International Journal of Applied Economics, Finance and Accounting
ISSN 2577-767X
Vol. 20, No. 1, pp. 21-34
2024
DOI: 10.33094/ijaefa.v20i1.1920

Firm characteristics and corporate governance of state-owned enterprises: An analysis of an emerging market

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Keywords:
Corporate governance
Firm characteristics
State-owned enterprises
Vietnam.

JEL Classification:
A10; G30; L20; O16.

Received: *26 March 2024*
Revised: *29 August 2024*
Accepted: *13 September 2024*
Published: *11 October 2024*
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Abstract

This paper explores the relationship between firm-level factors and the quality of corporate governance of state-owned enterprises (SOEs) in an emerging economy, namely Vietnam. We employ a self-built corporate governance index (CGI) for SOEs and conduct an empirical analysis of data from 113 listed SOEs on the stock market of Vietnam from 2016-2020 using a fixed effect model (FEM) as suggested by the Hausman test. We find that firm-level characteristics such as firm age and tangibility of assets as well as macroeconomic factors such as the quality of the business climate and economic growth exhibit a statistically significant correlation with the corporate governance quality of SOEs. On the other hand, there is no established statistically significant relationship between other firm characteristics such as firm size, state ownership, financial leverage, growth opportunities and corporate governance. These results for an emerging economy like Vietnam are novel and provide implications for policymakers, regulators, shareholders and other stakeholders on the possibility of enhancing the quality of corporate governance of SOEs in an emerging market, a critical issue given the increasing role of SOEs in economies. Our research can be improved for future research in a couple of aspects. First, addressing the case of companies that do not disclose their governance practices in annual reports would help enhance the information for the corporate governance index. Second, extending the data to compare listed SOEs with other listed firms would provide a more comprehensive analysis.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not applicable.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Data Availability Statement: The corresponding author may provide study data upon reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Conceptualization, methodology, formal analysis, data analysis, writing review and editing, N.H.D.; data analysis, methodology, formal analysis, review and editing, S.T.D. All authors have read and agreed to the published version of the manuscript.

1. Introduction

Government regulators and researchers are paying significant attention to state-owned firms which play an important role in the development of the global economy. The total value of state-owned enterprises (SOEs) assets among the 2000 largest companies in the world has increased twice to 20% over the past 20 years mainly due to SOEs in developing countries. These SOEs are currently responsible for $45 trillion or around 50% of the world's GDP. In many countries, SOEs contribute substantially to employment, GDP growth and market capitalization especially those with emerging markets. In other countries, SOEs can play a significant role in essential industries and sectors of the economy such as energy, transport,

telecommunication, etc. (European Commission, 2016). The crucial role that SOEs play in maintaining the economy during difficult times was highlighted by COVID-19.[1]

The primary concern of regulators and experts given the significance and function of State-Owned Enterprises (SOEs) is the competitiveness and efficiency of this enterprise sector with corporate governance commonly identified as an important factor. Many countries have put reform laws into place to improve the state-owned enterprise's management's effectiveness and transparency, reduce failure risk, and foster management capacities to enhance the competitiveness of SOEs. For example, the Organisation for Economic Co-operation and Development (OECD) issued different versions of the "OECD guidelines on corporate governance of state-owned enterprises" (OECD, 2015)[2] with recommendations on good practices of governance with the expectation to address the challenges and improve the corporate governance quality of SOEs. According to related research, corporate governance is essential for the long- and short-term success of organizations and capital markets Shleifer and Vishny (1997), Gompers, Ishii, and Metrick (2003), Klapper and Love (2004), Bebchuk, Cohen, and Ferrell (2009), Chang., Kim, and Yip (2009), Bhagat and Bolton (2019), Pucheta-Martínez and Gallego-Álvarez (2020), Aguilera et al. (2021), Ferriswara, Sayidah, and Agus Buniarto (2022) and Affes and Jarboui (2023).

In this paper, we study the relationship between firm characteristics and the quality of corporate governance of SOEs in a specific emerging market, Vietnam. Corporate governance is measured by an index comprehensively covering different aspects of corporate governance of SOEs from board characteristics, disclosure and transparency to equal treatment with non-state shareholders, investors and other stakeholders. The related research on corporate governance generally suggests that the business characteristics include state ownership, firm age, firm size, financial leverage and growth potential. We additionally consider macroeconomic variables that impact the economy's competitiveness.

Vietnam is a transition economy with a significant number of state-owned companies and their important contribution to the economy. According to the definition of state-owned enterprises in Vietnam,[3] there were 918 SOEs with 100% state-owned capital and 1045 SOEs with more than 50% state-owned capital in 2020 (General Statistics Office of Vietnam, 2021). State-owned businesses developed only 0.28% of all businesses and 6. 84% of the employees in the country. Still, they were responsible for 22. 24% of total annual average capital, 17% of all fixed assets and long-term investment value and $20. 44 of total profit before taxes (General Statistics Office of Vietnam, 2021). Furthermore, state-owned firms contributed 28% to economic growth employing 1.2 million people (8.3%) accounting for 29% of total corporate capital and producing 22.9% of profit compared to the profit of the entire enterprise sector (General Statistics Office of Vietnam, 2019). However, important corporate governance advancements are required because the SOE sector keeps improving compared to the resources it has access to and uses. The period 2016-2020 also observed significant efforts by Vietnam to reform the corporate governance of SOEs following the issuance of the guidelines of OECD for corporate governance of SOEs (2015edition) and the establishment of the country's commission for the management of state capital at enterprises . Vietnam is expected to be a good case to study SOEs and the corporate governance of SOEs.

This paper supplements the literature investigating the relationship between corporate governance and firm-level factors for SOEs. The research on such relationships for listed firms in general is rather extensive and comprehensive Klapper and Love (2004); Durnev and Kim (2005); Khanchel (2007), Arora and Bhandari (2017), Shubita and Shubita (2019) and Ronoowah and Seetanah (2023). However, SOEs are relatively inadequate either focusing on specific aspects of governance (board size, board composition, disclosure etc.) on peripheral or generic issues of governance such as the organizational form of SOEs or particularly on the specific country of China with 50.4% of studies being China-related as Daiser, Ysa, and Schmitt (2017) figured out Bruton, Peng, Ahlstrom, Stan, and Xu (2015), Chang and Lin (2022) and Andrews (2022). Firm-level characteristics with corporate governance are also not properly clarified in the setups of many studies.

The current paper offers two major contributions given its research question and setup. First, the research employs a self-calculated, comprehensive corporate governance index for state-owned enterprises in an emerging country, Vietnam and studies the relation between corporate governance of SOEs and firm-level factors with such an index. Second, an emerging economy that has been rather successful economically recently while still maintaining a rather significant SOE sector has frequently updated the rules regarding the corporate governance of the SOEs with an empirical analysis of Vietnam[4]. This paper sheds light on the determinants of corporate governance for a specific, yet important, sector of enterprises, SOEs. The findings of the paper provide implications for policymakers, owners and other stakeholders of SOEs on the possibility of improving the companies' corporate governance quality.

This paper is divided into five sections. Section 2 examines studies on the construction of corporate governance index and factors of corporate governance. The next section discusses sample selection, definitions

[1] In the COVID-19 pandemic, SOEs are active in the fight against COVID-19 both directly and indirectly, producing ventilators, masks, and even vaccines (World Bank, 2021).
[2] See the first version at: https://www.oecd.org/daf/ca/oecd-guidelines-corporate-governance-soes-2005.htm
[3] The Enterprise Law 2020 of Vietnam defines state-owned enterprises as "enterprises in which the state holds more than 50% of charter capital, the total number of shares with voting rights".

of variables and model specifications. Section 4 presents and discusses the results of the empirical analysis. Finally, section 5 presents key findings, implications for the corporate governance of SOEs in Vietnam and conclusion.

2. Literature Review

It is not feasible to conduct a comprehensive review of the literature on corporate governance as one might anticipate. In this section, we review the most related papers to our research topic. We focus on the measurement of corporate governance of SOEs and determinants of corporate governance.

2.1. Factors Affecting Corporate Governance

There is a literature that identifies potential factors affecting corporate governance and its quality. Klapper and Love (2004) found that characteristics of firms including firm size, asset composition and growth may have implications for corporate governance. Enterprises with stronger future growth prospects were more motivated to implement better corporate governance practices for intangible assets and corporate governance is positively correlated. The effect of firm size on corporate governance practices is not properly detected. Durnev and Kim (2005) discovered that three major drivers motivate organizations to adopt better corporate governance practices, growth opportunity, the requirement for external financing and ownership concentration.

Khanchel (2007) investigated corporate governance and its determinants in US firms. The sample consists of 624 US firms from 1994-2003. Determinants of strong governance are studied and detected. Specifically, firm characteristics such as investment opportunities, intangible assets, firm size and external financing needs are found to show a positive relationship with statistical significance with the composite governance index and its component indices (except for the one related to board committees). Other factors such as institutional ownership and external financing needs also show a positive relationship with the governance index. However, factors such as growth opportunities and performance are found not to have a statistically significant relationship with the quality of corporate governance.

Arora and Bhandari (2017) found that market size, research and development (R&D) intensity and age all exhibited a positive and statistically significant effect on corporate governance. Shubita and Shubita (2019) emphasized that foreign ownership can strengthen company governance procedures by expanding growth opportunities. Sullivan and Constand (1996) addressed the relationship between corporate governance and ownership structure.

In addition to firm-level variables, many studies have examined the impact of macro factors on corporate governance. Various factors such as the size of capital markets, foreign ownership, degree of government intervention etc., have been detected to be relevant. Klapper and Love (2004) addressed the role of the levels of asymmetric information and contracting imperfections. Aguilera and Cuervo-Cazurra (2004) investigated the effects of factors at the international level, across countries. Ugur and Ararat (2006) investigated the relationship between macroeconomic stability and corporate governance improvements in Turkey and demonstrated a positive association. More recently, there have been additional papers further exploring the topics, e.g., Shubita and Shubita (2019) on foreign ownership, Bruton et al. (2015) on the organizational aspect of SOEs, Chang and Lin (2022) on political factors and state ownership for SOEs in China and Andrews (2022) on board size and board composition for local SOEs in England.

2.2. State-Owned Enterprises and Corporate Governance

Many scholars have examined corporate governance issues associated with SOEs. Bruton et al. (2015) studied the ownership structure of state-owned enterprises and argued that SOEs are no longer purely private or public but exist in a more sophisticated form. Hence, they argued that SOEs should be viewed as hybrid organizations with varying levels of state ownership and control. Borisova, Brockman, Salas, and Zagorchev (2012) investigated SOEs in the EU and found that government ownership was negatively correlated with quality governance. Similarly, the preferential voting rights of golden shares were detrimental to the quality of governance. Some studies highlighted the challenges in the corporate governance of SOEs and suggested potential solutions. Zhang (2006) pointed out the problems of management selection and long-term managerial incentives for Chinese SOEs. Similarly, Tylecote and Cai (2004) pointed out that after the initiation of economic reforms in 1978, Chinese SOEs still struggled with inefficiency and competitiveness in the market. This was caused by inadequate corporate governance particularly weak disciplinary measures and incentives that led to mismanagement and hindered technological development. Menozzi, Erbetta, Fraquelli, and Vannoni (2014) investigated factors affecting board compensation and found the effects of firm size and board size. Levy Yeyati and Negri (2023) investigated and figured out two major challenges to the corporate governance of SOEs including the autonomy of managers from politics and the transparency in management. More recently, Ciolomic, Beleiu, and Nistor (2024) conducted a comprehensive bibliometric analysis of the governance and performance of SOEs.

Other scholars focused on the codes and practices of corporate governance in specific countries. Khongmalai, Tang, and Siengthai (2010) investigated a comprehensive corporate governance model for Thai

state-owned enterprises. The findings suggested the most significant role of strategic human resource management in the model followed by risk management, internal control, internal audit and information technology. Thomas (2012) studied the political influence on SOE's corporate governance in South Africa and found that the companies were not managed properly to ensure the adoption of best practices in corporate governance. SOEs were also found to comply more properly with external governance demands but not with internal, self-regulated ones. Lin, Lu, Zhang, and Zheng (2020) conducted a survey on research on SOEs in China for the past 40 years. The review of corporate governance covers aspects including ownership structure and controlling rights, CEO compensation, board independence, outside block holders, takeover markets and information transparency. Chang and Lin (2022) constructed a corporate governance index focusing on four categories including board selection and nomination, board independence, provisions on entrenchments and provisions on agency problems and studied the effect of political order, compliance and concentration of state ownership on the governance of SOEs in China. They found that stronger and central SOEs have better corporate governance. Thompson, Alleyne, and Charles-Soverall (2019) investigated the governance of SOEs in Barbados and pointed out major concerns on aspects of accountability and transparency including political interference, board appointment and composition. Thompson and Alleyne (2022) investigated the board of directors' quality and found that political considerations affect board member appointments and hence the quality of boards.

In general, there is a literature of papers acquiring data specific to SOEs to assess factors influencing corporate governance. However, Daiser et al. (2017) pointed out in their survey of research on corporate governance of SOEs even though the research on corporate governance of SOEs is a growing field. There is a wide-ranging area of research that needs to be done to understand the topic.

2.3. Measuring Corporate Governance

Many studies have built corporate governance indices to evaluate corporate governance quality. As one of the pioneering papers, Gompers et al. (2003) often referred to as "GIM" constructed an index for corporate governance (the GIM index) with 24 rules on governance to measure shareholder rights where the lower the index is, the stronger the rights are. More specifically, the "Governance Index" (GI) indeed measures how power is allocated between managers and shareholders. The provisions (rules) are divided into five thematic groups including delay (hostile takeover), voting, protection, state and others (for other takeover defenses). To construct the index, for each firm, for a given provision unfavourable to shareholder rights, one point is added (i.e. increases managerial power). Firms with the index value in the highest decile are assigned to the "Dictatorship Portfolio", i.e., with the "highest management power" (equivalently, weakest shareholder rights) and vice versa.

The GIM index does not take into account the relative importance of alternative provisions. Bebchuk et al. (2009) constructed an index focusing on six provisions including staggered boards, poison pills, bylaw amendment limitations (for shareholders), supermajority amendments and golden parachutes. The index is often referred to as the E-index (entrenchment index) in literature. Klapper and Love (2004) constructed an index of corporate governance (GOV) using the questionnaire proposed by Credit Lyonnais Securities Asia (CLSA). The questionnaire is designed with seven categories of content including transparency, accountability, independence, fairness, responsibility, management discipline and social awareness. For the GOV index, the category of social awareness is excluded. The questions are binary (yes/no) and for each question, an answer "yes " is equivalent to 1 point added to the governance score. Similarly, Brown and Caylor (2006) built an index using corporate governance data from Institutional Shareholder Services (ISS) with 51 governance criteria.

Many other papers constructed governance indices to study corporate governance for specific markets. Leal and Carvalhal-da-Silva (2007) developed a series of 24 questions based on the Code of Best Practices of the Brazilian Institute of Corporate Governance, the Brazilian Securities Commission, and the OECD. Younas, UdDin, Awan, and Khan (2021) used the corporate governance index (PAKCGI) with 70 provisions based on five sub-indices. Bhatt (2017) and Basyith, Ho, and Fauzi (2022) employed a self-defined Malaysian corporate governance index (MCGI). Ronoowah and Seetanah (2023) built a corporate governance disclosure based on 102 validated recommendations.

Overall, researchers tend to construct a summary corporate governance index by aggregating the scores of several attributes. The non-weighted index may be preferred because it is easier to calculate and ensures transparency and objectivity regarding the role of each factor in the index.

3. Methodology and Data

3.1. Corporate Governance Index (CGI) for State-Owned Enterprises

In this paper, we calculate a composite corporate governance index (CGI) to study corporate governance. There is not an index corporation particularly for listed SOEs in Vietnam. This part describes the construction of the CGI index[5] is constructed based on a set of guideline documents for corporate governance including the

[5] As proposed in Nam and Son (2022).

OECD Principles of corporate governance, the OECD Guidelines for Corporate Governance of SOEs, the Code of Corporate Governance for listed companies in Vietnam, and the Ho Chi Minh City Stock Exchange's Criteria for Evaluating Corporate Governance in 2020. The indicator set consists of 35 binary (yes /no) questions. If the information requested by the question is found to confirm the answer of "yes", the variable is set to 1, otherwise, the variable is set to 0. The combined score is then used to calculate the index CGI. The CGI index takes values in the range of 0 to 35.

Table 1 presents categories of criteria for the corporate governance index.

Table 1. Grouping of questions for the corporate governance index.

Groups	Categories of criteria
G1	Shareholder rights
G2	Stakeholders and their role
G3	Disclosure and transparency
G4	Board of directors and responsibilities

The CGI index's set of questions can be divided into four categories by content: G1. Shareholders' rights and equal treatment among shareholders with 8 questions. G2. Stakeholders and their role with 8 questions; G3. Disclosure and transparency with 10 questions; G4. Board of directors and responsibilities with 9 questions. Details of the questions are presented in Appendix 1.

Many of the criteria in these four categories have been selectively inherited from the Ho Chi Minh City Stock Exchange's 2020 Corporate Governance Evaluation Criteria as well as referring to the substance of the good governance practices of the OECD. Each component index can receive either one or zero points and the composite index is the sum of the component index scores. Appendix 1 describes the precise content of the criterion (questionnaire).

To assign points to the questions, information is taken from enterprises' annual reports. The governance quality documented is determined by secondary data from an objective standpoint. It is also crucial to remember that some information may not be given by firms in some situations. If the annual report of a firm does not contain relevant information, it is omitted from the calculation of the governance index.

3.2. Model Specification

3.2.1. Firm Characteristic Variables

This section covers factors that in theory, might be associated with the standard of corporate governance of SOEs. As suggested by the research related to the governance of SOEs as well as corporate governance in general various firm-level factors can be linked to the corporate governance of SOEs.

3.2.1.1. Factors Related to Firm Characteristics

According to the literature, for firm-level factors, various firm characteristics can have a relationship with the quality of state-owned enterprise governance such as state ownership (Borisova et al., 2012), foreign ownership (Shubita & Shubita, 2019), firm age (Arora & Bhandari, 2017), firm size (total assets) (Waweru, 2014), financial leverage (Khanchel, 2007), growth opportunity (Durnev & Kim, 2005; Khanchel, 2007) and tangibility of assets (Arora & Bhandari, 2017; De Carvalho, Dal'Bó, & Sampaio, 2021).

State ownership might be detrimental to corporate governance because the government has the authority to nominate directors, state ownership can erode director independence. Furthermore, the government, as the largest shareholder may attempt to exert influence over the firm by withholding important information from minority shareholders. The government can also put pressure on businesses to meet their objectives which may contradict the profit maximization goals of other shareholders. For instance, Borisova et al. (2012) indicated that a firm's corporate governance can be impaired by government ownership. Hence, firms with higher state ownership would have lower corporate governance quality.

Shubita and Shubita (2019) showed that foreign ownership exhibited a positive relationship with corporate governance. Intuitively, foreign investors act as outside shareholders to oversee the operations of businesses. Furthermore, because foreign firms' governance standards are frequently superior to those of domestic firms, foreign investors tend to urge domestic firms to adopt stronger governance practices. However, if foreign ownership is not concentrated, it cannot serve as a monitor for corporate governance.

Firm age may also have implications for governance quality. A more senior firm is likely to comply with higher governance rules, procedures and standards indicating a high corporate governance index (Arora & Bhandari, 2017). However, older firms can also be less flexible and more reluctant to adapt to new rules and requirements regarding corporate governance. In such a case, firm age may be a negative factor in corporate governance.

Similar to firm age, firm size may affect corporate governance in alternative ways. Larger firms are frequently in a better financial position to employ better and more expensive corporate governance practices. On the other hand, better corporate governance processes can benefit smaller enterprises by boosting their reputation in terms of external finance. This encourages small enterprises to enhance their corporate governance. Thus, the findings of previous studies are to some extent in dispute. Waweru (2014) discovered

that firm size showed a statistically significant and negative correlation with corporate governance while Mohamad Ariff, Kamil Ibrahim, and Othman (2007) found a positive one.

In theory, if businesses ensure that investors' interests are well protected, external financing may be more available (La Porta, Lopez-de-Silanes, & Shleifer, 1999). As a result, enterprises in greater financial need will benefit from enhanced corporate governance (Khanchel, 2007). Furthermore, lenders may put pressure on firms highly leveraged to improve their corporate governance. Hence, one can expect that highly leveraged firms will have better corporate governance.

Growth opportunity is another factor that can have implications for corporate governance. Specifically, fast-growing firms with limited internal capital may need external financing to fund their expansion projects and as a result, to obtain external financing. These businesses will voluntarily adopt higher corporate governance norms (Durnev & Kim, 2005; Khanchel, 2007). Hence, firms with higher growth opportunities are expected to have higher corporate governance quality.

The tangibility of assets may also be related to the corporate governance quality of SOEs. Intangible assets are more vulnerable to appropriation and theft since they are more difficult to watch and monitor than tangible ones. As a result, firms with a higher ratio of intangible assets are likely to adopt stricter governance practices (Himmelberg, Hubbard, & Palia, 1999) i.e., one should expect a negative association between the fraction of fixed assets and the quality of governance (Klapper & Love, 2004). Following the suggestions of De Carvalho et al. (2021) and Arora and Bhandari (2017), we measure asset tangibility by fixed assets divided by total assets.

3.2.1.2. Controlling Macro-Level Factors

To help properly address the relationship between firm-level factors and the corporate governance of SOEs, we control for macro-level factors that may also be linked to corporate governance in general. The government would contribute to the creation of a more open and responsible business environment in which shareholders are better protected and company executives can be more easily monitored by the public by constructing a better national governance framework (Nguyen, Nguyen, & Hoang, 2022). This suggests that the national governance framework may have implications for corporate governance. For Vietnam, the Provincial Competitiveness Index (PCI)[6] constructed and calculated by the Vietnam Chamber of Commerce and Industry (VCCI) offers a measure and assessment of the quality of economic governance, the accessibility and friendliness of businesses in the environment and the administrative reform efforts of Vietnam's provinces and cities. In this paper, we employ PCI as a variable for a macro-level factor.

According to Ugur and Ararat (2006), when the economy is steady, corporate governance quality tends to improve because stable economic conditions lower investment risks while increasing returns in the stock market which in turn attracts a large number of new investors into the market, promoting businesses' efforts to improve the quality of corporate governance to ensure investor loyalty. To address this, economic growth is taken into account as a macro-level variable.

Finally, industry might have an impact on corporate governance quality. Following Al-Janadi, Abdul Rahman, and Alazzani (2016) and Sharma, Panday, and Dangwal (2020), we also consider the industry as a control variable.

Table 2 summarizes the variables discussed above and the expected sign in the relationship with corporate governance quality as measured by the CGI index.

Table 2. Definition of variables.

Variables	Content	Description	Expected sign
CGI	Corporate governance index	The index is calculated based on 35 criteria.	
State	State ownership	The fraction of shares of a company owned by the state.	-
FDI	FDI ownership	The proportion of shares of the enterprise owned by foreign investors.	+
Firm age	Firm age	Number of years since the establishment of a business.	+/-
Log assets	Firm size (Log asset)	Natural logarithm of total wealth	+/-
Firm leverage	Firm leverage	Debt to total assets ratio	+
Growth opportunity	Growth opportunity	Cumulative net sales growth over the previous 3 years.	+
Assets tangibility	The tangibility of assets (A proxy for the	The ratio of fixed assets to total assets.	-

[6] PCI data is obtained from the website https://pcivietnam.vn/.

Variables	Content	Description	Expected sign
	nature of operations)		
Nation_pci	PCI	Provincial competitiveness index at the national level[7].	+
Growth rate	Gdp growth rate	The annual growth rate of the gross domestic product (GDP)[8].	+
Industry	Industry dummies	Eight dummy variables, take the value 1 for firms belonging to a specific industry and zero otherwise. Industry including wholesale and retail, manufacturing, real estate business, mining, science and technology, agriculture, electricity-gas production and distribution, transportation and warehousing.	
Year	Year dummies	Dummy variables year(t) (2016,2017,2018,2019, and 2020).	

3.2.2. Model Specification

The following regression model is used to investigate the relationship between enterprise features and the calibre of corporate governance taking into account the previous discussions concerning the hypotheses and variables:

$$CGI_{it} = \beta_0 + \beta_1 State_{it} + \beta_2 FDI_{it} + \beta_3 FirmAge_{it} + \beta_4 logAssets_{it} + \beta_5 FirmLev_{it} + \beta_6 GrowthOppor_{it} + \beta_7 AssTang_{it} + \beta_8 nation\_pci_{it} + \beta_9 growth\_rate_{it} + \sum_{m=1}^{8} \pi_m Industrym_{it} + \sum_{l=1}^{5} \mu_l Yearl_{it} + u_i + \varepsilon_{it} \quad (1)$$

Where i is the firm index, t is the time index, the term u_i refers to unobservable firm characteristics that do not change over time and the term ε_{it} represents the random error term for firm i in the year t.

In this research, in addition to firm-level factors, the striking feature of this model is that we control for macro-level factors in investigating the association between firm characteristics and corporate governance quality.

According to the discussion above, we expect $\beta_2, \beta_3, \beta_5, \beta_6 > 0$ and that $\beta_1, \beta_7 < 0$. The expected sign for the coefficients β_4 is ambiguous.

For empirical analysis, the ordinary least squares (OLS), fixed-effect model (FEM) and random-effect model (REM) can be used because of the nature of panel data, fixed effect and random effect models outperform the OLS. The Hausman test is then used to determine whether we should employ the fixed effect model or the random effect model.

3.3. Data

To address the research questions, we used data from the listed SOEs of Vietnam from 2016-2020. Prior to 2016, the related data on SOEs were not stable and of sound quality, partly due to the lack of perception about and adoption of transparency, disclosure and corporate governance provisions in general. In 2015, the OECD released its guidelines on corporate governance of state-owned enterprises , following period as of 2016 observed systematic efforts by Vietnam's government to reform institutions and adopt international standards for improving the corporate governance of SOEs (indicated by the mean of CGI presented in Table 5), remarkably marked by the establishment of the commission for the management of state capital at enterprises in early 2018. Our corporate governance index is also based on the OECD's 2015 standards for state-owned enterprises. On the other hand, we exclude the time after 2020 to eliminate potential and unexpected effects of COVID-19 which may not be dissected properly in the relationships of the question of this research.

State-owned enterprises are determined according to the definition of the Enterprise Law 2020 of Vietnam. Accordingly, there were 140 state-owned enterprises listed on Vietnam's stock market according to the list of public corporations listed as of December 31, 2020. Out of the 140 listed SOEs, we apply the following filters: (i) financial companies (firms in banking and insurance industries 7 companies)[9]. (ii) Companies for which the state does not maintain ownership of 50% or more for the entire period 2016-2020 (6

[7] We generate the PCI index for the entire country by averaging the PCI ratings of provinces and cities.
[8] The GDP growth rate is retrieved from the World Bank. https://data.worldbank.org/.
[9] Accounting procedures and treatments for enterprises in the banking and insurance industries are distinct from those non-financial.

companies). (iii) Companies that were not constantly listed on the stock exchange for the entire period 2016-2020 (14 companies). In total, 27 companies were filtered out and our final sample consists of 113 publicly traded state-owned companies.

4. Results

4.1. Descriptive Statistics

Table 3 exhibits descriptive statistics for the variables.[10] The average value of the governance index (CGI) of firms in the sample is 17 points. The largest value (max) of the index is 30 while the smallest value (min) is only 9. The range of the index value is rather large implying diversity in applying corporate governance practices and rules among SOEs in Vietnam. The average ownership shares of the state and FDI in enterprises are 60% and 10%, respectively. Businesses have been in operation for an average of 30 years.

Table 3. Descriptive statistics.

Variables	Obs.	Mean	Std. dev.	Min.	Max.
CGI	565	17.202	3.39	11	29
State ownership	565	60.813	11.693	50.4	98.2
FDI ownership	565	10.014	11.408	0	33
Firm age	565	29.867	14.428	7	65
Log asset	565	27.52	1.364	24.986	30.914
Firm leverage	565	0.504	0.223	0.097	1
Growth opportunity	565	17.084	52.912	-95.781	221.791
Tangibility of assets	565	0.435	0.616	0.001	3.661
PCI	565	62.928	2.298	58.886	65.663
GDP growth rate	565	6.28	1.718	2.9	7.5

For the period 2016-2020, the quality of state-owned company governance improved over time but in general, it was quite low. Particularly, the average SOE governance score increased from 16.248 to 17.903 points. The quality of corporate governance in 2020 was around 51% on a scale of 35. The standard deviation of CGI grew from 3.366 to 3.730 from the beginning to the end of the 2016-2020 period, indicating an increase in the dispersion in the quality of SOE governance. Certainly, the increase in the dispersion of the corporate governance index is not as stable as in 2018 and 2019. The standard deviations of CGI were smaller than those of 2016, and 2017.

Table 4 presents descriptive statistics of CGI by year.

Table 4. Descriptive statistics of CGI.

Years	Mean	SD	Min.	Max.
2016	16.248	3.366	9.000	30
2017	16.956	3.339	11.000	29
2018	17.257	3.229	11.000	29
2019	17.602	3.275	11.000	30
2020	17.903	3.73	10.000	29

4.2. Results and Discussion

The findings regarding the relationship between firm characteristics, macro-level factors and corporate governance quality of SOEs are presented in this section. Correlation matrix and collinearity diagnostics are used to look for correlations between explanatory factors. The collinearity diagnostics test findings show that all VIF values are less than 5 indicating that there is no collinearity in the regression analysis.

[10] To reduce the effect of outliers, we filter out the 1st and 99th percentile values.

Table 5. Pairwise correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) CGI	1.000										
(2) State	0.134***	1.000									
	(0.001)										
(3) FDI	-0.049	-0.261***	1.000								
	(0.242)	(0.000)									
(4) Firm age	-0.029	0.038	-0.095**	1.000							
	(0.499)	(0.371)	(0.024)								
(5) Log asset	0.460***	0.403***	-0.076*	0.148***	1.000						
	(0.000)	(0.000)	(0.072)	(0.000)							
(6) Firm leverage	-0.060	-0.064	-0.093**	0.167***	0.276***	1.000					
	(0.154)	(0.130)	(0.027)	(0.000)	(0.000)						
(7) Growth opportunity	0.059	0.070*	-0.118***	-0.074*	0.070*	0.090**	1.000				
	(0.164)	(0.095)	(0.005)	(0.081)	(0.098)	(0.033)					
(8) Asset tangibility	0.191***	0.120***	-0.042	-0.112***	0.316***	-0.081*	-0.013	1.000			
	(0.000)	(0.004)	(0.321)	(0.008)	(0.000)	(0.055)	(0.761)				
(10) Nation_pci	0.154***	0.016	-0.011	0.084**	0.004	-0.023	-0.022	-0.031	-0.024	1.000	
	(0.000)	(0.699)	(0.803)	(0.045)	(0.917)	(0.589)	(0.599)	(0.455)	(0.570)		
(11) Growth_rate	-0.085**	-0.009	0.050	-0.057	0.019	0.063	0.081*	-0.009	-0.023	-0.172***	1.000
	(0.044)	(0.838)	(0.233)	(0.178)	(0.647)	(0.133)	(0.055)	(0.826)	(0.591)	(0.000)	

Note: Robust pval in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

In general, fixed effect (FEM) and random effect (REM) models are favored over OLS regression given the panel data used in this research. More specifically, as suggested by the Hausman test, a fixed effect model is used to estimate Equation 1. Table 6 presents the regression results of corporate governance (CGI) on firm characteristics and controlling macro-level factors (model 1). The regression results (model A) indicate that firm characteristics including firm age and tangibility of assets are associated with the corporate governance of SOEs. Specifically, both firm age and tangibility of assets exhibit a negative association with CGI statistically significant at 1% and 10%, respectively.

The fact that firm age is found to be adverse to SOE corporate governance is novel. According to the findings of Arora and Bhandari (2017), Tanjung (2023) and Ronoowah and Seetanah (2023) firm age is found to exhibit a positive relationship with the quality of corporate governance, i.e., as a company ages, the corporate governance score tends to increase indicating an improvement in corporate governance practices. It suggests that older firms generally have better policies, procedures and transparency and hence enhanced governance norms (Arora & Bhandari, 2017). In contrast, our results indicate that older SOEs have a more difficult time adapting to new and more stringent corporate governance regulations. Intuitively, this result could be reasonable for the case of SOEs in Vietnam. Indeed, Vietnam has just achieved a sound perception of the importance of corporate governance for SOEs and pushed corresponding reforms for approximately a decade. To illustrate, the Committee for Management of State Capital at Enterprises of Vietnam was established[11] with the expectation of improving the overall governance of the country's SOEs in several weak cases of inefficiency of SOEs in 2018. As a result, many changes in regulation and in practices regarding corporate governance have been put forward. Given the complexity of old traces of governance and given that prior to the quality of corporate governance of SOEs in Vietnam, in general was rather low, SOEs of older ages may find it more costly and hence more reluctant to adapt to new norms. Similar to Arora and Bhandari (2017), our finding also suggests that age is identified as the most significant factor in determining the quality of corporate governance supported by statistical significance.

Table 6. Effect of firm-level variables on CG quality.

Variables	(A)	(B)	(C)
	FE	FE	FE
State ownership	0.038	0.038	
	(0.410)	(0.410)	
FDI ownership	0.004	0.004	
	(0.690)	(0.690)	
Firm age	-1.305***	-1.305***	-1.273***
	(0)	(0)	(0)
Log asset	0.186	0.186	
	(0.672)	(0.672)	
Firm leverage	0.423	0.423	
	(0.562)	(0.562)	
Growth opportunity	0.00015	0.00015	
	(0.925)	(0.925)	
Tangibility of assets	-1.225*	-1.225*	-1.187*
	(0.072)	(0.072)	(0.076)
PCI		0.818***	0.806***
		(0)	(0)
GDP growth rate		-0.600***	-0.585***
		(0)	(0)
Constant	45.420***	1.262	8.648***
	(5.85e-05)	(0.909)	(1.62e-05)
Observations	565	565	565
R-squared	0.219	0.219	0.215
Number of company ID	113	113	113
Sector FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Note: Robust pval in parentheses.
*** p<0.01, * p<0.1.

On the other hand, the finding that asset tangibility is negatively related to SOE corporate governance is in line with those of Klapper and Love (2004) and Khanchel (2007) for firms in general particularly firms with a greater proportion of intangible assets which tend to achieve a higher corporate governance score. This finding suggests that stricter corporate governance practices are recommended for firms maintaining a higher

[11] Under Resolution No. 09/NQ-CP of the Government.

proportion of intangible assets to deter the mismanagement of these assets. This result counters the finding of De Carvalho et al. (2021) that asset tangibility shows a positive correlation with corporate governance in the case of Brazil. The other characteristic variables are not detected to have a statistically significant relationship with the corporate governance index. The above results are in line with De Carvalho et al. (2021) who find that except for tangibility and liquidity, no other variables exhibit a statistically significant relationship with corporate governance quality.

The model is then supplemented by variables controlling for macro-level factors representing the competitiveness of the overall economy (model B). The findings of the model B regarding the association between firm characteristics and corporate governance are consistent with previous findings of A. In addition to macro variables, the PCI also shows a positive relationship with the corporate governance index. This indicates that positive changes in the business environment can encourage the enhancement of the SOE's corporate governance quality. Our finding confirms the conjecture that, not only firm-level factors, but also the overall business condition effect on firm-level corporate governance.

On the other hand, the GDP growth rate exhibits a negative link with the corporate governance index. Intuitively, the overall success of the economy may blur the issues and hence outweigh the need to reform corporate governance of SOEs in general in the case of Vietnam. This result is contrasted with Mihail and Dumitrescu's (2021) finding for the case of Romania that there is a positive relationship between corporate governance and economic growth rate and is a dispute with Ugur and Ararat's (2006) conclusion on the role of macroeconomic stability in improving governance quality. Finally, as suggested by Adams, Hermalin, and Weisbach (2010), to test the robustness, we repeated our regressions after omitting subsets of the variables whose coefficients are not statistically significant in models A and B. The results of the model C confirm the relationship between potential factors and the corporate governance of SOEs.

5. Conclusion

This paper investigates the relationship between corporate governance and the factors at the firm level, potentially determining the quality of corporate governance considering an emerging economy, namely Vietnam. Vietnam is not only an emerging market but also a transition economy with a significant sector of state-owned enterprises. Vietnam has also focused extensively on reforming the corporate governance of SOEs to bring the corporate governance of SOEs in Vietnam closer to international norms. Hence, Vietnam is expected to be an ideal case to study corporate governance for SOEs. This research is also novel in that it is the first of its kind to calculate a composite corporate governance index (CGI) to study the relationship between corporate governance and simultaneously both firm characteristics and macroeconomic factors including competitiveness and the growth of the economy.

This paper derives important findings. Firm age and tangibility of assets exhibit a negative relationship with the CGI index, a measure of corporate governance quality. The results are held when controlling for macro-level factors including PCI and the growth rate of the economy. However, other firm-level characteristics are not found to have a statistically significant relationship with the corporate governance of SOEs. Such results may not be surprising since Vietnam's corporate governance system had an extremely low foundation.

5.1. Implications

The results have important implications for enhancing the quality of corporate governance of SOEs in Vietnam by figuring out a number of hurdles. For instance, according to Arora and Bhandari (2017), an older firm tends to have a higher corporate governance index due to its stronger governance policies, guidelines, and standards. However, in the context of Vietnam, older SOEs frequently face more unofficial and outside incentives resulting in diminished motivation to adhere strictly to principles of sound corporate governance. The positive relationship between asset tangibility and corporate governance is in accordance with the findings of Himmelberg et al. (1999).

It is also worth reemphasizing that the relationship between other firm-level factors and governance quality is possibly not well established and is intuitively consistent with the reality that emerging economies, such as Vietnam have just recently been interested in strengthening the quality of SOE governance prior to that corporate governance had received insufficient attention as a crucial factor for the performance and efficiency of SOEs. Hence, it implies that it may take more time for the relationship between fundamental firm characteristics and governance quality to be established in emerging countries like Vietnam.

5.2. Limitations and Future Research Suggestions

Our research has some limitations that should be addressed in future research. First, the corporate governance index is calculated using information from the annual report. As a result, if a company does not reveal its corporate governance practices, its governance score can be low. Second, we might continue our research using extended data to compare listed SOE firms with other listed firms for a significant comparative analysis.

The findings of the paper are held when controlling for macroeconomic factors, the results also suggest that it may be worth exploring the relationship between the quality of governance in an emerging economy like Vietnam and macroeconomic conditions in future research. Positive developments in the business environment in Vietnam could support improvements in the quality of SOE governance. Meanwhile, good news about the overall economy's performance may blur the need for improving corporate governance.

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Appendix 1. Questions for construction of the corporate governance index (CGI).

TT	Rule	Criteria
1	G1	Does the company pay dividends on time (Within 06 months as of the previous annual general meeting of shareholders (AGMS))?
2	G1	Is the corporate website up to date with the AGM documents?
3	G1	Does the invitation to attend the general meeting of shareholders (GMS) contain information to guide shareholders to contribute opinions (Before the date of the GMS) on the issues discussed in the agenda of the GMS?
4	G1	Is information about new candidates (If any) of the board of directors (BODs) and the supervisory board (SB) provided in the meeting documents of the general meeting of Shareholders at least 10 days prior to the opening of GMS? (Including age, training, expertise, experience, information about members of the BODs currently affiliated with another company, independence)
5	G1	Are the voting results for the draft contents for voting of the GMS announced?
6	G1	Does the minutes of the GMS record members of the BODs, CEO, and SB (Supervisory board) present at the meeting?
7	G1	Does the company run a mechanism such as investor conferences, investor meeting programs to facilitate shareholders' contributions (Of ideas) to the company outside the GMS framework?
8	G1	Is there an investor relations department in the company and is the contact information of the investor relations department disclosed?
9	G2	Is the list of candidate auditing firms published in the AGM?
10	G2	Does the company publish environmental and/Or social responsibility assessments?
11	G2	Does the company publish its policies and practices protecting customers' interests?
12	G2	Does the company publish a policy and its implementation ensures the health, safety, and welfare of its employees?
13	G2	Does the company publish its policy and implementation of employee training programs?
14	G2	Does the company have a reward policy associated with its long-term performance?
15	G2	Is there a code of ethics/Code of conduct that company develops for its leaders and employees?
16	G2	Does the company have a policy that allows stakeholders to report violations?
17	G3	Does the enterprise disclose information about the number of shares of the members of the board of directors, supervisory board and executive board?
18	G3	Is the company's information about the number of direct shares held by major shareholders disclosed?
19	G3	Is the company's information about the shareholder structure disclosed in the annual report?
20	G3	Does the company disclose information about the independence of the members of the BOD in the annual report?
21	G3	Are remuneration and benefits (If any for members of the supervisory board and BODs published in the annual report?)
22	G3	Does the company publish the annual report on time as prescribed?
23	G3	Does the website of the company provide the company's charter & corporate governance regulations?
24	G3	Does the company disclose biographical information of members of the board of directors? (Age, education and training, first appointment, expertise and experience, and any positions held by BOD members outside the current company)
25	G3	Does the company publish an independent audit?
26	G3	Is information about the ownership share of the State in the company properly disclosed?
27	G4	Does the company ensure that the number of independent members accounts for at least one third of the total number of members of the BODs?
28	G4	Does the company ensure the diversity of knowledge and experience among members of the board of directors (In terms of law, finance, business activities)?
29	G4	Is the process of nomination and appointment of the BODs member be announced?
30	G4	Does the company ensure the separation of position chairman of the BODs and the position of general director?
31	G4	Are there committees established under the BODs?
32	G4	Do the company's supervisory board (SB) and the head of SB have expertise and experience in finance, auditing, or accounting?
33	G4	Is there an internal audit department in the company?
34	G4	Does the enterprise develop and disclose how to manage risks (Such as financial risks, operational risks, environmental risks, economic risks, etc.)
35	G4	Does the company provide annual board performance reviews and results?

Note: Nam and Sơn (2022).