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The Effect of Ownership Structure on ESG Disclosure in China

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Abstract

Effective ESG disclosure is becoming increasingly important in corporate governance as stakeholders demand greater corporate sustainability. As the world's second-largest economy and a major emerging market, China exhibits unique state-owned attributes and concentrated ownership in corporate governance, providing a distinctive research perspective for studying the relationship between ownership structure and ESG disclosure. Recently, China's mixed ownership reform has brought new challenges to corporate governance, and provided an important opportunity to promote ESG disclosure. Therefore, this study examines how ownership concentration, and equity checks and balances affect ESG disclosure in China. Using a fixed-effects model, we conduct an empirical analysis of data from 1,008 companies listed on the Shanghai and Shenzhen Stock Exchanges between 2017 and 2022, evaluating the relationship between ownership structure and ESG disclosure levels. The results indicate that higher ownership concentration has a significant negative impact on ESG disclosure, as controlling shareholders may prioritize short-term financial returns at the expense of broader ESG goals. In contrast, equity checks and balances have a significant positive impact on ESG disclosure, indicating greater counterbalance power among shareholders can promote higher

transparency and accountability in ESG reporting. This study contributes to the literature by providing empirical evidence on how ownership structures affect ESG disclosure in the Chinese context, offering policy insights for improving corporate governance practices. Policymakers and corporate practitioners can draw on these findings to promote stronger governance frameworks that enhance ESG transparency and corporate sustainability. Future research can further explore the global dynamics of ESG disclosure under different ownership structures by comparing emerging markets (concentrated ownership) with developed markets (dispersed ownership), to reveal the impact of corporate governance models on ESG transparency in different market contexts.
Keywords: Ownership Structures, Ownership Concentration, Equity Checks and Balances, ESG Disclosure, China.

Introduction

Environmental, Social, and Governance (ESG) has increasingly become a critical focus for both researchers and practitioners. Companies worldwide are placing greater emphasis on ESG practices as a way to demonstrate their commitment to social responsibility and sustainable business practices (Cucari et al., 2018; García-Sánchez & Martínez-Ferrero, 2018). This heightened focus on ESG reflects a broader understanding that robust ESG performance not only mitigates potential risks but also enhances overall corporate value (Lozano & Martínez-Ferrero, 2022; Wang et al., 2023). The integration of ESG considerations into corporate strategies is now seen as essential for addressing stakeholder expectations and improving long-term sustainability (Allam, 2018; Rashid, 2016). As companies strive to meet these expectations, the mechanisms through which they disclose and report their ESG efforts have become a significant area of study, particularly in emerging markets where ESG practices are still developing.

Ownership structure plays a pivotal role in shaping corporate governance and performance (Alnabsha et al., 2018), including ESG disclosure (Ma & Chen, 2023). Ownership concentration, where a large portion of a company's shares is held by the largest shareholders, can influence corporate decisions and priorities (Abdifatah & Nazli, 2013; Lopez-de-Silanes et al., 2024). In contrast, equity checks and balances involve distributing shares among multiple major shareholders, potentially leading to a more balanced approach to corporate governance (Brammer & Pavelin, 2006; Ducassy & Guyot, 2017; Nekhili et al., 2021). These structures affect how companies manage and disclose their ESG activities, with concentrated ownership often associated with a focus on short-term financial gains at the expense of long-term ESG goals, while higher counterbalance power among shareholders can encourage more comprehensive ESG reporting and practices (Gillan et al., 2021).

Previous research has explored the relationship between ownership structure and ESG disclosure (ESGD), but there are notable gaps in the literature. Previous studies have explored the negative impact of ownership concentration on ESGD, mainly because large shareholders may prioritize short-term financial gains over long-term ESG goals, leading to less emphasis on ESG (Crisóstomo et al., 2020; Lepore et al., 2018; Wang et al., 2023). However, there is limited investigation into how equity checks and balances, which involve multiple influential shareholders, affect ESGD. While existing research provides valuable insights into the role of ownership concentration, it often overlooks whether equity balances have an impact on ESG

disclosures. This study aims to address this gap by focusing specifically on the direct effects of ownership concentration and equity checks and balances on ESGD within the context of Chinese listed companies from 2017 to 2022.

Understanding the relationship between ownership structure and ESGD is increasingly important, especially in the context of emerging markets where institutional frameworks and market dynamics can significantly differ from those in developed economies. In China, where rapid economic growth and evolving regulatory environments create a unique corporate landscape, understanding how ownership structure impacts ESGD is crucial. Therefore, the objective of this study is:

Research objective: To investigate the effect of ownership structure on ESG disclosure in China.

We use Bloomberg ESG scores to measure ESGD and explore ownership concentration (OC) and ownership checks and balances (ECB), using a sample of 1,008 listed companies in China. The evidence shows that OC is significantly negatively associated with ESGD, while ECB is significantly positively associated with ESGD.

This study contributes to the literature by providing empirical evidence on the direct relationship between ownership concentration, equity checks and balances, and ESGD in the Chinese market. By focusing on these specific dimensions of ownership structure, the research offers new insights into how different ownership arrangements influence ESGD. The findings are particularly relevant for policymakers seeking to enhance corporate governance through balanced ownership policies, investors aiming to guide sustainable investment decisions, and corporate managers looking to align governance strategies with ESG objectives. Overall, this study advances our understanding of the role of ownership structure in shaping ESGD, providing valuable implications for improving corporate transparency and accountability in emerging markets.

The remainder of this article is structured as follows. Section 2 reviews previous relevant literature and proposes hypotheses. Section 3 introduces our research methodology, including sample and data collection, variables definition and research model. Section 4 provides empirical results and discussions. Section 5 is conclusion.

Literature Review and Hypotheses Development

Ownership structure (OS) plays a vital role in corporate governance and management incentives (Alnabsha et al., 2018). Agency theory posits that equity gives shareholders the power to supervise and control management and the board of directors (BOD), thereby effectively mitigating agency conflicts and opportunistic behavior (Allam, 2018; Rashid, 2016). In addition, in order to better balance financial and non-financial strategic goals (Zaid et al., 2020), OS plays a central role in shaping ESG practices (Ma & Chen, 2023). Therefore, ownership structure is an important factor affecting ESGD.

Ownership Concentration and ESG Disclosure

As an essential component of effective corporate governance (Shleifer & Vishny, 1997), ownership concentration (OC) is often used to measure the stability of a company's development. Agency theory points out concentrated ownership can reduce agency costs and strengthen shareholders' supervisory function over management (Jensen & Meckling, 1976), thereby effectively improving decision-making efficiency, alleviating agency conflicts and information asymmetry (Allam, 2018). Abdifatah & Nazli (2013), found that OC would promote Malaysian companies to disclose more non-mandatory information. Similarly, Lozano & Martínez-Ferrero (2022), research on emerging and developed markets pointed out that when equity is concentrated in the hands of major shareholders, they pay more attention to the company's long-term development and ESG practices, because they pay more attention to the business value brought to them by the company's long-term development. Lopez-de-Silanes et al (2024), research on the US further shows that OC can more effectively monitor the behavior of management and reduce the risk of management ignoring ESG in pursuit of short-term interests.

However, based on agency theory, Crisóstomo et al. (2020), explains that OC reduces the quality of corporate governance in Brazil, large controlling shareholders have an incentive to weaken the composition of the BOD because they do not need a strong board to monitor managers, who are strongly subordinate to their interests. Therefore, in companies with higher OC, the degree of information asymmetry and the risk of opportunism are higher (Foroughi & Fooladi, 2011), because large shareholders are able to obtain the internal information they need, but this also leads to insufficient external information disclosure (Sáenz González & García-Meca, 2014; Samaha et al., 2012). These behaviors are particularly evident in developing countries, where controlling shareholders deprive companies of resources for their own interests, thus exposing companies to higher operational and financial risks (Yasser et al., 2017). Moreover, large shareholders usually weaken the monitoring power of the BOD to ensure that management's decisions are in line with their own interests rather than the needs of broader stakeholders (Crisóstomo et al., 2020; Dam & Scholtens, 2013). Therefore, OC will lead to controlling shareholders being unwilling to sacrifice economic interests for social responsibility, thereby increasing governance risks and weakening the ESG performance.

Empirically, Lopez-de-Silanes et al. (2024), Lozano & Martínez-Ferrero (2022), and Yilmaz et al. (2022) found there is a significant positive relationship between OC and ESGD, while Alkayed & Omar (2022) and Wu et al. (2022) found there is an insignificant positive relationship between them. However, other scholars have found that OC can reduce ESG disclosure and performance (Crisóstomo et al., 2020; Lepore et al., 2018; Wang et al., 2023). Considering the relatively high OC background in China, we propose the first hypothesis:

H1: Ownership concentration has a negative impact on ESG disclosures.

Equity Checks and Balances and ESG Disclosure

In corporate governance, equity checks and balances refer to limiting the power of controlling shareholders or management through mutual supervision among shareholders (Lepore et al., 2018), which aims to mitigate conflicts of interest and agency problems (C. He et al., 2022;

Jensen & Meckling, 1976). According to agency theory, Wu et al. (2022), argue that a high concentration of shares held by the largest shareholders may lead to the interests of small and medium shareholders being overlooked. Consequently, companies should establish a counterbalance mechanism that enable minority shareholders to exert a certain level of influence over corporate decision-making, thereby reducing internal conflicts of interest (C. He et al., 2022).

Literature shows that equity checks and balances encourage major shareholders and management to pay more attention to the needs of external investors and other stakeholders, thereby enhancing the quality of ESGD (Lozano & Martínez-Ferrero, 2022). This mechanism not only helps protect the interests of small and medium shareholders, but also improves the corporate social responsibility performance by increasing transparency and reliability (Sarhan & Al-Najjar, 2023), thus mitigating information asymmetry (Brammer & Pavelin, 2006). Lepore et al. (2018) emphasize that the presence of other major shareholders can put pressure on controlling shareholders to improve the quality and transparency of corporate disclosure. This counterbalance power supervises and constrains the actions of controlling shareholders or management, reducing their potential for opportunistic behavior, which in turn promotes the disclosure and practice of more ESG activities to maintain their legitimacy and reputation within the company (Nekhili et al., 2021). Similarly, a high level of equity checks and balances among shareholders can enhance a company's sustainability performance (Ben-Amar et al., 2021).

However, not all equity checks and balances necessarily promote ESGD. For instance, alliances among principals (Ren, 2022) may undermine corporate ESG performance. Specifically, when the common interests of controlling shareholders and other major shareholders are threatened by increased investment in ESG initiatives, they may collude and use their decision-making power to restrict the company’s ESG efforts (Wang et al., 2023).

Empirically, some scholars found ECB has significant positive impact on comply-or-explain disclosure (Lepore et al., 2018), capital information disclosure (Fu et al., 2020) and ESGD (Brammer & Pavelin, 2006; Nekhili et al., 2021). While few scholars found ECB has significant negative impact on ESGD (Lozano & Martínez-Ferrero, 2022; Wang et al., 2023), and Wu et al. (2022) there is an insignificant positive relationship between them. Thus, we propose the second hypothesis:

H2: Equity checks and balance has a positive impact on ESG disclosures.

Research Methodology

Sample and Data Collection

This study collected balanced panel data of listed companies from Shenzhen (SZSE) and Shanghai Stock Exchange (SSE) from 2017 to 2022, with a total of 1,080 listed companies and 6,084 company-year observations. ESGD data was collected from Bloomberg database, and other data were obtained from China Stock Market and Accounting Research database (CSMAR), annual reports, the websites of the SZSE and SSE. The initial sample included 3,466 listed companies in 2017, and some companies were excluded according to the following criteria:

1. 93 financial and insurance companies, which have specific accounting standards and disclosure requirements.
2. 169 special treatment (ST & *ST) companies, which have financial or other abnormalities.
3. 82 companies delisted in 2017 and 427 newly listed companies in 2017, which have incomplete data and abnormal performance.
4. 1,687 companies with missing Bloomberg ESG scores.

Research Variables

Dependent Variable: ESG Disclosure (ESGD)

ESGD is the dependent variable, which is measured by Bloomberg ESG disclosure scores. Bloomberg is one of the world's most authoritative institutions in evaluating ESG disclosure and performance, and has been widely used by other scholars (Cucari et al., 2018; Fatemi et al., 2018; Kamran et al., 2022; Toerien et al., 2023). Bloomberg analyzes the three dimensions of environmental, social and governance based on the GRI framework, making the results more accurate (Raimo et al., 2020), ranging from 0.1 to 100, with higher scores indicating better ESG performance (Bloomberg, 2022).

Independent Variables: Ownership Structure (OS)

OS is the independent variable, including ownership concentration and equity checks and balances. Ownership concentration is measured by the proportion of shares held by the largest shareholder (Assidi, 2020; Wang et al., 2023). Equity checks and balances is measured by the proportion of combined shares held by the second to tenth largest shareholders divided by that of the largest shareholder (Ducassy & Guyot, 2017; Wu et al., 2022).

Control Variables

Considering other factors may have an impact on ESGD, referring to previous literature (Wang et al., 2023; Zaid et al., 2020), the characteristics of firm and BOD should be used as control variables. Company characteristics include firm size, return on assets, audit quality, firm age, firm growth and industry. Board characteristics include board size, board independence and CEO duality. The definitions of all variables are shown in Table 1.

Table 1
Variables Definitions

Variable	Abbreviation	Variable Definition	Source
ESG disclosure	ESGD	The ESGD scores ranging from 0.1 (low) to 100 (high)	(Kamran et al., 2022)
Ownership concentration	OC	Number of shares held by the largest shareholder/Total number of shares in the company	(Wang et al., 2023)
Equity checks and balances	ECB	Number of shares held by the second to tenth largest shareholders/Number of shares held by the largest shareholder	(Ducassy & Guyot, 2017; Wu et al., 2022)

Firm size	FS	natural logarithm of total assets	(Alkayed & Omar, 2022)
Return on assets	ROA	net profit/ total assets	(Tran et al., 2021)
Leverage	LEV	total debt/total assets	(Lepore et al., 2018)
Audit quality	BIG10	Dummy variable that equals 1 for audited by Big 4 or Chinese Big 10, 0 otherwise	(Kusnadi et al., 2016)
Firm type	FT	Dummy variable that equals 1 for heavy pollution enterprises, 0 otherwise	(F. He et al., 2022; Jizi, 2017)
Firm age	FAGE	Number of years the company was established	(Tran et al., 2021)
Firm growth	MB	Market-to-book value ratio	(Arif et al., 2021; Wang et al., 2023)
Industry	Industry	Dummy variable that equals 1 for state-owned enterprises, 0 otherwise	(Ma & Chen, 2023)
Board size	BODS	The total number of directors	(Arayssi et al., 2019; Zaid et al., 2020)
Board independence	IND	Number of independent directors/ Total number of directors	(Lozano & Martínez-Ferrero, 2022)
CEO duality	DUAL	Dummy variable that equals 1 for the CEO is also the chairman of the board, 0 otherwise	(Wang et al., 2023)

Research Mode/

The relationship between OS and ESGD is tested by the following Model 1 and Model 2:

1. $ESGD = \alpha + \beta_1 OC + \beta_2 FS + \beta_3 ROA + \beta_4 LEV + \beta_5 BIG10 + \beta_6 FT + \beta_7 FAGE + \beta_8 MB + \beta_9 BODS + \beta_{10} IND + \beta_{11} DUAL + \beta_{12} Industry + \varepsilon$
2. $ESGD = \alpha + \beta_1 EBC + \beta_2 FS + \beta_3 ROA + \beta_4 LEV + \beta_5 BIG10 + \beta_6 FT + \beta_7 FAGE + \beta_8 MB + \beta_9 BODS + \beta_{10} IND + \beta_{11} DUAL + \beta_{12} Industry + \varepsilon$

Where:

α = constant term;
β = correlation coefficient;
Ɛ = error term.

Empirical Results and Discussion

Descriptive Statistics

Table 2 presents descriptive statistics for all variables. The mean of ESGD is 35.32, with a standard deviation (SD) of 8.736, indicating ESGD is at a low level and exhibits significant variability in China. For ownership structure, the mean of ownership concentration (OC) is 36%, while the median (p50) is 24%, indicating that the first-largest shareholder holds a

relatively high proportion of shares in the sample companies, suggesting a relatively concentrated ownership structure in China. Meanwhile, the mean, p50 and SD of ECB are 0.91, 0.645 and 0.791, respectively. Indicating that the company has a strong counterbalance mechanism, which can effectively prevent the excessive control of the largest shareholder and is conducive to improving the quality of corporate governance and mitigating interest conflicts.

For firm characteristics, the mean of FS is 24, indicating that the sampled companies are generally large. The mean of ROA is 4.1%, indicating the company's profitability is low. The mean of LEV is 48.1%, indicating nearly half of the company's assets are obtained through debt financing, which puts it at a high financial risk. Moreover, approximately 59% of companies are audited by BIG10, 33% of companies are heavy polluting enterprises (FT) and 52% are state-owned enterprises (Industry). The mean of FAGE is 17 years. The mean of MB is 2.7 and high range (from 0.367 to 16.34) indicates that there is a large difference in firm growth between the companies. For board characteristics, the mean of BODS is 9, IND is 38% and 21% of companies have the chairman also serving as CEO.

Table 2
Descriptive Statistics

Variable	N	Mean	p50	SD	Min	Max	Skewness	Kurtosis
ESGD	6048	35.32	32.71	8.736	23.98	61.96	1.149	3.676
OC	6048	0.356	0.339	0.157	0.0780	0.751	0.357	2.412
ECB	6048	0.901	0.645	0.791	0.0540	3.962	1.585	5.655
FS	6048	23.57	23.46	1.288	20.73	27.29	0.502	3.222
ROA	6048	0.0410	0.0360	0.0640	-0.235	0.222	-0.698	7.390
LEV	6048	0.481	0.495	0.192	0.0820	0.895	-0.0870	2.282
BIG10	6048	0.585	1	0.493	0	1	-0.344	1.118
FT	6048	0.331	0	0.471	0	1	0.719	1.517
FAGE	6048	16.62	17	6.775	2	29	-0.212	2.048
MB	6048	2.747	1.833	2.742	0.367	16.34	2.661	11.37
BODS	6048	8.902	9	1.806	5	15	0.763	4.454
IND	6048	0.379	0.364	0.0570	0.333	0.571	1.436	4.830
DUAL	6048	0.206	0	0.404	0	1	1.458	3.124
Industry	6048	0.520	1	0.500	0	1	-0.0790	1.006

Correlation Analysis

Table 3 provides the Pearson correlation matrix and Variance Inflation Factors (VIF) to test the correlation and multicollinearity between variables. Except for MB and DUAL have a significant negative correlation with ESGD, other variables have a significant positive correlation with ESGD. However, the coefficient of −0.718 between OC and ECB indicates a significant negative correlation. Since the coefficient is close to the critical threshold of 0.8 (Weisberg, 2005), there may lead to multicollinearity when both variables are included in the same regression model (Lepore et al., 2018; Wu et al., 2022). Additionally, the mean of VIF1 and VIF2 are 1.33 and 1.32, respectively, which are far lower than 5, this there is no multicollinearity issue between the variables (Hair, 2009).

Table 3
Pearson Correlation Matrix and Variance Inflation Factors for Independent Variables

	ESGD	OC	ECB	FS	ROA	LEV	BIG10	VIF 1	VIF 2
ESGD	1								
OC	0.101***	1						1.22	
ECB	0.003	-0.718***	1						1.14
FS	0.457***	0.241***	-0.049***	1				1.75	1.72
ROA	0.087***	0.108***	-0.054***	0.041***	1			1.44	1.43
LEV	0.099***	0.063***	-0.055***	0.458***	-0.347***	1		1.69	1.70
BIG10	0.106***	0.089***	-0.024*	0.145***	0.063***	-0.00600	1	1.05	1.05
FT	0.164***	0.062***	-0.065***	0.0150	0.086***	-0.110***	-0.033***	1.06	1.06
FAGE	0.082***	-0.0180	-0.106***	0.092***	-0.088***	0.144***	-0.100***	1.19	1.17
MB	-0.037***	-0.063***	0.058***	-0.194***	0.034***	-0.055***	-0.0140	1.33	1.34
BODS	0.066***	0.031**	0.055***	0.199***	0.00900	0.071***	0.043***	1.37	1.39
IND	0.078***	0.083***	-0.072***	0.088***	0.00400	0.039***	0.0170	1.28	1.28
DUAL	-0.031**	-0.102***	0.075***	-0.083***	0.0150	-0.063***	-0.0200	1.14	1.14
Industry	0.086***	0.315***	-0.292***	0.201***	-0.071***	0.173***	-0.0130	1.41	1.39

	FT	FAGE	MB	BODS	IND	DUAL	Industry
FT	1						
FAGE	0.068***	1					
MB	-0.044***	-0.110***	1				

BODS	0.094***	0.083***	-0.066***	1			
IND	-0.062***	-0.0100	0.042***	-0.412***	1		
DUAL	-0.043***	-0.203***	0.075***	-0.155***	0.059***	1	
Industry	0.052***	0.298***	-0.123***	0.203***	0.049***	-0.304***	1

Note: * p < 10%, ** p< 5% and ***p <1%.

Results and Discussions

We use the Breusch-Pagan and Hausman tests to determine which model is suitable for balanced panel data. The Breusch-Pagan test result (Prob > chibar2 = 0.0000) supports the use of a random effects model instead of an OLS model (Breusch & Pagan, 1980). While the Hausman test result (Prob > chi2 = 0.0000) supports use of fixed effects models rather than random effects models (Hausman, 1978). Therefore, we use a fixed effects model for regression analysis.

The adjusted R-squared in columns (1) and (2) of Table 4 is very close to about 0.39, indicating that the variables we used can explain 39% of ESGD. This is similar the adjusted R-squared values of 38% for China (Wu et al., 2022) and the EU (Dam & Scholtens, 2013), but higher than the 16% for France (Lepore et al., 2018) and Finland (Maury & Pajuste, 2005).

The results in the column (1) of Table 4 show that OC has a significant negative impact on ESGD (β = -0.9072, p = 0.059), indicating the higher the ownership concentration, the lower the level of ESGD, supporting H1. This result is consistent with previous studies conducted in China (Wang et al., 2023), France (Lepore et al., 2018) and EU (Dam & Scholtens, 2013). High ownership concentration suggests that block-holders are inclined to enhance their own interests by occupying company resources or sacrificing the wealth of minority shareholders (Foroughi & Fooladi, 2011; Hasan et al., 2022; Kao et al., 2018). For instance, block-holders may reduce ESG practices to gain more personal benefits (Dam & Scholtens, 2013; Elmagrhi et al., 2016; Liao et al., 2015). Additionally, block-holders can obtain more required information from within the company easily, which leads them less disclosure more information to the public, thereby exacerbating opportunistic behavior and information asymmetry (Samaha et al., 2012; Sheng et al., 2019).

The results in the column (1) of Table 4 show that ECB has a significant positive impact on ESGD (β = 0.4722, p = 0.001), indicating equity checks and balances can improve ESGD, supporting H2. This result is consistent with previous studies conducted in China (Fu et al., 2020) and other countries (Brammer & Pavelin, 2006; Lepore et al., 2018). The improvement of equity checks and balances is conducive to limiting the largest shareholder from obtaining improper personal benefits through improper behavior, thereby ensuring the effective implementation of ESG strategies (Nekhili et al., 2021) and the long-term development of the

company (Ducassy & Guyot, 2017; Onoja & Agada, 2015). Additionally, this counterbalance power can enable controlling shareholders to disclose and participate in more ESG information and activities (Akben-Selcuk, 2019; Brammer & Pavelin, 2006), due to pressure from society and other shareholders, thereby improving the company's transparency and reducing principal-principal conflicts.

For control variables, LEV and FAGE have a significant positive impact on ESGD, while other firm characteristics (FS, FT, BIG10, MB and Industry) have a significant positive impact on ESGD. This indicates that heavily polluting enterprises and state-owned enterprises with large scale, late listing, low debt, high audit quality and strong growth ability have higher ESGD. On the other hand, the coefficient of IND is significantly positive, indicating the presence of independent directors strengthens the supervision of management behavior and decision-making (Li et al., 2008), thereby effectively improving ESG disclosure and performance. BODS and DUAL have no effect on ESGD.

Table 4
Fixed Effect Regression Results of Ownership Structure and ESG Disclosure

	(1) ESGD	(2) ESGD
OC	-0.9072** (-2.823)	
ECB		0.4722*** (7.848)
FS	3.2746*** (14.351)	3.2362*** (14.278)
ROA	4.6890 (1.933)	5.1255 (2.129)
LEV	-4.0481*** (-9.451)	-3.8825*** (-9.432)
BIG10	0.9875*** (13.370)	0.9971*** (13.106)
FT	2.8353*** (10.222)	2.8641*** (10.293)
FAGE	-0.0366*** (-7.097)	-0.0335*** (-7.753)
MB	0.3080*** (8.666)	0.2996*** (8.012)
BODS	-0.0872 (-1.305)	-0.1071 (-1.567)
IND	3.9615** (3.676)	3.9686** (3.641)
DUAL	-0.0671 (-0.533)	-0.0508 (-0.397)
Industry	0.7301*** (5.681)	0.8697*** (6.661)
Constant	-42.6229*** (-9.274)	-42.5101*** (-9.177)
N	6048	6048
Adjusted R^2	0.3869	0.3883
Year	Control	Control
Firm	Control	Control

Notes: t-value in parentheses. * p < 10%, ** p< 5% and ***p <1%.

Robustness Checking

This study uses alternative variables and two-stage least squares (2SLS) regression to test the robustness of the original results. The results of the robustness test provide additional evidence for the accuracy of the results in Table 4. Overall, the robustness results are

consistent with the original results, supporting our exploration of the relationship between OS and ESGD.

Alternative Variables

1. Alternative dependent variables:

Referring to the methods of previous scholars (Husted & Sousa-Filho, 2019; Kamaludin et al., 2022), we use the total score of the environmental and social dimensions (ESD) in the Bloomberg ESG disclosure score as a proxy for ESGD. In columns (1) and (2) of Table 5, OC has significant negative impact on ESGD and ECB has significant positive impact on it. This result is consistent with Table 4.

2. Alternative independent variables:

Based on previous studies (Crisóstomo et al., 2020; Dam & Scholtens, 2013; Tran et al., 2021; Wang et al., 2023) and the Company Law of the People's Republic of China, we create other measures as a replacement for OC and ECB. OC is set as the proportion of shares held by the largest shareholder exceeding 10%. ECB is set as the sum proportion of shares held by the second to tenth larest shareholders exceeding 20%. In columns (3) and (4) of Table 5, the results are similar to the basic regression results, where coefficient of OC is significant negative, whilst ECB is significant positive.

Table 5
Robustness Checking for Alternative Variables

Variable	ESD		ESGD	
	(1)	(2)	(3)	(4)
OC	-2.8343** (-3.375)		-0.9913** (-2.442)	
ECB		1.2612*** (6.804)		0.4743*** (7.423)
FS	8.4464*** (11.665)	8.3350*** (11.610)	3.2431*** (13.844)	3.2393*** (15.441)
ROA	13.2186 (2.039)	14.2266 (2.185)	4.6166 (1.901)	5.2039 (2.077)
LEV	-10.9036*** (-9.655)	-10.4636*** (-9.702)	-4.1957*** (-10.024)	-3.8725*** (-8.289)
BIG10	2.2940*** (11.611)	2.3138*** (11.559)	1.0899*** (13.894)	0.9240*** (11.340)
FT	8.2756*** (11.631)	8.3478*** (11.660)	2.8314*** (11.552)	2.8363*** (11.909)
FAGE	-0.0729*** (-7.870)	-0.0637*** (-7.965)	-0.0341*** (-6.380)	-0.0314*** (-6.451)
MB	0.8676*** (9.217)	0.8455*** (8.567)	0.3007*** (8.741)	0.2966*** (8.067)
BODS	-0.3081 (-1.655)	-0.3590 (-1.869)	-0.0972 (-1.377)	-0.1096 (-1.939)
IND	5.2469** (2.037)	5.2343** (2.015)	4.1374*** (4.069)	3.6907** (3.756)
DUAL	-0.1300 (-0.381)	-0.0826 (-0.237)	-0.0138 (-0.105)	-0.0642 (-0.534)

Industry	1.2153** (2.803)	1.5458** (3.736)	0.7800*** (5.841)	0.8669*** (6.517)
Constant	-166.3548*** (-11.318)	-165.9799*** (-11.231)	-41.8732*** (-9.029)	-42.4382*** (-9.596)
N	6048	6048	5896	5793
Adjusted R^2	0.253	0.255	0.263	0.267
Year	Control	Control	Control	Control
Firm	Control	Control	Control	Control

Notes: t-value in parentheses. * p < 10%, ** p< 5% and ***p <1%.

Endogeneity

Considering the possible endogeneity problem between variables due to reverse causality (Nekhili et al., 2021). We use the OS and board characteristics lagged by one year as instrumental variables, using 2SLS to test Model 1 and Model 2. Table 6 shows that the results are similar to those in Table 4, thus the original results are not affected by the endogeneity issue.

Table 6
Robustness Checking for Endogeneity

Variable	ESGD	
	(1)	(2)
OC	-1.7421** (-2.152)	
ECB		5.1726*** (4.946)
FS	3.8284*** (33.882)	3.6764*** (32.524)
ROA	1.8863 (1.109)	1.6953 (1.012)
LEV	-5.3572*** (-8.027)	-5.1781*** (-7.782)
BIG10	0.9206*** (4.231)	0.8749*** (4.021)
FT	3.0729*** (12.707)	3.0866*** (12.791)
FAGE	0.0609*** (3.393)	0.0754*** (4.211)
MB	0.4780*** (10.271)	0.4567*** (9.695)
BODS	-0.1917*** (-2.728)	-0.2218*** (-3.166)
IND	3.8176* (1.745)	3.6155* (1.668)
DUAL	0.0362 (0.125)	0.0913 (0.314)
Industry	0.4576* (1.769)	0.5356** (2.138)
Constant	-54.9179*** (-21.226)	-53.0847*** (-20.556)
N	5040	5040
Adjusted R^2	0.277	0.279

Notes: t-value in parentheses. * p < 10%, ** p< 5% and ***p <1%.

Conclusion

This study examines the impact of ownership structure on ESG disclosure (ESGD) among Chinese listed companies from 2017 to 2022. The results show that ownership concentration

has a significant negative impact on ESGD, indicating that concentrated ownership leads to reduced ESG practices, engagement and disclosure by companies, because the largest shareholder may prioritize short-term financial returns rather than long-term ESG objectives. In contrast, equity checks and balances have a significant positive impact on ESGD, indicating that when other major shareholders have the capacity to counterbalance the largest shareholder, it can promote more transparent and responsible corporate governance, thereby effectively enhancing ESG disclosure.

This contribution is significant for policymakers, suggesting the need for balanced policies that promote diversified ownership to enhance corporate transparency and accountability. Additionally, the study offers practical implications for managers and investors, emphasizing the role of ownership structure in improving ESG performance. It suggests that attracting foreign investors and maintaining ownership balance can be effective strategies for fostering sustainable corporate governance. These insights can guide regulators and stakeholders in developing frameworks that integrate ESG considerations into corporate policies and decision-making processes, supporting the advancement of sustainable business practices.
Moreover, this study has significant implications for policymakers, such as establishing appropriate mechanisms to promote counterbalance power among shareholders and avoid excessive concentration to improve corporate transparency and accountability. Additionally, this study emphasizes the role of equity checks and balances in improving ESGD and provides practical implications for managers and investors. Attracting a wide range of investors and maintaining equity balance can be effective strategies to promote sustainable corporate governance. These insights can guide regulators and stakeholders in developing frameworks to integrate ESG considerations into corporate policies and decision-making processes, supporting the advancement of sustainable business practices.

Future research can explore the impact of ownership type (e.g. government ownership and institutional ownership) on ESGD. Considering that OS and ESGD may have a nonlinear relationship, future research can add other factors as moderating variables to explore it. In addition, this study only focuses on the Chinese market. Future research can compare emerging markets (concentrated ownership) with developed markets (dispersed ownership) to fully understand how different ownership structures affect ESG disclosure or performance.

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