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Original Research

Corporate governance and performance of state-owned enterprises in a least developed economy

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Purpose: The main objective of the study was to investigate how corporate governance affects the performance of state-owned enterprises (SOEs) in a least developed economy.

Design/methodology/approach: Both primary and secondary data from nine state-owned companies that operated between 2001 and 2016 were analysed in the study. The investigation used a quantitative methodology. Fixed effects, random effects and generalised method of moments (GMM) estimations were used to conduct regression analysis.

Findings/results: The findings show that corporate governance characteristics affect SOE performance in a least developed economy. The performance of SOEs is influenced favourably by board structures, director tenure, reduced government ownership and leverage. Conversely, increased state ownership leads to subpar performance. The study also reveals that the presence of civil servants and directors with political affiliations in government-controlled companies has a negative effect on enterprise value.

Practical implications: The use of multiple case studies to investigate SOEs in their natural setting has given some insights for both professional managers and policymakers interested in developing corporate governance frameworks to improve SOEs value in least developed economies, particularly in sub-Saharan Africa, even though the results are limited in terms of statistical generalisation because the study was based on a single country.

Originality/value: The study fills a gap in the literature about how SOE performance is affected by corporate governance in least developed nations, where such research is underdeveloped.

Keywords: corporate governance; ownership structure; board attributes; capital structure; disclosure; state-owned enterprises; performance.

Introduction

The goal of state-owned enterprises (SOEs) is to promote 'economic growth and development' (World Bank, 2020, p. 1). Organisations with state ownership that are created under national legislation for commercial objectives are known as SOEs. While some of these SOEs may be 'wholly owned', others may only be 'partially owned' by the state (Robinett & Fremond, 2007, p. 1). Both high- and low-income economies continue to rely heavily on SOEs. The IMF Fiscal Monitor report (IMF, 2020) states that by 2018, the assets of SOEs were worth $45 trillion or over half of global gross domestic product (GDP). State-owned enterprises are responsible for 55% of infrastructure investment in developing and low-income nations. Despite massive investments by SOEs across the globe, these organisations have continued to perform poorly. The dismal performance has encouraged governments to implement economic reforms to improve the performance of these enterprises (World Bank, 2020). Poor corporate governance standards have been linked to subpar performance in SOEs (IMF, 2020).

While the performance of government-controlled companies has received considerable attention in Africa, leading to several structural reforms at the behest of multilateral financial institutions, there has been little attention paid to investigating the effect of corporate governance on the performance of SOEs. According to Daiser et al. (2017), most of the corporate governance research involving SOEs has been carried out in developed, emerging and developing nations. Despite the growing interest in SOE corporate governance scholarship in developed and emerging market nations, research on the corporate governance of government-controlled companies is still in its infancy (Daiser et al., 2017). This research on SOEs was carried out in

Malawi, which the UN considers to be one of the least developed nations (United Nations, 2021). More than 70% of the least developed economies are found in Africa. One of the main problems with conducting research on SOEs, particularly in emerging and least developed economies, is a lack of data (World Bank, 2021). To overcome this problem, research on SOEs domiciled in these economies can only be conducted successfully in their natural environments. The authors selected Malawi because of the accessibility of government-controlled companies' data. This study is being conducted to ascertain how corporate governance affects SOE performance in a least developed economy. What impact has corporate governance had on the performance of SOEs? is the research's attempt to achieve the above-stated objective. In this study, SOEs and government-controlled enterprises are used interchangeably.

Literature review

Corporate governance has benefited from a variety of theories. This section discusses two of the theories and how they affect corporate governance, and, by extension, how corporate governance affects performance. There are many definitions of corporate governance, but this study has adopted the Cadbury Committee definition, which describes 'corporate governance as the system by which companies are directed and controlled' (Cadbury Committee, 1992). Company performance and enterprise value have been used interchangeably and hereinafter means financial performance represented by the accounting performance measures of earnings before interest and tax (EBIT) and return on assets (ROA). The use of these performance measures is consistent with past research (Mishra & Kapil, 2018; Siddiqui, 2015). In line with previous studies, this study has controlled for the size and age of the company (Mishra & Kapil, 2018; Nguyen et al., 2014). In addition, the study has also controlled for competition and industry.

Agency and stewardship theories

Agency theory defines a legal relationship (Perrow, 1986) between the principal and the agent. The theory posits that parties to this contractual arrangement have conflicting interests, making it costly and ineffective to supervise agreements between the principal and agents (Perrow, 1986, p. 12). Agency theory argues that agents are self-serving and that their interests are not aligned with those of their principals. As a result of this misalignment and the self-serving behaviour of agents, agency theorists believe that principals should incur costs to monitor contracts. Some of the costs consist of 'monitoring expenditures by the principal; bonding expenditures by the agent; and the residual loss' (Jensen & Meckling, 1976, p. 6). Contrary to agency theory, which holds that managers are self-serving, stewardship theorists contend that managers are 'pro-organisational and trustworthy' (Chen, 2014, p. 66; Fama & Jensen, 1983). Stewardship theorists, therefore, argue that the monitoring systems put forth by agency theorists are expensive and ineffective (Tosi et al., 2003).

Most corporate governance codes in western nations, on which the corporate governance code for Malawi is based, use agency theory; hence, this study used agency theory to analyse corporate governance (Yusuf et al., 2018).

Ownership structure and performance

According to agency theory, moral hazards can be minimised with the use of a suitable ownership structure. In addition to board structure, ownership structure is one of the most crucial internal corporate governance mechanisms (Munisi et al., 2014). It specifies how business owners exercise their property rights. Corporate ownership literature has concentrated on ownership structure and corporate performance.

The influence of ownership structure on the poor performance of SOEs cannot be overemphasised. State-owned enterprises suffer from multiple principals and agents. While the taxpayer or citizen of a country is the actual owner of these enterprises in which they are domiciled, the power to manage is delegated to politicians and public servants who have their own interests to safeguard. In this case, SOEs appear to have dispersed 'absent owners' as well as poor agents who have multiple objectives (Wong, 2004, p. 8). Studies in certain developing nations have shown a positive association between government ownership and enterprise value, defying the notion of the agency theory that increased government ownership would increase agency costs (Bazhair & Alshareef, 2022; Nguyen et al., 2015; Rakhman, 2018). Recent research on ownership structure has concentrated on SOE legal form improvements as a tactic to enhance the performance of these organisations while they are owned by the state (World Bank, 2014). Studies conducted in the past on the relationship between change in legal form and enterprise value have revealed a significant positive relationship when the government has indirect ownership but a strong inverse relationship when the government has increased shares (Abramov et al., 2017). In a study on state-controlled businesses in China, Lin and Fu (2017) came to similar conclusions. In their study of emerging economies, Iwasaki et al. (2022) discovered that state ownership has a negative impact on enterprise value. We therefore hypothesise that:

   H1: Low levels of state ownership improve the performance of SOEs.

Board of directors and performance

The role of the board of directors, usually known as the 'board', in corporate governance cannot be overstated. One of the essential internal corporate governance mechanisms for resolving agency issues is the board of directors' organisational structure (Merendino & Melville, 2019; Munisi et al., 2014). Four attributes – board composition, structures, processes, and characteristics – have been the subject of previous studies on boards of directors, according to Korac-Kakabadse et al. (2001). In this study, board attributes were classified using Korac-Kakabadse et al.'s (2001) methodology.

Board composition

The term 'board composition' refers to the size of the board as well as its demographics, which include a mix of internal and external, female and male and foreign and local members (Korac-Kakabadse et al., 2001). Agency theorists have regarded board size as an important concept as it offers a variety of skills and an effective management monitoring system. According to corporate governance guidelines (Institute of Directors in Southern Africa [IoDSA], 2016; OECD, 2015), the size of the board should be appropriate, and a higher proportion of non-executive directors (NEDs) should make up the board.

Prior research on the effect of board size on financial enterprise value has been conflicting. Chen (2015), in a study on Chinese companies, observed favourable correlation between board size and company performance. In contrast to the findings by Chen, other studies have discovered a negative association between board size and enterprise value (Guney et al., 2020; Orozco et al., 2018). In their investigation of Italian-listed companies, Merendino and Melville (2019) found that board size and company performance are positively related. Menozzi et al. (2012) revealed in their study on Italian SOEs that having a majority of independent directors has a detrimental impact on company value. The foregoing findings underscore the importance of conducting corporate governance research in its natural setting.

Civil servants or public servants are not supposed to serve on the boards of SOEs, according to corporate governance best practices (World Bank, 2014). In a study on the effect of public servants on the technical efficiency of Canadian SOEs, Bozec and Dia (2007, p. 1747) discovered that the proportion of public employees has a detrimental impact on technical efficiency when SOEs are subjected to 'market discipline'. On the contrary, Xie et al. (2022), in their research on Chinese SOEs, found that the presence of party leadership on the boards is positively associated with SOE value creation.

Politically connected directors should not be appointed to SOEs, according to good corporate governance principles. Such directors encourage political meddling in these organisations. The World Bank (2014) argues that political meddling causes government-controlled enterprises to perform poorly. In line with this finding, earlier research (Menozzi et al., 2012; Wong, 2004) revealed that the presence of politically connected directors on the SOE board is detrimental to its performance.

Based on the aforementioned studies, we hypothesised that:

H2:　The performance of SOEs and board size are inversely correlated.

H3:　Directors affiliated to governing party are negatively associated with SOE performance.

H4:　Civil servants directors are negatively associated to SOE performance

Board structures

Board structure is the leadership of the board, including board organisation, the function of board committees and information flow between board structures (Korac-Kakabadse et al., 2001, p. 25).

According to best practices for corporate governance, boards ought to have committees with a preponderance of NEDs (Ibarguen et al., 2021; IoDSA, 2016). The audit, nomination and compensation committees should all be made up of NEDs, according to several corporate governance guidelines (IoDSA, 2016; Munisi & Randy, 2013; OECD, 2015). Positive firm performance is linked to the existence of these committees. Previous studies on board committees have yielded mixed results. A study conducted by Munisi and Randy (2013) on sub-Saharan African companies observed that audit committees have a favourable relationship with ROA but is negatively related to the market performance measure of Tobin Q. Hermawan and Adinda (2012), in their study of Indonesian SOEs, did not find any evidence of a connection between board committees and enterprise value. The relevance of risk management as one of the key structures that enhance the performance of boards has grown because of the rise in incidences of moral hazard and uncertainties surrounding corporate operations (IoDSA, 2016; OECD, 2014). Risk management is crucial for both private businesses and SOEs (Ibarguen et al., 2021). In a study on Ugandan commercial SOEs, Turyakira et al. (2023) revealed that risk management mediates the relationship between board attendance at meetings and SOE performance. Corporate governance guidelines advise creating a separate committee to oversee risk management (IoDSA, 2016; OECD, 2015). From the foregoing, we posit that:

H5:　The presence of NED in risk management committee is positively related to SOE performance.

Board processes

Board process is described by Korac-Kakabadse et al. (2001, p. 25) as 'decision-making activities; styles of board; frequency and length of board meetings; the formality of board proceedings; and the impact of board culture on the evaluation of the director's performance'. According to Chen et al. (2006), effective control mechanisms are associated with board meeting activities. Activities during board meetings, however, are the result of earlier events, such as, for example, unsatisfactory performance. Research by Brick and Chidambaran (2007) found that improved performance followed periods of increased monitoring after periods of mediocre performance. Fernandez et al. (2014) observed a weak association between board meetings and firm success in their research of Spanish enterprises. Similar results were found by Naseem et al. (2017) in their study on Pakistani-listed companies. Hence our hypothesis is that:

H6:　Higher frequency of board meetings is negatively related to SOE performance.

Board characteristics

'Director's experience, tenure, and functional background' are a few examples of board characteristics (Korac-Kakabadse et al., 2001, p. 25). The importance of directors' tenure has received scholarly interest. Long-tenure proponents contend that it aids directors in acquiring the essential knowledge and experience, making them more successful in their monitoring responsibilities. Past research has found that longer directors' tenure is associated with improved monitoring experience and company performance (Kim et al., 2014; Livnat et al., in press). Conversely, shorter director tenures are linked to director inexperience, as shown by an increase in fraud cases (Chen et al., 2006). We, therefore, hypothesise that:

> **H7:** Board tenure is positively related to SOE performance.

Capital structure and performance

There has been a considerable amount of study interest in the use of capital structure as a check on agents' power. It is believed that using debt compels managers to act in the interest of their principals (Berger & Di Patti, 2006). In contrast to the aforementioned claim, Le and Phan's (2017) research on Vietnamese companies discovered an inverse relationship between leverage and corporate value.

When deciding on a capital structure, SOEs encounter a variety of difficulties. While it is believed that debt financing has the same disciplinary effects on managers as revealed in business corporations, Whincop (2005) found that these effects are less pronounced in SOEs because of governments' propensity to step in and prevent SOE bankruptcy. The use of debt imposes stricter management discipline on government enterprises if there are 'hard budget constraints'. However, one of the elements that could lead to subpar business performance is loosening budget restrictions (Choe & Yin, 2000, p. 283). When a government acts as a guarantee for loans made to an SOE, budget restrictions can be eased (Tian & Estrin, 2007). We therefore posit that:

> **H8:** Capital structure is positively related to SOE performance

Transparency and disclosures

As agents become more responsible for their principals because of transparency and disclosure, agency costs are reduced. Disclosure is regarded as a corporate governance tool intended to improve agent oversight and raise the bar for accountability (OECD, 2018). According to Phuong et al. (2020) transparency and disclosures are significant governance mechanisms to track firm performance. Although corporate governance guidelines see transparency and disclosure as best practices, previous research on the connection between disclosure and firm success has produced contradictory findings. Research by Heo (2018) on South Korean government-owned companies found that increased transparency and disclosure are positively correlated with increased company performance. Transparency, however, was found to be inversely correlated with SOE performance

in China by Li et al. (2019). The World Bank (2014) noticed that SOEs have poor levels of accountability and disclosure. We therefore hypothesise that:

> **H9:** Availability of annual reports is positively related to SOE performance.

Methodology

The study used a quantitative approach to investigate the effect of corporate governance on SOE performance in a least developed economy. All commercial SOEs in Malawi that were active between 2000 and 2016 were included in the sample. In this study, only for-profit businesses that are fully or partially controlled by the state were included as SOEs (Institute of Directors Malawi, 2011). Institutions involved in financial, regulatory and training activities were not included, in line with Kuzman et al. (2018). The final sample of 13 commercial SOEs, both listed and non-listed, was chosen. Only nine of the 13 SOEs had complete data. The research employed a case study approach, which is appropriate for studies with a small population (Easton, 2010). When the goal of the study is to explore 'contemporary phenomena' in their natural surroundings, Yin (2009, p. 18) advises on the use of case studies.

As the data for the study was obtained from a single country, a purposive sample was used. Annual reports and other organisational records were used to get the data; other board characteristics were gathered through the use of a questionnaire and 36 respondents in total, representing nine SOEs, government ministries, the judiciary, the parliament and other government agencies, were interviewed. A conceptual framework presented in Figure 1 guided the study.

The following model was used in the study to explore how corporate governance attributes affect SOE performance:

$$Y_{it-1} = \alpha + \beta_1 LF_{it} + \beta_2 Bsize_{it} + \beta_3 PAf_{it} + \beta_4 Civil_{it} + \beta_5 Risk_{it} + \beta_6 Freq_{it} + \beta_7 Tenure_{it} + \beta_8 Lev_{it} + \beta_9 AnRpt_{it} + Z_1 LnAssets_{it} + Z_3 LnAge_{it} + Z_3 Industry_{it} + Z_4 COMPETE_{it} + \eta_i + \varepsilon_{it} \qquad [Eqn 1]$$

Where (Y) stands for SOE performances, which are dependent variables and are represented by EBIT and
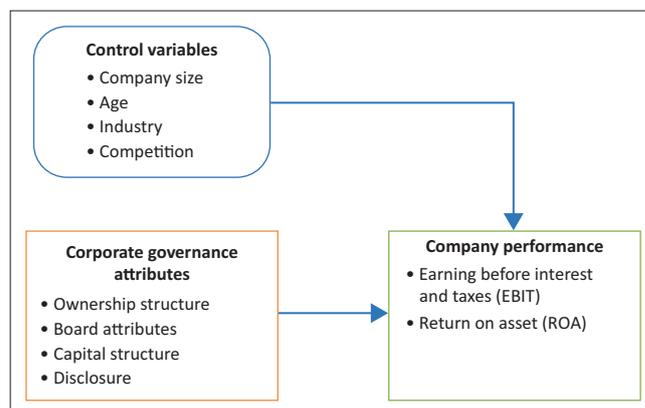
FIGURE 1: Conceptual framework of state-owned enterprises.

ROAs; α is a constant, and (β_1:β_9) denotes independent variables parameters; (Z_1:Z_4) stands for control variable parameters; symbol (i) represents SOE number; (*t*-1) represents time period in years with a lag of 1 year; η stands for unobservable individual heterogeneity; (ε) represents the error or disturbance in regression model that varies with individual SOE and time; explanation of variables is presented in Table 1.

A longitudinal panel data analysis was employed to empirically test the model. The study identified fixed effects regression analysis as an appropriate statistical analysis tool for time-series data analysis. To determine if fixed effects estimation was appropriate, the Hausman specification test was used (Ibrahimy & Ahmad, 2012). A dynamic generalised method of moments (GMM) estimation was used in the study to reduce endogeneity bias (Wintoki et al., 2012). This was accomplished by using STATA 15 to run the Arellano-Bover/Blundell-Bond (1998) estimator. The study used a Durbin–Wu–Hausman test (DWH) to evaluate the suitability of GMM. The dynamic model of GMM or the static models of fixed effects and random effects were chosen as a result of this test. The study used STATA 15's postestimation test of Sargan to validate the GMM. To uncover potential reasons for performance, directors of different SOEs were interviewed.

Ethical considerations

Ethical clearance to conduct the study was obtained from the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal, Westville Campus (Ethical Clearance Protocol Reference Number:

TABLE 1: Key definitions of variables.

Variable	Code	Definition
Independent variables		
Legal framework	LF	A dummy variable that has value of 1 if the legal form is limited company and 0 if otherwise.
Board size	BSize	Number of directors on the board.
Political affiliation	PAF	Percentage of directors affiliated to the governing party.
Directors appointed from civil service	CIVIL	Percentage of directors appointed from civil service.
Risk management committee	RISK	A dummy variable that has 1 for presence of Risk Committee, 0 otherwise.
Meeting frequency	FREQ	Number of meeting per year.
Board tenure	TENURE	Number of the years directors serving in the board.
Annual company performance report	AnRPT	A dummy variable that has 1 for presence of Annual Report, 0 otherwise.
Debt to equity	LEV	The ratio of debt to equity.
Dependent variables		
Operating profit	EBIT	Earnings before interest and tax.
Return on assets	ROA	Operating profit/average total assets.
Control variables		
Size of company	CSIZE	Logarithm of book value of assets.
Age of company	AGE	Logarithm of number of years since company was established as an SOE.
Industry dummies	INDUSTRY	Dummy for each industry.
Competition	COMPETE	A dummy variable that has a value of 1 if the SOE operates in a competitive environment and 0 if in monopoly.

SOE, state-owned enterprises.

HSS/2215/017D. The authors obtained written consent from participants for the research project. Respondents' participation was on a voluntary basis, and their privacy and confidentiality were guaranteed.

Results

This section presents the findings about how corporate governance affects SOE performance.

Correlation matrix – Corporate governance and state-owned enterprise performance

The Pearson correlation matrix was employed in the study to examine the relationship between corporate governance and SOE performance. The correlation coefficients of important variables for 133 research observations for the years 2000–2016 for 9 SOEs are shown in Table 1-A (cf. Appendix). Earnings before interest and taxes and ROA cannot be used interchangeably because the two variables have an insignificant correlation ($r = 0.48$) between them.

Results show that there is a strong positive relationship between EBIT and legal form at $r = 0.33$ ($p = 0.000$); risk management committee at $r = 0.58$ ($p = 0.000$) and annual performance report at $r = 0.27$ ($p = 0.000$), which is in support of our H1, H3, H5 and H9. Company size is also positively correlated with EBIT at $r = 0.20$ ($p = 0.022$). The EBIT results also support our H3, which stated that political party affiliation is significantly and negatively associated with performance. Our results show a negative correlation of $R = -0.27$ ($p = 0.002$). Regarding ROA, results are in support of H1, H3, H4, H5, H7, H8 and H9. The ROA is significantly and positively correlated with legal form at $r = 0.38$ ($p = 0.000$); risk management committee at $r = 0.41$ ($p = 0.000$); tenure at $r = 0.30$ ($p = 0.001$); annual report at $r = 0.33$ ($p = 0.000$); leverage at $r = 0.27$ ($p = 0.002$) and company size at $r = 0.20$ ($p = 0.023$). As predicated by the study, results on ROA reveal a negative relationship with political affiliation at $r = -0.30$ ($p = 0.001$) and civil servants sitting on the board at $r = -0.25$ ($p = 0.005$).

Linear regression in SPSS Version 23 was used to carry out one more test for multicollinearity for the remaining independent variables. Variables with a variance inflation factor (VIF) greater than the cut-off value of 10 were eliminated. According to the findings, legal framework (LF) had a high VIF of 13.90. As a result of its correlation with other independent variables, this variable was eliminated.

Multiple regression analysis: Corporate governance and state-owned enterprise performance

After accounting for multicollinearity, the final model was subjected to regression analysis. The final version that was used is shown here:

$$Y_{it} = \alpha + \beta_1 Bsize_{it} + \beta_2 PAf_{it} + \beta_3 Risk_{it} + \beta_4 Freq_{it} + \beta_5 Tenure_{it} + \beta_6 Civil_{it} + \beta_7 AnRpt_{it} + \beta_8 Lev_{it} + Z_1 LnAssets_{it} + Z_3 LnAge_{it} + Z_3 Industry_{it} + Z_4 COMPETE_{it} + \eta_i + \varepsilon_{it} \qquad [Eqn\ 2]$$

The study employed Ordinary Least Squares regression (OLS) estimation for the EBIT model and ROA. Results showed a strong relationship between corporate governance variables and the accounting performance measures of EBIT and ROA at a 95% confidence level and a p-value less than 0.05 (Table 5). A fixed effects estimation was used on the final model to reduce bias caused by time-invariant heterogeneity among SOEs (Saini & Singhania, 2018).

Endogeneity test

The OLS, according to Schultz et al. (2010), suffers from endogeneity bias. To control for endogeneity bias, the study performed fixed effects estimation on EBIT and ROA models. At a p-value of less than 5%, the findings indicated a significant relationship between corporate governance and company performance (Table 2).

To test whether fixed effects was the appropriate estimation, the Hausman specification test was performed. Table 3 presents the results of the Hausman specification test. Earnings before interest and tax has a p-value of 0.000 and a ROA of 0.097.

According to the Hausman specification test results, EBIT has a p-value less than 0.05, indicating that unique errors have a strong relationship with independent variables. Therefore, fixed-effects estimation is more appropriate. The ROA has a p-value greater than 0.05. The ROA results show that random effects estimation is more efficient than fixed effects estimation. However, both fixed effects and random effects estimations have their own limitations.

TABLE 2: Fixed effects estimation for corporate governance and state-owned enterprise performance.

Variables	EBIT		ROA	
	Coef.	$p > (z)$	Coef.	$p > (t)$
Constant	-4 643 578.00	0.200	-0.110	0.4600
BSize	-2 072.16	0.980	-0.001	0.6900
PAF	65 425.13	0.980	0.040	0.9200
RISK	5 368 946.00	0.000	0.060	0.0300
FREQ	375 194.20	0.430	0.020	0.4100
TENURE	28 696.64	0.860	0.002	0.7900
CIVIL	2 810 427.00	0.380	-0.100	0.0400
AnRPT	-308 548.50	0.710	-0.010	0.7900
LEV	3 004.52	0.870	0.000	0.0000
LNCSIZE	-50 625.24	0.720	-0.000	0.6500
LNAGE	1 815 987.00	0.090	0.090	0.0300
No of Obs	-	126	-	126
No of groups	-	9	-	9
R^2	-	0.450	-	0.2700
Between R^2	-	0.020	-	0.1400
Overall R^2	-	0.240	-	0.1800
Wald chi^2	-	8.800	-	3.9200
Prob > chi^2	-	0.000	-	0.0001

AnRPT, annual company performance report; BSize, board size; CIVIL, directors appointed from civil service; EBIT, earnings before interest and tax; FREQ, meeting frequency; LEV, debt to equity; LNAGE, controlled for the age of the SOE; LNCSIZE, controlled for the size of the SOE in terms of its assets; PAF, political affiliation; RISK, risk management committee; ROA, return on assets;TENURE, board tenure.
The p-value for EBIT is 0.000, and the ROA is 0.0001. These p-values are less than 0.05, indicating both EBIT and ROA are significantly associated with corporate governance. As revealed by the R^2 results, 45% of EBIT and 27% of ROA are predicted by the model.

One of the limitations of these estimations is that they do not address endogeneity problems that arise because of the influence of prior decisions on current performance (Shao, 2019). To overcome this limitation and in line with earlier studies (Khan et al., 2019; Shao, 2019), a DWH endogeneity test was performed (Table 4). Results for EBIT show that fixed estimation is appropriate. Durbin score was 1.49498 and p-value at 0.2214, Wu-Hausman score was 1.39286 and p-value was 0.2403. These results revealed that variables for EBIT are exogenous as p-values are above threshold of p-value 0.05. However, results for ROA revealed that static models had endogeneity concerns, as a result dynamic model was employed. Durbin test scores for ROA was 19.6085, and p-value was 0.0000, Wu-Hausman score was 21.3794 and

TABLE 3: Hausman test specification.

Variables	Fixed effects		Random effects	
	EBIT		ROA	
	Coeff.	$p > (z)$	Coeff.	$p > (z)$
Constant	-4 643 578.00	0.203	0.074736	0.0530
BSize	-2 072.16	0.980	-0.002700	0.3350
PAF	65 425.13	0.978	-0.160900	0.0290
RISK	5 368 946.00	0.000	0.095400	0.0000
FREQ	375 194.20	0.433	0.028000	0.1400
TENURE	28 696.64	0.860	0.010100	0.0900
CIVIL	2 810 427.00	0.375	-0.206100	0.0430
AnRPT	-308 548.50	0.713	-0.0221	0.2170
LEV	3 004.52	0.870	0.003300	0.0000
LNCSIZE	-50 625.24	0.716	-0.00200	0.7110
LNAGE	1 815 987.00	0.090	0.454000	0.0040
INDUSTRY	-	-	-0.013700	0.0460
COMPETE	-	-	-0.082400	0.0000
No. of obs	-	126	-	126
No of groups	-	9	-	9
R^2	-	-	-	0.2379
Between R^2	-	-	-	0.9309
Overall R^2	-	-	-	0.4589
F (10, 107)	-	8.800	-	-
Prob > F	-	0.000	-	-
Wald chi^2 (12)	-	-	-	95.8200
Prob > chi^2	-	-	-	0.0000
Hausman test	Chi^2 (10)	97.550	-	16.1100
Prob > chi^2	-	0.000	-	0.0970

AnRPT, annual company performance report; BSize, board size; CIVIL, directors appointed from civil service; COMPETE, competition; EBIT, earnings before interest and tax; FREQ, meeting frequency; INDUSTRY, industry dummies; LEV, debt to equity; LNAGE, controlled for the age of the SOE; LNCSIZE, controlled for the size of the SOE in terms of its assets; PAF, political affiliation; RISK, risk management committee; ROA, return on assets; TENURE, board tenure.

TABLE 4: Durbin–Wu–Hausman test for earnings before interest and tax and return on asset models.

Tests	Score	p-value
Test results for EBIT		
Durbin (score) chi^2 (1)	1.49498	0.2214
Wu-Hausman F (1,116)	1.39286	0.2403
Ho: $p > 0.05$ = Variables are exogenous	-	-
HA: $p \leq 0.05$ = Variables are endogenous	-	-
Test results for ROA		
Durbin (score) chi^2 (1)	19.6085	0.0000
Wu-Hausman F (1,116)	21.3794	0.0000
Ho: $p > 0.05$ = Variables are exogenous	-	-
HA: $p \leq 0.05$ = Variables are endogenous	-	-

EBIT, earnings before interest and tax; ROA, return on assets.

p-value was 0.0000 indicating that a dynamic estimation is considered as an appropriate model for ROA.

Regression analysis using static model for earnings before interest and tax

The DWH tests confirmed that fixed effects estimation was the most efficient estimation for the EBIT accounting measure. The regression results for EBIT support our H5 for the risk management committee. Risk management was positively and significantly associated with EBIT at the 5% level. The EBIT is also inversely correlated with industry and competition at the 5% level.

Overall, the static estimation models for EBIT show corporate governance have a significant impact on SOE performance at a *p*-value of less than 5%.

Regression analysis using dynamic model

The findings for the DWH test for ROA revealed that both fixed effects and random effects estimations had endogeneity bias. Consequently, the study employed a dynamic model of system-GMM. Using STATA 15, the study conducted a postestimation test of Sargan to test the validity of the system-GMM model. The Sargan score was 122.1208, and the *p*-value was 0.1355, confirming that the dynamic model was

appropriate for ROA. The *p*-value was above 0.05. In line with prior research (Shao, 2019), a dynamic panel data regression was carried out using Bover and Bond estimation with a 1-year lag. The lag equation is presented here:

$$ROA = \alpha + \beta_1 Bsize_{it-1} + \beta_2 PAf_{it-1} + \beta_3 Risk_{it-1} ++ \beta_4 Freq_{it-1} + \beta_5 Tenure_{it-1} + \beta_6 Civil_{it-1} + \beta_7 AnRpt_{it-1} + \beta_8 Lev_{it-1} + Z_1 LnCsize_{it-1} + Z_2 LnAge_{it-1} + Z_3 Industry_{it-1} + Z_4 COMPETE_{it-1} + \eta_i + \varepsilon_{it-1} \quad [Eqn 3]$$

The results from dynamic panel regression model are compared with static regression model (Table 5).

Table 5 compares the regression analysis between static and dynamic estimations for ROA. Both models reveal that corporate governance has a strong correlation with SOE performance. However, the DWH test showed that static regression models are not efficient compared with dynamic models.

In general, the results of the dynamic model show that ROA has a significant relationship with corporate governance. The *p*-value for ROA was less than 0.005 (Table 5). The GMM-SYS results support the study H5, H7 and H8. While results for traditional static estimations of OLS and random effects (RE) show that PAF and CIVIL are negatively associated with ROA at level 5%, supporting our H3 and

TABLE 5: Regression analysis: Corporate governance and state-owned enterprise performance (return on assets).

ROA	OLS		GLS		2SLS (IV)		GMM-SYS	
	Coef.	*p* > *t*	Coef.	*p* > *z*	Coef.	*p* > *z*	Coef.	*p* > *z*
L1.	-	-	-	-	-	-	0.269	0.0000
Constant	0.0750	0.5350	0.0750	0.5340	-0.3550	0.0060	-0.025	0.8300
BSize	-0.0027	0.3370	-0.0027	0.3350	0.0191	0.0000	-0.001	0.5900
PAF	-0.1609	0.0310	-0.1609	0.0290	-0.1006	0.2140	0.029	0.6500
RISK	0.0954	0.0000	0.0954	0.0000	0.1204	0.0000	0.063	0.0000
FREQ	0.0280	0.1430	0.0280	0.1400	0.0379	0.0960	0.015	0.3400
TENURE	0.0101	0.0930	0.0101	0.0900	0.0041	0.5080	-0.003	0.5200
CIVIL	-0.2061	0.0460	-0.2061	0.0430	0.0247	0.8270	-0.124	0.2200
AnRPT	-0.0221	0.2200	-0.0221	0.2170	0.0247	0.1710	-0.035	0.1130
LEV	0.0033	0.0000	0.0033	0.0000	0.0029	0.0010	0.003	0.0000
LnCSIZE	-0.0020	0.7110	-0.0020	0.7110	-	-	-0.006	0.1500
LnAGE	0.0454	0.0050	0.0454	0.0040	-	-	0.021	0.5200
INDUSTRY	-0.01370	0.0480	-0.0137	0.0460	-	-	0.025	0.1300
COMPETE	-0.0824	0.0000	-0.0824	0.0000	-	-	-0.106	0.0000
No. of Obs	-	126	-	126	-	126	-	119
No. Instruments	-	-	-	-	-	-	-	119
No. of groups	-	-	-	9	-	-	-	9
R²	-	0.4589	-	0.1973	-	0.1506	-	-
Adj *R²*	-	0.4014	-	-	-	-	-	-
F (12,113)	-	7.9900	-	-	-	-	-	-
Prob > *F*	-	0.0000	-	-	-	-	-	-
Wald chi²	-	-	-	95.8200	-	63.3500	-	112.0800
Prob > chi²	-	-	-	0.0000	-	0.0000	-	0.0000
Sargan test	-	-	-	-	-	-	-	-
Chi² (106)	-	-	-	-	-	-	-	118.7344
Prob > chi²	-	-	-	-	-	-	-	0.1698
DWH test	-	-	-	-	-	-	-	-
Durbin Score chi²	-	-	-	-	19.6085	0.0000	-	-
Wu-Hausman	-	-	-	-	21.3794	0.0000	-	-

2SLS (IV), two-stage least squares (instrumental variables); AGE, age of company; AnRPT, annual company performance report; BSize, board size; CIVIL, directors appointed from civil service; COMPETE, competition; DWH, Durbin–Wu–Hausman test; EBIT, earnings before interest and tax; FREQ, meeting frequency; GLS, generalized least-squares; INDUSTRY, industry dummies; LEV, debt to equity; OLS, ordinary least squares; regression; PAF, political affiliation; RISK, risk management committee; ROA, return on assets; SIZE, size of company; TENURE, board tenure.

TABLE 6: Corporate governance mechanisms and their impact on performance.

Theme/governance mechanism	Frequency of respondents (%)	Effect on SOE performance
1. Legal form		
1.1. External institution monitoring	36	+
1.2. Decreased shareholder power	43	+
1.3. Increased state ownership power	36	-
1.4. Institutional shareholding	7	+
2. Ownership arrangements		
2.1. Multiple and conflicting principals	43	-
3. Board attributes		
3.1. Qualified and independent board	36	+
3.2. Captured and ingratiated board	57	-
4. Capital structure		
4.1. Soft budget constraints	18	-
5. Disclosure		
5.1. Conflict of interest	36	-

SOE, state-owned enterprises.

H4. the results for dynamic estimations of GMM-SYS did not support our predictions for H3 and H4. Results confirm that better board attributes lead to better performance. The results show that having a risk management committee contributes favourably to the performance of SOEs as measured by ROA. In addition, the results demonstrate that having public servants on the board adds no benefit.

Results for capital structure attributes are consistent with agency theory and with the study's prediction that leverage is a disciplinary mechanism for agents. Results for all models reveal that there is a strong relationship between leverage and ROA at the 5% level, supporting the prediction of H8 of this study. While industry and competition have an inverse relationship with ROA, age has a positive relationship with performance at the 5% level on static models. When dynamic models were applied, control variables showed no influence, indicating that the relationship may be the result of an erroneous correlation between corporate governance and ROA when static models of OLS and RE are utilised.

Results from the correlation matrix and regression analysis reveal that there is a strong relationship between corporate governance and SOE performance in terms of EBIT and ROA. However, to reveal the causes of performance, interviews were conducted with directors and other stakeholders using a semi-structured questionnaire. Table 6 presents the findings from the interviews. The method of collecting data included both notetaking and voice recording, where applicable.

After performing an in-depth case analysis on SOEs, findings revealed marked differences in performance between SOEs with mixed ownership and those that are entirely owned by the state. Sunbird, which is partly owned by minority private investors, outperformed other SOEs, which are held entirely by the government.

Discussion and conclusion

The objective of the study was to examine the impact of corporate governance attributes on the performance of SOEs

in a least developed economy. Results from the study reveal that corporate governance has an influence on the performance of SOEs. This section discusses the influence of these corporate governance attributes on the performance of SOEs.

Ownership structure and performance

The study identified legal form as one of the important elements of ownership structure. While the regression analysis did not find any association between ownership structure and SOE performance except for results from the correlation matrix, findings from the case study analysis revealed some corporate governance mechanisms that contribute to performance. The study found that where there is increased government ownership of enterprises, performance is adversely affected. This was evident where the SOEs were fully owned by the state. Conversely, mixed ownership, which reduces government shareholding in an enterprise, has a positive influence on the company's value. Increased state ownership results in an increase in levels of political interference; this is consistent with the report from the World Bank (2021) on emerging and developing markets. These findings are similar to those obtained by Iwasaki et al. (2022) on emerging markets. In a related study on Chinese listed companies, Lin and Fu (2017) found that state-controlled businesses perform poorly. Conversely, a study by Abdallah and Ismail (2017) on Gulf Cooperative Council states discovered that a decreased level of state ownership leads to a significant increase in enterprise value. The findings of this study also demonstrated that mere changes in legal form without debunking state shareholding do not lead to improved performance, as evidenced by the performance of Electricity Supply Corporation of Malawi (ESCOM) and Airport Developments Limited (ADL). Most respondents argued that a change in legal form does not have a positive effect on the performance of government-owned companies as long as the state remains the only shareholder. One explanation for the poor performance of SOEs is that when an enterprise is fully owned by the government, the shareholder has unrestrained state power, which invariably leads to abuse. This is confirmed by the marked differences in performance between Sunbird and ESCOM, the former being a mixed shareholding entity while the latter being fully owned by the state. Political officials interfere not only with the appointment of directors and top management but also with the procurement process and the day-to-day operations of these enterprises. To minimise the adverse political influence of the state, this study has demonstrated that state ownership should be debunked by including private minority interests in the ownership of an SOE. Similar results were observed by Wong (2018). Findings on the Sunbird case in this study are in line with those obtained by Munisi et al. (2014), who revealed that some level of government ownership in emerging economies is beneficial.

While the findings of this study do not necessarily validate the efficacy of independent institutions as a deterrent to moral hazard that arises because of state abuses, the results

show that significant dilution of state shareholding leads to improvement in performance because of improved monitoring and control mechanisms.

On ownership arrangements, findings from the study show that they do influence performance. Of the respondents interviewed, 43% indicated that decentralised arrangements affect performance negatively. Respondents attributed this to the presence of multiple stakeholders and several reporting and approval lines. The findings of this study reveal that Sunbird, which has a dual ownership arrangement, has a positive performance, while the other cases, which have multiple conflicting principals, performed poorly. For instance, a respondent from ESCOM observed that the company reports to the Ministry of Finance, the Department of Statutory Corporations, the Ministry of Energy, the Malawi Energy Regulatory Authority (MERA) and, to some extent, the Office of the President and Cabinet. The results of this study regarding ownership arrangements are similar to those observed by Phuong et al. (2020, p. 677) in their study on Vietnamese SOEs, which found that decentralised ownership arrangements were one of the major causes of 'poor and ineffective performance in SOEs', which result from a lack of effective monitoring and control. In a study on power utilities in Southern African nations, Mbo and Adjasi (2017) noticed that subpar performance was attributed to multiple principals and their representation on the board.

Board attributes and state-owned enterprise performance

The board of directors' attributes form a critical element of internal corporate governance in terms of ensuring accountability and performance of SOEs (IoDSA, 2016). This study aimed to investigate the impact of board attributes on SOE value. Results indicate that political party affiliation and the presence of public servants on the board have a negative effect on SOE's performance. These results on directors with political affiliations are consistent with the study by Heo (2018) on Korean SOEs. Even though politically affiliated directors may be regarded as non-executive, the study makes it clear that their presence has insignificantly contributed to SOEs performance. If anything, they only serve political expediency. Similar results were obtained by Menozzi et al. (2012) on Italian public utility companies and Phuong et al. (2020) on Vietnamese state-owned companies. On civil servants, the results of the study reveal that their presence on the board relegates the SOE to a government department. Consistent with other studies (Amoako & Goh, 2015; Wong, 2018), this study argues that civil servants or public servants should be kept at arm's length to insulate the SOEs from political interference. Contrary to the findings of this study, a study by Xie et al. (2022) found that the inclusion of political leadership on the board contributes to positive performance.

Findings of the study show that ownership structure has an influence on the calibre of directors who sit on the board. The study found that directors appointed to fully government-owned enteprises lacked independence and were captured.

However, directors nominated for mixed-shareholding SOEs were autonomous and professional in their conduct. Captured directors perform suboptimally (Thenmozhi & Sasidharan, 2020) because they serve the interests of the appointing authority (Balasubramanian, 2017). The study also showed that a board that has been captured does not hold management accountable for their performance. The difference in these results shows that corporate governance models cannot be used on a 'one size fits all' basis. As observed by Aguilera et al. (2021, p. 11), 'political ideology' plays a significant role in shaping 'the relationship between state ownership and' enterprise value.

Regarding board tenure, the study found a favourable correlation with company value. The study also showed that tenure depended on the type of government in power. State-owned enterprises that changed boards because of a change in government showed poor performance. This was evident in the cases of ESCOM, Malawi Posts Corporation (MPC) and Malawi Housing Corporation (MHC), which are fully owned by the state. Similar observations were made by Simpson (2014) on Ghanaian SOEs. On the contrary, stable and longer board tenures were associated with improved performance. This was evident at Sunbird, whose boards were not aligned with the change of government. The results of this study on board tenure are similar to those of Livnat et al. (in press), which found that board tenure is strongly and favourably correlated with performance as measured by stock returns.

Regression results on board structure showed that the risk management committee is favourably and strongly related to both performance metrics supporting H5. The study found that most completely government-owned companies lacked risk management functions and did not disclose their presence. Only listed SOEs had a risk management committee. Since Sunbird, the highest-performing SOE, is the only SOE where the risk management committee is located, it is not surprising that this committee is strongly and favourably related to performance.

On the overall importance of board attributes, results are in line with those of Mbo and Adjasi (2017), who found that the poor SOE performance of utility companies in a few Southern African nations – Botswana, Mauritius, Namibia and South Africa – was caused by the representation of many stakeholders on the board.

Capital structure and state-owned enterprise performance

Capital structure is a mechanism that influences the performance of companies because of its ability to exert discipline on agents. The presence of debts is seen as an enabling factor to resolve conflicts of interest between agents and principals. The study revealed favourable correlations between leverage and enterprise value, supporting H8. Leverage was also found to be positively associated with the performance measure of ROA. The positive relationship is

consistent with prior studies (Detthamrong et al., 2017). Conversely, Le and Phang (2017) found that capital structure is inversely related to the performance of Vietnamese companies.

Analysis of the case studies revealed that while leverage was associated with improved performance for Sunbird, this was not true for most of the SOEs. The lack of correlation between capital structure and enterprise value for most of the SOEs can be attributed to several factors. Firstly, the loans are guaranteed by the state, so the chances of bankruptcy are remote. As a result, there is a lack of disciplinary pressure. Secondly, a lack of responsibility and openness with regard to the proper use of secured loans leads managers to use their own discretion in the use of money obtained through loans. Thirdly, financial markets are less developed in a least developed country like Malawi, and as a result, debt may not have the same effect as in developed or emerging markets (Le & Phan, 2017).

Disclosure and state-owned enterprise performance

Disclosure is considered a vital component of corporate governance because it promotes accountability by managers to stakeholders. Quality disclosure is considered an effective mechanism to inhibit corrupt practices and invariably leads to improved performance.

Results from the quantitative study showed mixed results. While results from the correlation matrix revealed a positive association between the presence of an annual report and both performance measures of EBIT and ROA, results from regression analysis revealed an insignificant relationship for both static and dynamic models. A further analysis of SOEs revealed that increased state ownership leads to increased levels of non-compliance with good corporate governance practices. Increased state ownership leads to increased political interference. It is in the interest of political actors in the government that their transactions in the SOEs are not made public. The study revealed a significant difference between disclosure by the listed company and fully government-owned SOEs. Disclosure by fully government-owned SOEs lacks details; for instance, funding for ruling parties is not revealed in the financial reports. The study observed that increased state ownership moderates the impact of disclosure on SOE value. These findings are consistent with the study by Li et al. (2019).

The study concludes that corporate governance has an impact on the performance of SOEs in a least developed economy. Reduced government ownership, competent and independent boards, disclosure and leverage all improve the enterprise value of government-controlled companies. On the contrary, increased state ownership leads to subpar performance. Civil servants and politically affiliated directors have a negative effect on performance.

The findings of the study will help both professional managers and policymakers formulate policies and come up with corporate governance frameworks that will enhance SOEs value. The major limitation of the study is that it is based on a single country with a small population of SOEs. The other limitation is that the present study used a quantitative method to conduct the study, which may not appropriately explain the causes of the observed performance or absence of the performance. We recommend a further detailed study be undertaken using qualitative methods to investigate the causes of the performance of SOEs. Further study should also include other statutory bodies with additional performance measures in addition to accounting measures. The authors suggest additional research should also include private sector enterprises to better understand the impact of corporate governance and enterprise value.

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Competing interests

Authors' contributions

T.P. was the project supervisor and administrator. E.K. was responsible for the study conceptualisation, developing the methodology, conducting the investigation and producing the original draft. E.K. and T.P. did the review and editing of the manuscript.

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Data availability

Data are available in the unpublished doctoral thesis by Elias Kaunda at University of KwaZulu-Natal, Graduate School of Business and Leadership. Additional data not retrieved from the thesis that support the findings of this study are available on request from the corresponding author, E.K., upon reasonable request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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Appendix

TABLE 1-A: Pearson correlation matrix – Corporate governance and state-owned enterprises performance.

Variables	EBIT	ROA	LF	BSize	PAF	RISK	FREQ	TENURE	CIVIL	AnRPT	LEV	LNCSIZE	LNAGE	INDUSTRY	COMPETE
EBIT	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ROA	0.483**	1	-	-	-	-	-	-	-	-	-	-	-	-	-
p-value	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LF	0.329**	0.375**	1	-	-	-	-	-	-	-	-	-	-	-	-
p-value	0.000	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-
BSize	-0.064	-0.007	-0.373**	1	-	-	-	-	-	-	-	-	-	-	-
p-value	0.474	0.934	0.000	-	-	-	-	-	-	-	-	-	-	-	-
PAF	-0.273**	-0.295**	-0.775**	0.441**	1	-	-	-	-	-	-	-	-	-	-
p-value	0.002	0.001	0.000	0.000	-	-	-	-	-	-	-	-	-	-	-
RISK	0.576**	0.408**	0.530**	-0.337**	-0.622**	1	-	-	-	-	-	-	-	-	-
p-value	0.000	0.000	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-	-
FREQ	-0.003	0.122	0.195*	-0.223*	-0.222*	0.123	1	-	-	-	-	-	-	-	-
p-value	0.977	0.160	0.024	0.011	0.012	0.157	-	-	-	-	-	-	-	-	-
TENURE	0.041	0.295**	0.474**	-0.254**	-0.544*	0.381**	0.258**	1	-	-	-	-	-	-	-
p-value	0.650	0.001	0.000	0.004	0.000	0.000	0.003	-	-	-	-	-	-	-	-
CIVIL	-0.155	-0.246**	-0.396**	-0.033	0.280**	-0.305**	-0.023	-0.254**	1	-	-	-	-	-	-
p-value	0.081	0.005	0.000	0.708	0.001	0.000	-0.023	0.004	-	-	-	-	-	-	-
AnRPT	0.267**	0.333**	0.826**	-0.272**	-0.626**	0.438**	0.161	0.448**	-0.250**	1	-	-	-	-	-
p-value	0.002	0.000	0.000	0.002	0.000	0.000	0.064	0.000	0.004	-	-	-	-	-	-
LEV	-0.012	0.265**	-0.066	0.068	0.161	-0.036	-0.016	0.060	0.001	-0.063	1	-	-	-	-
p-value	0.896	0.002	0.451	0.448	0.070	0.683	0.858	0.499	0.993	0.470	-	-	-	-	-
LNCSIZE	0.200*	0.199*	0.266**	-0.056	-0.167	0.189*	0.002	-0.012	-0.103	0.224**	0.004	1	-	-	-
p-value	0.022	0.023	0.002	0.528	0.061	0.030	0.982	0.893	0.251	0.010	0.963	-	-	-	-
LNAGE	-0.009	0.188*	-0.215*	0.045	0.266**	0.003	-0.010	-0.121	0.148	0.017	-0.032	0.043	1	-	-
p-value	0.918	0.030	0.013	0.612	0.002	0.970	0.910	0.174	0.097	0.844	0.714	0.623	-	-	-
INDUSTRY	-0.032	0.085	0.131	-0.394**	-0.447**	0.358**	0.230**	0.535**	0.057	0.146	0.058	0.077	0.011	1	-
p-value	0.713	0.332	0.134	0.000	0.000	0.000	0.008	0.000	0.526	0.094	0.506	0.380	0.085	-	-
COMPETE	-0.110	-0.124	0.120	-0.555**	-0.310**	0.267**	0.178*	0.229**	-0.211*	-0.005	-0.051	-0.221*	0.096	0.180*	1
p-value	0.209	0.157	0.170	0.000	0.000	0.002	0.040	0.009	0.017	0.952	0.558	0.011	0.270	0.038	-

AnRPT, annual company performance report; BSize, board size; CIVIL, directors appointed from civil service; COMPETE, competition; EBIT, earnings before interest and tax; FREQ, meeting frequency; GLS, generalized least-squares; INDUSTRY, industry dummies; LEV, debt to equity; LF, legal form; OLS, ordinary least squares; regression; PAF, political affiliation; RISK, risk management committee; ROA, return on assets; SIZE, size of company; TENURE, board tenure.

*, Correlation is significant at the 0.05 level (2-tailed).

**, Correlation is significant at the 0.01 level (2-tailed).