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-RESEARCH ARTICLE-

SHAREHOLDING STRUCTURE, CORPORATE COMPLIANCE, AND THE ECONOMIC IMPACT OF CRISIS EVENTS: EVIDENCE FROM THE YANGTZE RIVER DELTA

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—Abstract—

This study examines the imposition of stricter penalties on firms failing to comply with regulations and investigates their subsequent impact on corporate development, market stability, and Chinas economic growth. It analyses the factors influencing corporate compliance and considers significant events that have occurred in the Yangtze River Delta in recent years. The primary objective is to identify strategies for enhancing corporate compliance management, particularly to mitigate corporate losses during

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societal crises. The research utilises a sample comprising A-share listed companies within the Yangtze River Delta from 2015 to 2022. Findings indicate that the structure of shareholding influences corporate compliance, while crisis events act as a moderating factor in the relationship between ownership concentration and compliance practices.

Keywords: Shareholding Structure, Corporate Compliance, Crisis Events, Yangtze River.

INTRODUCTION

In Chinas rapidly expanding capital market, regulatory violations by listed firms have become increasingly frequent, disrupting market stability. External incentives represent a critical mechanism for promoting corporate compliance; consequently, a variety of external incentive frameworks may be employed to encourage adherence to regulations and foster a stable market environment (Rui, 2024). Nonetheless, eliminating corporate misconduct remains challenging for both enterprises and regulatory authorities (Nieri et al., 2023). Institutional arrangements can reduce the likelihood of infractions but cannot completely eradicate them. Existing literature has primarily focused on the internal and external governance factors that contribute to corporate violations. Notably, there is a demonstrable causal relationship between ownership structure and the occurrence of corporate breaches. Unlike the widely dispersed ownership structures characteristic of Western markets, Chinese listed firms typically exhibit a concentrated ownership structure dominated by a principal shareholder.

Issa et al. (2022) examined the association between board diversity and corporate social responsibility disclosure in the Arab Gulf Bank sector, finding a significant correlation. Similarly, Jibril and Isa (2024) investigated the relationships among board structure, environmental compliance, and safety disclosure, demonstrating a direct link between board composition and safety disclosure. Chijoke-Mgbame et al. (2020) assessed the influence of board diversity on financial performance within contexts of weak institutional frameworks in Nigeria, reporting that female director representation positively and significantly impacts corporate financial outcomes. Collectively, these studies conducted over the past five years indicate that board composition is correlated with corporate social responsibility, safety disclosure, and financial performance.

Dube et al., (2020), through research on franchise organisations and adherence to U.S. regulations, observed that franchisees often prioritise personal gain, exhibiting free-riding behaviour and disregarding corporate reputation, which increases non-compliance. Consequently, ownership structure is implicated in firm's regulatory adherence. Anum Mohd Ghazali (2010) analysed the relationship between corporate governance, equity structure, and corporate performance, reporting a significant correlation between equity structure and performance. Conversely, Henry (2010) found

that corporate governance compliance does not influence equity structure. While these earlier studies focus on equity structure and compliance, they suggest an indirect relationship between ownership patterns and adherence to regulations. These documents, although examining slightly different variables, collectively imply a link between ownership structure and corporate compliance.

Guo (2005) argued that a concentrated shareholding structure, particularly the stake held by the largest shareholder, acts as a deterrent to corporate violations. Zhao et al. (2021) similarly concluded that control rights of the principal shareholder are negatively associated with regulatory breaches, emphasising the role of ownership structure. Despite the extensive temporal span of these studies, they consistently demonstrate a significant correlation between shareholding concentration and corporate compliance. Guo (2005), analysing data from listed companies in 2001–2002, found that higher shareholding concentration reduces the likelihood of regulatory infractions, whereas reputational mechanisms are ineffective in discouraging violations. Ramalingegowda et al. (2021) explored the relationship between earnings management and major shareholder ownership in peer firms under common institutional investor oversight, finding that higher ownership concentration mitigates earnings manipulation. Ko and Feng (2019) further suggested that greater shareholding concentration lowers the probability of regulatory non-compliance. Wang et al. (2022) demonstrated that ultimate control exerts a restraining influence on corporate breaches, regardless of firm type, structure, or severity of the violation. The impact of the COVID-19 pandemic on individual tax compliance was examined by Khalimaturrosyida (2022), raising broader questions about its relevance to corporate compliance. Beyond health crises, the effects of sudden, large-scale events on corporate behaviour remain underexplored. According to Chinas National Comprehensive Emergency Plan on Public Emergencies (2006), public emergencies are unforeseen occurrences capable of causing significant harm to people, property, the environment, or social stability. Such emergencies are categorised as public health events, natural disasters, social security incidents, and accidents or hazards. Given their limited economic impact, social security incidents are less pertinent to this study, which focuses on public health crises and natural disasters.

Differences in ownership structure shape stakeholder composition and, consequently, a firm's resilience during crises. During COVID-19, firms with concentrated ownership were better able to absorb economic shocks, resulting in uneven recovery outcomes. Zhao et al. (2021) reports that companies with more concentrated equity structures respond more rapidly, make timely decisions, and recover more efficiently during crises. Against this backdrop, the present study investigates the relationship between shareholding structure and corporate compliance, with particular attention to the economic implications of recent crises, including COVID-19 and recurrent flooding in the Yangtze River Delta. El Ammari (2021) explores that the moderating effects of such crises on the link between ownership concentration and compliance are also assessed. By examining these dynamics, the study underscores the significance of ownership

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structure, compliance mechanisms, and crisis exposure for corporate sustainability and societal well-being, offering insights for future strategic planning and policy formulation.

THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

The impact of equity structure on corporate behaviour and governance has received considerable scholarly attention, particularly in relation to corporate misconduct. Chen et al. (2006), using univariate analysis, demonstrated that shareholder concentration is a significant determinant of corporate fraud. Choi et al. (2020) further identified a correlation between equity structure and fraudulent activities in central enterprises, noting that regulatory reforms contribute to the reduction of misconduct. In contrast, Hass et al. (2016) reported a negative relationship between equity concentration and corporate violations. Nguyen (2011) established a positive association between ownership concentration and risk-taking, indicating that enhanced monitoring mitigates behavioural biases and improves performance. Lukason and Camacho-Miñano (2020) also emphasised the value of concentrated ownership in reducing corporate violations, as firms with higher shareholding concentration are subject to increased external scrutiny.

Akinkoye and Olasanmi (2014), examining Nigerian enterprises, found a correlation between equity structure and compliance with laws and regulations. Kabbach de Castro et al. (2017) explored family business ownership and corporate compliance, reporting an inverted U-shaped relationship; family firms may violate regulations due to internal power dynamics, but are also motivated to maintain compliance to protect corporate image and reputation. Udin et al. (2017) investigated Pakistani listed companies and observed a complex pattern: while institutional ownership did not significantly correlate with financial distress, foreign shareholding was significantly negatively associated with corporate financial distress. Lepore et al. (2018) analysed Italian firms, finding that higher ownership concentration correlates negatively with information disclosure and reduces compliance.

Alkurdi and Mardini (2020) studied the relationship between ownership structure and corporate tax avoidance in Jordans primary listed market, identifying a negative correlation between tax avoidance and ownership concentration. Ke (2021) reported a correlation between equity structure and legal compliance among enterprises in Beijing. Raza and Ashraf (2020) empirically examined Malaysian companies with an Islamic orientation, demonstrating that ownership structure significantly influences compliance with Sharia principles. Arsad et al. (2020) similarly investigated Malaysian Islamic companies, revealing a correlation between ownership structure and corporate social responsibility fulfilment. Collectively, these studies suggest that concentrated ownership strengthens internal controls and reduces violations, whereas dispersed ownership can exacerbate governance challenges. The findings highlight the critical role of corporate governance and sustainability in optimising equity structures and

enhancing shareholder oversight, offering valuable insights for policymakers and corporate management. On the basis of these results, the following hypotheses are proposed in this study.

H1: *Shareholding Structure and Corporate Compliance behaviour of listed companies have a major positive relationship.*

Since the onset of the COVID-19 pandemic in 2020, Obrenovic et al. (2020) explores that the global economy and social structures have faced profound disruptions. Enterprises have encountered substantial operational challenges, with equity structure playing a critical role in determining corporate performance and recovery during the crisis. Perwitasari et al. (2022) examined the relationship between equity concentration and corporate performance under pandemic conditions, finding that firms with higher shareholding concentration experienced more pronounced negative effects. This suggests that the rigid decision-making processes inherent in highly concentrated ownership structures may hinder effective crisis response, thereby amplifying financial losses. Similarly, Zhao et al. (2021) observed that companies with a more balanced equity structure and greater institutional ownership exhibited stronger resilience during the crisis. Conversely, firms dominated by a single major shareholder faced higher agency costs and reduced strategic flexibility, increasing the likelihood of extreme decisions and potential collapse in sudden crisis situations.

These findings indicate that the COVID-19 pandemic has exerted both positive and negative moderating effects on the influence of equity concentration on corporate performance. The magnitude and direction of this effect differ between pre-pandemic and post-pandemic periods, underscoring the need to design robust equity structures and decision-making mechanisms that enhance organisational resilience against future crises. This study contributes both theoretically, by advancing understanding of corporate governance under crisis conditions, and practically, by providing guidance for policymakers in managing corporate responses during emergencies. The following hypothesis is derived from the preceding analysis.

H2: *Crisis events do not moderate the Shareholding Structure and Corporate Compliance relationship.*

RESEARCH DESIGN

Strategy and Data Sources Sampling

This study investigates the factors influencing corporate compliance among A-share listed companies in the Yangtze River Delta region of China from 2015 to 2022. To ensure the accuracy and reliability of the dataset, incomplete or missing information was systematically excluded from the analysis. Financial variables were constructed using the CSMAR database, and all continuous measures were winsorized at the 1st and

99th percentiles to mitigate the impact of outliers. Data analysis was conducted using STATA MP 18.

Variable Definition

The Corporate Compliance (COM)

The dependent variable, COM, is used to represent the compliance behaviour of firms. A value of 1 is assigned to a company in any year in which it commits a regulatory violation, while a value of 0 indicates no violations. Since corporate breaches are not directly observable and typically become apparent only after regulatory penalties are imposed and official notices are issued, the data are derived from records published in the CSMAR database.

Shareholding Structure (SC)

The key explanatory variable in this study is SC, defined as the cumulative squared shareholding percentages of the three largest shareholders. This measure, derived from ownership data obtained from the CSMAR database, serves as an indicator of a firm's equity concentration.

Moderating Effect Testing Approach

In this study, crisis events function as the moderating variable. Moderation can be examined either through the creation of an interaction term or by conducting a subgroup analysis. Due to limitations in the availability of appropriate measurement tools and the statistical reporting of crisis events in China, this research adopts a group comparison approach to evaluate the influence of crisis events on the relationship between shareholding structure and corporate compliance.

Control Variables

In addition to the independent, dependent, and moderating variables, this study incorporates several control variables identified in previous domestic and international research. These include board size (Board), firm growth (Growth), profitability as measured by return on assets (ROA), and the firms listing age (Listage). A summary of these variables is presented in Table 1.

Table 1: Variables

Index	Mark	Meaning
Corporate Compliance	Com	It is coded where a value of 1 is given when the company has been the recipient of any administrative penalty and a value of 0 when it is not.
Shareholding Structure	SC	Shareholding Structure (SC) is the sum of the squares of the shareholding ratios of the top three shareholders.
The Occurrence of Crisis	TIME	0 for 2015-2019 and 1 for 2019-2022.

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Table 1: Variables (cont…)

Index	Mark	Meaning
Board Size	Board	Board Size.
Company Growth	Grow	Main business income growth rate = (main business income this year - main business income last year) / main business income last year.
Company Profitability	Roa	The ratio of net profit to the ending balance of total assets.
Company Listage	Listage	The difference between the end of the sample year and the time of listing.

Model Construction

To examine Hypothesis H1, the following regression model has been specified:

$$COM = \alpha_0 + \alpha_1 SC_{i,t} + \gamma Controls + \varepsilon$$

In the regression model, the dependent variable is represented by COM, while the primary independent variable is SC. Control variables are incorporated to account for additional factors influencing corporate compliance, and ε denotes the error term.

From a geographical perspective, the Yangtze River Delta region lies in the lower reaches of the Yangtze River in China, adjacent to the Yellow Sea and the East China Sea, forming a confluence of river and sea. The area features numerous riverine and coastal ports and consists of an alluvial plain formed prior to the river's entry into the sea. The region encompasses Shanghai and the provinces of Jiangsu, Zhejiang, and Anhui, comprising a total of 41 cities. By the end of 2019, the population of the Yangtze River Delta reached 227 million, with a total area of 358,000 square kilometres. In 2023, the regions GDP amounted to 30,504.5 billion yuan, with all constituent cities exceeding an economic scale of 100 billion yuan. The urbanisation rate of permanent residents surpassed 60%, and although the region accounts for less than 4% of Chinas land area, it generates nearly one-quarter of the nation's total economic output and one-third of total import and export volume. As of December 2024, the Yangtze River Delta railway network comprises 29 high-speed lines, connecting all prefecture-level cities except Zhoushan, Zhejiang, with a total operational railway length exceeding 15,000 kilometres, including over 7,700 kilometres of high-speed track.

The Yangtze River Delta is recognised as one of Chinas most economically dynamic regions, demonstrating a high level of openness and strong innovation capabilities. It plays a strategic role in the country's broader modernisation and comprehensive opening-up agenda. Advancing the integrated development of the region, enhancing innovation and competitiveness, and improving economic agglomeration, regional connectivity, and policy coordination are crucial for driving high-quality national development and establishing a modern economic system. To examine the moderating

effect of crisis events on the relationship between COM and SC, this study employs a group comparison methodology. The outbreak of COVID-19 and recurrent floods in the Yangtze River Delta serve as the basis for grouping. A change in the correlation between COM and SC before and after these events would indicate a moderating effect; otherwise, no effect is inferred. Regarding COVID-19, the outbreak is marked by the Wuhan Health Commission notice on 31 December 2019 and the National Health Commission announcement on 20 January 2020. Severe flooding intensified from mid-2019. Accordingly, this study designates the period up to 2019 as pre-crisis and 2020–2022 as post-crisis, using data from 2015–2019 to represent the pre-crisis phase and 2020–2022 to capture the impact of crisis events.

EMPIRICAL ANALYSIS

The analysis indicates a strong positive association between SC and COM, as reported in section 4.1.

Descriptive Statistics

Table 2 presents the descriptive statistics for the primary variables. The mean value of COM is 0.11, suggesting that, on average, corporate compliance levels among the sampled firms are relatively low. With a standard deviation of 0.313 and a range from 0 (non-compliance) to 1 (full compliance), the results reveal considerable variation in compliance practices across companies. The mean of SC is 0.261, indicating a generally dispersed ownership structure. Higher SC values correspond to greater concentration of shareholding. A standard deviation of 0.145 highlights notable differences in ownership concentration among firms. SC values range from 0.035 to 0.689, showing that while most companies maintain low ownership concentration, several exhibit a high degree of shareholder control.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Id	8842	367352.3	263397.04	35	871981
Year	8842	2019.039	2.264	2015	2022
Com	8842	.11	.313	0	1
Sc	8842	.261	.145	.035	.689
Growth	8842	.158	.355	-.547	2.019
Lev	8842	.403	.189	.066	.861
Board	8842	2.094	.182	1.609	2.485
Listage	8842	2.048	.848	0	3.367
Mis	8842	0	0	0	0

Correlation Analysis

Table 3 examines the relationships between corporate compliance and the key variables, including equity concentration and the control measures. The results indicate a strong

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association between corporate compliance and equity concentration, profitability, board size, and firm listing duration. In contrast, corporate growth does not exhibit a substantial relationship with compliance. The correlation coefficient between corporate misconduct and SC is -0.113, with a p-value below 0.10, indicating a statistically significant negative relationship. This suggests that higher equity concentration is associated with reduced instances of corporate misconduct.

Conversely, a positive relationship exists between SC and corporate compliance, implying that firms with more concentrated ownership tend to demonstrate stronger compliance, as major shareholders are subject to enhanced oversight. The findings reveal a highly significant negative correlation between non-compliance and SC, further supporting the positive link between equity concentration and compliance. Additionally, SC is positively correlated with financial performance measures, such as return on assets, indicating broader implications for firm performance. Furthermore, listing duration exerts a significant effect on both corporate compliance and business development, suggesting that more established firms are generally more stable and consistent in their compliance behaviour.

Table 3: Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Com	1.000						
(2) Sc	-0.113*	1.000					
	(0.000)						
(3) Growth	-0.006	0.022*	-0.073*	1.000			
	(0.597)	(0.039)	(0.000)				
(4) Roa	-0.169*	0.200*	-0.092*	0.275*	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)			
(5) Board	-0.022*	-0.024*	0.208*	-0.013	-0.005	1.000	
	(0.036)	(0.024)	(0.000)	(0.231)	(0.652)		
(6) Listage	0.062*	-0.257*	0.464*	-0.105*	-0.217*	0.158*	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Note: *** p<0.01, ** p<0.05, * p<0.1							

VIF Analysis

Multicollinearity can compromise the reliability of regression results by producing unstable coefficient estimates and reducing both explanatory and predictive power. To assess this issue, the Variance Inflation Factor (VIF) is employed:

- VIF < 5: Indicates low collinearity and no cause for concern.
- 5 < VIF < 10: Suggests a moderate level of collinearity that should be monitored.
- VIF > 10: Denotes severe collinearity, signalling that the model requires adjustment.

In Table 4, all variables exhibit VIF values below 5, indicating minimal collinearity among predictors. This confirms the robustness of the regression model and the absence

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of significant multicollinearity concerns. Low VIF values enhance the precision of coefficient estimates, thereby increasing the reliability of the regression outcomes. Based on these findings, it is reasonable to proceed with further regression analyses to examine the relationships between variables and their impact on corporate compliance.

Table 4: VIF Analysis

VARIABLE	VIF	1/VIF
BOARD	1.05	0.950627
LISTAGE	1.47	0.681805
ROA	1.16	0.865021
SC	1.16	0.863204
GROWTH	1.09	0.919880
MEAN VIF	1.22	

Regression Analysis

The coefficient for SC is -0.125, with a standard error of 0.071, a t-value of -1.76, and a p-value of 0.079 as shown in Table 5. Although the p-value slightly exceeds the conventional 0.05 threshold, the coefficient remains significant at the 0.1 level. The negative sign of the coefficient indicates an inverse relationship between SC and corporate misconduct, implying that a one-unit increase in SC reduces the likelihood of violations by 0.125. Conversely, this result reflects a positive association between SC and COM, suggesting that higher equity concentration is associated with stronger corporate compliance.

Table 5: Regression Statistics

Com	Coef.	St.Err.	T-Value	P-Value	[95% Conf	Interval]	Sig
Sc	-.125	.071	-1.76	.079	-.265	.014	*
Growth	.023	.01	2.29	.022	.003	.042	**
Roa	-.552	.071	-7.75	0	-.691	-.412	***
Board	.041	.039	1.06	.29	-.035	.116	
Listage	-.016	.011	-1.47	.141	-.038	.005	
Constant	.111	.089	1.25	.212	-.063	.286	
Mean Dependent Var	0.110		SD Dependent Var		0.313		
R-Squared	0.009		Number of Obs		8842		
F-Test	13.276		Prob > F		0.000		
Akaike Crit. (AIC)	637.924		Bayesian Crit. (BIC)		680.448		
Note: *** p<.01, ** p<.05, * p<.1							

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Model Inspection Hausman Test

The Hausman test is employed to identify whether a fixed effects (FE) or random effects (RE) model is more appropriate, by testing the hypothesis that the difference in coefficient estimates between the two models are systematic. The results of the test are as follows:

The value of χ 2(5) = 36.54, p = 0.0000, shows that there is statistically significant difference in the two models.

These results indicate that the FE and RE estimators produce significantly different coefficient estimates. Notably, variables such as SC, ROA, and Board exhibit substantial differences. For example, ROA shows a coefficient difference of 0.1644 with a standard error of 0.0438 as shown in Table 6, highlighting a clear discrepancy between FE and RE estimates. This suggests that variations in coefficient estimates are systematic rather than random, indicating that the fixed effects model is likely more appropriate for analysing the relationship between firm-specific effects and explanatory variables.

The Hausman statistic is 36.54, calculated as the weighted sum of squares of the differences in the covariance matrix of the coefficients. The corresponding p-value of 0.0000, well below 0.05, indicates that these differences are statistically significant and reflect systematic divergences between the models. Consequently, the null hypothesis of the RE model—which assumes no correlation between explanatory variables and individual effects—is rejected. The FE model is therefore deemed more suitable, as it accounts for individual-specific effects and provides more reliable coefficient estimates. Based on the Hausman test results, the RE model hypothesis is rejected due to the p-value being below 0.05. Accordingly, this analysis employs the FE model, allowing for a more accurate estimation of the impact of equity concentration on corporate compliance while controlling for individual firm-level variations.

Table 6: Model Inspection Hausman Test

	(b) fe	(B) re	(b-B) Difference	Sqrt(diag(V_b-V_B)) Std. err.
Sc	-.1254434	-.1622562	.0368129	.0661484
Growth	.02285	.0339078	-.0110578	.0035862
Roa	-.5517313	-.7161714	.1644401	.0438286
Board	.040789	-.0296989	.070488	.0328763
Listage	-.0162102	.0071509	-.023361	.0100165

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Moderating Effect of Crisis Events on Relationship between SC and COM

Descriptive Statistics

The descriptive statistics largely mirror those presented in the previous analysis, except for a newly introduced time dummy variable. This variable enables the dataset to be divided into two periods, 2015–2019 and 2020–2022, allowing for a comparison of firm behaviour before and after the COVID-19 outbreak. Table 7 presents the key descriptive statistics based on 9,041 observations after data cleaning. The inclusion of the time dummy facilitates group analysis, making it possible to examine temporal differences and assess whether the post-pandemic period (2020–2022) influenced corporate compliance and related economic indicators. Overall, the descriptive statistics offer initial insights into the characteristics and distribution of the variables, providing a foundation for subsequent regression analyses, correlation tests, and model evaluations. Careful interpretation of these patterns enhances the validity of the empirical findings and supports the formulation of informed policy recommendations.

Table 7: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Id	9041	367468.8	263319.83	35	871981
Year	9041	2019.048	2.263	2015	2022
Com	9041	.11	.313	0	1
Sc	9041	.257	.146	.031	.686
Growth	9041	.158	.354	-.547	2.008
Roa	9041	.044	.065	-.231	.217
Board	9041	2.094	.183	1.609	2.485
Listage	9041	2.05	.846	0	3.367
Time	9041	.472	.499	0	1
Mis	9041	0	0	0	0

Regression Analysis

Table 8 presents the correlation between SC and COM for the period 2015–2019 (time = 0). The analysis reveals a strong relationship, with a correlation coefficient of -0.182 and a p-value of 0.000, indicating high statistical significance. This demonstrates a clear negative association, suggesting that higher ownership concentration is linked to a greater likelihood of corporate misconduct. Conversely, a significant positive relationship is observed between SC and COM, implying that firms with greater equity concentration exhibit stronger compliance behaviours. These results support the initial hypothesis, confirming that increased SC was positively associated with corporate compliance during 2015–2019.

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Table 8: Regression Statistics (Time=0)

Com	Coef.	St.Err.	T-Value	P-Value	[95% Conf	Interval]	Sig
Sc	-.182	.035	-5.19	0	-.251	-.113	***
Growth	.053	.013	3.95	0	.027	.079	***
Roa	-1.089	.08	-13.58	0	-1.247	-.932	***
Board	-.031	.027	-1.18	.236	-.083	.021	
Listage	.002	.006	0.31	.758	-.01	.014	
Constant	.279	.057	4.92	0	.168	.39	***
Mean Dependent Var	0.130		SD Dependent Var		0.337		
R-Squared	0.053		Number of Obs		4778		
F-Test	53.268		Prob > F		0.000		
Akaike Crit. (AIC)	2903.932		Bayesian Crit. (BIC)		2942.763		
Note: *** p<.01, ** p<.05, * p<.1							

The correlation analysis of SC and COM for the period 2020–2022 (time = 1), as presented in Table 9, demonstrates that the two variables remain significantly associated. Comparing Table 8 and Table 9, a positive relationship between SC and COM is evident across both periods, with only minor variations in the coefficients. For 2020–2022, the SC coefficient is -0.156 (SE = 0.03, t = -5.25, p = 0), indicating that corporate misconduct continues to be negatively affected by equity concentration. Compliance increases by 0.156 units for each unit rise in SC, slightly lower than the -0.182 observed during 2015–2019. Although the effect of SC on compliance appears somewhat reduced following the crisis, the relationship remains meaningful and warrants further investigation through regression analysis.

Table 9: Regression Statistics (Time=1)

Com	Coef.	St.Err.	T-Value	P-Value	[95% Conf	Interval]	Sig
Sc	-.156	.03	-5.25	0	-.214	-.098	***
Growth	.009	.013	0.65	.514	-.017	.035	
Roa	-.479	.07	-6.88	0	-.615	-.342	***
Board	-.07	.024	-2.94	.003	-.116	-.023	***
Listage	.006	.005	1.16	.245	-.004	.016	
Constant	.28	.05	5.62	0	.182	.378	***
Mean Dependent Var	0.088		SD Dependent Var		0.284		
R-Squared	0.026		Number of Obs		4263		
F-Test	22.578		Prob > F		0.000		
Akaike Crit. (AIC)	1253.509		Bayesian Crit. (BIC)		1291.655		
Note: *** p<.01, ** p<.05, * p<.1							

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These findings suggest that higher equity concentration continues to promote compliance, reflecting strengthened internal governance mechanisms and enhanced oversight by major shareholders. The analysis is conducted across two distinct periods, Before19 (2015–2019) and After19 (2020–2022), with the relationship between SC and COM examined using regression techniques. By comparing the correlation between SC and COM across these timeframes, the study seeks to determine whether major public events exert an influence on this relationship, thereby identifying a potential moderating effect. The regression results for both periods confirm a positive association between SC and COM, suggesting that equity concentration consistently contributes to corporate compliance. However, the effects of other variables differ depending on prevailing economic conditions, providing insights into how corporate compliance behaviour varies across different economic environments.

Regression Analysis Comparative Test

In this section, the relationship between SC and COM is examined across two periods, 2015–2019 and 2020–2022. A comparative regression analysis was conducted to assess whether major events, such as the COVID-19 pandemic, altered this association. In Table 10, the estimated SC coefficients are -0.182 for 2015–2019 and -0.156 for 2020–2022. While both coefficients are statistically significant and negative, the slightly lower value in the latter period suggests a minor weakening of the relationship during the pandemic.

Table 10: Regression Statistics (Time=0 and Time=1)

	Time=0	Time=1
Com		
Sc	-0.182***	-0.156***
	(-5.19)	(-5.25)
Growth	0.0531***	0.00868
	(3.95)	(0.65)
Roa	-1.089***	-0.479***
	(-13.58)	(-6.88)
Board	-0.0314	-0.0696**
	(-1.18)	(-2.94)
Listage	0.00190	0.00608
	(0.31)	(1.16)
_Cons	0.279***	0.280***
	(4.92)	(5.62)
N	4778	4263

Note: * p<0.05, ** p<0.01, *** p<0.001

The comparative test between Before19_Cean and After19_Cean reveals a coefficient difference of 0.027 with a p-value of 0.6061 as shown in Table 11, which is not statistically significant. Therefore, although SC continues to exert a consistent influence

on COM across both periods, observable economic and operational disruptions reflect the impact of major societal events. In conclusion, the results indicate that major public events do not exert a significant moderating effect on the relationship between ownership concentration and corporate compliance. The effect of SC on COM remains stable across differing economic conditions, demonstrating that concentrated ownership maintains a consistent influence on compliance behaviour regardless of external shocks.

Table 11: Comparative Test of Regression Statistics

	Coefficient	Std.	Err.	Z	P>Z	[95%]
Before19_Mean						
Sc	-0.182	0.049	-3.700	0.000	-0.279	-0.086
Growth	0.053	0.016	3.220	0.001	0.021	0.085
Roa	-1.089	0.121	-8.970	0.000	-1.327	-0.851
Listage	0.002	0.008	0.250	0.803	-0.013	0.017
Board	-0.031	0.036	-0.860	0.388	-0.103	0.040
_Cons	0.279	0.078	3.580	0.000	0.126	0.432
Before19_lnvar						
_Cons	-2.231	0.044	-50.170	0.000	-2.319	-2.144
After19_Mean						
Sc	-0.156	0.033	-4.720	0.000	-0.221	-0.091
Growth	0.009	0.015	0.590	0.555	-0.020	0.038
Roa	-0.479	0.094	-5.100	0.000	-0.662	-0.295
Listage	0.006	0.006	1.050	0.295	-0.005	0.017
Board	-0.070	0.030	-2.350	0.019	-0.128	-0.011
_Cons	0.280	0.062	4.530	0.000	0.159	0.401
After19_lnvar						
_Cons	-2.545	0.053	-47.860	0.000	-2.649	-2.441

[Before19_Mean]sc - [After19_Mean]sc = 0
Chi2(1) = 0.27
Prob > Chi2 =0.6061

CONCLUSION

Using the findings from the empirical analysis, several key conclusions can be drawn. Firstly, there is a positive association between SC and COM, indicating that higher equity concentration corresponds to stronger corporate compliance. Secondly, major crisis events appear to exert minimal influence on this relationship, with no significant moderating effect observed between SC and COM. The analysis consistently demonstrates that as equity concentration increases, compliance levels improve, reflecting that firms with concentrated shareholders exhibit enhanced legal and regulatory adherence. In firms where shareholding is concentrated, a small number of large shareholders hold substantial control, limiting the influence of minority shareholders. This concentration fosters greater accountability and strengthens monitoring mechanisms, which reduces risk, improves compliance, and ensures

adherence to regulations. Consequently, optimising equity structure can enhance corporate compliance, governance, and market competitiveness. Regarding the moderating effect of major public events, the study finds that while such events may affect business operations, the relationship between SC and COM remains largely unchanged before and after these occurrences. These results carry important implications for policymakers and business leaders. Firms should avoid relying solely on reactive measures during large-scale events and instead prioritise the long-term stability of shareholder structures and governance mechanisms. Specifically, companies with high SC should recognise the beneficial impact of concentrated ownership on compliance and self-governance, which continues to support strong compliance performance even during major societal events. Based on the study's findings, the following recommendations are proposed to assist businesses and policymakers in enhancing corporate governance and compliance:

Maximise equity concentration to strengthen corporate compliance: The observed positive correlation between SC and COM suggests that firms should consider increasing shareholder control. Organisations should review their current ownership structures and, if necessary, restructure them to optimise shareholder concentration and improve governance. Maintain governance stability during major public events: The analysis indicates that major events, including the COVID-19 pandemic, did not significantly moderate the relationship between SC and COM. This highlights the importance of preserving a stable governance framework during such periods. Companies should avoid making radical alterations to shareholder structures in response to short-term events and focus on sustaining long-term balance in their governance systems.

RESEARCH LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This paper has been prepared with a rigorous approach; however, several limitations remain, primarily in the following areas. First, the definition of corporate compliance presents certain constraints. Given that the dataset spans an extended period, some of the information is relatively outdated. Earlier laws and regulations on corporate supervision may have contained gaps, and enterprises illegal or irregular activities might not have been detected or disclosed promptly. Consequently, the overall accuracy of the data may be limited. Second, corporate compliance is measured only at two levels—compliance and non-compliance—without accounting for the severity of violations. This binary approach produces a relatively coarse measurement, which may affect the precision of the observed relationships between variables. Third, the classification of corporate ownership is relatively simplistic, lacking detailed categorisation based on actual ownership types, which further limits the depth of data analysis. Future research can address these limitations in several ways. Firstly, as market laws, regulations, and supervisory systems improve and the detection of

corporate non-compliance becomes more effective, the definition of corporate compliance can be refined. Compliance measures could be expanded beyond a binary classification to incorporate multiple levels reflecting the severity of non-compliance, thereby increasing the variability of the data and enhancing the accuracy of study results. Secondly, regarding ownership structure, future studies could assign values according to the type of ownership. This would enable the analysis of equity structure not only from a quantitative perspective, such as concentration, but also from a qualitative perspective that accounts for the nature of shareholding.

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