIZE	3.686*** (7.36)	3.660*** (7.33)	3.781*** (7.57)	3.749*** (7.45)
LEV	-1.224 (-0.57)	-1.493 (-0.69)	-1.416 (-0.66)	-1.101 (-0.52)
MTB	0.053 (0.82)	0.051 (0.80)	0.060 (0.96)	0.044 (0.69)
PPT	-8.131*** (-3.26)	-8.255*** (-3.31)	-6.998*** (-2.84)	-8.350*** (-3.34)
COCSR	8.582*** (17.00)	8.536*** (16.90)	8.618*** (17.14)	8.575*** (16.99)
BDIV	0.129*** (6.27)	0.130*** (6.30)	0.134*** (6.44)	0.128*** (6.23)
BSIZE	-0.447*** (-4.54)	-0.433*** (-4.40)	-0.457*** (-4.66)	-0.447*** (-4.55)
BIND	0.132*** (7.04)	0.131*** (7.03)	0.133*** (7.15)	0.132*** (7.05)
BEXP	0.422*** (4.39)	0.434*** (4.52)	0.455*** (4.73)	0.428*** (4.45)
Constant	-22.985*** (-4.36)	-23.117*** (-4.39)	-25.687*** (-4.86)	-23.112*** (-4.37)
Observations	3768	3768	3768	3768
Year fixed effects	Yes	Yes	Yes	Yes
R-square	0.647	0.648	0.648	0.647
F statistic p-value	0.000	0.000	0.000	0.000

This table presents the effects of government ownership, foreign ownership, and family ownership on ESG performance using the fixed effects method. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A. *t*-statistics are presented in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6 ESG performance, investor ownership, and financial sanctions (Fixed-Effect method)

	ESG performance		
	Model 1	Model 2	Model 3
GOVOWN	0.389*** (3.42)		
GOVOWN*FSANC	-0.339*** (-4.68)		
FOROWN		0.064* (1.89)	
FOROWN*FSANC		0.061*** (3.55)	
FAMOWN			-0.091*** (-2.92)
FAMOWN*FSANC			0.048* (1.86)
FSIZE	3.587*** (7.22)	3.838*** (7.68)	3.746*** (7.46)
LEV	-1.568 (-0.73)	-1.050 (-0.49)	-0.820 (-0.38)
MTB	0.050 (0.79)	0.058 (0.92)	0.049 (0.77)
PPT	-8.922*** (-3.66)	-8.242*** (-3.37)	-8.696*** (-3.48)
COCSR	8.398*** (16.61)	8.516*** (16.97)	8.601*** (17.01)
BDIV	0.130*** (6.31)	0.134*** (6.49)	0.128*** (6.21)
BSIZE	-0.415*** (-4.24)	-0.508*** (-5.10)	-0.460*** (-4.65)
BIND	0.128*** (6.85)	0.131*** (7.07)	0.132*** (7.04)
BEXP	0.419*** (4.37)	0.383*** (3.92)	0.406*** (4.18)
Constant	-22.419*** (-4.28)	-23.779*** (-4.51)	-22.630*** (-4.29)
Observations	3768	3768	3768
Year fixed effects	Yes	Yes	Yes
R-square	0.650	0.649	0.647
F statistic p-value	0.000	0.000	0.000

This table presents how government investors, foreign investors, and family investors respond to financial sanctions in terms of on ESG performance, using the fixed effects method. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A. *t*-statistics are presented in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1 Interaction between government ownership and financial sanctions

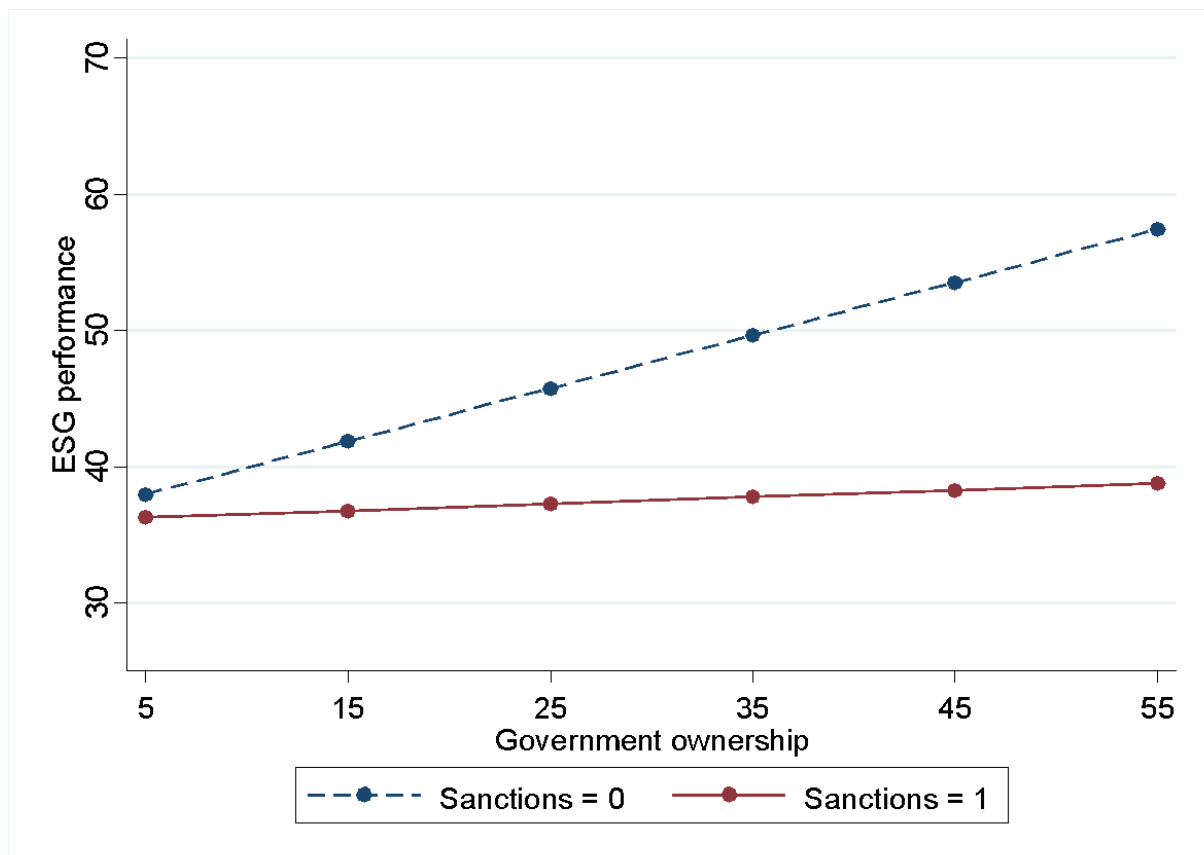


Figure 2 Interaction between foreign ownership and financial sanctions

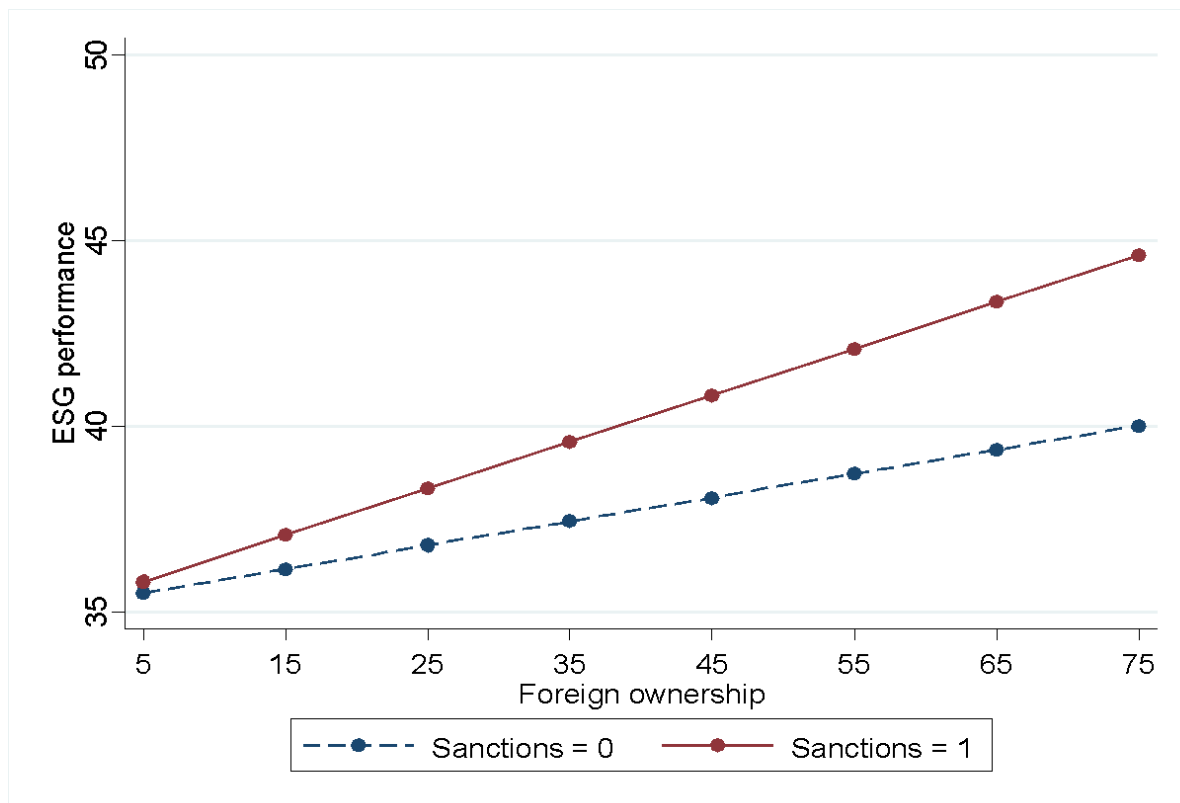


Figure 3 Interaction between family ownership and financial sanctions

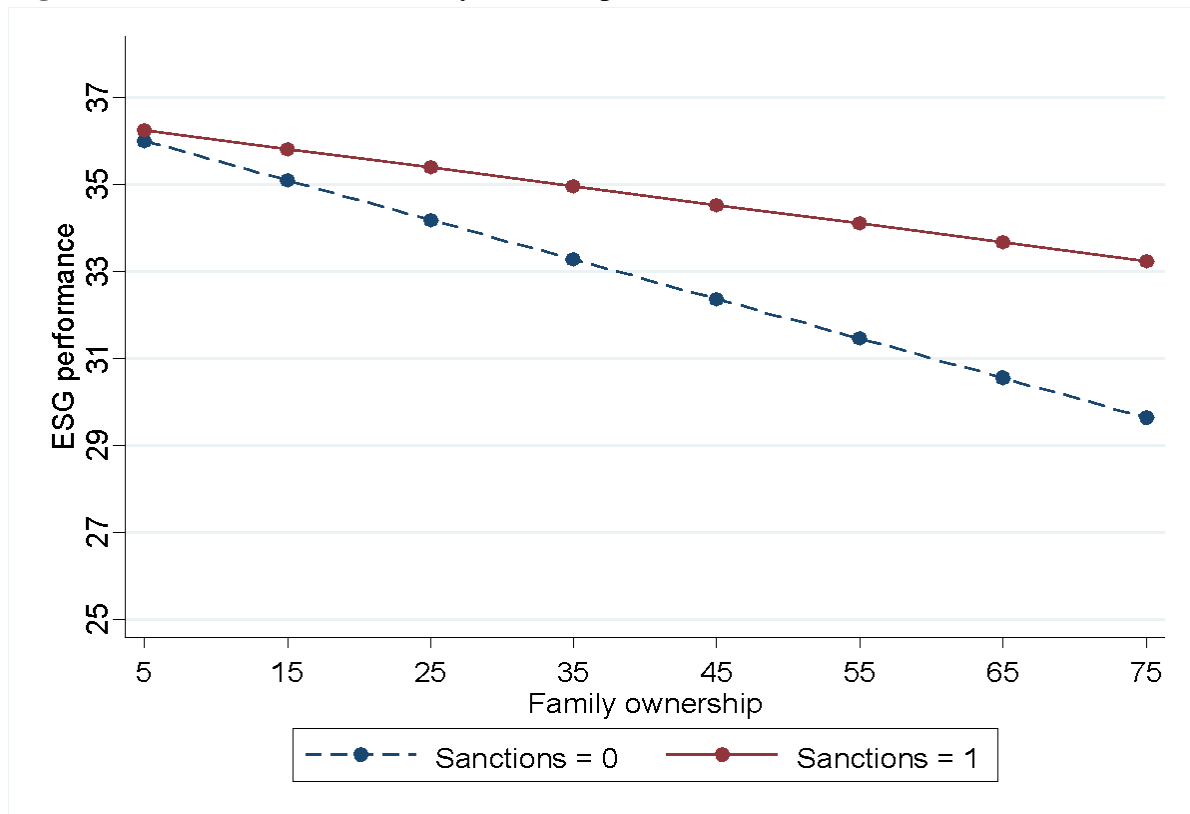


Table 7 ESG performance, investor ownership, and financial sanctions (Hackman two-stage method)

	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
GOVOWN	-0.005 (-0.77)	0.445*** (3.90)				
GOVOWN*FSANC		-0.340*** (-4.68)				
FOROWN			0.007*** (3.74)	-0.003 (-0.09)		
FOROWN*FSANC				0.061*** (3.56)		
FAMOWN					-0.003** (-2.05)	-0.053* (-1.69)
FAMOWN*FSANC						0.048* (1.85)
IMR		11.788*** (20.46)		10.139*** (17.25)		11.206*** (19.05)
FSIZE	0.317*** (10.08)	-0.152 (-0.26)	0.342*** (10.38)	0.361 (0.61)	0.306*** (9.56)	0.309 (0.53)
LEV	0.017 (0.05)	-1.777 (-0.83)	-0.078 (-0.22)	-0.273 (-0.13)	0.048 (0.14)	-1.367 (-0.64)
MTB	-0.013* (-1.80)	0.200*** (3.06)	-0.010 (-1.40)	0.158** (2.46)	-0.011 (-1.53)	0.170*** (2.60)
PPT	0.767*** (5.44)	-17.980*** (-7.30)	0.733*** (5.21)	-15.694*** (-6.36)	0.765*** (5.44)	-17.279*** (-6.82)
COCSR	1.362*** (16.99)	-7.700*** (-7.41)	1.324*** (16.33)	-4.951*** (-4.88)	1.362*** (16.92)	-6.707*** (-6.38)
BDIV	-0.002 (-0.74)	0.150*** (7.28)	-0.001 (-0.42)	0.143*** (6.97)	-0.001 (-0.66)	0.144*** (7.03)
BSIZE	0.017 (1.38)	-0.614*** (-6.39)	0.025** (2.02)	-0.761*** (-7.84)	0.014 (1.16)	-0.618*** (-6.35)
BIND	0.001 (0.41)	0.112*** (5.98)	0.002 (0.48)	0.115*** (6.19)	0.002 (0.58)	0.111*** (5.87)
BEXP	0.001 (0.06)	0.410*** (4.28)	-0.003 (-0.24)	0.412*** (4.20)	0.003 (0.26)	0.370*** (3.80)
Constant	-4.994*** (-11.74)	35.491*** (5.71)	-5.496*** (-12.19)	30.872*** (4.88)	-4.891*** (-11.44)	31.203*** (5.01)
Observations	3768	3768	3768	3768	3768	3768
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	Yes	No	Yes	No
Pseudo R-square	0.327		0.330		0.328	
R-square		0.650		0.649		0.647
F statistic p-value	0.000	0.000	0.000	0.000	0.000	0.000

This table presents how government investors, foreign investors, and family investors respond to financial sanctions in terms of on ESG performance, using the Hackman two-stage method. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A. *t*-statistics are presented in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8 ESG performance, investor ownership, and financial sanctions (2SLS method)

	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
INSTVAR	1.120*** (20.56)		0.993*** (28.65)		0.812*** (27.64)	
PRDGOVOWN		-0.188*** (-2.64)				
PRDGOVOWN*F SANC		-0.219*** (-2.61)				
PRDFOROWN				0.106*** (2.79)		
PRDFOROWN*FS ANC				0.131*** (3.33)		
PRDFAMOWN						-0.095* (-1.84)
PRDFAMOWN*F SANC						0.185*** (4.22)
FSIZE	-0.092** (-2.14)	2.736*** (12.78)	-2.957*** (-10.55)	3.876*** (16.61)	-2.021*** (-10.07)	3.017*** (13.19)
LEV	0.001 (0.28)	0.027 (1.13)	0.179*** (5.59)	-0.017 (-0.70)	0.063*** (2.84)	0.022 (0.90)
MTB	-0.017* (-1.77)	-0.001 (-0.01)	-0.332*** (-4.63)	0.120* (1.88)	0.544*** (6.07)	-0.040 (-0.61)
PPT	0.007*** (2.77)	-0.013 (-1.24)	0.036*** (2.66)	-0.046*** (-3.98)	0.016 (1.55)	-0.018* (-1.70)
COCSR	0.197* (1.68)	15.931*** (32.63)	6.213*** (10.50)	13.944*** (26.38)	-0.433 (-0.89)	15.955*** (32.88)
BDIV	-0.010*** (-3.65)	0.071*** (3.83)	-0.113*** (-5.46)	0.086*** (4.80)	0.043** (2.15)	0.076*** (4.14)
BSIZE	-0.036 (-1.52)	-0.336*** (-3.60)	-0.539*** (-4.77)	-0.074 (-0.79)	-0.568*** (-6.47)	-0.239** (-2.55)
BIND	-0.000 (-0.06)	0.141*** (5.51)	0.049 (1.56)	0.107*** (4.37)	0.131*** (4.64)	0.125*** (4.81)
BEXP	-0.050*** (-2.66)	0.620*** (6.36)	0.558*** (4.59)	0.380*** (3.90)	0.376*** (3.53)	0.603*** (6.16)
Constant	1.380* (1.86)	- (-4.93)	45.484** (10.77)	- (-10.79)	14.877** (4.78)	- (-5.96)
Observations	3768	3768	3768	3768	3768	3768
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-square	0.511	0.419	0.404	0.471	0.295	0.426
F statistic p-value	0.000	0.000	0.000	0.000	0.000	0.000

This table presents how government investors, foreign investors, and family investors respond to financial sanctions in terms of on ESG performance, using the two-stage least squares method. All continuous variables are winsorised at the 1st and 99th percentiles to address potential outliers. The definitions of the variables are provided in Appendix A. *t*-statistics are presented in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix A variable definitions and data sources

Variable	Definition	Source
ESG	ESG performance score.	ASSET4
GOVOWN	Percentage of shares owned by a government.	DataStream
FOROWN	Percentage of shares owned by foreign investors.	DataStream
FAMOWN	Percentage of shares owned by family members.	DataStream
IMR	Inverse Mills ratio estimated from the Heckman two-stage method.	Authors' estimation
INSTVAR	Instrumental variable measured as the average of ownership by industry and region.	Authors' calculation
FSIZE	Natural logarithm of total assets.	Worldscope
LEV	Long-term debt to total assets.	Worldscope
MTB	Market value to book value.	Worldscope
PPT	Net property, plant and equipment to net total assets.	Worldscope
COCSR	Dummy variable coded as 1 if a CSR committee exists, 0 otherwise.	ASSET4
BDIV	Percentage of women members on the board.	ASSET4
BSIZE	Total number of directors on the board.	ASSET4
BIND	Percentage of independent directors on the board.	ASSET4
BEXP	Average number of years that the board of directors has served.	ASSET4

This table presents the definitions and data sources of the variables.

6. References

- AL NATOUR, A. R., MEQBEL, R., KAYED, S. & ZAIDAN, H. 2022. The role of sustainability reporting in reducing information asymmetry: the case of family-and non-family-controlled firms. *Sustainability*, 14, 6644.
- ANDERSON, R. C. & REEB, D. M. 2003. Founding-family ownership and firm performance: evidence from the S&P 500. *The journal of finance*, 58, 1301-1328.
- ATTIG, N., EL GHOUL, S., GUEDHAMI, O. & SUH, J. 2013. Corporate social responsibility and credit ratings. *Journal of business ethics*, 117, 679-694.
- BAE, K. H., KANG, J. K. & KIM, J. M. 2002. Tunneling or value added? Evidence from mergers by Korean business groups. *The journal of finance*, 57, 2695-2740.
- BAI, C.-E., LU, J. & TAO, Z. 2006. The multitask theory of state enterprise reform: Empirical evidence from China. *American Economic Review*, 96, 353-357.
- BECK, T., DEMIRGÜÇ-KUNT, A. & MAKSIMOVIC, V. 2005. Financial and legal constraints to growth: does firm size matter? *The journal of finance*, 60, 137-177.
- BOUBAKRI, N., EL GHOUL, S., GUEDHAMI, O. & MEGGINSON, W. L. 2018. The market value of government ownership. *Journal of corporate Finance*, 50, 44-65.
- BOUBAKRI, N., GUEDHAMI, O., KWOK, C. C. & WANG, H. H. 2019. Is privatization a socially responsible reform? *Journal of corporate finance*, 56, 129-151.
- BOUBAKRI, N., MANSI, S. A. & SAFFAR, W. 2013. Political institutions, connectedness, and corporate risk-taking. *Journal of international business studies*, 44, 195-215.
- BOUSLAH, K., KRYZANOWSKI, L. & M'ZALI, B. 2018. Social performance and firm risk: Impact of the financial crisis. *Journal of Business Ethics*, 149, 643-669.
- BOYD, B. K. 1994. Board control and CEO compensation. *Strategic management journal*, 15, 335-344.
- BUCHANAN, B., CAO, C. X. & CHEN, C. 2018. Corporate social responsibility, firm value, and influential institutional ownership. *Journal of Corporate Finance*, 52, 73-95.
- CHARITOU DI, G., GIANNARAKIS, G. & LAZARIDES, T. G. 2011. Corporate social responsibility performance in periods of financial crisis. *European Journal of Scientific Research*, 63, 447-455.
- CHEN, R., EL GHOUL, S., GUEDHAMI, O. & WANG, H. 2017. Do state and foreign ownership affect investment efficiency? Evidence from privatizations. *Journal of Corporate Finance*, 42, 408-421.
- CHEN, S., CHEN, X., CHENG, Q. & SHEVLIN, T. 2010. Are family firms more tax aggressive than non-family firms? *Journal of financial economics*, 95, 41-61.
- CHEN, S., SONG, Y. & GAO, P. 2023. Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management*, 345, 118829.
- CHEN, S., SUN, Z., TANG, S. & WU, D. 2011. Government intervention and investment efficiency: Evidence from China. *Journal of Corporate Finance*, 17, 259-271.

- CHENG, B., IOANNOU, I. & SERAFEIM, G. 2014. Corporate social responsibility and access to finance. *Strategic management journal*, 35, 1-23.
- CHEUNG, Y.-L., KONG, D., TAN, W. & WANG, W. 2015. Being good when being international in an emerging economy: The case of China. *Journal of Business Ethics*, 130, 805-817.
- CORDEIRO, J. J., PROFUMO, G. & TUTORE, I. 2020. Board gender diversity and corporate environmental performance: The moderating role of family and dual-class majority ownership structures. *Business Strategy and the Environment*, 29, 1127-1144.
- CORDEIRO, J. J., PROFUMO, G. & TUTORE, I. 2021. Family ownership and stockholder reactions to environmental performance disclosure: A test of secondary agency relationships. *Business Strategy and the Environment*, 30, 2091-2107.
- CROZET, M., HINZ, J., STAMMANN, A. & WANNER, J. 2021. Worth the pain? Firms' exporting behaviour to countries under sanctions. *European Economic Review*, 134, 103683.
- DANISEWICZ, P., MCGOWAN, D., ONALI, E. & SCHAECK, K. 2018. The real effects of banking supervision: Evidence from enforcement actions. *Journal of Financial Intermediation*, 35, 86-101.
- DELIS, M. D., STAIKOURAS, P. K. & TSOUMAS, C. 2017. Formal enforcement actions and bank behavior. *Management Science*, 63, 959-987.
- DENG, X., KANG, J.-K. & LOW, B. S. 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of financial Economics*, 110, 87-109.
- DENG, Y., WU, Y. & XU, H. 2020. Political connections and firm pollution behaviour: an empirical study. *Environmental and Resource Economics*, 75, 867-898.
- DHALIWAL, D., LI, O. Z., TSANG, A. & YANG, Y. G. 2014. Corporate social responsibility disclosure and the cost of equity capital: The roles of stakeholder orientation and financial transparency. *Journal of accounting and public policy*, 33, 328-355.
- DWEKAT, A., MEQBEL, R., SEGUÍ-MAS, E. & TORMO-CARBÓ, G. 2022. The role of the audit committee in enhancing the credibility of CSR disclosure: Evidence from STOXX Europe 600 members. *Business Ethics, the Environment & Responsibility*, 31, 718-740.
- EL GHOUL, S., GUEDHAMI, O., WANG, H. & KWOK, C. C. 2016. Family control and corporate social responsibility. *Journal of Banking & Finance*, 73, 131-146.
- FAN, Y., ZHANG, F. & ZHU, L. 2021. Do family firms invest more in pollution prevention strategy than non-family firms? An integration of agency and institutional theories. *Journal of Cleaner Production*, 286, 124988.
- FELBERMAYR, G., KIRILAKHA, A., SYROPOULOS, C., YALCIN, E. & YOTOV, Y. V. 2020. The global sanctions data base. *European Economic Review*, 129, 103561.
- GHASSEMINEJAD, S. & JAHAN-PARVAR, M. R. 2021. The impact of financial sanctions: The case of Iran. *Journal of Policy Modeling*, 43, 601-621.

- GHOUL, S. E., GUEDHAMI, O. & KIM, Y. 2017. Country-level institutions, firm value, and the role of corporate social responsibility initiatives. *Journal of International Business Studies*, 48, 360-385.
- GIANNARAKIS, G. & THEOTOKAS, I. 2011. The effect of financial crisis in corporate social responsibility performance. *International Journal of Marketing Studies*, 3, 2.
- GILLAN, S. L., KOCH, A. & STARKS, L. T. 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, 66, 101889.
- GODFREY, P. C., MERRILL, C. B. & HANSEN, J. M. 2009. The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic management journal*, 30, 425-445.
- GOMEZ-MEJIA, L. R., CRUZ, C., BERRONE, P. & DE CASTRO, J. 2011. The bind that ties: Socioemotional wealth preservation in family firms. *The academy of management annals*, 5, 653-707.
- GUJARATI, D. N. 2022. *Basic econometrics*, Prentice Hall.
- GULL, A. A., HUSSAIN, N., KHAN, S. A., KHAN, Z. & SAEED, A. 2023. Governing corporate social responsibility decoupling: The effect of the governance committee on corporate social responsibility decoupling. *Journal of Business Ethics*, 185, 349-374.
- GUTMANN, J., NEUENKIRCH, M. & NEUMEIER, F. 2023. The economic effects of international sanctions: An event study. *Journal of Comparative Economics*.
- HADANI, M. 2012. Institutional ownership monitoring and corporate political activity: Governance implications. *Journal of Business Research*, 65, 944-950.
- HAIDER, Z. A., LIU, M., WANG, Y. & ZHANG, Y. 2018. Government ownership, financial constraint, corruption, and corporate performance: International evidence. *Journal of International Financial Markets, Institutions and Money*, 53, 76-93.
- HE, F., DING, C., YUE, W. & LIU, G. 2023. ESG performance and corporate risk-taking: Evidence from China. *International Review of Financial Analysis*, 87, 102550.
- HO, J., HUANG, C. J. & KARUNA, C. 2020. Large shareholder ownership types and board governance. *Journal of Corporate Finance*, 65, 101715.
- HOPE, O.-K., KANG, T. & KIM, J. W. 2013. Voluntary disclosure practices by foreign firms cross-listed in the United States. *Journal of Contemporary Accounting & Economics*, 9, 50-66.
- HSU, P.-H., LIANG, H. & MATOS, P. 2021. Leviathan Inc. and corporate environmental engagement. *Management Science*.
- IOANNOU, I. & SERAFEIM, G. 2017. The consequences of mandatory corporate sustainability reporting. *Harvard Business School research working paper*.
- JENSEN, M. C. 1993. The modern industrial revolution, exit, and the failure of internal control systems. *the Journal of Finance*, 48, 831-880.
- JIANG, L., LIN, C. & LIN, P. 2014. The determinants of pollution levels: Firm-level evidence from Chinese manufacturing. *Journal of Comparative Economics*, 42, 118-142.

- JO, H. & HARJOTO, M. A. 2011. Corporate governance and firm value: The impact of corporate social responsibility. *Journal of business ethics*, 103, 351-383.
- KAROLYI, G. A. 2006. The world of cross-listings and cross-listings of the world: Challenging conventional wisdom. *Review of Finance*, 10, 99-152.
- KELLERMANN, F. W., EDDLESTON, K. A. & ZELLWEGER, T. M. 2012. Article commentary: Extending the socioemotional wealth perspective: A look at the dark side. *Entrepreneurship Theory and Practice*, 36, 1175-1182.
- KIM, Y., PARK, M. S. & WIER, B. 2012. Is earnings quality associated with corporate social responsibility? *The accounting review*, 87, 761-796.
- KIRIKAKHA, A., FELBERMAYR, G. J., SYROPOULOS, C., YALCIN, E. & YOTOV, Y. V. 2021. The Global Sanctions Data Base (GSDB): an update that includes the years of the Trump presidency. *Research handbook on economic sanctions*, 62-106.
- KOCHHAR, R. & DAVID, P. 1996. Institutional investors and firm innovation: A test of competing hypotheses. *Strategic management journal*, 17, 73-84.
- KÖSTER, H. & PELSTER, M. 2017. Financial penalties and bank performance. *Journal of Banking & Finance*, 79, 57-73.
- KRAUS, S., REHMAN, S. U. & GARCÍA, F. J. S. 2020. Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological forecasting and social change*, 160, 120262.
- LE BRETON-MILLER, I. & MILLER, D. 2016. Family firms and practices of sustainability: A contingency view. *Journal of Family Business Strategy*, 7, 26-33.
- LI, S., BROCKMAN, P. & ZURBRUEGG, R. 2015. Cross-listing, firm-specific information, and corporate governance: Evidence from Chinese A-shares and H-shares. *Journal of Corporate Finance*, 32, 347-362.
- LI, Z., WANG, P. & WU, T. 2021. Do foreign institutional investors drive corporate social responsibility? Evidence from listed firms in China. *Journal of Business Finance & Accounting*, 48, 338-373.
- LIU, W., SHAO, X., DE SISTO, M. & LI, W. H. 2021. A new approach for addressing endogeneity issues in the relationship between corporate social responsibility and corporate financial performance. *Finance Research Letters*, 39, 101623.
- MARDAWI, Z., DWEKAT, A., MEQBEL, R. & IBÁÑEZ, P. C. 2023. Configurational analysis of corporate governance and corporate social responsibility reporting assurance: understanding the role of board and CSR committee. *Meditari Accountancy Research*.
- MAUNG, M., WILSON, C. & TANG, X. 2016. Political connections and industrial pollution: Evidence based on state ownership and environmental levies in China. *Journal of Business Ethics*, 138, 649-659.
- MCGUINNESS, P. B., VIEITO, J. P. & WANG, M. 2017. The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance*, 42, 75-99.

- MCLEAN, E. V., HINKKAINEN, K. H., DE LA CALLE, L. & BAPAT, N. A. 2018. Economic sanctions and the dynamics of terrorist campaigns. *Conflict Management and Peace Science*, 35, 378-401.
- MURÈ, P., SPALLONE, M., MANGO, F., MARZIONI, S. & BITTUCCI, L. 2021. ESG and reputation: The case of sanctioned Italian banks. *Corporate Social Responsibility and Environmental Management*, 28, 265-277.
- NEUENKIRCH, M. & NEUMEIER, F. 2015. The impact of UN and US economic sanctions on GDP growth. *European Journal of Political Economy*, 40, 110-125.
- OH, W. Y., CHANG, Y. K. & MARTYNOV, A. 2011. The effect of ownership structure on corporate social responsibility: Empirical evidence from Korea. *Journal of business ethics*, 104, 283-297.
- ORLITZKY, M., SCHMIDT, F. L. & RYNES, S. L. 2003. Corporate social and financial performance: A meta-analysis. *Organization studies*, 24, 403-441.
- REES, W. & RODIONOVA, T. 2015. The influence of family ownership on corporate social responsibility: An international analysis of publicly listed companies. *Corporate Governance: An International Review*, 23, 184-202.
- SUN, J., DING, L., GUO, J. M. & LI, Y. 2016. Ownership, capital structure and financing decision: evidence from the UK. *The British Accounting Review*, 48, 448-463.
- SUN, J., PELLEGRINI, M. M., DABIĆ, M., WANG, K. & WANG, C. 2023. Family ownership and control as drivers for environmental, social, and governance in family firms. *Review of Managerial Science*, 1-32.
- ULLAH, S., AKHTAR, P. & ZAEFARIAN, G. 2018. Dealing with endogeneity bias: The generalized method of moments (GMM) for panel data. *Industrial Marketing Management*, 71, 69-78.
- ULLAH, S., ZAEFARIAN, G. & ULLAH, F. 2021. How to use instrumental variables in addressing endogeneity? A step-by-step procedure for non-specialists. Elsevier.
- ZAHID, R. A., SALEEM, A. & MAQSOOD, U. S. 2023. ESG performance, capital financing decisions, and audit quality: empirical evidence from Chinese state-owned enterprises. *Environmental Science and Pollution Research*, 30, 44086-44099.
- ZHANG, Y. 2022. Analyst coverage and corporate social responsibility decoupling: Evidence from China. *Corporate Social Responsibility and Environmental Management*, 29, 620-634.