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**The effects of corporate governance on firm performance in the
Association of Southeast Asian Nations (ASEAN): A comparative
analysis**

A thesis
submitted in partial fulfilment
of the requirements for the Degree of
Doctor of Philosophy

at
Lincoln University
by
Dilini Chavika Fernando

Lincoln University

2023

Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy.

Abstract

The effects of corporate governance on firm performance in the Association of Southeast Asian Nations (ASEAN): A comparative analysis

by

Dilini Chavika Fernando

Increasing dependence on corporate governance (CG) raises questions about whether corporate governance positively impacts firm performance and whether other variables can change the relationship between corporate governance and firm performance. We investigate the relationship between corporate governance features, including board effectiveness, block ownership, and national governance, on the firm performance of ASEAN-6 non-financial listed firms. We use the fundamental features of CG, such as board size, board independence, gender diversity, CEO duality, institution ownership, foreign ownership, insider ownership, government effectiveness, the rule of law and regulatory quality to analyse their impact on firm performance as measured by return on equity and Tobin's Q.

We use 265 ASEAN-6 non-financial listed firms (2385 firm-year observations) from 2010-2019 and uses OLS estimation and System-GMM estimator to control for the endogeneity issue. The results show that, except for CEO duality and insider ownership, that have no significant impact on performance, the other governance mechanisms significantly influence the performance of ASEAN-6 non-financial listed firms. Specifically, board independence, board gender diversity, governance effectiveness, the rule of law, and regulatory quality significantly positively influence ASEAN-6 non-financial listed firms. The results show a significant negative relationship between block ownership variables and the performance of ASEAN-6 non-financial listed firms. From a theoretical perspective, we emphasise how CG impacts firm performance and uncover the importance of CG systems in ASEAN-6 non-financial listed firms. From a practical perspective, we not only explain the optimal structure of CG that can enhance performance but also identify the moderating impact on board effectiveness, block ownership, national governance and the performance of ASEAN-6 non-financial listed firms.

Keywords: Corporate governance, firm performance, board effectiveness index, block ownership index, national governance index, ASEAN-6.

Acknowledgements

First, I thank my main supervisor, Professor Christopher Gan, for his invaluable support, suggestions, guidance and encouragement during my doctoral study. He guided me to improve my thesis and mentored me with a standard of excellence. His constant encouragement helped me overcome difficulties in completing my thesis. I also thank Dr Baiding Hu, my associate supervisor, for his contributions to completing my thesis.

Second, completing my PhD would not have been possible without the continuous support and encouragement from my beloved husband, Pumal. Thank you for the great help and patience throughout my PhD journey. I am proud to have you as my partner. My sincere thanks and love also go to my children, mother and sisters for their encouragement, support and prayers. Most importantly, I thank my mentor, Dr Stephen Bahadar, for his helpful suggestions and encouragement during my PhD study.

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Chapter 1

Introduction

1.1 Background

Recently, corporate governance (CG) topics have received considerably increased global attention (Ahrens, Filatotchev & Thomsen, 2011). According to Claessens, Djankov and Lang (2000), the growing need for CG is due to financial disasters and corporate scandals. During the last three decades, the world has witnessed the adverse economic and social consequences of the 1997 Asian financial crisis and 2008 global financial crisis. One fundamental reason for these financial crises is failure of CG systems in financial institutions (Claessens et al., 2000). Following the aftermath of these financial crises, academics, legislators, policymakers, and organizations around the world have recognized the possible consequences of weakly governed systems in organizations such as financial institutions and how they affect macro economies (Claessens et al., 2000).

CG is considered an answer to the agency problem in organisations. Berle and Means (1991), in their classic work "The Modern Corporations and Private Properties", explain that the agency problem arises because of the separation of owners and managers where a "conflict of interest" happens between the managers, who control the company, and the owners, who do not manage the firm's daily operations. The agency problem leads managers to prioritize their benefit over that of the shareholders or the account owners and misuse the firm's resources. To mitigate agency problems, many internal and external corporate governance mechanisms have been introduced, developed and practised by organizations. For instance, La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) specify that the main objective of the CG is to ensure that investors get a return for their investment, thus creating a mechanism that enables investors to oversee (or monitor) the managers' behaviour. Shahid and Abbas (2019) suggest that the investment level is higher in countries that practice good CG practices. The authors argue that internal CG mechanisms improve board members' monitoring function; therefore, firm managers make decisions effectively and, ultimately, investors get a return on their investments.

As a response to the growing need for a good CG model, the Organisation for Economic Cooperation and Development (OECD) introduced a set of guidelines and standards in 1999 (revised in 2004 and 2015). The objective of the guidelines is that OECD member and non-member countries may adopt CG principles and guidelines that would help to achieve better CG practices. The guidelines will also help policymakers improve the laws, rules, regulations, and institutional systems associated with CG to enhance economic growth and stability in the market (Worang & Holloway, 2007). Since then, the

principle of CG introduced by the OECD has become the “benchmark” of CG in “OECD and non-OECD countries” (G20/OECD, 2015).

Prior studies show that CG is related to firm performance. For instance, Bhagat and Bolton (2008), Bonna (2012), and Ahmed (2015) indicate that practising sound CG helps to improve firm performance. This is because, in better-governed firms, the stakeholders and shareholders transfer fewer controlling powers to managers, which will likely maximise the firm’s wealth (Shleifer & Vishny, 1986). Jensen (1986) report that when an organization practises rigorous CG, investors have more confidence in getting their returns instead of them being taken away by managers.

The significance of CG and its association with firm performance has been significantly highlighted for developing countries. For example, La Porta et al. (1997) specify that CG plays a substantial role in market growth and in increasing corporate value. La Porta et al. (2000) report that one purpose of CG is to protect outside investors from managers’ unethical practices. When firms practise good corporate governance, it protects investors who invest in those firms. As a result, firms can mobilize capital through share issues or bonds. Therefore, safeguarding the interests of investors; both shareholders and creditors, helps firms with capital mobilization and enables growth of the stock markets. La Porta et al. (1997) posit that the countries with a higher level of investor protection enjoy market development, such as market capitalisation and frequency of initial public offering (IPO), more than those with a lower level of investor protection. La Porta et al. (2000) highlight the importance of many reforms in the CG mechanism in emerging countries in different regions such as Asia, Latin America, and Eastern Europe, and identify the advantages of these reforms, such as expansion of financial markets, reducing ownership concentration and increasing capital distribution. Kencanasari (2021) show that good CG is strongly associated with firm performance, market value, company value, and information disclosure. Claessens and Yurtoglu (2013) posit that improved CG practices in emerging markets enable companies to benefit in terms of greater capital availability, reduced capital mobilisation costs, and better treatment of all stakeholders.

1.2 Corporate governance in ASEAN- 6 countries

Founded in 1967, ASEAN today includes Singapore, Thailand, Malaysia, Indonesia, the Philippines, Vietnam, Brunei, Cambodia, Myanmar, and Laos – economies at different developmental stages but sharing an immense growth potential. As a bloc, ASEAN is a major hub of manufacturing and trade and one of the world’s fastest-growing consumer markets. However, ASEAN markets are segregated into top and bottom tiers based on their CG practices (Capannelli, 2014).

ASEAN has split markets; some countries practice good corporate governance as top performers (Singapore, Thailand and Malaysia) and others practice weak corporate governance as bottom

performers (Indonesia, the Philippines and Vietnam) (Capannelli, 2014). A study by the Asian Development Bank (ADB) in 2014 shows that the countries in the bottom tier need to reform their governance practices by improving transparency in financial statements, the functioning of corporate boards and internal audit functions and strengthening shareholder rights. As a result, regulators and governments in Indonesia, the Philippines, and Vietnam reinforced and harmonized corporate governance practices to ensure that international CG standards apply (Huang, 2004).

Another notable characteristic is that small and medium enterprises (SMEs) dominate ASEAN markets. These SMEs play crucial roles in improving income distribution, creating new employment opportunities, reducing poverty and increasing regional export growth (Tambunan, 2008). For example, according to ASEAN key figures for 2020, over 95% of the regional companies are SMEs; they provide domestic employment between of 50%-97%; contribute over 50% of sales; and share over 30% of direct exports. In 2019, the contribution of these enterprises to each ASEAN state's GDP was between 30% and 53%. Hence, SMEs are extremely important to the economic development of the less-developed countries in ASEAN. The ASEAN governments support SMEs extensively through many programmes such as subsidized credit schemes, implementation of the ASEAN strategic action plan to promote technology, productivity and innovation; increased access to finance, enhanced market access and internationalisation; strengthened the policy and regulatory environment; and promotion of entrepreneurship and human capital development (Tambunan, 2008). The World Bank and the United Nations Industry and Development Organization (UNIDO) have extended financial and technical empowerment for the development of SMEs in ASEAN countries by offering financial and technical support (Tambunan, 2008).

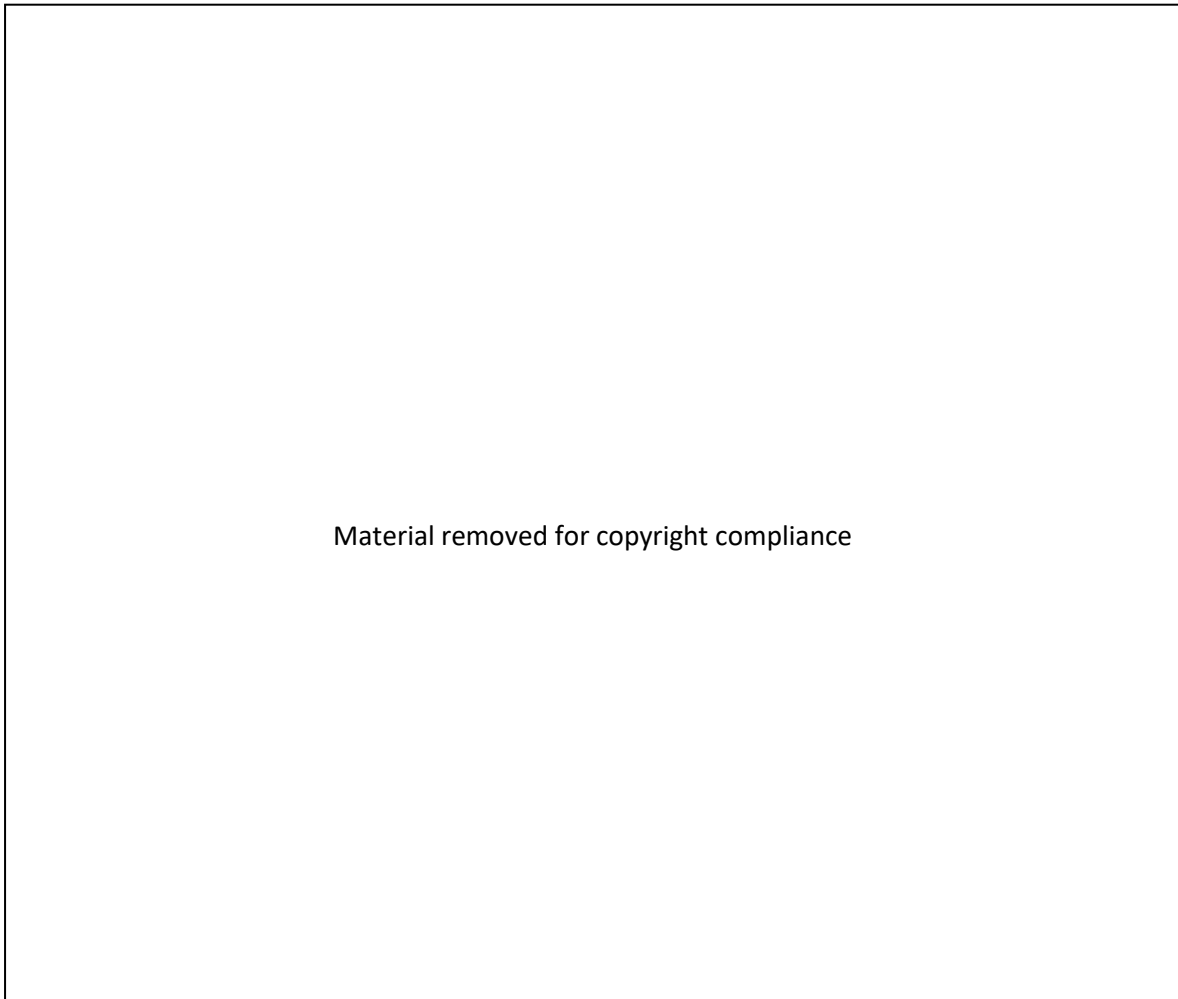
Economic development in and across ASEAN markets shows significant differences (Capannelli, 2014). The total combined GDP of the 10 ASEAN member countries was US\$ 3.2 trillion in 2019, recording ASEAN as the world's fifth-largest economy. Despite the 2008 financial crisis, ASEAN's GDP had a positive trend from 2008 to 2019. The region's GDP in 2019 was double that of a decade ago (US\$ 1.6 trillion). The GDP per capita in 2019 of the countries of the region was recorded as follows: Indonesia (\$4,135.5), Malaysia (\$11,414.2), the Philippines (\$3,485), Singapore (\$65,233.2), Thailand (\$7,806.7), Vietnam (\$2,715.2) Brunei Darussalam (\$31,628), Cambodia a(\$1,512), Lao PDR (\$2,542), and Myanmar(\$1,418). The GDP of ASEAN member countries ranged from US\$ 1,418 to US\$ 65,233.2.

Regional averages indicate a level of diversity that describes ASEAN nations in terms of competitiveness and income, e.g. in 2018, Malaysia, Indonesia, Thailand, and the Philippines were categorized as 'middle-income countries' with a GDP per capita level from US\$ 3,100 for the Philippines to US\$ 11,000 for Malaysia. Vietnam has more recently moved to a lower-middle-income

country with a per capita of over \$2,500 in 2018, whereas Cambodia, Laos, Brunei and Myanmar remain in the lower-income category (Capannelli, 2014).

Although the ASEAN nations have made significant efforts to effectively implement CG mechanisms, there is a considerable difference between the member countries' CG scores ranging from 28.42% for Vietnam to 96.60% for Thailand (see Figure 1.1).

Figure 1.1 Corporate governance mean scores of the ASEAN-6 countries (2012-2019)



Source: Adapted from ADB (2019).The ASEAN CG Scorecard: Country Reports and Assessments 2012-2019.

Figure 1.1 shows the differences in CG scores for ASEAN countries. The good corporate governance index (GCG) developed during 2012 -2019 among the ASEAN countries was significantly different. Thailand has the highest GCG index for four consecutive years of the ASEAN-6 nations (Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam). Thailand was followed by Singapore and Malaysia. The CG mean scores of the Philippines over 2012-2019 are noteworthy for an improvement of 58%. Indonesia shows a 64% improvement in CG mean scores, whereas Vietnam's 2019 figures indicate a 92% improvement on their 2012 CG mean score.

ASEAN's financial landscape has a great diversity across member countries based on total credit from banks and the capitalisation of equity and bond markets. For instance, ASEAN financial systems are largely banked-based, with stock markets expanding in terms of relative importance, particularly in the ASEAN-6 countries (Capannelli, 2014). There has been a considerable increase in the market capitalisation of listed domestic firms from \$ 571.1 million to \$579.9 million between 2015 and 2019 (World Bank, 2019). Although ASEAN equity markets are more developed than bonds, no regional exchange(except Singapore) is among the world's 20 largest financial centres (Capannelli, 2014). The financial systems of Brunei, Cambodia, Laos and Myanmar are still underdeveloped, especially in terms of size and the quality of the equity and bond markets. Among the 10 ASEAN countries, Brunei has no stock exchange and the stock markets of Cambodia, Laos and Myanmar are currently underdeveloped. Data from those markets are not sufficient for empirical estimation and analysis. Therefore, we investigate non-financial listed firms in ASEAN-6 countries: Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

1.3 The corporate governance regulatory framework in ASEAN-6 countries

According to Kamal (2010), CG comprises a set of recommendations primarily relating to board structure, organisation and decision processes, executive pay, information disclosure and investor relationships. Aguilera and Cuervo-Cazurra (2004) explain that, although not all CG codes are the same, the perception of a code is to improve the quality of CG and increase shareholders' value worldwide. Most CG codes have to comply with or explain their approach, have soft laws rather than laws, and recommend the establishment of an audit committee or remuneration committee, but the codes are also concerned with investor protection and promoting a favourable investor atmosphere (Kamal, 2010).

1.3.1 Singapore

According to the Asian Development Bank (2013), the CG regulatory system in Singapore includes rules, practices and principles that are monitored by authorities such as the Singapore Monetary Authority, Regulatory Authority for Accounting, and Singapore Stock Exchange Limited (Chong, Ting, & Cheng, 2016). The Corporate Code of Singapore was introduced by the Singaporean Corporate Governance Committee in 2001 to strengthen board quality in many key areas, such as lowering the independent director threshold from 10 to 5 per cent and enhancing board composition by age and gender. The code made it mandatory for Singapore-listed companies to disclose their board diversity policies (Lin, 2019).

Since introducing its first corporate governance code in 2001, Singapore has changed it three times, issuing updated versions in July 2005, May 2012 and August 2018. The revisions emphasise greater

information disclosure in financial statements, board accountability, board diversity and other improvements (Lin, 2019). The Singaporean code takes a principle-based approach where compliance with the code is voluntary, but under the listing rules, publicly listed companies are required to disclose the CG practices and explain non-compliance in their annual reports (Nguyen, 2015b).

1.3.2 Malaysia

Malaysia has had three CG codes (MCCG 2000, 2007, 2012) to date since the introduction in 2000 (MCCG 2000) to strengthen the Malaysian corporate governance system (Rahman, 2015). In 2007, Malaysia revised the “MCCG 2000” to recognise domestic and international market developments. The “MCCG 2007” mainly addressed the board of directors and the audit functions of Malaysian firms. The code clarified directors' roles and appointment eligibility. It also recommended the establishment of an internal audit function and set the audit committee's responsibility towards independence.

The global financial crisis in 2008 badly affected the Malaysian economy. According to Rahman (2015), the Malaysian economy experienced a fall of 670 points in the Bursa Malaysian Index. Subsequently, the Asian Round Table on CG has advised countries, including Malaysia, to improve their CG structure and strengthen the weaknesses shown during the crisis. As a result, the Securities Commission of Malaysia issued a CG blueprint document in July 2011 to improve the CG structure in the country. This resulted in the introduction of a new CG code in 2012 (MCCG 2012) (Rahman, 2015). The code addressed the independence of the board to improve the firm performance of Malaysian listed companies.

1.3.3 Indonesia

Indonesia's CG history was linked to the 1997 Asian financial crisis. The crisis started in Thailand and spread to the Philippines, South Korea, Malaysia, and Indonesia. According to Kamal (2010), the Indonesian currency depreciated by nearly 80% and, as a result, some businesses, especially in the banking sector, collapsed. The Indonesian government needed financial assistance and the International Monetary Fund (IMF) offered conditional loans with certain restrictive conditions. One condition was restoring the country's corporate governance system (Kamal, 2010).

The concept of CG was introduced in 1999 after the Indonesian government established the National Committee on Corporate Governance (NCCG). In 2001, Indonesia created a CG code through NCCG. The national code is a reference point for all the companies in Indonesia, including state-owned enterprises (SOEs) that are regulated under Law 2003 (Kamal, 2010). According to that law, there are two types of SOEs: limited liability companies and non-listed companies (pure SOEs). Subsequently,

Indonesia's CG code also applied to these pure SOEs. In 2006, NCCG reviewed and improved the C.G. practices of listed firms in Indonesia.

1.3.4 The Philippines

The legal part of the Philippine CG system includes laws, a corporate governance code, a securities regulation code, general banking laws and central banking laws (Echanis, 2006). The country's regulatory system encompasses the rules and regulations issued by the agencies that regulate entities (Securities Exchange Commission), publicly listed companies (the Philippines Stock Exchange), and financial institutions (Central Bank of Philippines) (Echanis, 2006). The rules and regulations have influenced CG reforms in publicly listed companies in the Philippines.

In April 2000, the Republic Act (the new Central Bank Act) was passed into law to regulate the operations of financial institutions and banks in the Philippines. The Republic Act enforced some provisions that related to CG restrictions on directors' interests, qualifications and disqualification regarding appointments to the boards of directors and the disclosure of the transactions made with the bank by family members (Echanis, 2006). In 1998, the SEC granted self-regulatory organisation status to the Philippines Stock Exchange (PSE) with the authority to impose rules and penalties on listed companies and trading parties. The Securities Regulations Code (SRC), which follows the US model, was enacted into law in 2000. The objectives of the SRC are to encourage more ownership involvement in enterprises and strengthen the country's CG system. To protect investors, SRC requires file annual and periodic reports to update investors on operations (Echanis, 2006).

1.3.5 Thailand

Like other Asian countries, Thailand was affected by the 1997 Asian financial crisis. Thailand faced CG problems at two levels. First, poor corporate governance practices in firms in Thailand were caused by over-borrowing and over-investment. The excess borrowings went into the projects with uncertain benefits and unneeded efforts. Secondly, Thailand, a developing country, relied on bank financing rather than capital market financing to secure funds for growth (Limpaphayom & Connelly, 2004). In developing countries, capital markets are often incapable of monitoring company managers. Banks, as the leading suppliers of funds, should adequately monitor the borrowers. However, banks were suffering from poor CG practices in Thailand. As a result, several Thai banks were taken over by the government or were merged into large banks (Limpaphayom & Connelly, 2004).

In the wake of the crisis, the Securities and Exchange Commission (SEC) outlined the challenges to improve corporate governance practices in Thailand. The SEC outlined three ways to strengthen CG in Thailand: improve laws and regulations, establish an institution set-up, and rely on market forces.

Other Thai bodies, such as the Ministry of Finance and Commerce, and the Stock Exchange of Thailand (SET) with the SEC began to play a role in implementing and enforcing CG reforms (Limpaphayom & Connelly, 2004).

In late 2000, there was significant progress in CG reform in Thailand. Thai regulators and institutions implemented auditing reforms and toughened the disclosure requirements to improve CG systems. In August 2001, SET released a report on CG, which consisted of CG principles, recommendations and best practice for company directors. In 2002, a national CG committee was established and declared 2002 the “year of good governance”. The committee includes representatives from the Ministry of Finance and Commerce, the Bank of Thailand, SEC and SET (Limpaphayom & Connelly, 2004).

1.3.6 Vietnam

According to the Asian Development Bank (2013), Vietnam's CG system comprises many corporate governance rules and regulatory bodies. The Ministry of Finance (MOF) and the Securities Commission (SSC) are the primary regulatory bodies in Vietnam. The SSC governs two sub-bodies of listed companies in the country: the Ho-Chi-Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). The primary CG regulations in the Vietnam market are the Law on Securities of 2006, the Law on Enterprises of 2005, the Model Charter of 2007, the HOSE and HNX requirements, and the corporate governance code for listed companies of 2007 (Nguyen, 2015b).

The Law on Enterprises (LOE) was introduced in 2005 and enacted in July 2006. It was the turning point to business freedom and a legal framework of CG in Vietnam (Hai & Nunoj, 2008). The LOE 2005 is heavily based on Anglo-American jurisdictions and aims to establish an effective CG system in Vietnam and improve public awareness of CG practices (Minh & Walker, 2008).

Under the Law of Enterprise 2005, the MOF established and promulgated the CG code for Vietnam, which is mandatory for all listed companies in the country (Minh & Walker, 2008). The Vietnamese code was most recently updated in July 2012 with some changes reflecting OECD corporate governance principles (Minh & Walker, 2008).

1.4 Rationale

Corporate governance is a significant concern in Southeast Asia markets, particularly after the 1997 Asian Financial Crisis (AFC). During the crisis, many contributing factors contributed to the sharp economic decline in Indonesia, Malaysia, Thailand and the Philippines, such as weak CG practices, weak investment structure, unethical accounting practices, a corrupted legal system, and political intervention (Ho, 2005). These countries have learnt from past experience and executed various measures to improve CG. They include accountability, policy transparency and monetary prudence.

However, These CG reforms were not restricted to only these countries; countries like Taiwan and China were quick to acknowledge these reforms before another crisis struck (Ho, 2005).

In Southeast Asia today, policymakers in business and the state understand that sound CG practice is the key to economic recovery, which many companies ignored or inadequately considered (Sukmadilaga, Pratama, & Mulyani, 2015). With sudden financial disasters, states or markets started to realize the adverse effects of bad CG management. Subsequently, they also began to understand that practising good governance is a key to enhancing financial growth.

Subsequently, ASEAN countries introduced strict CG rules in formal and informal measures at institutional, political, economic and organization levels (Ho, 2005). Policymakers in these countries have paid attention to some factors, such as the law, regulations, and the institutional environment, that influence changes in governance policies (Sukmadilaga et al., 2015). It has been over 25 years since the 1997 Asian financial crisis affected the Asian markets; the substantial efforts undertaken to restructure CG practices have improved CG in Asian countries (Sukmadilaga et al., 2015).

Despite recent financial disasters, ASEAN countries continue to be platforms for economic growth. In 2018, the combined Gross Domestic Production (GDP) was over \$2.9 billion (3.4% of the world's total); the figures are doubled from 1990. Further, in 2018, the area's population was recorded at 649 million (around 9% of the world's population), which is the third-largest in Asia after China and India. The average per capita income of ASEAN economies was \$4,601 Vietnam is \$2,546 and Singapore is \$64,567 or 33.33% of the world's average per capita (see Table 1.1). ASEAN states are well positioned in the middle of Asia, well connected to China and India through sea and land routes, and are endowed with rich natural resources such as oil, hydropower, gas, minerals and agriculture.

With a population of 649 million, ASEAN has become a fast-growing hub for increased customer demand. Some of the ASEAN member countries have grown at a faster rate: Vietnam, for instance, within ten years, doubled its GDP per capita (US\$1,149 in 2008-US\$ 2,546 in 2018)(Capannelli, 2014).

Table 1.1 ASEAN countries' basic demographic indicators in 2018

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1A: Refers to/based on mid-year total population based on country projections, 2A: Based on AMSs data submission to ASEANstats and Official National Statistical Offices website, 3A: Computed based on IMF WEO Database April 2019 estimates and the latest actual country data,4A: ASEAN IMTS Database preliminary 2018 figures are as of 17 July 2019 Source: ASEANstats (2018): <https://data.aseanstats.org/>

ASEAN markets are well-located on the international trade routes and are recorded as the world's fourth-largest exporter after North America, the European Union and China/Hong Kong (Verhezen, Williamson, Crosby, & Soebagjo, 2016). ASEAN states collectively contribute over 7% of the world's exports. ASEAN member countries have developed their manufacturing capability and have diversified their exports. For instance, Vietnam specializes in apparel and textile manufacturing, whereas Singapore and Malaysia are prominent exporters of electronic products and Thailand has become a leading exporter of automobile vehicle parts. Indonesia has become the world's largest palm oil exporter and is the second-largest exporter of cocoa. Myanmar has started to open its economy with natural resources such as oil, gas and minerals (Verhezen et al., 2016).

However, the global COVID-19 pandemic and the amplified global pandemic (AGP) have affected world supply capacity, international tourism, employment, and imports/exports across sectors and destinations (Maliszewska, Mattoo, & Van Der Mensbrugge, 2020). A country's imports and exports are driven by its level of openness, competitiveness changes, and trading partners. For instance, under AGP, global exports declined by 4.6%. Countries that experienced global export losses include China (9.8%), Cambodia (7.4%), Singapore (8.5%), Lao PDR (7.3%), the Philippines (6.4%), and Thailand (6.8%) (Maliszewska et al., 2020).

Further, under the AGP, the US export market was expected to decline by \$85 billion by the end of 2021 (Maliszewska et al., 2020). The most affected are exports of services, especially tourism to Europe and East Asia and Pacific (EAP) as the recession and lower demand in the region, the main destination for US exports in services. In China, the exports have declined in manufacturing goods to the US, Europe and EAP. However, there has been a slight increase in China's exports to Europe and Central Asia (ECA), and the Middle East and North Africa (MINA) countries as Chinese products became more competitive than those of other suppliers (Maliszewska et al., 2020). For Thailand, the

biggest decline in 2020 was in manufacturing goods and services with a slight effect on agricultural goods or natural resources in 2020.

1.5 Problem statement

Corporate governance is a system whereby companies are directed and controlled (Robinett, Anantavasilpa & Hickey, 2013) to determine their operational activities (Brown, Beekes & Verhoeven, 2011). This function aims to establish ownership and governance structures that ensure ethical behaviour from managers and decisions beneficial to shareholders (Fauzi & Locke, 2012). Since corporate governance is used to manage companies, with the board of directors overseeing governance and strategic development (Pass, 2004), governance attributes are expected to influence firm performance.

Corporate governance has become a prominent topic over the last two decades, driven partly by the events surrounding a series of US scandals and corporate failures in the late 1990s (Becht, Bolton & Roell, 2002). Numerous studies have investigated the relationship between corporate governance attributes and corporate performance across several countries. For instance, studies have been conducted in Australia (Balatbat, Taylor & Walter, 2004), China (Claessens & Djankov, 1999; Xu & Wang, 1999; Hovey, Li & Naughton, 2003; Bai, Liu, Lu, Song & Zhang, 2004; Li & Naughton, 2007), Italy (Alimehmeti & Paletta, 2012), Malaysia (Abdullah, 2006; Abidin, Kamal & Jusoff, 2009; Zakaria, Purhanudin & Palanimally, 2014), New Zealand (Fauzi & Locke, 2012), Spain (Arosa, Iturralde & Maseda, 2010), and the UK (Weir & Laing, 2001).

The 1997 Asian financial crisis in Thailand, also known as the 'Tom Yum Kung Crisis,' showed the critical importance of good corporate governance for the long-term survival of companies. Since then, the concept of good corporate governance has gained significant attention in Thailand, with claims linking the economic crisis to issues such as poor corporate governance and the prevalence of a crony economy (Alba, Claessens & Djankov, 1998; Dhnadirek & Tang, 2003).

Since 1997, numerous researchers have sought to explore the relationship between alternative corporate governance mechanisms proposed by theories on firm performance. The Thai Stock Exchange Committee and other concerned parties directed their attention towards examining the roles of management, boards of directors, and controlling shareholders in overseeing firms' performance (Panyasrivanit, 2005).

Several studies have explored the relationship between corporate governance mechanisms, ownership structure, and firm performance in countries with varying characteristics, primarily focusing on developed countries (Guest, 2009; Ross, 2012; Yan, Hui and Xin, 2021). These studies

have produced diverse results influenced by the prevailing governance systems unique to each country.

In the ASEAN market, several studies have explored the influence of board and ownership structure on corporate governance (CG) on firm performance, suggesting that these attributes influence firm performance. Previous studies have suggested that significant corporate governance attributes affecting corporate performance include board effectiveness (Shakir,2008; Shukeri, Shin and Shaari, 2012; Tulung and Ramdani, 2018) and block ownership. (Dewayanto, Suhardjanto and Setiadi ,2017; Handriani and Robiyanto ,2019).

Investigating ASEAN-6 non-financial listed firms could add diversity to the growing body of work by examining board structures. This study attempts to extend the study of corporate governance theories and focus on the impact of ownership mechanisms on firm performance in ASEAN-6 countries. The investigation of ASEAN-6 non-financial listed firms is interesting because the ownership structure in the region has a unique characteristic, such as family ownership and capital structure.

Given the significant need for CG, conducting a comprehensive study and identifying how CG impacts firm performance in ASEAN markets is important. This study will bridge the literature gap by conducting an in-depth study of ASEAN-6 markets, namely, Singapore, Indonesia, Malaysia, Thailand, Vietnam and the Philippines, that accounted for 72.2 per cent of the total ASEAN's GDP per capita in 2019 (ranges from 2.7 per cent to 64.9 per cent) (Elistia & Syahzuni, 2018).

Notably, most previous research has ignored the elements of country-level governance, which is equally important as firm performance. For example, Ngobo and Fouda (2012) report that country-level governance differences might impact and shape firm-level governance and, subsequently, firm performance. The extant CG literature considers the role of firm-level governance and firm performance in some Asian markets (Bhatt & Bhatt, 2017; Rathnayake & Sun, 2017). However, the role of CG at country level is explored for other countries (Ngobo & Fouda, 2012), particularly ASEAN-6 markets (Ngobo & Fouda, 2012). Aguilera and Jackson (2010) reveal that national-level governance should consider where the firms operate. Thus, this study investigates firm-level and country-level (national) governance and firm performance in ASEAN -6 markets.

This study is novel in that it is the first to evaluate the relationships among country and firm-level CG mechanisms and firm performance for ASEAN-6 markets. The study takes into account key determinants. It explores whether CG and national governance enhance the firm performance of listed firms (except for property management companies, utilities, and financial firms) in the selected ASEAN-6 markets from 2010 to 2019. Property management companies are excluded from the study

because they do not have a board of directors. Financial and banking sectors are excluded from the study sample because they follow typical standards of accounting regulations, which may lead to differences in calculating financial performance compared with other sectors (Rose, 2007), and are subject to stricter rules and specific governance regimes (Yermack, 1996).

Therefore, this study investigates the effects of board and ownership structures on the Firm performance of ASEAN-6 non-financial listed firms from 2010-2019.

1.6 Research objectives

The Study's research objectives are to:

1. explore the relationship between board effectiveness and firm performance of non-financial listed firms in ASEAN-6 countries;
2. examine the relationship between block ownership and firm performance of non-financial listed firms in ASEAN-6 countries; and
3. investigate the relationship between national governance and firm performance of the non-financial listed firms in ASEAN-6 countries.

1.7 The structure of the thesis

The thesis is organised as follows. Chapter Two summarises relevant CG literature and its relationship with firm performance. The chapter also develops hypotheses on the relationship between CG and the firm performance of non-financial companies in ASEAN-6 countries. Chapter Three describes the data collection, defines the variables, provides the endogeneity tests (the results of correlation between explanatory variables and the error term), describes the dynamic nature of CG and firm performance; and the empirical estimation method used in the study. Chapter Four presents the empirical results of the investigation. Chapter Five concludes the study with the findings, the contributions, the limitations of the study, and suggestions for future research.

Chapter 2

The literature Review and Hypotheses Development

Section 2.1 presents definitions of CG. Section 2.2 discusses the theoretical viewpoints on corporate governance of different theories: Agency Theory, Stakeholder Theory, Stewardship Theory, Resource Dependence Theory, and Ethics theory. Section 2.3 reviews the association between CG and firm performance and develops the research hypotheses. Section 2.4 reviews the relationship between national governance and firm performance. Section 2.5 summarises the chapter.

2.1 Definition of corporate governance

There are many different definitions of CG, which are generally classified as 'narrow' or 'broader' (Claessens & Yurtoglu, 2013). According to Claessens and Yurtoglu (2013), the 'narrow' definition of CG considers the role of internal CG mechanisms, such as board characteristics and ownership structure, in determining the firm performance and maximizing shareholder wealth. The narrow definition is more suitable for studies on CG at the individual country level, focusing on internal CG mechanism (Claessens & Yurtoglu, 2013). Conversely, the 'broad' definition of CG mainly focuses on the external institutional environment where the firm operates. These definitions are suitable for cross-country studies because they allow researchers to investigate how country-specific characteristics affect firms, shareholders and stakeholders (Claessens & Yurtoglu, 2013). We use both 'narrow' and 'broad' definitions of CG.

The 'narrow' definition of CG in the literature was derived initially by Shleifer and Vishny (1997, p. 737) who define CG as: "how suppliers of finance to corporations assure themselves of getting a return on their investment". Denis and McConnell (2003, p. 2) define the narrow approach of CG as "the set of mechanisms-both institutional and market-based that induce the self-interested controllers of a company (those that make decisions regarding how the company will be operated) to make decisions that maximize the value of the company to its owners (the suppliers of capital)". The Cadbury Report (1992,p.14) proposes CG as "the system by which companies are directed and controlled. Boards of directors are responsible for the governance of their companies. The shareholders' role in companies is to appoint directors and auditors and satisfy themselves with an appropriate governance structure. The board's responsibilities include setting the companies' strategic aims, providing the leadership to put them into effect, supervising the management of the business, and reporting to shareholders on their stewardship. The board's actions are subject to laws, regulations and the shareholders in general meeting".

The broad definition of CG in the OECD Principles of CG (OECD 2004, p.11) is that “corporate governance involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the company’s objectives are set, and the means of attaining those objectives and monitoring performance are determined. An effective corporate governance system within an individual company and across an economy helps provide a degree of confidence necessary for the proper functioning of a market economy. As a result, the cost of capital is lower, and firms are encouraged to use resources more efficiently, thereby underpinning growth”.

This OECD definition shows that CG considers matters beyond internal mechanisms and stakeholder profits; it considers external CG mechanisms and stakeholders’ benefits. By taking both perspectives together, researchers often categorise CG as internal or external to the firms (Gillan, 2006). Gillan (2006) argues that the dual classification is limited and may not capture the multidimensional network of interrelationships. However, for convenience, we follow Gillan (2006) and consider board structure and ownership structure (including board diversity, composition, leadership structure, and board size) as the main internal CG mechanisms.

2.2 The theoretical viewpoint of corporate governance

This section introduces the theories of CG from several viewpoints. The present study follows the view that good CG, when approached in a broad manner, is difficult to explain with a single theory. Thus, a combination of relevant theories may be pertinent to describe good CG practices.

2.2.1 The Agency Theory

In the early 1800s, Adam Smith introduced the Agency Theory, which was explored by Ross (1973) and by Jensen and Meckling (1976) to present a comprehensive explanation. This theory evolved from the economic perspective and provides two sides to any business transaction: the principal and the agent. A principal-agency relationship arises when the principal engages with the agent to get a task done on the former's behalf; the agent performs the same in return for payment by the former (Lan & Heracleous, 2010). Shareholders assume managers and directors act and manage on their behalf and make decisions in their interest. However, some managers or directors do not always make decisions that benefit shareholders, which is where conflict begins.

A business transaction between the ‘principal’ and the ‘agent’ reveals that both parties have self-interest that motivates them to collaborate. Similarly, employees and managers are agents and principals, respectively, in a business. The employees provide their services under the contract of pay, non-monetary benefits, and some other remuneration per their agreement (Jensen & Meckling,

1976). From this transaction, the managers receive benefits in terms of performance, practical work, completed tasks, and possible business remuneration.

There are two problems with the principal-agent relationship. First, it is challenging for the principal to verify agents' (managers') act or behave appropriately regarding the business. Secondly, the parties will have conflicts because of the different attitudes towards the work (Kultys, 2016). According to Kultys (2016), a principal's objective is to get the maximum value from a particular organization, whereas the agent thinks of the organisation's growth or expansion. However, effectively practising CG may decrease agency costs and safeguard shareholders when potential conflicts occur.

The main aim of CG is to support owners in decision-making without any disputes with managers. From this perspective, CG is a monitoring tool to protect shareholders from having conflicts with managers. However, conflict issues may arise when the structure is unstable (Ha, 2019).

2.2.2 The Stakeholder Theory

The Stakeholder Theory is an emerging phenomenon Freeman (1994) first developed for the management discipline. This theory is based on the supposition that all the individuals associated with a company have a stake in the organization. That includes employees, managers, clients, customers, suppliers and the environment (Freeman, 1999). The theory states that these stakeholders are affected by the company's business processes; when the company makes a profit or suffers a loss, all stakeholders are affected (Freeman, 2001). Therefore, all stakeholders must be provided with a fair return on their investment. The theory is a proponent of corporate social responsibility in that it provides an ethical way to conduct business even at the cost of reduced overall profit for company's principal shareholders (Otley, 1999).

2.2.3 The Stewardship Theory

Under the Stewardship Theory, managers and company executives are treated as the stewards of the owners. Both the owners and stewards have the same outlook for the company and, thus, share similar goals. Therefore, company owners should provide the stewards with adequate opportunities to lift the common goals both parties share (Abdullah & Valentine, 2009). This theory maintains that there should not be a controlling force from the board because it hinders the company's innovative growth and goes against the Agency Theory's principles. This theory also progresses the board idea of supporting the stewards (managers) in their work by empowering and providing them with opportunities to show their performance potential (Nicholson & Kiel, 2007). The Stewardship Theory also trusts that the association between the executive and operational management can be positive

and involves motivational mentoring, training and development, and increased participation in decision-making for the company.

2.2.4 The Resource Dependency Theory

This theory explains that directors are resource providers for the executives and managers to help the former achieve the organizational goals of the business. The resources include finance, human, tangible and intangible resources, and facilities that may help the managers achieve better organisational performance (Das & Teng, 2000). The theory explains that resource dependence can also mean that the board can help by networking for better company performance by tapping additional resources from other sources. However, this theory also maintains that, in return, the board must approve all decisions that are made before the managers can execute them because the resources used are provided by the board (Davis & Cobb, 1970).

2.2.5 Ethics Theories

The five ethics theories in CG literature are now defined. The Business Ethics Theory differentiates right from wrong in a business transaction. The Feminist Ethics Theory emphasises a healthy relationship on the social front, empathy with stakeholders, care among employees and employers, and harm avoidance through ethical business practices (Abdullah & Valentine, 2009). The Discourse Ethics Theory establishes ethical truths and provides discourse by investigating the suppositions of reality that promote rationality and openness in business practices.

The Virtue Ethics Theory focuses on a business transaction's moral part, especially excellence, goodness, and character. Finally, the Postmodern Ethics Theory looks at a transaction's value, going beyond face value and addresses feelings and atmosphere (Heath & Norman, 2004). The theory provides a complete approach to organizations, emphasising values and beliefs rather than goals, achievement and performance.

2.3 Corporate governance and firm performance

Corporate governance is a concept derived from Agency theory whereby shareholders expect managers and directors to act and make decisions in their interests, but some managers do not make decisions that benefit shareholders when conflicts begin. However, the ultimate purpose of good CG is to deal with Agency problems. The achievement of good CG depends on CG structures or mechanisms.

There are two categories of CG mechanism, namely internal and external CG mechanisms. Gillan (2006,p.38) states that "internal governance mechanism" includes the board of directors, ownership structure, internal controls and corporate rules. According to Gebba (2015), external CG mechanisms

help control the conflict of interest between a business's stockholders and managers. The external CG mechanisms include the judicial, legal, labour and financial markets (Claessens & Yurtoglu, 2013).

This study focuses on important internal and external CG mechanisms, including (i) board effectiveness, (ii) block ownership and (iii) national governance of ASEAN-6 non-financial firms' performance.

2.3.1 Board effectiveness and firm performance

The board of directors plays an important role in maintaining good CG, particularly in listed companies where agency problems may arise from the separation of ownership and control. The management of a firm is responsible for suggesting and implementing the firm's policies, but shareholders do not always agree with these policies, which leads to agency problems between the parties. The board of directors (BOD) is one mechanism that can mitigate the agency problem. The board of directors is responsible for monitoring managers on behalf of shareholders, working towards shareholders' and managers' benefits, and terminating underperforming managers whose contributions do not increase the firm's values. Therefore, research on board structure consists of board size, board composition, board diversity, and leadership. Board size is the number of directors on the board; board composition refers to the proportion of independent directors; board diversity is the number of female directors on the board; and leadership refers to whether the CEO is also the chair of the board.

Board size and firm performance

The number of board members is one important factor that impacts firm performance. However, there is no optimal size in the literature (Nath, Islam & Saha, 2015). The key functions of BODs are supervising management performance, providing expertise skills and relevant resources, and giving necessary advice to the CEO (Fama & Jensen, 1983; Hillman & Dalziel, 2003).

Previous CG literature presents various arguments regarding the number of directors on the board and firm performance. Several researchers suggest that a higher number of board members tends to benefit a firm for many reasons. First, a larger board contributes to better firm performance because of various opportunities from board diversity, such as education, experience, gender, nationality, and demographic (Darko, Zakaria Ali & Uzonwanne, 2016). Secondly, a large board with outside directors may bring independence to the boardroom, thus provide better monitoring of the managers (Ha, 2019). Third, Fauzi and Locke (2012) recognize that more board members could solve agency problems and review management actions.

However, other arguments suggest that a larger board disadvantages the firms. These disadvantages include "free rider" issues and ineffectiveness in decision-making. First, it is harder for a larger board

to organize a meeting time and obtain agreement on issues, which generates low speed and inefficiency in boardroom decision-making (Jensen, 1993). Lipton and Lorsch (1992) state that attaining board cohesiveness on a large board is more challenging because of different views and less readiness to agree to a common purpose. Secondly, according to Lipton and Lorsch (1992), director "free-riding" rises because the cost to a director who fails to exercise diligence is reduced because of greater board size.

Lipton and Lorsch (1992) state that when the board size increases over a particular number, the disadvantages prevail over the benefits of having a larger board, resulting in decreased firm performance. The authors suggest that the optimal number of board members should not exceed eight or nine. Jensen (1993) reports that if board members exceed seven or eight, it is more likely to be less efficient and more easily controlled by the CEO.

Empirical studies on developed nations (such as the U.K. and the U.S.) provide evidence of adverse effects of board size on firm performance. In contrast, developing nations provide mixed results, especially for Asian countries. For instance, Eisenberg, Sundgren and Wells (1998) analysed data from 879 listed U.S. firms between 1992 and 1994 and concluded that larger board sizes negatively affect firm profitability due to potential common decision-making and coordination issues that reduce board effectiveness. Yermack (1996), who examined 452 large listed firms in the U.S. from 1984-1991, reports that larger boards are less effective in coordination and decision-making, which negatively impacts firm's performance. Guest (2009) examined 2,746 listed firms in the U.K. from 1981-2002, and posits that large board size negatively influences firm performance due to poor communication, and delays in decision-making might be disadvantageous, thus impacting firm performance. Yan, Hui and Xin (2021) examined 327 listed companies in the U.S. from 2013 to 2017, and the study indicates that larger board sizes are associated with a negative impact on firm performance, potentially due to decreased efficiency in decision-making processes.

However, studies conducted outside developed markets show mixed results. For example, Arora and Sharma (2016) propose that larger boards possessing superior intellectual knowledge contribute positively to firm performance based on the sample period from 2001 to 2010. However, Samuel (2013) asserts that a bigger board unfavourably impacts ROE because its collective strength may overrule a CEO's decisions if they are irrational. The author conducted the study on Nigeria with a sample of 50 listed companies from 2001 to 2010. In the same vein, Kumar and Singh (2013) find that bigger boards negatively impact firm value in their empirical study of 176 Indian companies due to independent directors change board dynamics, resulting in negative firm value for bigger boards. Likewise, Nakano and Nguyen (2013) examined 1771 listed companies in Japan from 2003 to 2007

and reported that board size adversely impacts company market value and ROA because of the inability of the directors to use company assets in the most beneficial ways.

Empirical studies in ASEAN-6 countries produced inconclusive results. For instance, Zakaria, Purhanudin and Palanimally (2014) investigated 73 Malaysian listed firms from 2005-2010, showing that board size positively impacts firm performance. The authors assert that board members share more ideas, experience, and skills that may help develop firm policies and enhance firm value. Shukeri, Shin and Shaari (2012) examined 300 Malaysian listed firms in 2011 and document that larger boards might have proper management and control, thus positively linking with ROE. Similarly, Tulung and Ramdani (2018) show that board size positively impacts bank performance measured by ROA and ROE in Indonesia from 2010 to 2014. The authors suggest that larger boards perform better than smaller boards because of their various skills, thus improving ROA.

Vo and Phan (2013) studied 77 Vietnamese listed firms on the HSX from 2006 to 2011 and reported board size unfavourably impacts ROA because Vietnamese management culture differs from international practice in that Vietnamese management does not share its powers. Shakir (2008) examined 81 listed firms in Malaysia from 1999 to 2005 report that firms with bigger boards are less likely to function effectively, thus negatively impacting firm performance. Mc Reynald (2013) examined 36 listed holding firms in the Philippines and reports board size negatively influences share price and firm performance. The authors found that the independent directors in the firms were appointed "in compliance" with CG rules, leading to shareholders' negative reaction, resulting in decrease in share prices. Mak and Kusnadi (2005) show board size adversely impacts firm value measured by the Tobin's Q of 230 Singaporean listed firms in 1999 and 2000. The authors suggest that the negative relationship between board size and firm value may be generalised to various CG systems. Detthamrong, Chancharat and Vithessonthi (2017), using data on 493 firms in Thailand from 2001-2004, show board size has no impact on firm performance. The authors document that CG attribution does not necessarily lead to better performance. Therefore, the following relationship is hypothesized:

Hypothesis 1: Board size has a negative effect on the firm performance in ASEAN- 6 nations.

Independent directors and firm performance

Recently, the significance of board independence with 'non-executive directors' or 'independent directors' has been much considered by shareholders and regulators. The Higgs Report (2003, p. 361-371) in the U.K. suggests that, for better monitoring, a firm may use 50 per cent of members as independent, non-executive members. Fama and Jensen (1983) suggest that a manager's efficiency regarding the board monitoring function is greatly associated with board independence.

The impact of independent directors on firm performance is strongly supported by both the Agency Theory and Resource Dependency Theory. The former suggests that outside directors are independent and free from conflict of interest (Ameer, Ramli & Zakaria, 2010, p. 641-661) and provide greater monitoring (Fama & Jensen, 1983). They could have expert directors in different fields and bring independent views for strategic decisions by the BOD, creating value for firms (Fields & Keys, 2003). Kiel and Nicholson (2003) argue that if the BOD is implemented effectively, managers' chances of gaining advantages on account of shareholders can be minimized. Thus, shareholders get greater benefits. The Resource Dependency Theory suggests outside directors are a great source of external information and resources (Hillman & Dalziel, 2003). They provide vital resources to companies; therefore, more non-executive directors may favourably impact firm performance (Daily, Dalton & Cannella Jr, 2003).

Empirically, the extant CG literature for developed nations provides inconsistent findings on the association of board independence and firm performance. In the U.S., Rosenstein and Wyatt (1990) conducted a study using 1251 listed firms from 1981 to 1985 and show outside directors are superior to inside directors. Thus, having outside directors on board positively impacts firm performance. However, Klein (1998) examined 971 U.S. listed firms (excluding foreign firms) for 1992 and 1993 and reports that insider directors could be more valuable than outside board members. Thus, the appointment of external directors does not affect firm performance. Agrawal and Knoeber (1996) suggest that appointing more outside directors to the board negatively impacts firm performance. They conducted a study with a sample of the 500 largest listed U.S. firms in 1987 and found that boards influenced by political constraints, such as including political or environmental activists as outside directors, tend to experience reduced firm performance.

Outside the U.S., O'Connell and Cramer (2010) investigated 77 listed firms on the Irish stock market and conclude that firm performance is favourably impacted by the proportion of non-executives on the board. The authors find that firms with more outside directors have a less chance of financial distress. Similarly, Krivogorsky (2006), in a study of 87 European listed firms from 2000 to 2001, finds that more independent directors on the board has a strong monitoring role over the managers, which improves firm performance. Dehaene, De Vuyst and Ooghe (2001) show that outside directors on the board positively impact ROE because outside directors bring more technical experience. The authors' sample comprised 122 Belgian-listed companies from 1985-1995.

Studies on developing markets also show inconclusive results. For instance, Dharmadasa, Gamage and Herath (2014) analysed 189 listed firms on the Colombo stock exchange and show that a higher number of independent directors may bring expertise and skills that positively influence firm performance. Choi, Park and Yoo (2007) analysed 464 listed firms in South Korea from 1999 to 2002

and assert that outside directors have professional ties with the firm may positively influence firm performance. Liu, Miletkov Wei, and Yang's (2015) study on 2057 Chinese listed firms from 1999-2012 shows that board independence positively impacts the firm performance. The authors claim that Chinese independent directors are important to improving investment opportunities. In contrast, Jackling and Johl (2009) analysed 180 listed firms on the Bombay Stock Exchange and show that multiple appointments of outside directors negatively impact firm performance, suggesting their involvement in many outside activities does not add valuable skills and resources to firms.

Empirical studies on ASEAN-6 countries also produce inconclusive results. Chancharat and Chancharat (2019) assert that board independence unfavourably impacts ROA because outside directors do not always act in shareholders' interests, based on their study of 58 listed Thai firms from 2001 to 2014. Vo and Phan (2013) studied 77 listed Vietnamese firms on the HSX from 2006 to 2011 and report that having independent directors on the board result in less financial distress, thus they contribute positively to firm performance. However, Jamaludin et al.(2018) studied 3482 listed firms in Malaysia from 2012 to 2015 suggest that a board structure with a large proportion of independent directors who lack commitment to their role negatively affects a firm's financial performance. Mc-Reynald (2013) examined 36 listed holding firms in the Philippines and reported board independence negatively influences share price. The authors find that investors prefer companies with a smaller number of directors who work closely and have power over management in business operations. However, Tulung and Ramdani (2018) posit independent directors positively impact firm performance by providing recommendations to managers during decision-making. The authors conducted their study with a sample of 26 listed Indonesia banks from 2010-2014. As a result of the discussion, we hypothesize that:

Hypothesis 2: Board Independence has a significant positive effect on firm performance in ASEAN-6 nations.

Female directors and firm performance

Recently, board gender diversity has been identified as an important feature in the CG literature and has become a topic in academia (e.g., Arora, 2021; Kubo & Nguyen, 2021; Noamene, Halcro, Chaher & Talib, 2021; Soare, Dettleux & Deschacht, 2021). Increased board gender diversity in empirical studies on European countries supports female directors' greater participation for gender equality. To date, as many as 16 European countries have set quotas on the percentage of female directors on BODs (Rhode & Packel, 2014). Norway initiated a gender balancing quota of 40 per cent in 2003, and Spain followed Norway's law to increase female participation on boards up to 40 per cent (Yang et al. 2019). Germany has also introduced legislation. In 2016, it mandated 30 per cent non-executive female directors on board (Rhode & Packel, 2014). The European Union has set a target of having 40

per cent female directors in large listed firms (Rhode & Packel, 2014). However, unlike Norway and other European countries where quotas were introduced, government interference in gender diversity in Asian countries is less apparent (Hampel-Milagrosa, Van Hong, Quoc & Thanh, 2010).

According to Carter, Simkins and Simpson (2003) and Low, Roberts and Whiting (2015), Agency Theory and Resource Dependency Theory are considered the theoretical foundations of gender diversity in the boardroom. From the Agency Theory point of view, females often offer a fresh point of view on complicated matters, thereby assisting boards to solve problems in the board room (Francoeur, Labelle & Sinclair-Desgagné, 2008). Bilimoria and Wheeler (2000) hypothesize that women are likely to ask questions about complex problems and take an active role on the board, thus improving CG. Furthermore, boards with increased numbers of female directors monitor the reporting system more accurately, thus ensuring the accuracy of the firm's annual financial statements (Srinidhi, Gul & Tsui, 2011). Therefore, female directors' participation on boards reduces the agency problem and hence obtains better firm performance.

The Resource Dependency Theory posits that women on a board have diversified resources to firms, which is termed board capital (Hillman & Dalziel, 2003). Rose (2007) remarks that women's participation on the board can create innovative solutions for a firm by contributing various viewpoints that result in more answers to the problems faced by boards. Furthermore, the participation of women on the board may bring a better understanding of the marketplace. As the market becomes more diversified, the demand from potential customers or buyers of firms can be better satisfied by the participation of females on board, which creates greater value for the firm (Campbell & Mínguez-Vera, 2008).

However, extant CG literature on developed nations provides inconsistent findings on the relationship between female directors and firm performance. For instance, Erhardt, Werbel and Shrader (2003) posit that female directors' participation in the BOD favourably impacts ROE because female directors are better at overseeing the managerial function, thus improve firm performance. The authors' study was on 127 listed US firms in 1998. Campbell and Mínguez-Vera (2008) emphasize that women directors on the board increases firm value after studying in Spanish firms from 1995-2000. The authors find that investors do not penalise firms that increase the number of female directors on the board and that greater gender diversity may improve economic gains. Dezsö and Ross (2012) find that women's board participation improves managerial task performance, improving firm performance. The authors used 1,500 companies in the U.S. over 15 years. Fauzi and Locke (2012) posit that decisions of women directors on a board may lead to agency problems that lower firm performance. The authors conducted their study with a sample of 78 New Zealand-listed firms from 2007-2011. From a study conducted in the U.S. from 1996-2003, Adams (2009) explains that

women in top management may have adverse effects on the market and operational value. The authors argue that mandating gender quotas in the board room may increase board effectiveness on average but, for firms with strong governance, that may ultimately decrease shareholders' value. To support the same argument, Ahern and Dittmar (2012) state that the legal requirement to have 40% women on the board resulted in declining stock prices and operational profits. The authors sampled 248 Norwegian listed companies from 2001 to 2009.

Gregory-Smith, Main, and O'Reilly III (2014) argue that appointing female directors to the board has no impact on the firm performance of U.K. listed firms from 1996-2011. The authors find that appointing female directors to the board may be time-consuming and have higher recruitment costs. Rose (2007) investigated the relationship between women directors and Tobin's Q, based on Danish listed firms from 1998-2001 and concludes that female directors have no impact on firm value. The author finds that educational background and the number of foreign female directors on the board does not have material value or impact on firm performance.

Studies on developing markets also show inconclusive results. Wellalage and Locke (2013) provide evidence that women on the board negatively impacts firm performance because of a rise in agency costs. The authors' study used 151 listed Sri Lankan firms from 2006-2010. Similarly, Mirza Andleeb and Ramzan (2012) show women on the board negatively impacts firm performance in Pakistan from 2004-2009 as measured by ROA and ROE. The authors suggest that women on the board are emotional, risk-averse, and uneducated, leading investors to decline to invest in firms with female directors. Arora (2021) asserts that female directors are capable of dealing with complex situations in a strategic way that enhances firm performance. The findings came from 500 Indian-listed companies from 2015-2019. Kılıç and Kuzey (2016) posit that female directors favourably impact firm financial performance by sustaining good relationships and better communication with customers. The authors' study used a sample of 149 listed Turkish firms from 2008-2012.

Empirical studies of ASEAN-6 countries also produce inconclusive results. Julizaerma and Sori (2012) analysed 100 Malaysian listed firms from 2008-2009 and show female directors positively impact firm performance as measured by ROA. Their findings show that the involvement of women on the board better impacted the financial conditions. Vo and Phan (2013) investigated 77 listed firms on the HSX from 2006-2011 and find gender diversity gives a diversified nature that positively impacts ROA. Similarly, Duppati et al. (2020) report that investors have a favourable perception of firms with female representation on the board, which positively impacts firm performance. The authors examined 874 listed Singapore firms from 2005-2015. Chotiyaputta and Yoon (2018) examined 55 listed Thai public companies from 2008-2017 and show that having a higher ratio of females on the board helps in mitigate agency problems, resulting in improved firm performance. However, Darmadi

(2011) examined 200 Indonesian listed firms from 1996-2000 and posits that women's presence on the board destroys shareholders' value, which negatively impacts ROA and Tobin's Q. Unite, Sullivan and Shi (2019) examined 2,648 listed Philippines companies from 2003-2014 and show that the Philippines women and men with comparable skills and having more women on the board might not impact firm performance. Therefore, we hypothesize the following relationship:

Hypothesis 3: Board gender diversity has a significant positive effect on firm performance in ASEAN-6 nations.

CEO duality and firm performance

When the CEO and the chairman of any firm are the same individual, the phenomenon is called CEO duality. CEO duality has been identified as an important feature in the CG literature and has become a topic in academia for over two decades following the outbreak of large U.S. corporate failures (Krause, Semadeni, & Cannella Jr, 2014; Pham & Pham; 2020 Jwailles, 2021). One underlying cause of these corporate failures is that powerful CEOs misuse their powers to expropriate the interests of the firms or shareholders. Since 1990, many governance activists and regulators have encouraged firms to separate the CEO and board chair roles to achieve independent leadership and avoid "conflicts of interest" (Krause et al., 2014).

The consideration of splitting the combined roles (board chair and CEO) into one person is seen across many countries. According to the study by Russell Reynolds Associates in 2012, 45 per cent of U.S. firms had a separate CEO and board chair in 2011. This was a remarkable increase of 21 per cent compared with 2001. An analysis shows that 62 per cent of companies in the NASDAQ 100 had separate dual roles in 2011, a 45 per cent increase in split roles compared with 2005 (Russell Reynolds Associates, 2012). In European countries, splitting the CEO and the board chair is a more established role. For instance, the 2014 European Corporate Governance Report documents that only 20% of European firms had combined CEO and chair roles. A study by the Financial Reporting Council in 2014 showed that 96% of FTSE firms did not encourage combining the roles in one person.

Leadership structure is an ongoing debate with two contradictory CG theories. The Agency Theory strongly supports the view that splitting the CEO and board chair roles results in improved firm performance. Fama and Jensen (1983) show that CEO duality decreases a board's monitoring of managers. Hence, the split is required for the efficiency of the "checks and balances" system by CEOs and boards. Jensen (1993) states that if one person holds both leadership roles, the board cannot assess the CEO's performance, leading to weak internal controls. Goyal and Park (2002) assert that duality hinders the board from removing underperforming managers. Conversely, the Stewardship Theory argues that if the CEO and board chair roles are combined, the firm may have quicker

decision-making, improvements in firm strategy implementation, and effective leadership, thereby improving firm performance (Chen, Lin & Yi, 2008).

According to prior CG literature, board leadership has no optimal form, either duality or separation, with cost and benefits (Brickley, Coles & Jarrell, 1997). For instance, Brickley et al. (1997) suggest that the costs are comparatively higher than firms' benefits in larger firms because the firms might involve agency costs in controlling the chairman, information costs, and communication costs. Goodwin and Seow (2002) suggest that substantial costs may rise because of insufficient information regarding who is going to lead the firm.

The literature on CEO duality and company performance is mixed between developed and developing nations. In developed countries, researchers mainly focus on U.S. firms. Rutledge, Karim, and Lu (2016) analysed 470 U.S. firms from 2010-2014 and report that CEO duality negatively impacts firm performance. The authors suggest that duality strengthens a CEO's ability to increase self-interest and impair firm performance. Duru, Iyengar and Zampelli (2016) assert that CEO duality might reduce firm performance through managerial entrenchment. The authors conducted their study in the U.S. on a sample of 950 listed firms from 2007-2011. Guillet, Seo, Kucukusta and Lee (2013) suggest that CEO duality brings quick decision-making that positively impacts a firm's performance. Their study was in the U.S. with a sample of 351 restaurants from 1992 -2008. Rechner and Dalton (1991) investigated 141 U.S. listed firms from 1978-1983 to find that a CEO's bargaining power brings a superior ability to attract investors and favourably impact the firm's performance.

Studies conducted outside the U.S. show mixed results. Bathula (2008) investigated the relationship between CEO duality and firm performance of 156 New Zealand firms from 2004-2007 and concludes that duality positively impacts firm performance. The author suggests that if one person holds the combined leadership, there may be substantial power in quick decision-making, thus improving firm's performance. Chen (2014) investigated EU-listed firms from the Fortune 500 and suggests that CEO duality does not impact a firm's value because companies with the CEO performing dual roles have lower shareholder returns.

For developing markets, Amaral-Baptista, Klotzle and de Melo (2011) suggest that companies with dual leaders may provide strategic direction and execution that improves firm performance. The findings were derived from a study of 121 Brazilian listed companies in 2008. Conversely, Ehikioya (2009) examined 107 Nigerian listed firms from 1998-2002 and reports duality delays decision-making, thus adversely impacting firm performance. Rashid (2010) examined 825 Bangladeshi listed firms from 2000-2009 and suggests that CEO duality adversely influences ROA and Tobin's Q. The author asserts that both leadership role situations have costs and benefits that benefit in some situations supporting the Stewardship Theory and does not support the Agency Theory. Mashayekhi

and Bazaz (2008) examined Iranian firms from 2005-2006 to find that CEO duality did not affect ROE and ROA. The authors find that separating individuals in the CEO and chair positions leads to a better CG system that increases firm value.

Studies using ASEAN-6 countries also produce inconclusive duality and firm performance results. Ramdani and Witteloostuijn (2010) indicate that dual roles adversely affect company performance in their study conducted of Indonesia, Malaysia, South Korea and Thailand during 2001-2002. The authors find that duality creates conflicting leadership and unity of command and adversely impacts firm performance. Nahar Abdullah (2004) reports that if one person holds both leadership and control, it reduces monitoring, which weakens internal CG, adversely impacting firm performance. The authors used 1,128 listed companies in Malaysia from 1994-1996. Rahman and Haniffa (2005) also show a negative effect of duality on ROE and ROA for listed firms in Malaysia from 1996-2000. The authors indicate that CEO duality reduces monitoring of management resulting in poorer performance. To (2011) examined the 100 largest listed firms in Vietnam and shows that duality positively impacts firm value. The author asserts that the chair CEO duality is more active in decision-making and management, leading to increased firm value. In contrast, Oupananchai (2019), after a study of 40 Thai-listed firms during 2017 asserts that separation of the chair and CEO brings agency problems that negatively impact firm performance. Therefore, the following relationship is hypothesized:

Hypothesis 4: CEO duality has a negative effect on firm performance in ASEAN-6 nations.

2.3.2 Block ownership and firm performance

Ownership structure is important in the CG literature because it determines the managers' incentives and, thereby, firms' economic efficiency (Jensen & Meckling, 1976). To interpret the relationship between block ownership and firm performance, most scholars use Agency Theory (Jensen, 1986; Jensen & Meckling, 1976), which states that block ownership affects agency costs that influence firm performance. According to Jensen and Meckling (1976), separating shareholders and managers might result in an "agency problem" between the owners and managers when shareholders assume managers act and manage on their behalf and make decisions in their interest. Though managers are fully responsible for the firm's decisions, they do not gain benefits from their firms' profit activities. Therefore, managers may manage firms to pursue their own interests instead of shareholders' interests (Phung & Le, 2013).

This concern makes the ownership structure issue a most critical subject in CG literature. Research on block ownership consists of institution, foreign and insider ownership.

Block ownership and firm performance

Institutional shareholders are considered large entities with substantial money to invest in the stock market. They are thus more likely to buy larger blocks of a target firm's common stock (Choi, 2011). According to Ferreira and Matos (2008), institution shareholders can be divided into two groups: independent institutions (mutual fund managers and investment advisers) and grey institutions (bank trusts, insurance companies and other institutions).

According to the CG literature, institution shareholding has several effects on firm performance. Pound (1988) suggests that institution shareholders that own large equity shares have better monitoring of managers' actions and decisions. Pound (1988) indicates that institution shareholders have the resources or skills to monitor firm managers at a lower cost so they may favour firm performance. Hutchinson, Seamer and Chapple (2015) suggest that institution shareholding is important to maintain the financial health of a firm and for risk management. The authors argue that institutions may have vigilant monitoring of daily activities that lessen the risk of quick financial decisions by firm managers. Cornett, Marcus, Saunders and Tehranian (2007) clarify that institution investors have more opportunities and ability to influence managers and, thus, improve firm performance. Hsu and Wang (2014) in their study of the Taiwanese stock market suggest that institution shareholders effectively monitor managers and reduce agency costs. The authors analysed 647 listed firms on the Taiwanese stock exchange from 2005 to 2009.

The extant CG literature regarding the relationship between institution shareholding and firm performance remains inconclusive. In developed countries, Clay (2002) indicates a one per cent increment in institution shareholding leads to an increase in the firm value of 0.75 per cent in S&P 500 firms. Using 1914 firms in the Standard & Poor 500 index, Hartzell and Starks (2003) find that institution shareholding reduces agency costs by monitoring the manager's activities, thus improving firm performance. Cornett et al. (2007) assert that institution shareholders favourably impact a firm's performance by using their power to monitor managers for ownership rights. The authors conducted their study on with a sample of 737 listed U.S. firms from 1993-2000. Fung and Tsai (2012) analysed a sample of U.S. publicly listed firms from 1997-2006 and reveal that institution investors' role as monitoring managers is more important when internal CG is weak, impacting firm performance on the U.S. stock market.

Conversely, Pound (1988) explains that institution shareholders increase the "conflict of interest" between managers and shareholders thus reducing firm performance. The author used 100 proxy contests from 1981-1985. Weir, Laing and McKnight (2002) suggest that institution owners do not reduce agency problems and, thus, are ineffective in monitoring board operations of U.K. companies. Doukas and Pantzalis (2003) show an adverse relationship between high institution shareholding and

firm value by using 6951 multinational and domestic firms in the U.S. According to the authors, when institution shareholdings are high, shares are less liquid and must be held on the stock market for longer periods.

Studies conducted in developing countries also show mixed results. For instance, Lin (2010) reports that when institution shareholders have over 81 per cent of shares in Taiwanese companies, firm value increases because they mitigate agency conflicts and increase the firm monitoring. The author's study contained a sample of 221 listed Taiwan firms from 1997-2006. Nashier and Gupta (2016) analysed 1392 listed firms on the Bombay stock exchange from 2007-2014 to find that institution owners on the board monitor management decisions and actions more effectively, thus improving firm performance. Balagobei (2017) investigated 15 listed Sri Lankan plantation companies from 2010-2014 and shows that institution shareholders have no impact on dividend policy.

Empirical studies in ASEAN-6 countries indicate that institution shareholding positively impacts firm performance. Handriani and Robiyanto (2019) studied 293 Indonesian listed firms from 2010-2015 and report that institution investors have a better monitoring mechanism that may improve firm performance. Jusoh and Ahmad (2013) assert that institution investors have stronger incentives to monitor the companies they in which they invest thus improving firm performance. The authors' study used a sample of 730 Malaysian-listed firms from 2007-2009. Thanatawee (2014) examined 323 non-financial firms listed on Thailand's stock exchange from 2007-2011 and suggests that institution shareholders provide an effective monitoring role, thereby increasing corporate governance and firm performance. However, Dewayanto, Suhardjanto and Setiadi (2017) examined non-financial Philippines and Indonesian listed companies from 2009-2013 and show that institution shareholders have a dominant role in the shareholder votes and have access to management through communication channels to improve financial disclosure and firm performance but that they exploit small shareholders. Therefore, the following relationship is hypothesized:

Hypothesis 5: Block ownership has a negative effect on the firm performance in ASEAN-6 nations.

2.4 National governance and firm performance

Prior CG literature shows internal CG mechanisms affect firm performance. Recent literature also suggests that country-level governance indicators impact firm performance (Kumar & Zattoni, 2013; Van Essen, Engelen & Carney, 2013; Rose, 2016). These external governance mechanisms are directly linked to the "rule of law", "voice and accountability", "political stability and absence of violence", "government effectiveness", "regulatory quality", and "control of corruption" and are treated as

external mechanisms that do not control firms' activities. These variables are classified as under 'national-level governance' activities (Gillan, 2006).

Recently, shareholders and regulators have highlighted the importance of national governance quality (Nguyen, Locke & Reddy, 2015). For instance, Ngobo and Fouda (2012) show that national governance may reduce uncertainty in transaction and research costs and improve firm performance. The authors say that national governance reduces investment risk and improves high returns. Using 1487 Singapore and Vietnamese listed firms, Nguyen, Locke & Reddy (2015) find that national governance quality may moderate internal CG and firm performance. Sobel (2003) suggests national governance leads to better lending and access to share capital because lending is related to better regulation and democracy in the markets. However, Hail and Leuz (2006) indicate that country-level governance negatively affects capital cost because it has strict rules.

Empirical studies on developed countries' national governance firm performance show positive results. Van Essen et al. (2013) analysed data on 36 European listed firms from 2004-2009 and find that country-level governance ensures managerial oversight, thus improving firm performance. Rose (2016) evaluated Danish listed firms from 2010-2011 and shows that the firms that comply with national governance are linked to high firm performance. Richter and Weiss (2013) support the view that country-level governance impacts ownership concentration after examining 900 listed firms in Australia, Brazil, Canada, France, Germany, Italy, Japan, the U.K. and the U.S. in 2017.

Many studies in developing countries show mixed results. For instance, Ngobo and Fouda (2012) evaluated the 500 largest listed companies in 21 African countries from 2002-2005 and show that firms that follow better governance reduce uncertainty, transaction, and production costs and ultimately positively impact firm performance. Tunyi, Agyei-Boapeah, Areneke and Agyemang (2019) examined 1490 unique firms in African countries over 17 years and suggest national governance moderates firm performance by translating growth opportunities into profitability. However, Elamer, Ntim, and Abdou (2020) analysed 64 listed banks in the MENA region from 2006-2013 and show that risk management and disclosure practices are higher in countries with better national governance.

Empirical studies on the ASEAN-6 countries show inconclusive national governance and firm performance results. Williams (2014) studied 10 ASEAN banks from 1998-2012 and finds that improved national governance increases bank risk, reducing bank performance. Nguyen, Nguyen Nguyen and Truong's (2021) study of 756 ASEAN-6 listed firms (Indonesia 110, Malaysia 194, Philippines 68, Singapore 325, and Thailand 59) shows that a decrease in national governance quality impacts board gender diversity and adversely impacts firm performance. However, Nowland (2008) used data from five ASEAN countries (Hong Kong, Indonesia, Malaysia, Philippines, Singapore and Thailand) from 1993-2005 to find an indirect effect on company disclosure practices, national

governance, and board independence that improves firm performance. Nguyen, Locke and Reddy (2015) investigated 1064 firm-year observations in Vietnam and Singapore from 2008-2011 and find a moderating impact between national governance and firm performance. Therefore, the following relationship is hypothesized:

Hypothesis 6: National governance quality has a positive effect on the firm performance in ASEAN-6 nations.

Table 2.1 summarises the hypotheses' signs.

Table 2.1 Summary of the study's hypothesized signs

Relationship	Hypothesized Sign
Board size- firm performance	-
Independent directors- firm performance	+
Female directors- firm performance	+
CEO duality- firm performance	-
Block ownership- firm performance	-
National governance- firm performance	+

Note: Symbols (+) and (-) represent positive and negative, respectively.

2.5 Summary

This chapter reviewed the existing CG literature on the relationship between CG and firm performance. The chapter begins with definitions of CG followed by a discussion of the fundamental theories of CG: the Agency Theory, the Stakeholder Theory, the Stewardship Theory, the Resource Dependence Theory, and the Ethic Theories. Theoretically, good CG helps improve firm performance. However, empirical results to date by many scholars on the relationship between CG and firm performance show mixed results. We develop six hypotheses to test the relationship between CG and firm performance in ASEAN-6 nations. Chapter Three presents the data and research methodology.

Chapter 3

Data and Methodology

Chapter 3 presents the data and methodology used in the study to investigate the impact of CG on firm performance in non-financial listed firms in ASEAN-6 nations. Section 3.1 introduces the data collection method. Section 3.2 discusses the explanatory, dependent and control variables. Section 3.3 presents the estimation techniques and the empirical model. Section 3.4 discusses the robustness and endogeneity checks concerns used in the study and Section 3.5 presents the moderation analysis. Finally, Section 3.6 summarises the chapter.

3.1 Data cleaning

To investigate the relationship between CG and firm performance in ASEAN-6 nations, we use non-financial listed firms in the ASEAN-6 countries, Singapore, Malaysia, Indonesia, Thailand, the Philippines, and Vietnam, over 10 years from 2010-2019. The year 2010 was selected as the base year for many reasons. First, some ASEAN-6 countries failed to comply with CG regulations before 2010 and then revised the situation with some changes that reflect OECD principles. For instance, the Securities Commission of Malaysia issued a CG blueprint document in July 2011 to improve the CG structure. This facilitated the introduction of a new CG code in 2012 (MCCG 2012) (Rahman et al., 2015). Similarly, in May 2012, the Monetary Authority in Singapore issued a revised code of C.G. to emphasize information disclosure in financial statements, board accountability, board diversity, and other improvements (Lin, 2019). The Vietnam CG code was updated in July 2012 with some changes reflecting OECD corporate governance principles (Minh & Walker, 2008). Secondly, access to financial and CG data on the six exchanges from Bloomberg and Datastream were unavailable before 2010. We selected 2019 as the last year because it is the last year for which data were available when collecting national governance, CG, macroeconomic and financial data.

For many reasons, financial, banking and property management firms are excluded from the sample. First, according to Fama and French (1992, p.427-465), “high leverage that is normal for banks and financial firms may not have the same meaning for non-financial firms”. The operational nature of banks and financial institutions is different from other industries. Second, property management companies are excluded from the study sample because they do not have a board of directors. Thirdly, financial and banking companies are subject to strict rules and governance regulations (Yermack, 1996). Finally, it has been common practice in the extant CG literature to exclude financial and banking firms from samples when exploring the relationship between CG and firm performance (Adams & Mehran, 2012).

The CG and financial data are extracted from Bloomberg and BoardEx. Macro-economic data, such as GDP and inflation, were downloaded from the World Bank (WBDI) in 2019. Where necessary, the data are supplemented by the annual reports and companies' official websites. The Worldwide Governance Indicator measuring national governance quality (WGI) was developed by Kaufmann, Kraay and Mastruzzi (2011). The data for the WGIs are available on the World Bank website, and the IPindex is downloaded from the 'Doing Business' project of the World Bank.

Ultimately, the dataset consists of 265 non-financial listed firms with 2,385 observations for 10 years from 2010-2019. Previous studies on CG and firm performance in ASEAN countries have had limited sample sizes because of data accessibility issues. Compared with previous studies, we use a larger data set (in terms of the number of observations and sample firm size), which may help better estimate the relationship between CG and firm performance in ASEAN-6 nations. For instance, Nguyen's (2015b) study uses data from 122 listed firms in Vietnam from 2008-2011; Bhatt and Bhatt's (2017) study uses 113 listed firms in Malaysia from 2008-2013; Chotiyaputta and Yoon's (2018) study uses only 55 listed firms in Thailand from 2008-2017; and Koh's (2008) study uses 149 listed companies in Singapore from 1998-2003.

Table 3.1 presents the sample distribution by industry (Panel A), year (Panel B) and country (see Panel C) in the ASEAN-6 countries. The sample of ASEAN-6 non-financial listed firms is classified into eight industry categories based on the Global Industry Classification Standard (GICS): including (i) energy, (ii) materials, (iii) industrials, (iv) consumer discretionary, (v) consumer staples, (vi) health care, (vii) information technology, (viii) communication services. We use the GICS classification because it is a benchmark for firm classification and is available from Bloomberg. Panel A of the table shows industrial, communication services and consumer staples are the largest industries; industrials account for 45.37 per cent of the total sample. Though information technology, health care, and consumer discretionary are the lowest industries, information technology contributes 1.43 per cent to the total.

Panel B shows the sample distribution by year of the unique non-financial listed firms in the data set. There are 2,385 firm-year observations, of which 169 observations (7.08%) are in 2010 and 260 (10.90%) are in 2019. There are 251 (10.52% each year) observations for 2013 and 2014, and 260 (10.90% each year) observations for 2015 and 2016.

Panel C shows the sample distribution of non-financial listed firms by country in the data set. There are 265 listed firms in the ASEAN-6 countries, of which Indonesia contributes 34.68%, Thailand 25.95% and Singapore 12.33%.

Table 3.1 Details of the Sample of ASEAN-6 firms' Distribution

Table 3.1 reports the sample distribution by industry (in Panel A), years (in Panel B) and countries (in Panel C) in the ASEAN-6 countries.

Panel A: Sample distribution by industry

Industry	No. of Firms	Observations	Percentage	Cumulative Percentage
Energy	23	216	9.06	9.06
Materials	21	174	7.30	16.36
Industrials	119	1082	45.37	61.73
Consumer Discretionary	18	166	6.96	68.69
Consumer Staples	31	283	11.87	80.56
Health Care	12	103	4.32	84.88
Information Technology	4	34	1.43	86.31
Communication Services	37	327	13.71	100.00
Total:	265	2385	100	-

Panel B: Sample distribution by year

Year	Firm Observations	Observations	Percentage	Cumulative Percentage
2010	169	169	7.08	7.08
2011	197	197	8.25	15.34
2012	209	209	8.76	24.10
2013	251	251	10.52	34.63
2014	251	251	10.52	45.15
2015	260	260	10.90	56.05
2016	260	260	10.90	66.96
2017	263	263	11.02	77.98
2018	265	265	11.11	89.09
2019	260	260	10.90	100.00
Total:	2385	2385	100	-

Panel C: Sample distribution by country

Country	No. of Firms	Observations	Percentage	Cumulative Percentage
Indonesia	91	827	34.68	34.68
Malaysia	30	284	11.91	46.58
Philippines	28	268	11.24	57.82
Singapore	30	294	12.33	70.15
Thailand	75	619	25.95	96.10
Vietnam	11	93	3.90	100.00
Total:	265	2385	100	-

Source: Author's Calculations

3.2 Variables

3.2.1 Dependent variables

In the CG literature, firm performance is measured by accounting-based or market-based measures or both. Roudaki and Bhuiyan (2015) suggest that firm performance is measured by three proxies: ROE, ROA, and Tobin's Q. We use return on equity (ROE) to measure firm performance (Danoshana & Ravivathani, 2019) and Tobin's Q to estimate the market performance (Kiel & Nicholson, 2003).

Return on equity

Return on Equity (ROE) is a popular measure of firm financial performance (Zabri, Ahmad & Wah, 2016; Hussain, Ahmad & Hassan, 2019; Al-hadal, Alsamhi, Tabash & Farhan, 2020; Tsafack & Guo, 2021). ROE is one of the best methods to test firm financial performance if debt levels are rational. Accordingly, ROE can be inflated by increasing the leverage levels in a firm because ROE is an output of ROA (leverage multiplier) (Lindow, 2013). Demsetz and Villalonga (2001) explain that ROE is a backwards-looking financial measure that affects managerial accountability and transparency. The ROE is an essential ratio that the shareholders consider because it measures the return on equity and shows the result of a structural ratio breakdown called Du Pont analysis (Rappaport, 1986; De Wet & Du Toit, 2007). The ROE is divided into profitability, asset turnover and financial leverage ratios. Therefore, it can be improved by improving profitability, proper asset utilization and increasing leverage (De Wet & Du Toit, 2007). The ROE considers how the operating efficiency can be translated into benefits to the company's owners. The ROE is the net income for the full fiscal year earning tax (EAT) and is divided by the shareholders' shares, excluding preferential shares.

$$ROE = \frac{\text{Net Income}}{\text{Shareholder's equity}} \quad (3.1a)$$

Tobin's Q

According to CG literature, Tobin's Q (denoted as lnq) is the most commonly used market-based proxy for measuring firm performance (Al-Matari, Al-Swidi & Fadzil, 2014). Many studies on CG have selected Tobin's Q to measure market-based performance (Agrawal & Knoeber, 1996; Reddy, Lucke & Scrimgeour, 2010). As a "forward-looking" measurement, Tobin's Q reflects growth in the marketplace compared with market expectations and forecasts of a firm's value that may not be accounted for by any accounting measures (Demsetz & Villalonga, 2001).

Tobin's Q was introduced and defined by Tobin (1969) as the market value of a firm, including the market value of its equity and its liabilities, divided by the replacement cost of its total assets:

$$\text{Tobin's Q} = \frac{\text{The market value of equity} + \text{Market value of liabilities}}{\text{Replacement cost of total assets}} \quad (3.1b)$$

When Tobin's Q is greater than one (Tobin's Q >1), stock markets are optimistic about the firm's value and investment in the firm could be a better decision because the profit earned is greater than the asset investment. Conversely, when Tobin's Q is less than unity (Tobin's Q <1), the stock market undervalues its value and investors should consider selling the asset rather than keeping it. In practice, constructing (Tobin's Q equation (3.1a)) is difficult because of the unavailability of data on the market value of liabilities and replacement cost of total assets. To solve this problem, Chung and Pruitt (1994) introduced an approximately constructed Tobin's Q by replacing "market value of liabilities" and "replacement cost of total assets" with "the book value of liabilities" and "the book value of assets", respectively:

$$\text{Tobin's Q} = \frac{\text{The market value of equity} + \text{Book value of liabilities}}{\text{Book Value of total assets}} \quad (3.1c)$$

By showing a correlation of the theoretical and modified Tobin's Q above 0.99, Chung and Pruitt (1994) state that researchers may use the modified Tobin's Q in equation (3.1c) because the data required to calculate equation (3.1a) are unavailable. The use of modified Tobin's Q became the scholars' practice because it gives a realistic, approximate calculation of the theoretical Tobin's Q with available data and simplifies computation efforts (Nguyen, 2015).

3.2.2 Explanatory variables

The explanatory variables are (i) board size, (ii) board independence, (iii) board gender diversity, (iv) board duality (that represents board governance effectiveness index), (v) foreign shareholding, (vi) institutional shareholding, (vii) insider shareholding (considered as the identity of the block ownership index), (viii) government effectiveness, (ix) regulatory quality and (x) the rule of law (representing the national governance index).

Board governance effectiveness index

Several studies have explored the relationship between CG firm performance based on a particular aspect of CG, such as board size, gender diversity and board independence. However, CG's failures highlight that the policymakers and academics should assess the quality of CG from a comprehensive perspective and consider multiple CG mechanisms because single governance mechanisms may have their own limitations. Black, Jang and Kim (2006) evaluated the impact of CG firm performance of Korean firms with multiple governance mechanisms such as board structure, ownership structure, shareholder rights, and board procedures. Bhagat and Bolton (2008) tested CG and firm performance using ownership structure, CEO duality and board independence.

However, today, the dominant method to evaluate the quality of CG is to construct a composite index because it comprises multiple dimensions of a firm's CG and index systems. Therefore, many

scholars have adopted the CG index to explore the relationship between CG and firm performance. For instance, Black (2001) finds a strong relationship between the CG index and the firm value of listed firms in Russia. Lin and Su (2009) constructed a CG index to evaluate the relationship between CG and firm performance in Chinese companies. Bai, Liu, Lu, Song and Zhang (2002) developed a CG index and report a significant relationship between CG and firm performance in Chinese firms. Following Okoth (2017), we formulated a board governance effectiveness index (BEI) based on a slightly different set of board characteristics: board size, board independence, board gender diversity and board duality. Following Larcker, Richardson, and Tuna (2007) and Veprauskaitė and Adams (2013), the Principal Component Analysis (PCA) method is used to calculate the BEI.

Board size

Board size is an important feature of the BEI and is defined as the number of directors on board. Board size may substantially impact a firm's boardroom decision-making effectiveness and ability. The Agency Theory suggests that large boards enhance the board's manager monitoring capability to maximise shareholders' investments (Kiel & Nicholson, 2003). The Resource Dependence Theory argues that a larger board with outside directors brings external resources and linkages with the outside environment and contributes to a board's independence by putting forward more objectives. Therefore, a larger board results in improved firm performance (Raheja, 2005). The support for a larger board from these two theories is challenged by the Stewardship Theory which says a larger board with different viewpoints may lead to an ineffective decision-making process because of communication difficulties and getting common agreement (Jensen, 1993).

In the CG empirical research, the board size-firm performance relationship is mixed. Haniffa and Hudaib (2006) and Arora and Sharma (2016) posit a positive relationship between board size and firm performance. Similarly, Shukeri et al. (2012) report larger boards are positively linked with the ROE of Malaysian listed firms and Tulung and Ramdani (2018) show board size positively impacts bank performance in Indonesia as measured by ROA and ROE. However, Guest (2009) and Samuel (2013) report that board size inversely impacts firm performance. Following the literature, we use the total number of directors on board (*BSIZE*) to represent board size in the sample (To, 2011).

Board independence

Board independence is seen as an important feature of the BEI. Board independence is represented by the proportion of independent directors or the proportion of non-executive directors on the board (Fama & Jensen, 1983; Wintoki et al., 2012). According to Fama and Jensen (1983), the efficiency of supervising managers is considered to be linked to board independence. In the CG literature, both Agency Theory and Resource Dependence Theory support the appointment of board independence. The Agency Theory suggests that independent directors may provide independent

views that provide insights to deal with conflicts of interest and may help make better strategic decisions thus improving firm performance (Dalton, Daily, Johnson & Ellstrand, 1999). The Resource Dependence Theory supports the view that outside directors may bring external resources and information that improves firm value (Fama & Jensen, 1983). However, the Stewardship Theory argues that outside directors have less information required to make strategic decisions (Bozec, 2005) and less motivation to supervise managers. Therefore, the appointment of independent directors may have a negative effect on firm performance.

Empirical studies report mixed evidence on the independent director-firm performance relationship. For example, Vo and Phan (2013) show independence positively impacts firm performance in Vietnam. Similarly, Tulung and Ramdani (2018) show board independence positively impacts bank performance in Indonesia. However, Jamaludin et al. (2018) find outside directors negatively impact firm performance in Malaysian market. Banderlipe (2013) reports board independence negatively influences share prices in the Philippines.

Following Yermack (1996) and Wintoki et al. (2012), we calculate it as the percentage of independent directors on the board. The percentage of independent directors on the board is denoted as BIND.

Board gender diversity

More women directors on the board may directly impact the board efficiency. The Agency Theory and the Resource Dependence Theory argue that female directors are likely to bring fresh views and innovative ideas, which may help BODs improve problem-solving and set up new business strategies (Rose, 2007). Srinidhi et al. (2011) document that female directors supervise the reporting system, thus improving firm performance. Therefore, greater female participation may lead to better financial performance. Conversely, several arguments exist on the disadvantages of female directors on the board. For example, gender diversity might create differences and inconsistencies and impact decision-making (Litz & Folker, 2002). Women's participation on boards may lead to excess supervision by the BOD over managers, which decreases shareholder value (Ferreira, 2009).

The CG literature provides inconsistent findings on the relationship between female directors and firm performance. Julizaerma and Sori (2012) find that more female directors on a board leads to better firm performance in Malaysian-listed firms. Similarly, Duppati et al. (2020) report that firms in Singapore with a high proportion of females on the board positively impacts firm performance. Vo and Phan (2013) document that more females on the board improves firm performance in Vietnam. However, Darmadi (2011) asserts that increasing the number of women on the BOD negatively impacts firm performance in Indonesia. Unite et al. (2019) find that gender diversity does not impact firms' financial performance in the Philippines. To analyse the relationship between gender diversity

and firm performance, we measure gender diversity by dividing the number of female directors on the board by the total number of directors. Gender diversity is denoted as *FD*.

Board duality

Board duality is when one person holds the titles of CEO and board chair (Krause et al., 2014). The Agency Theory supports the argument that a split between the CEO and the board chair leads to better firm performance because separating the two positions enhances the checks and balances system between the CEO and chair (Fama & Jensen, 1983). Conversely, the Stewardship Theory argues that if the roles are combined, the company might obtain a faster decision to implement new strategies, and reduce information transfer costs, thus contributing to firm performance (Chen et al., 2008).

The extant CG literature provides inconsistent findings on the relationship between CEO duality and firm performance. For instance, CEO duality and the firm performance effect can be positive (Choi et al., 2007; To, 2011) or negative (Nahar Abdullah, 2004; Rahman & Haniffa, 2005; Ramdani & Witteloostuijn, 2010).

Following Nguyen (2015), we use a dummy variable for CEO duality. The variable equals 0 when the CEO and chair are merged and equals 1 when they are separate. CEO duality is denoted as *DUAL*.

Block ownership index

Following Okoth (2017) and Guo (2011), we formulated a block ownership index (BOI) based on a slightly different set of ownership characteristics: foreign, insider, and institution shareholder. Following Larcker et al. (2007) and Veprauskaitė and Adams (2013), the Principal Component Analysis (PCA) is used to calculate the BOI.

Foreign shareholders

Although foreign shareholders may not account for a large proportion of block ownership, it is an important part of the ownership structure in emerging markets (Douma, George & Kabir, 2006). Choi and Min (2012) suggest that foreign shareholders play a better monitoring role because they are independent of controlling owners and managers, thus improving firm performance. Oxelheim and Randøy (2003) document that foreign shareholders on a board helps companies have better governance, raising investors' confidence and increasing firm value. Kim (2011) reports that foreign owners mitigate the agency problem and help improve firm performance. Apart from the view that foreign shareholders increase firm performance because of the monitoring role, foreign shareholding brings expert technological resources and experience that can help improve firm performance (Huang & Shiu, 2009).

The multi-theoretical viewpoint (agency, resource and institutional) suggests that foreign shareholders play an active role in internal CG systems, thus improving firm value (Douma et al., 2006).

The extant CG literature provides inconsistent findings on the relationship between foreign shareholders and firm performance. Nazli Anum Mohd (2010) finds that companies with a higher proportion of foreign shareholders disclose more information in their annual reports, which increases investor confidence. However, Mihai and Mihai (2013) studied listed firms in Italy to examine the impact of foreign shareholders and firm performance. They find a non-significant link between foreign shareholders and firm performance. Kao, Hodgkinson and Jaafar (2019) studied Taiwanese-listed firms to find a positive impact of foreign shareholders on firm performance. Gurbuz and Aybars (2010) explored Turkish listed firms and similarly find that foreign ownership positively impacts financial performance. However, Phung and Hoang (2013) assert that foreign shareholding negatively impacts firm performance in Vietnamese because it is not concentrated.

To analyse the relationship between foreign shareholders and firm performance, we measure foreign shareholders as the percentage of outstanding shares currently held by foreign investors. Foreign ownership is denoted as *frgnown*.

Insider shareholders

There are two conflicting hypotheses on the impact of insider shareholders on firm performance in the CG literature, the convergence of interest hypothesis and the entrenchment hypothesis (Jensen & Meckling, 1976). The former suggests that the firm performance increases with insider shareholders. This is because the greater shareholding by managers may align their interests with shareholders, thus they work towards maximizing profits (Jensen & Meckling, 1976). However, the latter argues that firm performance may decrease at a certain level because the insider shareholders try to increase their voting power and may prioritize their interest over profit maximization (Ellstrand, Tihanyi, & Johnson, 2002).

Previous studies show mixed results between insider ownership and firm performance. Chung and Pruitt (1996) and Fauzi and Locke (2012) find a convergence effect between insider ownership and firm performance. Some studies report no effect (e.g., Loderer & Martin, 1997; Demsetz & Villalonga, 2001) and an entrenchment effect (Shah & Hussain, 2012) of insider ownership on firm performance. However, Beiner, Drobetz, Schmid, and Zimmermann (2006), who studied Swiss firms, find a positive relationship between insider ownership and firm performance. Kaserer and Moldenhauer (2008) also find a positive relationship between insider ownership-firm performance in their study of German firms. The insider ownership in our study is denoted as *insider*.

Institution shareholders

Institution shareholders (denoted as *Iown*) are large entities with substantial money in the stock market. They are more likely to buy larger blocks of a target firm's common stock (Choi, 2011). There are three perspectives on the effects of institution shareholders on firm performance. According to the active monitoring view, institution shareholders actively monitor firms, minimize agency problems, and increase firm performance (Shleifer & Vishny, 1997). Institution shareholders also apply their highly developed managerial skills, professional knowledge and voting rights to improve CG quality and help firms make better decisions (Shleifer & Vishny, 1997). When firms need funding to expand, institution shareholders can provide funding directly or use their relationships to source funding for firms (McConnell & Servaes, 1990). According to the passive monitoring view, institution shareholders are considered short-term traders interested in short-term trading profits based on information advantage rather than improving CG and firm performance (Elyasiani & Jia, 2010). Therefore, there is no relationship, or a weak relationship between institution shareholders and firm performance. According to the exploitation view, institution shareholders may work with managers, exploit small businesses, and weaken firm performance. A negative relationship between institution shareholders and firm performance may occur if they decrease firm value (Elyasiani & Jia, 2010).

Previous studies show mixed results on the relationship between institution shareholders and firm performance. For instance, using 1914 U.S. firms, Clay (2002) finds a significant positive relationship between institution shareholders and firm performance. Similarly, Lin (2010) posits that a higher proportion of institution shareholders increases firm value in Taiwanese companies. Hartzell and Starks (2003) find that institution shareholders mitigate agency costs between shareholders and managers because they increase monitoring, improving the firm performance of U.S. firms. However, Henry (2010) posits a negative relationship between institution shareholders and firm performance for Australian listed firms. Pound (1988) claims that institution shareholders increase conflicts between shareholders and managers, reducing firm performance. McKnight and Weir (2009) find that institution shareholders do not mitigate agency problems in listed U.K. firms.

National governance index

The Worldwide Governance Indicators (*WGI*) (denoted as the *NGI* Index) are considered the primary most widely used indicator for multi-country comparisons (Ngobo & Fouda, 2012). By reporting six dimensions of national governance quality of over 200 countries since 1996, the *WGI* facilitates meaningful cross-country comparisons over time (Kaufmann et al., 2011).

The literature provides inconsistent findings on the relationship between national governance and firm performance. For instance, national governance and firm performance have been found to be

positive (Nowland, 2008; Fauzi & Locke, 2012; Tunyi et al., 2019) and negative (Williams, 2014; Elamer et al., 2020).

Based on Ngobo & Fouda (2012), I downloaded six national governance indicators from the WGI. Following a similar approach undertaken by Knudsen (2011) and Van Essen et al. (2013), I focus narrowly on the measures of country-level governance quality which are most relevant to firm operations. Accordingly, of these six dimensions, three indicators of national governance, namely government effectiveness, regulatory quality, and rule of law, are singled out. These indicators are all acknowledged to potentially affect firm performance since they are essential to firms' successful business operations (Krivogorsky & Grudnitski, 2010; Ngobo & Fouda, 2012). The indicators are displayed in standard normal units ranging from -2.5 to $+2.5$, of which a more significant value indicates better national governance quality (Kaufmann et al., 2011).

Consistent with Globerman and Shapiro (2002), we find that these indicators are highly correlated, as evidenced by their significantly high correlation coefficients (unreported). Thus, using them in a single regression is difficult as their collinearity is highly likely to make empirical estimations problematic. For this reason, in line with Knudsen (2011), these three individual indices are combined to form an aggregate national governance index.

There many advantages to adopting PCA analysis. First, it helps us aggregate the existing corporate governance characteristics into a unique national governance index. Second, PCA analysis controls for multicollinearity problems when individual national governance variables are introduced into the regression (Agrawal & Knoeber, 1996). Third, PCA automatically produces weights for each national governance variable, which makes the national governance index explain much of the variance in the set of different national governance variables (Tarchouna, Jarraya & Bouri, 2017).

In PCA, the first component explains the vector with the largest governance element; the second largest vector is the second component and ignores vectors with lower values (Tarchouna et al., 2017). However, the rule of thumb is to retain values that are greater than 1 (Tarchouna et al., 2017).

We follow Florackis and Ozkan (2009) and Ellul and Yerramilli (2013) to conduct the PCA and take the first factor, given that it represents the largest percentage of variation in the original dataset. This factor linearly combines three variables: government effectiveness, regulatory quality, and the rule of law.

3.2.3 Control variables

Apart from board governance effectiveness structure, block ownership structure, and the national governance variables used in this study, other factors may affect firm financial performance.

Therefore, controlling any effects on the dependent variables is necessary to remove their potential effects from the models (when these factors have no impact on the dependent variables) and mitigate the possibility of omitted variable bias problems (when the factors impact the dependent variable). We use a set of 15 control variables that may impact on the dependent variables: including (i) firm size, (ii) business risk, (iii) cash conversion cycle, (iv) market to book value, (v) capital expenditure (vi) cash flow from operations, (vii) sales growth, (viii) market competition, (ix) intangibles, (x) R&D expenses, (xi) advertising expenses, (xii) cash holdings, (xiii) default risk, (xiv) inflation rate, and (xv) GDP.

Firm size

The literature shows a possible link between firm size (denoted as *Size*) and firm performance (Love & Klapper, 2002). Two studies (Kimberly C Gleason, Mathur, & Mathur, 2000; Ehikioya, 2009) report a positive relationship between firm size and firm performance. However, Ghazal (2010) analysed non-financial listed firms in Malaysia to find that firm size negatively impacts firm performance. Bayyurt (2007) suggests that larger firms with greater market share and resources are more competitive than smaller firms, improving firm performance. , and Paudyal (2008) explain that larger firms with greater transparency may have better access to debt markets at lower costs and higher borrowing costs than smaller firms, thus helping those firms maximize profits. Black, Khanna, Kim and Yurtoglu (2014) argue that larger firms possibly impact economies of scale. For example, larger firms are more diversified and create value more than smaller firms (because larger firms enjoy economies of scale and because they are diversified). They benefit more from opportunities in a diverse market, which enhances firm performance.

Firm Size can be measured in many ways, such as total assets, market value of equity, or annual sales. We follow Al-Najjar (2015) and Nguyen (2015) to measure *firm Size* by the natural logarithm of total assets.

Business risk

Business risk (*Brisk*) is uncertainty related to a firm's future operating income, variability in future sales income or operating income. The literature describes business risk in many ways. For example, Ramli, Latan and Solovida (2019) calculate it as the difference in earnings before interest and tax (EBIT) and average the change in EBIT over the sample period. De Jong, Kabir and Nguyen (2008) measure business risk as the standard deviation of the operating income over the book value. Wald (1999) calculate business risk as the variance to total assets. We follow De Jong et al. (2008) and calculate business risk as the standard deviation of the 3-year ROA. Bickley (1959) argue that the business risk level is inherited in every business, but the business risks change over time. Yavitz and Newman (1982) state that firms at an early stage are affected by investment decisions, and

predictions about the business may affect the business risk level. The authors suggest that accurate forecasting about working capital enables one to make accurate decisions that may lead to firm performance.

Many studies explain the relationship between business risk and firm performance. For instance, Ramli et al. (2019) argue that high-risk firms have less debt attractiveness and do not meet debt commitments because of high financial distress. Therefore, business risk and firm performance have a negative relationship. Hurdle (1974) analysed the relationship between business risk and liabilities and argues that higher liabilities highlight firm performance variations. However, Amit and Wernerfelt (1990) explain that lower levels of business risk increase cash flow, which positively impacts firm performance. Abazari, Hasanzade and Nahandi (2012) show that business risk significantly negatively affects a firm performance; if any operation or sales fail, firm performance may decline.

Cash conversion cycle (CCC)

The cash conversion cycle (CCC) is a performance measurement of how well a firm manages its working capital (Richards & Laughlin, 1980). The efficiency of working capital management involves the speeding up of cash collection and the slowing down of disbursements. Gentry, Vaidyanathan and Lee (1990) argue that a shorter CCC impacts firms' value indirectly. A short CCC indicates a firm is collecting its receivables as soon as possible and delaying its suppliers' payments, leading to relatively high net present firm value. Similarly, a shorter CCC could increase a firm's profitability because it improves working capital efficiency. A shorter CCC indicates that a firm manages and processes inventory quickly, collects cash from receivables, and delays supplier payments. A shorter CCC increases a firm's internal operational efficiency, resulting in higher profitability and higher market value (Gentry et al., 1990). A longer CCC may increase firms' sales and profitability for many reasons. First, a firm can increase its sales by extending more credit, which helps strengthen its relationship with customers (Ng, Smith & Smith, 1999). Second, larger inventories can prevent production and business loss interruptions (Wilner, 2000). Conversely, a shorter CCC may harm a firm's operations and lead to poor performance. Reducing the inventory conversion cycle may increase the shortage cost and cause firms to lose their good credit customers and lengthening the payable period may damage the firm's reputation (Nobanee, Abdullatif & AlHajjar, 2011b).

Market to book value

For many reasons, market-to-book value (*Mtb*) is considered a control variable. Eisdorfer (2008) documents that most firms are likely to engage in risk shifting when there are more investment opportunities. Since market-to-book value is a common proxy for investment opportunities, we consider it a control variable and expect its coefficient to be positive. For instance, Lamichhane

(2018) finds that the market-to-book value positively impacts financial performance in Nepalese firms.

Alves, Couto and Francisco (2015) posit that Mtb measures growth opportunities and provides information between managers and investors. Therefore, a firm with a high market-to-book value may indicate valuable growth opportunities and few agency problems. This is important for this study because a lower level of information asymmetry may bring more independent board directors. Market-to-book value, as a control variable, could result in collinearity between firm performance and the board structure variable. Baker and Wurgler (2002) show that the relationship between Mtb and financing sources might reflect managers' time on equity issues. Mtb is important in this study because managers may time their equity issues when they are overvalued; such overvaluation may reflect having more independent directors on the board.

Capital expenditure

Capital expenditure (*capex*) arises when a firm buys fixed assets or adds value to existing fixed assets by a useful life extending beyond the taxable life (Ballkoci, 2017). Some studies (McConnell & Muscarella, 1985; Jiang, Chen & Huang, 2006) report a positive relationship between capital expenditure and firm performance. In contrast, some studies report a negative impact of capital expenditure on firm performance (Titman, Wei & Xie, 2004; Cooper, Gulen & Schill, 2008). Jiang et al. (2006) report that when a firm increases its capital expenditure, it will be more competitive and have future opportunities, thus positively impacting operating profit. McConnell and Muscarella (1985) posit that managers seek to maximize market value through capital expenditure, thus improving the firm's future performance. However, Titman et al. (2004) conclude that capital expenditure negatively impacts firm performance with a higher cash flow and lower debt ratio. Abarbanell and Bushee (1997) show that capital expenditure may negatively impact future earnings if the company takes on excessive capital projects.

Cash flow from operations

Cash flow management (*Cfo*) is important for a business entity for short and long-term survival and to achieve business objectives (Uwonda, Okello & Okello, 2013). A firm's cash flow management policies, which manage working capital regarding cash receivables from customers, inventory holdings and cash payables to suppliers, are associated with firm performance (Kroes, Subramanian & Subramanyam, 2012). Several studies show a positive relationship between operating cash flow and firm performance. For instance, Turcas (2011) finds that a positive cash flow from operations strengthens the short-term survival of firms, thus improving firm performance. Aghaei and Shakeri (2010) investigated listed firms in Iran and determined the relationship between predicted cash flow and earnings. The authors find that cash flow has better predictive power than past earnings.

Habib (2011) investigated cash flow, profitability and growth opportunities in Australian firms to find that free cash flow attracts growth opportunities, thus improving firm profitability. Similarly, Yuan and Jiang (2008) conclude that firms with high free cash flow maintain a stronger relationship between the quality of the accounts and investments in listed firms in China. Earlier, Habib (2008) investigated the relationship between free cash flow and stock returns from 1995-2004 in New Zealand firms to find that profit and cash flow generate greater information for stock returns. Jintaviwatwong and Suntraruk (2013) report that current operating cash flow is positively associated with future cash flows and future stock prices. However, Ghodrati and Abyak (2014), who investigated Iranian firms find no significant relationship between operating cash flow and stock returns. The authors show that operating cash flow did not provide the necessary information to determine stock returns. Mong'o (2010) studied Kenyan banks and finds that operating cash flow negatively impacts bank performance.

Sales growth

Prior CG literature posits that sales growth is positively associated with firm performance because firms with higher sales can create more profit and investment opportunities. For instance, King and Santor (2008) document that sales growth enables firms to attract new investors, enhancing firm performance. Zeitun and Tian (2014) suggest a positive relationship between sales growth and firm performance measured by ROA. The authors explain that firms with high growth opportunities have high performance as growth firms can generate high profits. Gleason, Knowles and Mathur (2000) show that sales growth increases operational effectiveness in European countries. Jiraporn and Liu (2008) find that sales growth leads to market growth opportunities that positively impact firm performance. Margaritis and Psillaki (2010), conducting research on French manufacturing firms, provide evidence that the effect of sales growth on firm efficiency is significant and positive. Sales growth is denoted as "sales growth" in our study.

Market competition (HHI)

Market competition (*hhi*) is an important factor that affects a firm's financial decisions, operating efficiency, and financial performance (Giroud & Mueller, 2011). Previous studies suggest that market competition may affect reporting decisions because of agency conflicts and strategic considerations (Dhaliwal, Huang, Khurana & Pereira, 2014). The literature shows mixed results on market competition and firm performance. For instance, Gunasekarage, Luong, and Truong (2020) report that market competition leads to better performance because it serves as a powerful tool to solve agency conflicts between owners and managers. Franko (1989) asserts that market competition is a business strategy that allows a firm to gain a competitive advantage and improve performance. Giroud and Mueller (2011) report that market competition is a valuable resource that allows firms to produce high-quality products to compete in the industry for higher profit. Fernández-Kranz and

Santaló (2010) find that firms in highly competitive markets show better environmental performance. Fisman, Heal and Nair (2007) reveal that when firms are in highly competitive markets, they are willing to invest in social activities to develop different strategies such as corporate social activities, environmental, social and corporate activities. These different strategies significantly enhance firm performance. However, Bagnoli and Watts (2003) document an inverse association between market competition and firm performance because high competition generates lower profit margins.

Intangibles

Intangible assets (*intan*) have no physical existence but help increase revenue growth; company values are based on organization resources or employee skills (Lönqvist & Mettänen, 2002). In the past, intangible assets have been ignored because of the dominance of physical assets on a firm's balance sheet (Jhunjhunwala, 2009). Hence, firms always 'dress up' physical assets because they influence the firm's net worth. Today, however, firm success depends on the effective use of intangible assets, including employees, their skills and knowledge, patents and copyrights (Itami & Roehl, 1991). Garcia-Parra, Simo, Sallan and Mundet (2009) document that innovation and expert knowledge dominate the wealth of organisations in the 21st century. Colley and Volkan (1988) argue that the roots of research on intangible assets goes back to 1988 and show that goodwill could be defined in two ways. First, the authors suggest that goodwill can be calculated by discounting a firm's excess earnings over time. Second, goodwill can be defined as assets not recorded in the balance sheet, such as patents, brand names and customer relationships. Salamudin, Bakar, Ibrahim and Hassan (2010) divide intangible assets into two types: financial (copyrights and goodwill) and marketing (brand names, customer relationships, and advertisements). Diefenbach (2006) posits that intangible assets are non-physical assets that can be considered as in the mind rather than on paper and are self-renewable once used. For example, Diefenbach (2006) reports that knowledge increases when shared and increases overall firm performance.

Research and development (R&D)

Research and development (*rnd*) has been used in previous studies as a control variable that enhances firms' reputation and performance (McWilliams, Siegel & Wright, 2006; Aras Aybars & Kutlu, 2010). Research and development (R&D) is a form of capital investment related to increasing knowledge on innovative products. Therefore, R&D expenses correlate with firm performance (McWilliams et al., 2006). There are different findings on the relationship between R&D and firm performance. McWilliams et al. (2006) argue that highly innovative companies have high-quality products, thus positively impacting firm performance. Wang (2011) documents that firms that allocate higher R&D expenses are expected to have higher firm performance than those that do not. In his seminal work, Drucker (2005) explains that firms with a high competitive advantage also have

high R&D intensity. Erickson and Jacobson (1992) finds that R&D expenses allow firms to prevent imitation by rival companies and earn high profit. Investment in R&D is an investment in an intangible asset that contributes to a firm's long-term value. Thus, a firm's market value represents the present value of intangible and tangible assets (Chan, Lakonishok & Sougiannis, 2001). Successful investment in R&D results in innovative products and services, enabling firms to differentiate from other firms. However, Donelson and Resutek (2012) argue that, from the investor's perspective, R&D is an expense. In reality, R&D is an investment that generates revenue in terms of profit. Wang (2011) posit that R&D expenses are compensated for better firm performance after reaching an equilibrium.

Advertising expenses

The impact of advertising expenses (*adv*) on customers' and investors' decision-making is mainly through two mechanisms: signalling and spillover (Assaf, Josiassen, Ahn & Mattila, 2017). According to signalling theory, advertising spending signals to customers and investors that the product quality is high and the level of risk is low (Joshi & Hanssens, 2018).

Prior studies show mixed evidence on the advertising expenses-firm performance (Han & Manry, 2004; Joshi & Hanssens, 2018). Assaf, Josiassen, Mattila and Cvelbar (2015) emphasise that the relationship between advertising expenses and firm performance is not simple and assumes that no variables interact with the relationship. Joshi and Hanssens (2018) suggest that investors are more attracted to firms with brand visibility introduced by advertising that shows that a firm is different from its competitors, thus improving firm profitability. Aaker (1996) highlights that advertising creates strong brand associations between investors and customers, creating customer loyalty, attitude and satisfaction and attaining greater market share.

Luo and de Jong (2012) explain that advertising leads to a high level of familiarity and a lower level of uncertainty, thus positively impacting firm performance. However, Han and Manry (2004) argue that the economic benefit of advertising expenses expires in the current period, thus negatively impacting firm performance. Picconi (1977) document a negative relationship between advertisements and firm performance.

Cash holding

Cash holding (cash or stock)(*cash holding*) is quickly accessible cash in hand and assets that can easily be converted into cash with a maturity of less than three months (Gill & Shah, 2012). Cash holding plays a vital role in the management of a firm. Cash holdings help firms ensure transaction needs, seize new investment opportunities and keep provisions for business risk (Beckhart, 1936). However, large cash holdings may cause opportunity costs, especially when firms miss investment opportunities that may yield a return by choosing cash holding (Doan, 2020).

Fresard (2010) finds evidence that firms holding higher cash than their competitors achieve better performance and profitability when measured by return on assets because their market share increases more than that of competitors. Stulz and Williamson (2003) show that the value of cash holding increases firm's growth opportunities and may increase firm performance. Allahawiah and Al Amro (2012) conclude that a firm's liquidity does not depend on debt, mostly it makes for a stronger financial position and attracts new investors, which reflects positively on the stock market. Chen (2012) suggests that corporate cash holdings in developing countries promote economic growth and allow firms to take advantage of investment opportunities. Vuorikari (2012) find evidence that firms that use effective working capital management may enjoy a competitive advantage regardless of the economic climate.

However, Vijayakumar (2011) posits that not having the right liquidity management causes short cash holdings, resulting in difficulty in payment obligations, which damages firm image and negatively affect performance. Abushammala and Sulaiman (2014) argue that firms holding more liquid assets might not exploit profitable investment opportunities and pay higher taxes on the assets.

Default risk

Vassalou and Xing (2004) suggest that a firm is considered in default when it fail to meet its debt obligations. Therefore, the default risk (denoted as Drisk) is when a firm cannot make the required payments on debt obligations. A factor in determining default risk is a firm's leverage. For instance, Zeitun, Tian and Keen (2007) posit that firms with higher leverage have a higher probability of default, which leads to high default risk. However, Rasool, Kayani and Zafar (2011) argue that larger firms have higher target debt levels and stable cash flows that reduce the probability of bankruptcy and default risk.

Vassalou and Xing (2004) show that default risk is the oldest risk associated with financial markets. Scott (1981) shows that firms can default when debt obligations exceed the current year's profit. Therefore, a firm is considered a corporate failure or poor performer if the current year's profit is exceeded by its debt obligation. Sawal (2013) documents that higher leverage decreases firm value by increasing bankruptcy risk. Therefore, to enhance a firm's market value, every firm has to have a sound optimal capital structure. Hung, Albert and Eddie (2002) investigated construction firms in Hong Kong to find that high gearing reflected low equity in firms, adversely impacting firm performance. Likewise, Ebaid (2009) highlights that firm performance negatively impacts the capital structure's leverage. The findings show that total debts negatively impact firm performance. However, Cheng and Tzeng (2011) argue that better firm quality captures better lending rates, strengthening the positive influence of leverage and leading to better firm performance.

Industry dummies

We include industry dummy variables (*Ind*) to control for the possible effects of industry-specific characteristics. Bowman and Helfat (2001) document that industry may influence firms' financial performance because industry growth rate, policies, and concentration may induce differences in firms operating in different industries.

Eight industries classified by the Global Industry Classification Standard (GICS) are included in our study: (i) energy, (ii) materials, (iii) industrials, (iv) consumer discretionary, (v) consumer staples, (vi) health care (vii) information technology and (viii) communication services. One industry dummy variable will be benchmarked among the dummy variables to alleviate the dummy trap.

Year dummies

Following Akbar, Poletti-Hughes, El-Faitouri, and Shah (2016) to capture time-specific effects, we use GDP growth rate (denoted as *GDP*) and inflation (*inf*) from 2010-2019 in the models. The year dummy is controlled because each year could carry specific macroeconomic information, including GDP growth rate and inflation, that may impact the financial performance of listed firms.

In addition to the control variables mentioned above, we use a one-year lagged dependent variable (for the robustness checks) as another explanatory variable in the models to control for the dynamic nature of corporate governance and firm performance (Wintoki et al., 2012). According to Wooldridge (2010), including a one-year lag period in the empirical model allows better specification and shows the omitted factors in the other parameters.

Table 3.2 provides the definitions and measurement methods of the study variables.

Table 3.2 Definitions of variables used in the analyses

Variable	Acronym	Definition
<i>Dependent</i>		
ROE	<i>Roe</i>	(Net income/total equity) x 100
Tobin's Q (robustness)	<i>Inq</i>	Tobin's Q ratio
<i>Explanatory</i>		
Board size	<i>BSIZE</i>	Total number of directors on Board
Board independence	<i>BIND</i>	Percentage of independent directors on Board (= number of independent directors / total number of directors)
Board gender	<i>FD</i>	Percentage of women directors on Board (=

diversity		number of women directors / total number of directors)
Board duality	<i>DUAL</i>	A dummy variable equal to 1 if CEO is also the Board Chair and 0 otherwise.
Board governance effectiveness index	<i>BEI Index</i>	The BEI is constructed by extracting the first PCA factor of Board Size, Gender Diversity, Board Independence and CEO Duality.
Foreign ownership	<i>Frgnown</i>	Percentage of outstanding shares currently held by foreign investors
Insider ownership	<i>Insider</i>	Percentage of outstanding shares currently held by insider shareholders.
Institution ownership	<i>lown</i>	Percentage of shares held by the Institutional Investors
Block ownership index	<i>BOI index</i>	The BOD Index is constructed by extracting the first PCA factor of outstanding shares held by foreign, institution and Insider shareholders
Government effectiveness	<i>GE</i>	Government effectiveness
Regulatory quality	<i>RQ</i>	Regulatory quality
Rule of law	<i>RL</i>	The rule of law
National governance index	<i>NGI index</i>	An Index constructed by extracting the first PCA component of Government effectiveness, regulatory quality and rule of law
National governance index (The alternate proxy for national governance quality)	<i>ngindex_ai</i>	Additive index (= government effectiveness + regulatory quality + rule of law)
Control		
Firm Size	<i>Size</i>	Natural log of total assets in year t.
Business Risk	<i>Brisk</i>	The standard deviation of the 3-years ROA
Cash conversion cycle	<i>CCC</i>	CCC = DIO + DSO – DPO
Market-to-book ratio	<i>Mtb</i>	Market capitalization / total equity in year t
Capital expenditure	<i>Capex</i>	Capital expenditure/Total assets
Cash flow from operations	<i>Cfo</i>	Cash flow from operations
Revenue growth (or sales growth)	<i>salesgrowth</i>	Percentage change in sales of a company in year t
Market competition	<i>hhi</i>	HHI- a firm's market share
Intangibles	<i>intan</i>	Intangible assets= Total Assets- tangible assets
R&D expenses	<i>rnd</i>	R & D expenditure / total sales
Advertising expenses	<i>adv.exp</i>	Advertising expense / total assets
Cash holding	<i>cashholding</i>	Cash and cash equivalent/total assets

Default risk	<i>Drisk</i>	Debt to equity ratio
GDP	<i>gdp</i>	GDP growth
Inflation	<i>inf</i>	Inflation in per cent
Industry dummies	<i>ind</i>	Industries classified DUMMY
Year dummies (Year)	<i>year</i>	Year dummy variables

Moderating Variables

National governance index	<i>NGI index</i>	An Index constructed by extracting the first PCA component of government effectiveness, regulatory quality and rule of law.
Leverage	<i>Lev</i>	Total debt over total assets of a company in year t
Political Stability and Absence of Violence	<i>PSAV</i>	Political Stability and No Violence

Data

We report the descriptive statistics of all numerical variables, including the mean, standard deviation, median, minimum and maximum, for the ASEAN -6 countries. We also present the Pearson correlation matrix for all the variables and indicate potential multicollinearity in the regression models. According to Damodar (2004), if the correlation coefficient between variables is less than 0.8, there are no multicollinearity levels in the regressors. We use the inflation factor (VIF) to robustly check for potential multicollinearity in the explanatory variables. Chatterjee and Hadi (2013) claim that, if the tolerance value is over 0.1 and the VIF value is less than 10, multicollinearity is not present in the data.

Before conducting Principal Component Analysis (PCA) on the Board Effectiveness Index (BEI index), Block Ownership Index (BOI index), and National Governance Index (NGI index), we examined the data for outliers, normality, and linearity to ensure the reliability of subsequent analyses. Outliers, data points deviating from the overall pattern, were identified using box plots with jitters and addressed through imputation techniques such as replacing them with NA values or winsorizing them at various quantile levels. This meticulous approach aimed to mitigate potential distortions of PCA outcomes due to outlier influence. Concurrently, we assessed the normality of variables using the Shapiro-Wilk test, where p-values indicated deviations from normal distributions. The data were subsequently scaled to facilitate PCA, maintaining consistency with its assumption of linear relationships between variables. Moreover, linearity was assessed through scatter plots to adhere to PCA assumptions, revealed no potential nonlinearities that required remediation through variable transformations such as log transformations (Shittu, Che Ahmad, & Ishak, 2015; Zheka, 2006).

We carefully selected ten variables to construct the indices, ensuring they effectively capture the underlying dimensions or constructs of interest, resulting in more interpretable, meaningful, and reliable principal components (Ramdani and Witteloostuijn 2010; Chen 2014). We explained correlations between individual variables and principal components by examining standardized loadings via the pattern matrix. Notably, principal components (PC1) showed robust loadings for fundamental variables such as board size, board independence, gender diversity, and CEO duality. Similarly, PC2 shows robust loadings for key variables such as foreign ownership, insider and institution ownership. PC3 shows robust loadings for government effectiveness, regulatory quality, and the rule of law, clarifying their substantive contributions to the overall variance. Conversely, variables such as voice and accountability, political stability and absence of violence/terrorism, and control of corruption exhibited moderate loadings, implying their nuanced roles within the NGI framework (Veprauskaitė & Adams, 2013).

Furthermore, we determined the suitability of employing PCA through rigorous statistical tests, including the Bartlett test and the Kaiser, Meyer, Olkin (KMO) Measure of Sampling Adequacy (MSA) (Krishnan, 2010). The significant of the Bartlett test results ($p < 0.05$) and an overall MSA of 0.83 confirmed the robustness and adequacy of our sample for PCA analysis.

We use varimax rotation in PCA, which offers enhanced interpretability regarding structural composition. Varimax rotation, aimed at maximizing the variance of squared loadings within each component, facilitated the redistribution of variable loadings across principal components, resulting in clearer and more distinct patterns. Post-rotation, variables previously displaying moderate loadings across multiple components assumed stronger and more exclusive associations with specific components, thereby elucidating the underlying factors and enhancing interpretability. Notably, all positioning variables, such as board size, board independence, gender diversity, CEO duality, foreign ownership, insider ownership, institution ownership, government effectiveness, regulatory quality, and the rule of law on PC1 –PC3 post-rotation, heightened their pivotal roles within the governance framework (Field et al., 2012).

We conducted validation measures to check the reliability of the results. According to Field et al. (2012), residuals with absolute values less than 0.05 indicate a satisfactory fit of the PCA model to the data. Our analysis revealed that the residuals indeed adhered to this criterion, further supporting the credibility of the PCA outcomes.

The model fit was assessed to ascertain its adequacy in capturing the underlying structure of the Board Effectiveness Index (BEI index), Block Ownership Index (BOI index), and the National Governance Index. The model fit, quantified through various statistical indices, including but not limited to the goodness-of-fit statistic, should ideally exceed a threshold value of 0.9 to be

considered satisfactory (Krishnan, 2010). In our analysis, the model fit surpassed this critical threshold, confirming the PCA's reliability in clarifying the governance dimensions involved in the dataset. Furthermore, we evaluate the communalities, representing the proportion of variance in each variable explained by the extracted components. According to Krishnan (2010) and Shrestha (2021), communalities exceeding 0.7 indicate a robust extraction of common variance by the principal components, thus ensuring the reliability of the PCA outcomes. Our analysis revealed that the communalities significantly surpassed the prescribed threshold, underscoring the efficacy of the varimax rotation in capturing the shared variance among all the selected variables.

In sum, we have conducted comprehensive validation checks, including assessing model fit and evaluating communalities, and robustness of the PCA results following varimax rotation. These validation measures validate the suitability of the PCA model and instil confidence in the derived principal components as confident representations of the underlying governance constructs within the dataset.

3.3 The estimation technique and empirical model

3.3.1 Estimation technique

The estimation technique used in this study is Ordinary Least Square (OLS). We also use different techniques to observe how the results change with other approaches. The OLS estimator was the most commonly used technique until endogeneity in CG studies became a major concern. The OLS estimation method of unknown parameters in linear regression minimises the sum of the squares of the differences between the observed value in the sample and the predicted values of the dependent variable. Like many statistical analyses, ordinary least squares (OLS) regression has underlying assumptions. When these assumptions for linear regression hold, OLS produces the best estimates. The first assumption is that the regression model is linear in the coefficients and the error term. This assumption shows the model's functional form. The second assumption is that the error term has a population mean of zero. In other words, for the model to be unbiased, the average value of the error term should be zero. The third assumption is the independent variables are uncorrelated with the error term. If an independent variable correlates with the error term, then OLS incorrectly attribute some of the variance to the error term. The fourth assumption is observations of the error term are uncorrelated with each other. This assumption explains that one observation of the error term should not predict the following observation. The fifth assumption is that the error term has a constant variance (no heteroscedasticity). In other words, the variance does not change for each observation or a range of observations. The sixth assumption is that no independent variable is a perfect linear function of other explanatory variables. In other words, OLS cannot differentiate one variable from the other when they are perfectly correlated. The seventh assumption is the error term

is normally distributed (optional). However, OLS does not require error term to follow a normal distribution (Wooldridge 2015).

However, the literature suggests that the CG-firm performance relationship is dynamic (Hermalin & Weisbach, 2001; Wintoki et al., 2012), and current CG may be related to a firm's past performance (Wintoki et al., 2012). Wintoki et al. (2012) argue that the OLS or Fixed Effects are not designed to address that dynamic nature and prior studies using the OLS estimator may have an endogeneity problem that has not been fully addressed. Following Wintoki et al. (2012), we use the system GMM method to estimate the relationship between the CG and firm performance in the ASEAN-6 nations' non financial listed firms.

3.3.2 Empirical model

The study's objectives are to examine the relationship between the firm performance of ASEAN-6 nations and governance mechanisms, including board governance effectiveness (board size, independent directors, gender diversity, duality), block ownership (foreign, insider and institutional ownership) and national governance (government effectiveness, regulatory quality and the rule of law).

Following Petersen (2009) and Harymawan and Nowland(2016), we use a regression model with fixed year, industry effects and error term. The following regression model tests the first hypothesis. Based on Harymawan, Nasih, Ratri and Nowland (2019), the equation we use to examine the CG-firm performance relationship of ASEAN-6 listed firms is:

$$FP_{it} = \beta_0 + \beta_1 BE\ index_{it} + \beta_2 BOI\ index_{it} + \beta_3 NGI\ index_{it} + \beta_4 \sum (Controls)_{it} + year_{it} + industry_{it} + \varepsilon_{it} \quad (3.2)$$

where,

FP is the firm performance of firm i in year t;

β_0 is at constant;

$BE\ index_{it}$ represents the board effectiveness variables (board size, board independence, gender diversity and CEO duality);

$BOI\ index_{it}$ represents block ownership(foreign, insider, and institutional shareholders);

$NGI\ index_{it}$ represents the national governance index (government effectiveness, regulatory quality and the rule of law);

$\beta_4 \sum(Controls)_{it}$ denotes the control variables (including firm size, business risk, cash conversion cycle, market to book value, capital expenditure, cash flow from operations, sales growth, market competition, intangibles, R&D expenses, advertising expenses, ash holding, default risk, inflation rate and GDP);

$year_{it}$ is the year dummy;

$industry_{it}$ is the industry dummy; and

ε_{it} is the error term

Research Objective 1: To explore the relationship between the BEI *index* and firm performance of ASEAN-6 non-financial listed firms, based on equation (3.2), we use equation (3.3) as follows:

$$FP_{it} = \beta_0 + \beta_1 BE\ index_{it} + \beta_2 Size_{it} + \beta_3 Brisk_{it} + \beta_4 Wc_{it} + \beta_5 CCC_{it} + \beta_6 Mtb_{it} + \beta_7 Capex_{it} + \beta_8 Cfo_{it} + \beta_9 Salesgrowth_{it} + \beta_{10} Hhi_{it} + \beta_{11} Intan_{it} + \beta_{12} Rnd_{it} + \beta_{13} Adv.\ Exp_{it} + \beta_{14} Cashholding_{it} + \beta_{15} Drisk_{it} + year_{it} + industry_{it} + \varepsilon_{it} \quad (3.3)$$

Equation (3.3) has four explanatory variables (board size, board independence, gender diversity, CEO duality) and sixteen control variables (including the year and year dummy). The dependent variable in equation (3.3) is the return on equity.

Research Objective 2: To examine the relationship between the BOI *index* and the firm performance of ASEAN-6 non-financial listed firms, based on equation (3.2), we use equation (3.4) as follows:

$$FP_{it} = \beta_0 + \beta_1 BOI\ index_{it} + \beta_2 Size_{it} + \beta_3 Brisk_{it} + \beta_4 Wc_{it} + \beta_5 CCC_{it} + \beta_6 Mtb_{it} + \beta_7 Capex_{it} + \beta_8 Cfo_{it} + \beta_9 Salesgrowth_{it} + \beta_{10} Hhi_{it} + \beta_{11} Intan_{it} + \beta_{12} Rnd_{it} + \beta_{13} Adv.\ Exp_{it} + \beta_{14} Cashholding_{it} + \beta_{15} Drisk_{it} + year_{it} + industry_{it} + \varepsilon_{it} \quad (3.4)$$

There are three explanatory variables (foreign, institution and insider ownership) and 16 control variables. The dependent variable in equation (3.3) is the return on equity.

Research Objective 3: To investigate the relationship between the NGI *index* and firm performance in the ASEAN-6 non-financial listed firms, based on equation (3.2), we use equation (3.5) as follows:

$$FP_{it} = \beta_0 + \beta_1 NGI\ index_{it} + \beta_2 Size_{it} + \beta_3 Brisk_{it} + \beta_4 Wc_{it} + \beta_5 CCC_{it} + \beta_6 Mtb_{it} + \beta_7 Capex_{it} + \beta_8 Cfo_{it} + \beta_9 Salesgrowth_{it} + \beta_{10} Hhi_{it} + \beta_{11} Intan_{it} + \beta_{12} Rnd_{it} + \beta_{13} Adv.\ Exp_{it} + \beta_{14} Cashholding_{it} + \beta_{15} Drisk_{it} + year_{it} + industry_{it} + \varepsilon_{it} \quad (3.5)$$

There are three explanatory variables (government effectiveness, regulatory quality, and the rule of law) and 15 control variables. The dependent variable in equation (3.3) is return on equity.

3.4 Robustness checks

To ensure the validity of the results, the study conducts an additional set of tests, including individual explanatory variables with ROE, simultaneous quantile regression, and country-wise analysis.

3.4.1 Individual explanatory variables with ROE test

We use individual independent variables with ROE and rerun the regression to ensure the validity of baseline results. Wang, Abbasi, Babajide and Yekini (2019) conducted an additional analysis replacing ROE with Tobin's Q to examine the robustness of the results in their study. We have a similar approach and conduct an individual explanatory variable test with the ROE by replacing the BGE, BOI and NGI with individual independent variables. We use the OLS regression method and control variables to conduct the alternative X analysis.

3.4.2 Simultaneous quantile regression

We use simultaneous quantile regression as one robustness check to examine the baseline regression model using results obtained by OLS. Quantile Regression is more effective than standard linear OLS regression because it produces separate estimates for all conditional quantiles of a response variable's distribution. This differs from OLS regression, which estimates only the conditional mean effect of a response variable. Quantile Regression performs well under the assumptions that are more relaxed than those associated with OLS regression. It can handle skewed data, unequal variance (heteroscedasticity), and the presence of outliers (Ramdani & van Witteloostuijn, 2009). Based on previous literature, this study investigates the relationship between CG and firm performance, and we test the 0.25, 0.5, and 0.75 quantiles (Conyon & He, 2017). Quantile regression analysis is designed to estimate the relationship of explanatory variables at different quantiles in the conditional distribution of the dependent variable. By using this regression model, a more complete picture can be derived of how corporate governance mechanisms relate to firm performance at the different quantiles. For instance, Mosteller and Tukey (1977, p. 266) argued, "What the regression curve does is give a grand summary for the averages of the distributions corresponding to the set of x's. We could go further and compute several regression curves corresponding to the various percentage points of the distributions and thus get a complete picture of the set". Therefore, simultaneous quantile regression techniques can help obtain a more complete picture of the underlying relationships between variables. Quantile regression analysis helps to determine the sign and the magnitude of the CG variables and firm performance, which are different for different levels of financial performance.

We select simultaneous quantile regression as one robustness check for many reasons. First, OLS regressions focus on the conditional mean of the dependent variable, whereas simultaneous quantile

regression can describe the entire conditional distribution of the dependent variable. Second, quantile regression may avoid the restrictive assumption that the error terms are identically distributed at all distribution points. Finally, simultaneous quantile regression is characteristically robust to outliers and has heavy-tailed distributions (Buchinsky, 1994). The slopes of the independent variables are estimated at three different quantiles in the study (i.e. 25th, 50th and 75th) using the same equation and set of explanatory variables for each quantile to estimate the impact of CG and firm performance in ASEAN -6 countries.

3.4.3 Country analysis

Following Giorgi et al. (2022), we conduct a country analysis to compare the impact of CG on firm performance in ASEAN-6 countries. Country analysis helps measure and compare the results and CG practices within the region and improves countries with less CG practices. Balasubramanian, Black and Khanna (2010) suggested that countries may have different CG needs. For instance, countries that practice with good CG suggest a solid combination of growth prospects for firms and investors, not expecting a high level of tunnelling. In contrast, the countries that practice weak CG suggest a high CG tunnelling risk (Balasubramanian et al., 2010). Therefore, country analysis suggests that core CG problems may differ in kind or intensity and may call for different remedies. The study uses the OLS regression method and the same control variables to conduct the country analysis.

Endogeneity concerns

The endogeneity problem is a matter of concern in academia when analyzing the relationship between corporate governance and firm performance (Wintoki et al., 2012; Nguyen, 2015). According to Wooldridge (2010), endogeneity occurs when governance variables correlate with error terms, which results in inconsistent and biased estimates. Therefore, the study conducts two stage least square method (TSLS) and System GMM to address the endogeneity problem between CG-firm performance.

Two Stage Least Square method (TSLS)

The common approach to analyse the relationship between CG and firm performance is to use the OLS estimation method (Klein, 1998). However, one issue widely discussed in CG literature is the presence of endogeneity in the CG-firm performance relationship. The presence of endogeneity in the OLS model may give biased, inefficient results when it violates the basic assumptions (Jackling & Johl, 2009). Another approach to address the endogeneity problem is the two stage least square method (TSLS), which is a generalisation of the Instrumental Variable (IV) estimator. The main idea of TSLS and IV is to use exogenous instrumental variables to eliminate the effects of correlation between endogenous variables and the error term. For the validity of TSLS and IV, the instrumental variables must be strongly correlated with endogenous explanatory variables but uncorrelated with

the regression equation error term. In the case of weak instruments, the estimators may suffer from large bias and standard errors, and the sample distribution will not be normal (Hill, Griffiths & Lim, 2011). TSLS can be conducted if we can find a set of variables that : (i) do not affect Y and are not included in the right-hand side of the equation: (ii) correlate with X1, X2, X3Xk; and (iii) are uncorrelated with the error term.

Although TSLS and IV usually address the simultaneity problem, i.e., CG and firm performance being related to each other, they are not designed to deal with dynamic endogeneity (Nguyen, 2015). Notably, the validity of the TSLS and IV instrumental variables must be strong. In the case of weak instruments, the estimates can suffer from bias and errors, and large sample distributions may not be normal (Hill et al., 2011).

System Generalised Method of Moments (Sys GMM)

Endogeneity is a serious concern in empirical estimation in a performance model (Bhagat & Black, 1999; Coles, Daniel & Naveen, 2008). To address the endogenous relationship between corporate governance and firm performance, we use the system GMM model with CG control variables. The endogeneity problem arises when there is a possibility that the effect of the control mechanism itself depends on firm performance, which may cause serious consequences for inference.

Wintoki et al. (2012) propose that the GMM technique is a more appropriate method to investigate the CG-firm performance relationship to address the limitations of the OLS method. Wintoki et al. (2012, p. 586) explain that "past values of governance and performance can be used as instruments for current realizations of governance. This eliminates the need for external instruments". Following Wintoki et al.'s (2012) suggestions, we use the GMM estimator as a robustness check.

According to several researchers, the GMM technique is appropriate with panels with $N > T$, or "small T, large N" panels (Bond, 2002; Baum, 2006; Roodman, 2009). We analyse the relationship between the CG and firm performance of 265 non-financial listed firms in ASEAN-6 countries (N) over ten years (T). Our panel has $N > T$; therefore, using the GMM technique in the study is relevant.

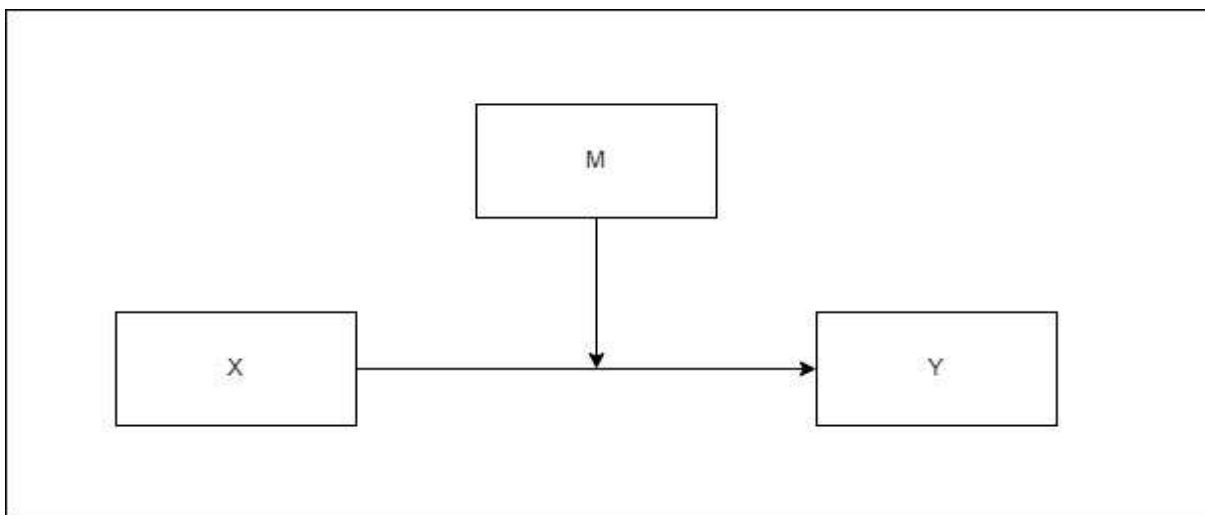
3.5 Additional analysis

3.5.1 Moderation analysis

As discussed above, we have considered the consequences of the effect of CG and firm performance from the perspective of board governance effectiveness, block ownership, national governance, and firm performance. However, our study will explore the moderating impact of board governance effectiveness, block ownership, national governance, and firm performance to enhance our understanding of the interactions between the variables.

In our study, moderation analysis addresses when, under what circumstances, or what magnitude moderating variables impact the relationship between CG and firm performance variables. Figure 3.1 depicts the concept of moderation. In this figure, the arrow linking M (moderating variable) to the effect of X (independent variable) on Y (dependable variable) shows that X's effect on Y depends in some way on M (Hayes & Rockwood, 2017). We use OLS regression analysis to investigate the moderating impact of the three hypotheses in our study using the same set of control variables. We use national governance effectiveness as the moderating variable in the study's first objective. We use leverage as the moderating variable for the second objective to analyse the interaction of block ownership and return on equity. We consider political stability and the absence of violence as the third moderating variable to analyse the interaction of national governance and firm performance.

Figure 3.1 Moderation analysis of corporate governance in ASEAN-6 nations



Source: Author, figure 3.1 shows moderating analysis

M- represents -the moderating variable, X represents -the independent variable, and Y represents the dependent variable.

3.6 Summary

The chapter describes the study sample, the dependent, independent, and control variables, empirical models and endogeneity concerns and robustness checks used. The sample comprises 265 non-financial listed firms from ASEAN-6 countries from 2010-2019. The primary independent variables are the board governance effectiveness index, block ownership dynamics index and national governance index. We use OLS to estimate the relationship between CG and firm performance.

Based on evidence from the literature, we control for firm-specific characteristics such as firm size, business risk, cash conversion cycle, market-to-book value, capital expenditure, cash flow from operations, sales growth, market competition, intangibles, R&D expenses, advertising expenses, cash

holding, default risk, inflation rate and GDP to ascertain the relationship between corporate governance and firm performance.

We use individual explanatory variables with the ROE test, simultaneous quantile regression, and country analysis to validate the baseline results to achieve robustness regression estimates. Additionally, to address a possible dynamic endogeneity problem when investigating the relationship between C.G and firm performance in ASEAN-6 countries, we conduct the two-step least square method (TSLS) and the System Generalised Method of Moments. We also conduct moderation analysis to address when or under what circumstances the causal effect exists or what the magnitude is between CG and firm performance.

Chapter 4

Empirical Results

Chapter 4 presents the study's empirical results. The chapter is structured as follows. Section 4.1 provides the data analysis, which includes the descriptive statistics, a pairwise correlation matrix and a multicollinearity diagnostic of the model variables. Section 4.2 provides the study's main empirical results. Section 4.3 presents robustness results. Section 4.3 reports the endogeneity test results, and Section 4.4 presents the moderating analysis. Section 4.5 summarises the chapter.

4.1 Data analysis

4.1.1 Descriptive statistics

Table 4.1 presents the descriptive statistics of the variables used in the study. Return on equity (ROE) measures the firm performance of the ASEAN-6 non-financial listed firms of the sample. The ROE ranges from a low of 3% to a high of 40%, with a mean value of 15.78% and a median of 14.78%. The ROE mean and median values are over 13%, which means the ASEAN-6 non-financial listed firms have efficiently used their investment financing for growth in the study period 2010-2019. Tobin's Q, which measures the market performance of ASEAN-6 non-financial listed firms over the same period, ranges from a low of 0.50 to a high of 3.71, with a mean of 1.54 and a median of 1.31. The values are greater than 1, suggesting that the market value was higher than the book value for the ASEAN-6 non-financial listed firms from 2010-2019. The BEI ranges from a low of -4.70 to a high of 1.72 for ASEAN-6 non-financial listed firms. The results show that the higher value for board effectiveness leads to improved performance in ASEAN-6 non-financial listed firms. Most studies show that larger boards share more ideas, experience and skills, which improves firm performance (Shukeri et al., 2012; Zakaria et al., 2014; Tulung & Ramdani, 2018). The BOI ranges from a low of -1.75 to a high of 6.11 for ASEAN-6 non-financial listed firms. The 6.11 value for BOI indicates that block ownership is high for ASEAN-6 non-financial listed firms. Higher block ownership yields similar benefits to board effectiveness in providing supervision and monitoring. However, a problem arises when stockholders take personal benefits at the expense of minority shareholders and other stakeholders. The NGI ranges from -2.38 to 4.11 for the studies firms. The high value of the NGI represents better national governance quality of ASEAN-6 non-financial listed firms (Kaufmann et al., 2011). We focus on narrow measures of country-level governance quality, such as government effectiveness, regulatory quality, and the rule of law, which have potential effects on firm performance since they are essential to successful business operations (Ngobo & Fouda, 2012).

Table 4.1 The descriptive statistics of the study variables

Variable	Obs	Mean	Std. Dev.	Median	Min	Max
Return on equity	2385	15.78	12.53	14.86	3	40
Tobin's Q	2385	1.54	0.66	1.31	0.50	3.71
Board effectiveness	2385	0.00	1.12	.36	-4.70	1.72
Block ownership	2385	0.00	1.10	-.21	-1.75	6.11
National governance quality	2385	0.00	1.71	-.18	-2.38	4.11
Firm size	2385	12.72	3.23	12.21	8.26	17.79
Business risk	2385	3.01	2.91	2.21	0.00	16.24
Cash conversion cycle	2385	125.89	179.52	57.67	-20.98	568.99
Market to book value	2385	607.23	2139.74	2.41	0.45	12905.20
Capital expenditure (scaled by total assets)	2385	0.04	0.05	.03	0.00	1.47
Cash flow from operations (in \$M)	2385	0.48	0.95	0.0065	-0.0003	2.88
Sales growth	2385	9.71	17.73	7.35	-36.9	65.20
Market competition	2385	2.10	3.19	1.04	0.00	73.13
Intangibles (in \$millions)	2385	0.298	0.215	0.000087	0.00	5.61
R&D expenses	2385	266.38	1480.23	0.00	0.00	9820.33
Advertising expenses (in \$millions)	2385	0.02878	0.253	0.00	0.00	0.426
Cash holding (in \$millions)	2385	1.74	7.44	0.003	0.00	103.7
Default risk	2385	2.17	3.87	0.00	-5.00	48.52
Inflation rate	2385	118.65	14.69	113.27	100.00	163.52
GDP (in \$billions)	2385	558.00	294.00	407.00	116.00	1120.00

Note: Table 4.1 reports the descriptive statistics of all numerical variables used in the regression analysis and contains the number of observations, mean, minimum, maximum values, median, and standard deviation. The sample consists of an unbalanced panel of 2,385 observations from 2010–2019. All variables are defined in Table 3.2

Firm size measured by the total assets varies significantly among the ASEAN -6 non-financial listed firms over time, with a lower bound of 8.26 and an upper bound of 17.79. Bayyurt (2007) suggests that larger firms with greater market share and resources are more competitive than smaller firms, improving firm performance.

The mean value for the cash conversion cycle for the 265 ASEAN-6 non-financial listed firms is 126 days, which implies that, on average, ASEAN -6 non-financial listed firms took only 126 days to convert their cash on hand into inventory and then convert inventory back into cash. At the same time, the standard deviation value of CCC is 180.

4.1.2 Pairwise correlation matrix

We conducted a correlation analysis of all the variables of the model to test for the study variables. Table 4.2 shows all the explanatory variables have values less than 0.7. For multicollinearity problems, researchers have commonly highlighted values less than 0.8, meaning there is no "multicollinearity" problem among the regressors (Damodar, 2004).

Table 4.2 Pairwise correlation matrix of the study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Return on equity	1.00																			
Tobin's Q	0.50	1.00																		
Board effectiveness	0.05	0.01	1.00																	
Block ownership	-0.08	-0.07	-0.13	1.00																
National governance quality	0.07	0.09	0.17	-0.17	1.00															
Firm size	-0.02	-0.03	-0.02	-0.12	-0.52	1.00														
Business risk	-0.02	-0.11	0.01	0.18	-0.12	-0.03	1.00													
Cash conversion cycle	-0.09	-0.14	-0.13	0.07	0.00	0.10	-0.02	1.00												
Market to book value	0.02	0.04	0.01	0.10	-0.16	-0.27	0.14	-0.08	1.00											
Capital expenditure	0.15	0.19	-0.01	0.02	-0.04	-0.10	0.05	-0.16	-0.03	1.00										
Cash flow from operations	0.12	0.15	0.01	-0.06	-0.37	0.70	-0.02	0.00	-0.10	-0.04	1.00									
Sales growth	0.03	0.01	-0.03	0.07	-0.08	0.05	0.00	0.06	-0.03	0.04	-0.02	1.00								
Market competition	0.05	-0.01	-0.11	-0.10	0.11	0.05	-0.03	-0.05	-0.07	0.06	0.01	-0.02	1.00							
Intangibles	-0.01	-0.01	0.02	0.00	-0.11	0.21	-0.01	-0.02	-0.03	-0.04	0.24	0.02	0.00	1.00						
R&D expenses	0.06	0.06	0.01	-0.03	-0.07	0.11	-0.03	-0.03	-0.02	0.00	0.15	-0.01	0.02	0.03	1.00					
Advertising expenses	0.14	0.47	0.04	-0.05	-0.10	0.14	-0.07	-0.02	-0.02	0.06	0.23	-0.01	0.02	0.04	0.14	1.00				
Cash holding	0.06	-0.05	0.06	-0.08	-0.20	0.35	-0.03	0.04	-0.05	-0.08	0.39	-0.03	-0.03	0.13	0.09	0.00	1.00			
Default risk	0.34	0.50	0.05	0.09	-0.19	0.12	-0.03	-0.08	0.07	0.11	0.23	0.01	0.01	0.04	0.18	0.38	-0.02	1.00		
Inflation rate	-0.19	-0.02	-0.04	-0.06	-0.25	0.44	0.01	0.08	0.10	-0.11	0.43	-0.04	0.01	0.12	0.03	0.06	0.13	-0.06	1.00	
GDP	-0.06	0.06	0.13	0.00	-0.50	0.49	0.11	-0.03	0.26	-0.06	0.49	-0.01	-0.21	0.13	0.09	0.10	0.21	0.17	0.54	1.00

Source: Author's Calculations

In addition, we also conducted variance inflation factors (VIFs) tests of the explanatory variables used in equations (3.3) to (3.5). Table 4.3 shows all VIFs are under the acceptable cut-off points of 10, as recommended by (Chatterjee & Hadi, 2013). This implies that there is no multicollinearity problem in our data.

Table 4.3 Variation Inflation Factors (VIFs) of the study variables

Variable	VIF	1/VIF
Firm size	2.92	0.34
Business risk	1.09	0.92
Cash conversion cycle	1.14	0.87
Market to book value	1.53	0.65
Capital expenditure	1.08	0.93
Cash flow from operations	2.66	0.38
Sales growth	1.03	0.97
Market competition	1.22	0.82
Intangibles	1.13	0.88
R&D expenses	1.07	0.93
Advertising expenses	1.28	0.78
Cash holding	1.43	0.70
Default risk	1.40	0.72
Inflation rate	1.47	0.68
GDP (in USD)	2.72	0.37
Board effectiveness	1.15	0.87
Mean VIF	1.52	.

Source: Author's calculations

4.2 Baseline results of corporate governance and firm performance of ASEAN-6 non-financial listed firms

As discussed in Chapter 3, corporate governance and national governance indexes are composite measures and can reflect the overall quality of a company's governance from the perspective of board effectiveness, block ownership and national governance. The impact of board effectiveness, block ownership and national governance on the firm performance of ASEAN-6 non-financial listed firms are reported in Table 4.4. Columns (1)-(6) provide the results obtained using the OLS estimation

method. The results produced by the OLS estimator show that board effectiveness is positively related to ROE (estimated coefficient $\beta_1 = 0.1205$, t value= 0.0359), which is significant at the 1% level.

Table 4.4 Baseline results of corporate governance and firm performance of ASEAN -6 non-financial listed firms

Explanatory variable	DV: Return on Equity			DV: Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Board effectiveness	0.1205*** (0.0359)			0.0115* (0.0065)		
Block ownership		-0.1060** (0.0462)			-0.0308*** (0.0094)	
National governance quality			0.1171*** (0.0287)			0.0277*** (0.0052)
Firm size	0.1134*** (0.0326)	0.1027*** (0.0324)	0.1693*** (0.0369)	0.0422*** (0.0070)	0.0403*** (0.0068)	0.0563*** (0.0087)
Intangibles	0.0936 (0.2091)	0.1187 (0.2158)	0.1120 (0.2128)	0.0481* (0.0257)	0.0521* (0.0276)	0.0501* (0.0262)
R&D expenses	0.1578 (0.1166)	0.1464 (0.1171)	0.1433 (0.1151)	0.1272** (0.0499)	0.1246** (0.0498)	0.1243** (0.0496)
Advertising expenses	-0.0132 (0.0561)	-0.0053 (0.0564)	-0.0358 (0.0554)	0.3732*** (0.0429)	0.3773*** (0.0430)	0.3691*** (0.0433)
Cash holding	-0.4170*** (0.0710)	-0.4077*** (0.0700)	-0.3793*** (0.0708)	-0.0072 (0.0094)	-0.0084 (0.0094)	-0.0011 (0.0092)
Default risk	-1.3087*** (0.1040)	-1.2714*** (0.1033)	-1.2774*** (0.1027)	-0.3546*** (0.0317)	-0.3477*** (0.0320)	-0.3500*** (0.0320)
Business risk	0.0409 (0.0441)	0.0268 (0.0443)	0.0311 (0.0443)	-0.0288*** (0.0072)	-0.0325*** (0.0074)	-0.0308*** (0.0072)
Cash conversion cycle	-0.0098*** (0.0023)	-0.0097*** (0.0023)	-0.0095*** (0.0023)	-0.0022*** (0.0005)	-0.0022*** (0.0005)	-0.0022*** (0.0005)
Market to book value	0.1088 (0.0703)	0.1225* (0.0698)	0.0717 (0.0736)	0.0164 (0.0156)	0.0170 (0.0152)	0.0052 (0.0164)
Capital expenditure	0.6778** (0.2923)	0.6850** (0.3017)	0.6421** (0.2888)	0.1491*** (0.0540)	0.1514*** (0.0545)	0.1408*** (0.0525)
Cash flow from operations	0.1568*** (0.0281)	0.1566*** (0.0283)	0.1691*** (0.0284)	0.0280*** (0.0056)	0.0277*** (0.0056)	0.0307*** (0.0057)
Sales growth	0.0207 (0.0194)	0.0187 (0.0192)	0.0171 (0.0190)	0.0058*** (0.0022)	0.0052*** (0.0020)	0.0049** (0.0020)
Market competition	0.1239 (0.1087)	0.1814* (0.1084)	0.2346** (0.1108)	-0.0883* (0.0453)	-0.0747* (0.0439)	-0.0644 (0.0430)
Inflation rate	0.1491*** (0.0441)	0.1327*** (0.0437)	0.1211*** (0.0433)	0.0107 (0.0078)	0.0101 (0.0079)	0.0070 (0.0078)
GDP	0.0760** (0.0329)	0.0938*** (0.0325)	0.1082*** (0.0325)	-0.0001 (0.0059)	0.0012 (0.0058)	0.0047 (0.0058)
Constant	0.4009*** (0.0516)	0.2889*** (0.0458)	0.3771*** (0.0474)	0.0118 (0.0090)	-0.0038 (0.0078)	0.0184** (0.0087)
Observations	2,384	2,384	2,384	2,384	2,384	2,384
R-squared	0.2395	0.2375	0.2407	0.4504	0.4529	0.4550
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes

Notes: t-statistics are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels respectively.

In line with the literature, board effectiveness positively impacts firm performance, suggesting that larger boards improve firm performance (Kiel & Nicholson, 2003; Goel, Dhiman, Rana & Srivastava, 2022; Alsadeq, 2023). Consistent with the Resource Dependency Theory, firms with larger boards

have a competitive advantage of diverse knowledge, skills, and easy access to capital for better investment (Hillman, Cannella & Paetzold, 2000; Hillman & Dalziel, 2003; Campbell & Mínguez-Vera, 2008).

All the control variables, except for business risk, show the expected direction and magnitude. In particular, firm size, cash conversion cycle, and cash flow from operations show positive relationships with ROE, indicating that larger firms with higher market share and resources are more competitive than smaller firms, thereby improving firm performance (Love & Klapper, 2002; Bayyurt, 2007; Black et al., 2014). Our results support the literature and show a positive direction of CCC and ROE, indicating a shorter CCC increases a firm's internal operations' efficiency, resulting in higher profitability and higher market value (Gentry et al., 1990; Nobanee, Abdullatif, & AlHajjar, 2011a; Yazdanfar & Öhman, 2014). Jintaviwatwong and Suntraruk (2013) report that operating cash flow is positively associated with future cash flows and stock prices. Further, for robustness, the market-based measure, i.e. Tobin's Q, is used in our study. Interestingly, the results show that board effectiveness is positively related to Tobin's Q (estimated coefficient $\beta_1 = 0.0115$, t value= 0.0065, significant at the 10% level). All the control variables, except for the cash conversion cycle and market competition, show the expected direction. Our results support the literature and show that larger firms are more diversified and are capable of creating value within than smaller firms (Guo & Kga, 2012; Black et al., 2014; Vu, Nguyen, Ho & Vuong, 2019). The positive association between advertising expenses and Tobin's Q not only shows that investors are more attracted to firms' with brand visibility but also helps differentiate them from competitors, which helps improve firm performance (Antoniou et al., 2008; Luo, 2012; Joshi & Hanssens, 2018). The result produced by the OLS estimation shows that ROE and Tobin's Q are positively related to board effectiveness (estimated coefficient $\beta_1 = 0.1205$, t value= 0.0359) significant at the 1% level and (estimated coefficient $\beta_1 = 0.0115$, t value = 0.0065, significant at the 10% level). This result supports our hypothesis (1) that board effectiveness positively influences the firm performance of ASEAN-6 non-financial listed firms.

Table 4.4, Column (2) presents the results of the impact of block ownership on ROE and column (5) presents the results of the effect of block ownership on Tobin's Q. The results from the OLS estimator show that block ownership is negatively related to ROE (estimated coefficient $\beta_2 = -0.1060$, t value= 0.0462, significant at a 5% level). In line with the literature, block ownership negatively impacts firm performance, suggesting that, according to the "exploitation" view, institution shareholders exploit small businesses, which weakens firm performance (McKnight & Weir, 2009; Elyasiani & Jia, 2010; Henry, 2010). All control variables, except the cash conversion cycle, show the expected direction and magnitude. In particular, firm size, cash flow from operations, and capital expenditure positively

correlate with ROE. Our results support the literature and show a positive direction of cash flow from operations helps the short-term survival of firms, thus improving firm performance (Jiang et al., 2006; Turcas, 2011; Black et al., 2014).

Further, for robustness, the market-based measure, i.e., Tobin's Q, is used in our study. The results show that board effectiveness is negatively related to Tobin's Q (estimated coefficient $\beta_2 = -0.0308$, t value= 0.0094 and significant at the 1% level). In line with the previous literature, block ownership negatively impacts firm performance, suggesting that block ownership increases conflicts between shareholders and managers, which reduces firm performance, and that they prioritise their interests rather than firm profitability (Phung & Le, 2013; Iwasaki, Ma & Mizobata, 2022). Table 4.4 also shows the effectiveness of control variables that impact Tobin's Q. All control variables except market competition and cash conversion cycle show the expected direction and magnitude.

The results produced by OLS estimation show that ROE and Tobin's Q are negatively related to block ownership (estimated coefficient $\beta_2 = -0.1060$, t value= 0.0462, significant at the 5% level; and estimated coefficient $\beta_2 = -0.0308$, t value= 0.0094 significant at the 1% levels). This result supports our hypothesis (2) that block ownership negatively influences the firm performance of ASEAN -6 non-financial listed firms.

Table 4.4, Column (3) presents the results of the impact of national governance on ROE, and Column (6) presents the results of the effect of national governance on Tobin's Q. The OLS results show that national governance is positively related to ROE (estimated coefficient $\beta_3 = 0.1171$, t value= 0.0287, significant at the 1% level). In line with the literature, national governance positively impacts firm performance, suggesting that a higher score in the rule of law factor implies more confidence of investors in the legal system (Kaufmann et al., 2011; Fauzi & Locke, 2012; Tunyi et al., 2019). Ngobo and Fouda (2012) show that good governance improves firm performance by achieving the rule of law and reducing corruption. All the control variables, except for the cash conversion cycle, show the expected direction and magnitude. In particular, firm size, cash flow from operations, and capital expenditure positively correlate with ROE. Further, for robustness, the market-based measure, i.e. Tobin's Q, is also used as the dependent variable in our study. The results show that national governance is positively related to Tobin's Q (estimated coefficient $\beta_3 = 0.0277$, t value= 0.0052, significant at the 1% level). The OLS results show that ROE and Tobin's Q are positively related to national governance. This result supports our hypothesis (3) that national governance positively influences the firm performance of ASEAN-6 non-financial listed firms.

Board effectiveness is essential in shaping firm performance and enhancing shareholder value. Enhance governance best practices, strategic oversight, risk management, and proactive stakeholder

engagement are key drivers that lead to sustainable growth, profitability, and a competitive advantage in the market (Hermalin & Weisbach, 2012). Academic research consistently shows a positive correlation between board effectiveness and firm success, highlighting the importance of robust corporate governance in today's rapidly evolving business (Fauzi and Locke, 2012; Shukeri, Shin and Shaari, 2012).

Effective corporate governance promotes a well-structured board comprising independent directors with diverse expertise. By prioritising transparency, accountability, and ethical conduct, corporate boards lay the foundation for sound decision-making and value creation. This approach boosts investor confidence, reduces capital costs, and attracts long-term investors aligned with the company's values and strategic vision. Boards play a pivotal role in providing strategic direction and oversight to management. They actively evaluate business strategies, assess market opportunities, and ensure alignment with shareholder interests. Regular performance evaluations, monitoring key indicators and adapting to market dynamics significantly enhance competitiveness and achieve financial success (Priscilla, 2021). A critical responsibility of boards is effective risk management. By identifying and mitigating financial, operational, regulatory, and reputational risks, boards safeguard the company's assets and ensure business continuity. These risk management practices preserve shareholder value and improve firm performance and resilience in facing challenges. Furthermore, prioritising stakeholder engagement is essential for building trust, strengthening relationships, and fostering brand loyalty among shareholders, customers, employees, and the broader community. Engaged stakeholders support the company's long-term sustainability efforts and enhance its reputation and market standing (Branson & Clarke, 2012; Mallin, 2011).

Block ownership may offer benefits in terms of monitoring and strategic influence, but it also poses significant challenges and risks that can harm firm performance. Understanding these dynamics and implementing appropriate governance mechanisms, such as enhancing transparency, accountability, and board independence, is crucial for mitigating the potential downsides of block ownership. By doing so, firms can maintain investor confidence, promote market efficiency, and foster long-term value creation for shareholders, ultimately contributing to their sustained success and competitiveness in the market. One of the primary concerns with high levels of block ownership is the reduced liquidity and market efficiency it can cause. When a large portion of a company's shares is held in blocks, the trading volume and liquidity of those shares may decrease. Reduced liquidity often leads to wider bid-ask spreads, increased price volatility, and lower market efficiency (De Miguel, Pindado, & De La Torre, 2004; Edmans & Manso, 2011).

Consequently, investors may be discouraged, and the firm may encounter challenges in raising capital at favourable terms, hindering its growth prospects and strategic initiatives. Another

significant issue associated with block ownership is the potential for entrenchment and agency conflicts. Blockholders with substantial ownership stakes may seek to entrench themselves and exert undue influence over corporate decision-making processes. This can create agency conflicts between blockholders and minority shareholders, where decisions may prioritise short-term gains for the block holders at the expense of long-term value creation for all shareholders. Such conflicts can lead to governance challenges, lack of accountability, and reduced transparency, reducing investor trust and confidence in the company's management and operations (Faccio & Lang, 2002; Yermack, 2017).

Additionally, the risk of insider control is heightened in situations of high block ownership. When block holders exert significant influence, there is a risk of management entrenchment, where decisions are made to serve the interests of insiders rather than those of the broader shareholder base. This can result in governance problems, resistance to adopting governance reforms that enhance shareholder rights or promote board independence, and, ultimately, a deterioration in corporate governance practices. Moreover, the presence of large block holders can influence market perception and investor confidence. If investors perceive that block holders prioritise their own interests over broader shareholder interests or concerns arise regarding governance practices, it can lead to reduced investor trust, lower stock valuations, and difficulties in attracting new investors. This, in turn, can negatively impact the firm's access to capital and its ability to fund growth initiatives and strategic projects (Morck, Shleifer, & Vishny, 1990; Gompers, Ishii, & Metrick, 2003).

National governance is the basis of a conducive and stable business environment, significantly influencing how firms operate and perform. Firstly, strong government effectiveness ensures policies and regulations are implemented efficiently and fairly. This creates a predictable regulatory landscape, reducing uncertainties and risks associated with compliance. As a result, firms can focus on their core activities and strategic initiatives, leading to increased productivity and performance. Secondly, a robust rule of law framework provides businesses with legal certainty and safeguards property rights. This fosters investor confidence, attracts domestic and foreign investments, and facilitates smooth business transactions. A reliable legal system also strengthens contract enforcement, lowers transaction costs, and enhances business relationships, all contributing positively to firm performance. Thirdly, regulatory quality plays a vital role in supporting business development. Transparent, consistency, and business-friendly regulations promote competition, innovation, and market efficiency. Well-designed regulations also create a level playing field, discouraging monopolistic practices and benefiting firms across various sectors (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002; Kaufmann, Kraay, & Mastruzzi, 2010).

The economic significance of strong national governance is profound. It creates an enabling environment where businesses can thrive, leading to economic growth, job creation, and sustainable

development. Efforts to promote efficiency, transparency, legal certainty, and fair competition through robust national governance frameworks are crucial for fostering a vibrant and competitive business landscape (Khan & Ssnhadji, 2001). Policymakers and stakeholders must prioritise strengthening national governance to sustainably drive economic growth, enhance firm performance, and create a conducive environment for businesses to contribute to overall national prosperity.

4.3 Robustness tests and endogeneity concerns

In this section, we conduct various robustness tests to check the robustness of the baseline results.

4.3.1 Robustness tests: individual explanatory variable with ROE test

To check the robustness of the results obtained from equations (3.3-3.5) (see Table 4.4), We use individual corporate governance variables as alternatives to the indexed governance variables. Table 4.5 shows the relationship between all the dependent variables (BSIZE, BIND, FD, DUAL, Frgnown, Insider, Iown, GE, RQ, RL) and ROE remains unchanged from equations (3.3-3.5). Specifically, BIND, FD, GE, RQ and RL positively impact ROE. Meanwhile, DUAL, BSIZE, Frgnown, Insider, and Iown negatively impact ROE. The results show the R-squared is 0.24 for all explanatory variables in the OLS estimator. The R^2 value suggests that there is no problem in selecting the independent variables in terms of explanatory power (Schultz, Tan & Walsh, 2010; Wintoki et al., 2012).

Table 4.5, Column (2) presents the results of the impact of board independence on ROE and Column (3) presents the results of gender diversity on ROE. The OLS results show that board independence is positively related to ROE (estimated coefficient $\beta_2 = 0.1294$, t value= 0.0362, significant at the 1% level). In line with the literature, board independence positively impacts firm performance, suggesting that the supervisory value of independent directors is more significant in markets with weak corporate governance (Modest, Aly, & Hussainey, 2018; Mao-Feng, Hodgkinson, & Jaafar, 2019). The coefficient $\beta_2 = 0.1294$ implies that if the proportion of board independence increases by one per cent, ROE, on average, will increase by 0.362 per cent, ceteris paribus. This finding is consistent with Arora and Sharma (2016) and Tulung and Ramdani (2018). Using OLS and GMM, both groups find that ROE positively affects board independence. Our finding is also consistent with prior studies based on ASEAN-6 countries. For instance, Vo and Phan (2013) studied 77 Vietnamese-listed firms from 2006-2011 and report a positive correlation between outside directors and firm performance. Tulung and Ramdani (2018) analysed 26 large Indonesian listed banks from 2010-2014 and find that independent directors provide recommendations during decision-making, thus positively impacting on firm performance.

Table 4.5, Column (3) presents the results of gender diversity (*FD*), which positively influences the firm performance of ASEAN-6 non-financial listed firms (estimated coefficient $\beta_3 = 0.2105, t \text{ value} = 0.0406$, significant at 1% level). In line with the literature, female directors on the board affect a firm's innovation activities and bring social diversity benefits that improve firm performance (Dezsö & Ross, 2012). However, CEO duality and board size (*BFSIZE*) negatively influence the firm performance of ASEAN-6 non-financial listed firms. Table 4.5, Column (1) shows *DUAL* is insignificantly negatively related to ROE (estimated coefficient $\beta_1 = -0.0214, t \text{ value} = 0.0188$). Table 4.5, Column (4) shows *BFSIZE* is significant and negatively impacts ROE (estimated coefficient $\beta_4 = -0.0831, t \text{ value} = 0.0325$), significant at the 5% level. This agrees with the literature, e.g., Shakir (2008) finds that bigger boards are less likely to function effectively, thus negatively impact firm performance. Vo and Phan (2013) assert that board size unfavourably impacts firm performance because of cultural differences compared with international practices.

Institution ownership (*lown*), foreign ownership (*Frgnown*) and insider ownership (*Insider*) negatively influence the firm performance of ASEAN-6 non-financial listed firms. Specifically, insider ownership is insignificant and negatively related to ROE (estimated coefficient $\beta_7 = -0.0774, t \text{ value} = 0.0517$). Institution and foreign ownership significantly negatively impact ROE at the 5% and 1% significance levels. This is consistent with Doukas, Kim and Pantzalis (2000), Weir et al. (2002), Tsai and Gu (2007), and Henry (2010) that when institution shares are in a high proportion, shares are less liquid and are held for longer periods.

Table 4.5, Columns (9)-(11) show government effectiveness (*GE*), the rule of law (*RL*), and regulatory quality (*RQ*) are significant and positively influence the performance of ASEAN-6 non-financial listed firms. Government effectiveness is positively related to ROE (estimated coefficient $\beta_9 = 0.1002, t \text{ value} = 0.0273$, significant at the 1% level). ROE is significantly positively affected by the rule of law and regulatory quality at the 1% level. These findings are consistent with Ngobo and Fouda's (2012) study of Singapore and Vietnam-listed firms.

Table 4.5 Robustness tests: Individual explanatory variables relationship with the ROE

Explanatory variables	Dependent variable: Return on Equity											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
CEO duality	-0.0214 (0.0188)											
Board independence		0.1294*** (0.0362)										
Gender diversity			0.2105*** (0.0406)									
Board size				-0.0831** (0.0325)								
Institutional ownership					-0.0486** (0.0204)							
Foreign ownership						-0.1401*** (0.0450)						
Insider ownership							-0.0774 (0.0517)					
National governance (Additive index)								0.3980*** (0.0867)				
Government effectiveness									0.1002*** (0.0273)			
The rule of law										0.1121*** (0.0268)		
Regulatory quality											0.1375*** (0.0326)	
Firm size	0.1051*** (0.0326)	0.1253*** (0.0333)	0.1116*** (0.0321)	0.0950*** (0.0329)	0.1030*** (0.0325)	0.1069*** (0.0326)	0.1053*** (0.0324)	0.1689*** (0.0369)	0.1633*** (0.0369)	0.1650*** (0.0364)	0.1746*** (0.0371)	
Intangibles	0.1166 (0.2116)	0.1215 (0.2104)	0.0920 (0.2119)	0.1046 (0.2083)	0.1103 (0.2143)	0.1135 (0.2109)	0.1201 (0.2136)	0.1119 (0.2128)	0.1134 (0.2134)	0.1087 (0.2116)	0.1136 (0.2134)	
R&D expenses	0.1540 (0.1174)	0.1753 (0.1248)	0.1521 (0.1118)	0.1513 (0.1154)	0.1520 (0.1188)	0.1573 (0.1178)	0.1476 (0.1163)	0.1436 (0.1152)	0.1466 (0.1152)	0.1453 (0.1164)	0.1386 (0.1141)	
Advertising expenses	-0.0220 (0.0551)	0.0119 (0.0575)	-0.0125 (0.0562)	-0.0299 (0.0555)	-0.0024 (0.0575)	-0.0237 (0.0553)	-0.0188 (0.0550)	-0.0357 (0.0553)	-0.0341 (0.0552)	-0.0342 (0.0554)	-0.0381 (0.0555)	
Cash holding	-0.3953***	-0.4104***	-0.4324***	-0.4007***	-0.4092***	-0.4065***	-0.4004***	-0.3794***	-0.3771***	-0.3862***	-0.3762***	

	(0.0707)	(0.0729)	(0.0715)	(0.0697)	(0.0700)	(0.0710)	(0.0704)	(0.0707)	(0.0708)	(0.0705)	(0.0711)
Default risk	-1.2818***	-1.2875***	-1.3069***	-1.2956***	-1.2667***	-1.2905***	-1.2864***	-1.2773***	-1.2733***	-1.2831***	-1.2769***
	(0.1027)	(0.1027)	(0.1044)	(0.1036)	(0.1038)	(0.1030)	(0.1029)	(0.1027)	(0.1027)	(0.1029)	(0.1026)
Business risk	0.0375	0.0395	0.0407	0.0346	0.0303	0.0395	0.0321	0.0312	0.0313	0.0333	0.0293
	(0.0442)	(0.0443)	(0.0441)	(0.0439)	(0.0442)	(0.0442)	(0.0442)	(0.0443)	(0.0444)	(0.0442)	(0.0443)
Cash conversion cycle	-0.0092***	-0.0092***	-0.0096***	-0.0098***	-0.0097***	-0.0094***	-0.0095***	-0.0095***	-0.0095***	-0.0095***	-0.0095***
	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)
Market to book value	0.1302*	0.1051	0.1068	0.1320*	0.1312*	0.1267*	0.1184*	0.0721	0.0770	0.0780	0.0643
	(0.0699)	(0.0711)	(0.0702)	(0.0696)	(0.0697)	(0.0697)	(0.0700)	(0.0736)	(0.0736)	(0.0729)	(0.0740)
Capital expenditure	0.6735**	0.6767**	0.6699**	0.6685**	0.6971**	0.6815**	0.6709**	0.6419**	0.6444**	0.6354**	0.6501**
	(0.3004)	(0.2998)	(0.2911)	(0.2845)	(0.3060)	(0.3013)	(0.2977)	(0.2889)	(0.2910)	(0.2872)	(0.2893)
Cash flow from operations	0.1586***	0.1686***	0.1517***	0.1572***	0.1586***	0.1591***	0.1562***	0.1691***	0.1681***	0.1702***	0.1678***
	(0.0281)	(0.0284)	(0.0281)	(0.0280)	(0.0283)	(0.0281)	(0.0282)	(0.0284)	(0.0284)	(0.0284)	(0.0284)
Sales growth	0.0210	0.0203	0.0216	0.0188	0.0202	0.0210	0.0191	0.0171	0.0177	0.0169	0.0170
	(0.0196)	(0.0199)	(0.0187)	(0.0194)	(0.0194)	(0.0196)	(0.0193)	(0.0190)	(0.0190)	(0.0190)	(0.0190)
Market competition	0.1401	0.1474	0.1024	0.1287	0.1752	0.1345	0.1583	0.2338**	0.2241**	0.2259**	0.2464**
	(0.1072)	(0.1057)	(0.1102)	(0.1079)	(0.1079)	(0.1070)	(0.1076)	(0.1107)	(0.1104)	(0.1101)	(0.1115)
Inflation rate	0.1249***	0.1446***	0.1376***	0.1656***	0.1367***	0.1276***	0.1265***	0.1206***	0.1197***	0.1133***	0.1318***
	(0.0433)	(0.0439)	(0.0435)	(0.0456)	(0.0438)	(0.0434)	(0.0434)	(0.0433)	(0.0433)	(0.0434)	(0.0434)
GDP	0.1032***	0.0882***	0.0750**	0.1121***	0.0986***	0.0953***	0.0912***	0.1088***	0.1119***	0.1152***	0.0951***
	(0.0332)	(0.0325)	(0.0324)	(0.0332)	(0.0324)	(0.0323)	(0.0325)	(0.0325)	(0.0326)	(0.0326)	(0.0325)
Constant	0.3188***	0.3747***	0.2933***	0.3408***	0.3331***	0.3125***	0.3115***	0.3786***	0.3734***	0.3695***	0.3896***
	(0.0447)	(0.0483)	(0.0440)	(0.0454)	(0.0451)	(0.0444)	(0.0443)	(0.0476)	(0.0478)	(0.0467)	(0.0482)
Observations	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384
R-squared	0.2359	0.2392	0.2447	0.2377	0.2371	0.2363	0.2365	0.2406	0.2396	0.2407	0.2412
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Table 4.5 reports the robustness tests using individual components of the indexed variables as alternative measures for board effectiveness, block holding and national governance in ASEAN- 6 non-financial listed firms (t-statistic in parentheses). ***, **, * indicates significance at the 1%,5%, and 10% levels respectively.

4.3.2 Robustness tests: Simultaneous quantile regression analysis

We use quantile regression analysis to complement the baseline results. Several studies have used simultaneous quantile regression analysis in the corporate governance and the firm performance context as a robustness test (Hewa Wellalage, 2012; Garanina & Muravyev, 2021). The quantile regression results show that the effects of corporate governance differ across the quantiles in condition and firm performance (ROE).

Board Effectiveness and Quantile Regression:- Table 4.6, Columns (2)-(3) show that board effectiveness in quantiles Q50 ($\theta=50$) and Q75 ($\theta=75$) is significant and positively influences the performance of ASEAN-6 non-financial listed firms at the 1% level. However, for Q25 ($\theta=25$), board effectiveness has a positive, insignificant impact on the performance of ASEAN-6 non-financial listed firms.

Block Ownership and Quantile Regression:- Table 4.6, Column (4) shows that block ownership has a significant negative effect that is significant at the 1% level for Q25 (i.e., $\theta=25$) and for the highest quantile Q75 (i.e., $\theta=75$) and the median Q50 (i.e., $\theta=50$) negatively impact in ASEAN-6 non-financial listed firms.

National Governance and Quantile Regression:- Table 4.6, Columns (8)-(9) show that national governance quality in quantiles Q50 and Q75 significantly positively influences the performance of ASEAN-6 non-financial listed firms at the 1% level. However, for Q25, national governance quality has a positive but insignificant impact on the performance of ASEAN-6 non-financial listed firms.

Firm Size and Quantile Regression:- Table 4.6, Columns (1)-(9) show that firm size positively, negatively impacts ROE for the independent variables. Column (3) shows firm size significantly positively impacts firm performance at the 1% level. However, firm size is positive and significant at the median quantile (i.e., 0.5), but at 0.25 quantile, firm size is negatively significant at the 10% level. Column (4) shows firm size significantly, negatively impacts firm performance at the 1% level. Column (5) shows that firm size at the median quantile negatively impacts the firm performance of ASEAN-6 non-financial listed firms. Surprisingly, column (6) shows firm size significantly positively affects firm performance at the 1% level. Column (7) shows that firm size is insignificant but negatively impacts firm performance. However, at the median quantile, firm size is positive but insignificant and at the 0.75 quantile, firm size is significant and negatively influenced at the 1% level. The results indicate that firm size has a positive or negative significant impact on firm performance at

the national governance level and a moderate performance on board effectiveness and block ownership of ASEAN-6 non-financial listed firms.

Cash Holding and Quantile Regression:- Table 4.6, Columns (1)-(9) show that cash holding significantly negatively impacts ROE for the independent variables. Columns (1)-(2) show that cash holding in quantiles 0.25 and 0.50 significantly and negatively influences the performance of ASEAN-6 non-financial listed firms at the 1% level. Columns (4) and (5) show that cash holding significantly negatively influences the performance of ASEAN-6 non-financial listed firms at the 1% level. For the smallest and median quantiles in Table 4.6, Columns (7) and (8), cash holding significantly negatively influences the performance of ASEAN-6 non-financial listed firms at the 1% level. However, in Columns (3), (6), and (9), cash holding is significant, but with a negative sign at the 5% level. The results suggest that cash holding significantly negatively impacts high firm performance on board effectiveness, block ownership and moderate performance of national governance of non-financial listed firms in ASEAN-6.

Cashflow from Operations and Quantile Regression:- Table 4.6, Columns (1)-(9) show that cash flow from operations significantly impacts ROE on the independent variables. Columns (1)-(3) shows that cash flow from operations is positive at the 1% level. Columns (4)-(6) show that cash flow from operations is significantly positive at the 1% level. Columns (7)-(9) show that cash holding significantly influences the performance of ASEAN-6 non-financial listed firms at the 1% level. Habib (2011) examined Australian 7229 listed firm-year observations to find that firms with free cash flow and attractive growth opportunities positively impact stock returns.

Overall, the results in Table 4.6 indicate that corporate governance variables significantly affect the different quantiles of firm performance.

Table 4.6 Robustness tests – Simultaneous quantile regression

Explanatory variables	Dependent variable: Return on equity								
	$\theta=0.25$	$\theta=0.50$	$\theta=0.75$	$\theta=0.25$	$\theta=0.50$	$\theta=0.75$	$\theta=0.25$	$\theta=0.50$	$\theta=0.75$
	Q25	Q50	Q75	Q25	Q50	Q75	Q25	Q50	Q75
Board effectiveness	0.0480 (0.0427)	0.1855*** (0.0475)	0.2035*** (0.0547)						
Block ownership				-0.1077*** (0.0403)	-0.1091 (0.0670)	-0.0779 (0.0979)			
National governance quality							0.0362 (0.0252)	0.0950*** (0.0350)	0.1908*** (0.0515)
Firm size	-0.0693* (0.0392)	0.0032 (0.0620)	0.2186*** (0.0544)	-0.0703*** (0.0266)	-0.0044 (0.0422)	0.1848*** (0.0421)	-0.0576 (0.0450)	0.0374 (0.0541)	0.3043*** (0.0493)
Intangibles	1.0591*** (0.3883)	0.2251 (0.4035)	0.2325* (0.1311)	1.1282*** (0.2902)	0.2666 (0.2450)	0.2193 (0.2502)	1.0280*** (0.3402)	0.1754 (0.2289)	0.2662* (0.1372)
R&D expenses	0.3826 (0.3536)	-0.0161 (0.3144)	0.1484 (0.1290)	0.3585** (0.1428)	-0.0270 (0.2730)	0.1618 (0.1479)	0.3634 (0.3368)	-0.0241 (0.2956)	0.1453 (0.1407)
Advertising expenses	0.2571** (0.1110)	0.0595 (0.0699)	-0.2072*** (0.0629)	0.2926*** (0.0471)	0.0067 (0.0485)	-0.2182*** (0.0711)	0.2523*** (0.0430)	0.0035 (0.0546)	-0.2128*** (0.0470)
Cash holding	-0.4624*** (0.0873)	-0.4544*** (0.0883)	-0.3527** (0.1436)	-0.4851*** (0.0961)	-0.4114*** (0.0535)	-0.2928** (0.1165)	-0.4656*** (0.0986)	-0.4290*** (0.0711)	-0.2634** (0.1157)
Default risk	-1.3217*** (0.1416)	-1.3466*** (0.1224)	-1.4048*** (0.1012)	-1.2817*** (0.1174)	-1.3828*** (0.1126)	-1.3635*** (0.1634)	-1.3072*** (0.1289)	-1.3976*** (0.0996)	-1.3110*** (0.0756)
Business risk	-0.1365*** (0.0442)	0.0035 (0.0665)	0.0687 (0.1009)	-0.1287*** (0.0364)	-0.0187 (0.0882)	0.0959 (0.1093)	-0.1364*** (0.0434)	0.0202 (0.0794)	0.0697 (0.0762)
Cash conversion cycle	-0.0039 (0.0025)	-0.0099*** (0.0035)	-0.0273*** (0.0036)	-0.0031* (0.0018)	-0.0132*** (0.0031)	-0.0238*** (0.0031)	-0.0040 (0.0025)	-0.0127*** (0.0033)	-0.0234*** (0.0036)
Market to book value	0.1082 (0.0858)	0.1554 (0.1209)	0.0756 (0.1323)	0.1317* (0.0754)	0.1620* (0.0838)	0.1670** (0.0803)	0.1031 (0.0948)	0.1179 (0.0782)	0.0185 (0.0970)
Capital expenditure	0.2620 (0.3624)	1.1958* (0.6385)	1.1563** (0.4985)	0.1741 (0.1566)	1.3281*** (0.4140)	1.4922*** (0.4642)	0.2130 (0.2461)	0.9991* (0.5337)	0.9527** (0.4188)
Cash flow from operations	0.1352*** (0.0282)	0.1912*** (0.0458)	0.2569*** (0.0376)	0.1390*** (0.0223)	0.1930*** (0.0297)	0.2642*** (0.0310)	0.1357*** (0.0282)	0.1988*** (0.0304)	0.2791*** (0.0339)
Sales growth	0.0086 (0.0430)	0.0414 (0.0702)	0.1403* (0.0728)	0.0124 (0.0330)	0.0376 (0.0579)	0.0848 (0.0610)	0.0098 (0.0305)	0.0436 (0.0606)	0.0996 (0.0645)
Market competition	0.3294 (0.2231)	0.2700 (0.1991)	-0.0835 (0.2350)	0.3655** (0.1603)	0.1227 (0.1622)	0.0196 (0.1405)	0.3910* (0.2226)	0.1839 (0.2069)	0.0602 (0.1362)

Inflation rate	0.2930*** (0.0284)	0.3005*** (0.0361)	0.1998*** (0.0597)	0.2874*** (0.0314)	0.2840*** (0.0442)	0.1864*** (0.0398)	0.3022*** (0.0540)	0.2657*** (0.0499)	0.1602*** (0.0347)
GDP growth	0.1064*** (0.0237)	0.1024** (0.0403)	0.0667 (0.0427)	0.1247*** (0.0258)	0.1273*** (0.0432)	0.1070*** (0.0350)	0.1193*** (0.0358)	0.1667*** (0.0491)	0.0931*** (0.0297)
Constant	0.1599*** (0.0587)	0.3763*** (0.1080)	0.5794*** (0.0864)	0.1028** (0.0426)	0.2305*** (0.0720)	0.4529*** (0.0865)	0.1532*** (0.0532)	0.3124*** (0.0899)	0.5902*** (0.0766)
Observations	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384	2,384
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table 4.6 reports the results of simultaneous quantile regression of corporate governance and firm performance in Asean-6 non-financial listed firms. t-statistics in parentheses. ***, **and, *indicate significance at the 1%, 5%, and 10% levels, respectively.

4.3.3 Robustness tests: Country analysis

Table 4.7, Column (1), shows that board effectiveness is positively related to ROE (estimated coefficient $\beta_1 = 0.164$, t value= 0.0677 significant at the 5% level) in Indonesia. Columns (3) and (5) indicate that board effectiveness is positively related to ROE in the Philippines and Vietnam at the 5% level. Table 4.7 also shows that the coefficient between board effectiveness and ROE for Malaysia, Singapore and Thailand is significant at the 1% level. In line with the literature, board effectiveness positively impacts firm performance, suggesting that larger firms perform better than smaller ones in Indonesia (Tulung & Ramdani, 2018). Independent directors on the board have less financial distress, thus, they positively contribute to the firm performance of listed firms in Vietnam (Vo & Phan, 2013). Julizaerma and Sori (2012) find that the involvement of female directors on the board is better for financial decisions by listed firms in Malaysia.

Table 4.7 also shows that block ownership is negatively associated with ROE in the ASEAN-6 non-financial listed firms. Column (6) shows the estimated coefficient is significant at the 1% level for Vietnam. Table 4.7 shows Indonesia, Malaysia, the Philippines, Singapore, and Thailand are negatively impacted by block ownership and ROE at the 10% level. In line with the literature, block ownership negatively impacts firm performance, suggesting that, according to the exploitation view, institutional shareholders exploit small businesses, weakening firm performance (Elyasiani & Jia, 2010). Konijn, Kräussl, and Lucas (2011) show that block ownership has an incentive to monitor the agency problem because they gain more benefits than minority shareholders.

Table 4.7 also shows that national governance positively affects ROE in the selected ASEAN-6 non-financial listed firms. Column (1) shows that the estimated coefficient is significant at the 1% level for Indonesia. Table 4.7 also shows a positive coefficient, at the 5% level, between national governance and ROE for Singapore, Thailand and Vietnam. The results align with Nowland's (2008) study that finds that national governance indirectly improves firm performance in five ASEAN countries. Almustafa (2017) finds that national governance is associated with high firm performance in the Middle East.

Table 4.7 Robustness tests – Analysis by country

Explanatory variables	Dependent variable: Return on Equity					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Panel 10A: Board Effectiveness and Return on Equity						
Board effectiveness	0.164** (0.0677)	0.583*** (0.161)	0.121** (0.0608)	0.608*** (0.0885)	0.356*** (0.121)	0.261** (0.131)
Observations	827	284	268	294	619	92
R-squared	0.428	0.616	0.586	0.572	0.331	0.690
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Panel 10B: Block Ownership and Return on Equity						
Block ownership	-0.150* (0.0876)	-0.832* (0.469)	-0.248* (0.131)	-0.501* (0.276)	-0.436* (0.221)	-0.773*** (0.207)
Observations	827	284	268	294	619	92
R-squared	0.426	0.583	0.582	0.579	0.331	0.738
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Panel 10C: National Governance Quality and Return on Equity						
National governance quality	0.309*** (0.0784)	0.403*** (0.120)	0.930* (0.550)	0.249** (0.122)	0.0835** (0.0401)	0.202** (0.0809)
Observations	827	284	268	294	619	92
R-squared	0.423	0.583	0.582	0.571	0.331	0.689
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes

Note: Table 4.7 reports the results of the country analysis of corporate governance and firm performance in ASEAN-6 non-financial listed firms. Return on equity is the dependent variable. The t-statistic are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels, respectively.

Endogeneity concerns

This section addresses possible endogeneity relationships between corporate governance, national governance and firm performance. The endogeneity problem is a matter of concern when analysing the relationship between corporate governance and firm performance (Wintoki et al., 2012; Nguyen, 2015b). According to Wooldridge (2010), endogeneity occurs when governance variables correlate with the error term, which results in inconsistent, biased estimates. Therefore, we conducted a Two-Stage Least Square (TSLS) regression analysis and System Generalised Moments of Methods (SYS-GMM) to address the endogeneity concerns.

Endogeneity concerns: Two-Stage Least Square (TSLS) regression results

Table 4.8 presents the output of the TSLS regression used to estimate the endogeneity relationship between governance and firm performance. ROE measures firm performance in the model and is the endogenous variable in the simultaneous equation model. As explained in the methodology section of Chapter 3, indexes were created to measure board effectiveness, block ownership and national governance. Consistent with the baseline results, Table 4.8, Column (1) shows that board effectiveness is positively, significantly associated with ROE at the 5% level. This finding parallels with Heenetigala (2011), Danoshana and Ravivathani (2019) and Rathnaweera and Deepal (2022), who suggest that a larger board of directors brings expert knowledge to boost the overall performance.

Consistent with the baseline results, Table 4.8, Column (2), shows block ownership is negatively, significantly associated with ROE at a 5% level. This finding supports the results of Singh and Gaur (2009) who indicate that block shareholders have a substantial number of shares and undertake every possible action to maintain their investment value, resulting in decreased firm performance. Table 4.8, Column (3), shows that national governance positively significantly impacts ROE at a 5% level. This finding reflects the results of Filatotchev, Jackson, and Nakajima (2013), who state that national governance mechanisms, such as the legal system, rule of law, and investor protection, may influence corporate governance practices and firm performance. For control variables, capital expenditure and cash flow from operations have a significant positive impact on ROE, whereas cash holding, default risk and cash conversion cycle have a significant negative impact on ROE.

Table 4.8 Endogeneity concerns – Two-Stage least square (TSLS) regression results of corporate governance and non- financial listed firm performance in ASEAN-6 countries

Explanatory variables	Dependent variable: Return on Equity		
	(1)	(2)	(3)
Board effectiveness	0.3652** (0.1606)		
Block ownership		-0.6901** (0.2886)	
National governance quality			0.2258**

			(0.1126)
Firm size	0.0556*	-0.0106	0.1400**
	(0.0324)	(0.0361)	(0.0626)
Intangibles	-0.0874	0.0602	-0.0466
	(0.1622)	(0.1690)	(0.1593)
R&D expenses	0.1142	0.0627	0.0785
	(0.1585)	(0.1664)	(0.1583)
Advertising expenses	0.1174	0.1927	0.0803
	(0.1064)	(0.1198)	(0.1047)
Cash holding	-0.6295***	-0.6030***	-0.5539***
	(0.1012)	(0.1008)	(0.0926)
Default risk	-1.4821***	-1.2747***	-1.4040***
	(0.0968)	(0.1191)	(0.0953)
Business risk	0.0354	-0.0681	0.0105
	(0.0365)	(0.0574)	(0.0383)
Cash conversion cycle	-0.0141***	-0.0146***	-0.0122***
	(0.0024)	(0.0025)	(0.0022)
Market to book value	0.0650	0.0895	-0.0117
	(0.0688)	(0.0686)	(0.0919)
Capital expenditure	0.6297***	0.6631***	0.4908***
	(0.1719)	(0.1795)	(0.1900)
Cash flow from operations	0.1274***	0.1195***	0.1488***
	(0.0309)	(0.0329)	(0.0312)
Sales growth	0.0242	0.0098	0.0201
	(0.0148)	(0.0170)	(0.0151)
Market competition	0.0395	0.3492*	0.2505
	(0.1547)	(0.1809)	(0.1603)
Inflation rate	0.4325***	0.3725***	0.3679***
	(0.0446)	(0.0404)	(0.0389)
GDP	0.0771*	0.1198***	0.1872***
	(0.0408)	(0.0349)	(0.0431)
Constant	0.6095***	0.2175***	0.5076***
	(0.1234)	(0.0570)	(0.0898)
Observations	1,859	1,859	1,859
R-squared	0.2364	0.1632	0.2405
Year dummy	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes
Post estimation results			
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....			
....			

Note: Table 4.8 reports the Two-stage least square (TSLS) regression results of corporate governance and firm performance in ASEAN-6 non-financial listed firms. Return on equity as the dependent variable. The t-statistic parentheses. ***, **, * significance at the 1%, 5% and 10% levels respectively

Endogeneity concerns: System Generalised Moments of Methods (SYS-GMM)

This section presents the results of the specification tests of the SYS-GMM estimator for equations (3.3) to (3.5). The specification tests include the Arrelano Bond test for "autocorrelation" and the Hansen J and Sargan test for overidentifying restrictions to confirm the validity of the study.

Table 4.9 presents the specification tests of the SYS-GMM. The AR (1) reports the z- statistics, which are negative with p-value=0.0000 for equations (3.3) to (3.5), which suggests that serial correlation of the first order in difference AR(1) is present in our study (Arellano & Bond, 1991). The AR (2) results show that the p-values are not greater than 0.1 for all equations (3.3) to (3.5) (p-values are 0.129, 0.610, 0.0951). The results indicate that serial correlation in AR-(2) is present in our study.

Table 4.9 Endogeneity concerns: System GMM results

Explanatory variables	Dependent variable: Return on Equity		
	(1)	(2)	(3)
Lagged return on equity	0.8909*** (0.1126)	0.6196*** (0.0794)	0.8222*** (0.1109)
Board effectiveness	0.2879*** (0.1071)		
Block ownership		-0.5783** (0.2889)	
National governance quality			0.4686** (0.2107)
Firm size	0.3036 (0.2123)	-0.2200 (0.2200)	0.2955 (0.2220)
Intangibles	0.7318 (1.3281)	-0.7590 (1.8461)	1.3831 (1.1830)
R&D expenses	0.1094 (0.2373)	0.0789 (0.3197)	0.2448 (0.3584)
Advertising expenses	0.0830 (0.1363)	0.4696** (0.2102)	-0.0620 (0.1930)
Cash holding	-1.2592 (1.2625)	1.0960 (0.9433)	-0.2268 (1.2603)
Default risk	0.2505 (0.8868)	1.1586 (0.7351)	0.3828 (1.0345)
Business risk	-0.8642*** (0.2400)	0.1906 (0.1545)	-0.5218** (0.2259)
Cash conversion cycle	0.0029 (0.0144)	-0.0301** (0.0138)	-0.0038 (0.0163)
Market to book value	0.2087 (0.6180)	2.0897*** (0.6293)	-1.3532 (0.8973)
Capital expenditure	3.2134** (1.3084)	-1.9209 (1.4454)	2.0381 (1.3420)
Cash flow from operations	0.0597 (0.2900)	-0.1725 (0.2152)	0.1103 (0.3998)
Sales growth	0.3663*** (0.1120)	0.2964*** (0.0689)	0.3637*** (0.1146)
Market competition	-1.7204 (1.2096)	-1.5982 (1.6033)	0.4435 (1.3789)
Inflation rate	-0.1648 (0.1666)	-0.0279 (0.1250)	-0.1191 (0.1369)
GDP	0.0335 (0.2650)	0.3447 (0.2300)	-0.0337 (0.2662)
Observations	1,596	1,596	1,596
Number of ticks	260	260	260
Number of instruments	32	37	32
AR (1)	8.07e-06	9.94e-08	1.31e-05
AR (2)	0.129	0.610	0.0951
AR (3)	0.933	0.481	0.852
Hansen-J	0.478	0.571	0.181
Sargan	0.342	0.242	0.375

Notes: Table 4.9 reports the system GMM regression results of corporate governance and firm performance in ASEAN-6 non-financial listed firms. Return on equity as the dependent variable. The t-statistic is in parentheses. ***, **, * significance at the 1%, 5% and 10% levels, respectively.

The AR-(3) results show p-values greater than 0.1 for equations (3.3) to (3.5) (p-values 0.933, 0.481, 0.852). The results indicate that serial correlation in the AR-(3) is not present in our study. Thus, there is no autocorrelation in the AR(3). Roodman (2009) suggests that lags of the order of two or

higher in levels are valid to use as instruments in the differenced equations. We follow Wintoki et al. (2012) and use 3- and 4-level lags as the instruments in the differentiated equations.

The Hansen-J test results reported in Table 4.9 show that the p-values are greater than 0.1 for equations (3.3) to (3.5) (p-values 0.478, 0.571, 0.181), which suggests that the instruments used in equations (3.3) to (3.5) are exogenous and valid. Roodman (2009) suggests that, in the SYS-GMM, the number of instruments should be smaller than the number of groups (number of listed firms) to ensure the estimator works efficiently. Table 4.9 shows the number of instruments is lower than the number of groups in equations (3.3) to (3.5). Therefore, concern about too many instruments is not an issue in our study. Further, Table 4.9 shows 32, 37 and 32 instruments used in System GMM for equations (3.3) to (3.5), respectively. We used lag of ROE, the rule of law and regulatory quality and a combination of the same variables, 2-5 lags.

Table 4.9 presents the empirical results based on the system GMM. Table 9, Column (1), shows that board effectiveness is positively related to ROE, suggesting high board effectiveness improves firm performance. The results are consistent with prior research by Yasser, Entebang, and Mansor (2011) and Velnampy and Pratheepkanth (2013). The results align with agency theory, which proposes that larger boards enhance the board's monitoring of managers to maximise shareholder wealth (Kiel & Nicholson, 2003). Table 4.9, Column (2), shows block ownership is negatively related to ROE, suggesting institution shareholders work with managers and exploit small businesses, thus reducing firm value. The results are consistent with prior research by Henry (2010) and Elyasiani and Jia (2010). Pound (1988) suggests institution shareholders may impact the conflict of interest between shareholders and managers. Table 4.9, Column (3), indicates that national governance positively impacts ROE, suggesting that practising good governance improves firm performance. The results align with Ngobo and Fouda's (2012) study that good governance reduces transaction and production costs and enhances firm performance. In relation to the other control variables, the results show that the coefficient of sales growth is significant and positively related to the firm performance. This is consistent with the literature that growth enables firms to attract new investors, enhancing firm performance (King & Santor, 2008). Firm size is positively related to board effectiveness and national governance, suggesting that larger firms with larger market share are more competitive than smaller firms (Bayyurt, 2007), and larger firms possibly exhibit economies of scale (Black et al., 2014).

4.4 Additional analysis: Moderating effect analysis

Table 4.10 reports the regression results related to hypothesis (1) that board effectiveness positively affects firm performance. The coefficients of the performance measures are positive and statistically significant at the 5% level. The results support the argument that women directors on the board increase monitoring skills and improve firm performance (Rose, 2007). Shukeri et al. (2012) posit that

larger boards bring managerial skills that enhance firm performance. Table 4.10, Column (1), shows the finding of the moderation effect of national governance quality. Column (1) in Table 4.10 shows the interaction coefficient term (Board effectiveness x National governance quality) is positive and significant at the 1% level, indicating that national governance quality positively affects board effectiveness and firm performance. Ngobo and Fouda (2012) find that good country governance improves firm performance by achieving the rule of law and reducing corruption. Areneke and Kimani (2019) and Hanousek and Kochanova (2016) suggest that firms with high national governance quality perform comparatively better than those with low national governance quality. Firm size shows a significant positive association with firm performance, which confirms that larger firms benefit from the diverse market and improve firm performance (Black et al., 2014).

Table 4.10 Moderating analysis of corporate governance and non- financial listed firm performance in ASEAN-6 countries

Explanatory variables	Dependent variable: Return on Equity		
	(1)	(2)	(3)
Board effectiveness	0.0872** (0.0442)		
National governance quality	0.0136* (0.0070)		0.1220*** (0.0327)
Board effectiveness x National governance quality	0.1100*** (0.0342)		
Block ownership		-0.1076** (0.0463)	
Leverage		-0.4176** (0.1939)	
Block ownership x leverage.		-0.2662*** (0.0836)	
Political stability			0.2563* (0.1435)
National governance quality x Political stability			0.3173*** (0.0914)
Firm size	0.1750*** (0.0363)	0.0987*** (0.0326)	0.1493*** (0.0369)
Intangibles	0.1060 (0.2118)	0.1265 (0.2168)	0.1101 (0.2081)
R&D expenses	0.1425 (0.1168)	0.1472 (0.1169)	0.1456 (0.1186)
Advertising expenses	-0.0358 (0.0558)	-0.0039 (0.0564)	-0.0404 (0.0565)
Cash holding	-0.3795*** (0.0711)	-0.4038*** (0.0698)	-0.4276*** (0.0740)
Default risk	-1.2981*** (0.1026)	-1.2614*** (0.1038)	-1.3561*** (0.1070)
Business risk	0.0341 (0.0443)	0.0243 (0.0444)	0.0265 (0.0439)
Cash conversion cycle	-0.0097*** (0.0023)	-0.0098*** (0.0023)	-0.0089*** (0.0023)
Market to book value	0.0633 (0.0736)	0.1308* (0.0698)	0.1295* (0.0740)
Capital expenditure	0.6591** (0.2871)	0.6854** (0.3018)	0.6340** (0.3070)
Cash flow from operations	0.1668*** (0.0283)	0.1560*** (0.0283)	0.1745*** (0.0285)
Sales growth	0.0173	0.0181	0.0169

	(0.0191)	(0.0191)	(0.0186)
Market competition	0.2131*	0.1760	0.2583**
	(0.1112)	(0.1085)	(0.1212)
Inflation rate	0.0875*	0.1348***	0.1061**
	(0.0467)	(0.0437)	(0.0488)
GDP	0.1105***	0.0927***	0.0522
	(0.0324)	(0.0325)	(0.0354)
Constant	0.3713***	0.2888***	0.1978***
	(0.0464)	(0.0457)	(0.0650)
Observations	2,384	2,384	2,384
R-squared	0.2441	0.2381	0.2499
Year dummy	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes

Notes: Table 4.10 reports the results of the moderating analysis of corporate governance and firm performance in ASEAN-6 non-financial listed firms. Return on equity as the dependent variable. t-statistic in parentheses. ***, **, * significant at the 1%, 5%, and 10% levels respectively

Table 4.10 presents the regression results related to hypothesis (2) that block ownership negatively affects firm performance. The coefficients of the performance measures are negative and statistically significant at the 5% level. The results align with the argument that block owners neither have the time nor expertise to act as managers, reducing firm performance (Doukas et al., 2000). Fama and Jensen (1985) argue that the entrenchment effect of insider ownership has a negative impact on firm performance because insider ownership creates incentives for controlling shareholders that may reduce the wealth of minority shareholders. Table 4.10, Column(2) shows the moderating effect of leverage. The interaction coefficient term (Block ownership x leverage) is negative and significant at the 1% level, indicating that leverage negatively affects block ownership and firm performance (Azeem & Kouser, 2013).

Table 4.10 also reports the regression results related to hypothesis (3) that national governance positively affects firm performance. The coefficients are positive and statistically significant at the 1% level for the performance measures. The results support the argument that country governance reduces the risk of financial markets being detrimental to economic growth (Bruno & Claessens, 2010). Kaufmann et al. (2011) explain that a higher level of the rule of law implies more confidence in the legal system. Additionally, Table 4.10, Column (3), presents the findings on the moderation effect of political stability. The interaction term (national governance quality x political stability) coefficient is positive and significant at the 1% level, indicating that political stability positively affects national governance quality and firm performance. For the control variables, the results in Table 4.10 show that firm size, market competition, and cash flow from operations have significant positive relationships with firm performance (ROE).

4.5 Summary

Chapter 4 answers the study's three research questions. Using OLS estimation, especially the system GMM method, allows us to address the dynamic endogeneity issue of the corporate governance-firm

performance relationship. We show that corporate and national governance impact the firm performance of ASEAN-6 non-financial listed firms measured by ROE and Tobin's Q.

Specifically, the board effectiveness and national governance indexes positively impact the ROE of ASEAN-6 non-financial listed firms. However, the block ownership index negatively impacts the ROE of ASEAN-6 non-financial listed firms.

Board independence and gender diversity positively influence the ROE of ASEAN-6 non-financial listed firms. Conversely, board size and duality are board effectiveness variables that negatively impact the ROE of ASEAN-6 non-financial listed firms.

With respect to the impact of block ownership on the firm performance of ASEAN-6 non-financial listed firms, we find that institution ownership, foreign ownership, and insider ownership are negatively associated with firm performance.

We also find a positive relationship between governance effectiveness, the rule of law and regulatory quality, and the performance of ASEAN-6 non-financial listed firms. To check the robustness of the empirical results, we use an alternative measure for profitability (Tobin's Q), simultaneous quantile regression analysis and country analysis. The robustness checks produce results consistent with the baseline relationships between corporate governance, national governance and firm performance.

Chapter 5

Conclusion

Chapter 5 concludes the study. Section 5.1 summarises the main results on the relationship between CG and the performance of ASEAN-6 non-financial listed firms. Section 5.2 discusses the study's main contributions to the CG literature. Section 5.3 presents the implications of the study for policymakers and ASEAN-6 non-financial listed firms. Section 5.4 discusses the study's limitations and makes recommendations for future research and section 5.5 summarises the chapter.

5.1 Main findings of the study

This study examined the relationship between CG, including board effectiveness, block ownership and national governance and the performance of ASEAN-6 non-financial listed firms. The study uses board independence, board size, gender diversity, CEO duality, insider ownership, foreign ownership, institutional ownership, government effectiveness, regulatory quality, and the rule of law and analyses their effects on firm performance as measured by ROE and Tobin's Q. We use control variables to estimate the causal effects of the treatment variable on an outcome. As a result, the treatment variable cannot be endogenous, otherwise the results would be biased or other more suitable research designs should be applied (such as instrumental variables and discontinuity of the design) (Hünermund & Louw, 2020). Using 2,385 firm-year observations of ASEAN-6 non-financial listed firms, we use ordinary least square (OLS) to examine CG and firm performance. We also use the SYS-GMM estimator to control the endogeneity. The results show that board effectiveness and national governance positively affect firm performance, and block ownership negatively impacts firm performance.

5.1.1 The relationship between board effectiveness and firm performance

The study's first objective was to investigate the impact of four major board effectiveness variables: board size, board independence, board gender diversity, and CEO duality, on the performance of ASEAN-6 non-financial listed firms.

For CEO duality, in some countries, such as the U.S. (Guillet et al., 2013), Brazil (Amaral-Baptista et al., 2011), and China (Yu, 2008), CEO duality increases performance. However, having the roles combined is not an efficient CG mechanism for ASEAN-6 non-financial listed firms. For instance, Abdullah (2004) document that If one person holds both leadership and control, it reduces the monitoring, weakens internal CG and adversely impacts firm performance. Ramdani and Witteloostuijn (2010) find that duality creates conflicting leadership and unity of command that

adversely impact firm performance. The results on the impact of gender diversity on firm performance show that a higher percentage of female directors on the board positively influences the performance of ASEAN-6 non-financial listed firms. This result is similar to that of Vo and Phan (2013), Chotiyaputta and Yoon (2018) and Duppati et al. (2020). Female directors on the board (Arora, 2021) can deal with complex situations strategically, which enhances firm performance. Specifically, gender diversity may increase firm value and improve managerial tasks (Campbell & Mínguez-Vera, 2008; Dezsö & Ross, 2012). However, women's presence on the board destroys shareholder value and negatively affects the performance of Indonesian non-financial listed firms (Darmadi, 2011).

Board independence positively impacts the performance of ASEAN-6 non-financial listed firms. Vo and Phan (2013) report that having independent directors on the board means firm faces less financial distress. Tulung and Ramdani (2018) suggest that independent directors provide recommendations during the decision-making that improve firm performance. Although in some countries such as the U.S. (O'Connell & Cramer, 2010) and India (Jackling & Johl, 2009), increased independence adversely impacts firm performance, independent directors bring investment opportunities and can improve the performance of Chinese listed firms (Liu et al., 2015).

5.1.2 Relationship between block ownership and firm performance

The study's objective two was to investigate the impact of three block ownership variables: institution ownership, foreign ownership, and insider ownership, on the performance of ASEAN-6 non-financial listed firms. Our results show a significant negative relationship between institution shareholders and the performance of ASEAN-6 non-financial listed firms. The negative relationship between institution shareholders and the performance of ASEAN-6 non-financial listed firms is similar to that of Elyasiani and Jia (2010). This result supports the "exploitation" view that institution shareholders work with managers, exploit small businesses, and weaken firm performance. The impact of foreign shareholding on firm performance shows that a higher percentage of foreign ownership negatively impacts firm performance. This result is similar to Phung and Le's (2013) study that shows the foreign ownership level in Vietnamese listed firms is low compared with other types of ownership and cannot effectively monitor Vietnam firms.

Similarly, consistent with Fazlzadeh, Hendi and Mahboubi (2011), we find insider shareholders negatively impact firm performance. This is because when an insider investor holds a large portion of a company's shares, the managers will be overwhelmed by their power. Instead of working for the benefit of all shareholders, the managers work to satisfy a particular insider shareholder who owns most of the firm's shares, which results in negative firm performance. This result is also similar to

Shah and Hussain (2012) because the agency problem arises with increased insider shareholding, making the firm less competitive for the non-owners (Hossain, Sultan & Ahmed, 2021).

5.1.3 Relationship between national governance and firm performance

The study's third objective was to investigate the impact of three national governance variables: including government effectiveness, regulatory quality, and the rule of law, on the performance of ASEAN-6 non-financial listed firms.

The results show that national governance variables positively affect the ASEAN-6 non-financial listed firms. Like the findings of Nowland (2008), the rule of law is a national governance strategy to discipline managers and improve firm performance. Ngobo and Fouda (2012) find that national governance reduces uncertainty, transaction and research costs, and improves firm performance. Our results are similar to this in Sobel (2003), that good national governance leads to better access to share capital because lending is related to better regulation and democracy in the market. Sobel (2003) explains that regulatory stability matters when influencing investor behaviour and lending in the global capital market correlates with better regulatory quality. Van Essen et al. (2013) find that legal rights and creditor protection positively impact performance during a crisis. Like our results, Almustafa (2017) finds that higher national governance quality, such as the rule of law, government effectiveness and regulatory quality, are linked to high performance because the results align with the institutional theory that national governance quality improves performance and reduces risk for investments.

5.2 Contributions of the study to the governance literature

The present study contributes to the CG literature in several ways.

This study is among the first to comprehensively examine the relationships between board effectiveness, block ownership, national governance and performance of non-financial listed firms in ASEAN-6 countries. Although several studies have examined a single aspect of CG mechanisms, we apply CG indexes to assess the quality and effect of overall CG on firm performance from the perspective of board effectiveness, block ownership, and national governance of ASEAN-6 non-financial listed firms. The CG indexes are calculated using Principal Component Analysis (PCA) following Okoth (2017), but with slightly different variables, board effectiveness index (board size, board independence, board gender diversity, board duality), block ownership index (institutional ownership, foreign ownership, insider ownership), and national governance index (government effectiveness, the rule of law and regulatory quality). As a result, first, we calculated the indexes to determine the effectiveness of board effectiveness, block ownership and national governance and the performance of ASEAN-6 non-financial listed firms. Second, we comprehensively explain the

relationships between CG and firm performance in ASEAN-6 countries. Third, the evidence of ASEAN-6 countries' indexes applies to emerging economies with similar legal frameworks and investor protection. Most previous CG studies were conducted in developed countries (i.e., the U.K., the U.S. and Europe). Developed countries exhibit differences in macro and micro economic environments compared with ASEAN countries, including ownership structure, stock market development, and culture. Therefore, examining the findings and implications in the context of ASEAN-6 non-financial listed firms is necessary. This helps answer whether the "one size fits all" CG mechanism exists across ASEAN countries with different environments. Before this study, a limited number of studies have investigated the relationship between CG and firm performance in ASEAN countries. To the best of our knowledge, no previous study has comprehensively examined the relationship between board effectiveness, block ownership and national governance and the performance of ASEAN-6 non-financial listed firms. This study, therefore, enriches the CG literature and expands our understanding of the effects of CG features on the performance of ASEAN-6 non-financial listed firms.

Secondly, using the SYS-GMM method to address the endogeneity problem produces robust results of the impact of board effectiveness, block ownership, and national governance on the firm performance of ASEAN-6 non-financial listed firms. This is important because we use the OLS estimation method to produce the baseline results. As suggested by Wintoki et al. (2012), because of the dynamic nature of CG-firm performance, studies that fail to control dynamic endogeneity when past performance influences current performance and governance can produce biased, inconsistent results. To overcome the dynamic endogeneity problem, Wintoki et al. (2012) suggest that the SYS-GMM estimator is the most appropriate method in CG research. We use TSLS to address the endogeneity problem, which is a generalization of the Instrumental Variable (IV) estimator. The main idea of TSLS is to use exogenous instrumental variables to eliminate the correlation effects between endogenous variables and the error term (Hill et al., 2011). To the best of our knowledge, this is the first study that uses TSLS and the SYS-GMM estimator to address the endogeneity problem to study the firm performance of ASEAN-6 countries.

We develop a model to investigate the moderating effect of board governance effectiveness, block ownership, national governance, and firm performance to enhance our understanding of the interactions between the variables. Consistent with the hypothesis regarding the moderating effect of national governance quality on the relationship between board effectiveness and firm performance, our results show that board effectiveness is positively related to firm performance measured by ROE when national governance quality is high. Similarly, we find that the moderating effect of leverage negatively affects the relationship between block ownership and firm performance measured by ROE. The results also indicate that the national governance quality is positively related to firm performance measured by ROE when political stability is high. This addresses how the

moderating variables' magnitude impacts the relationship between corporate governance and the firm performance variables. To the best of our knowledge, this is the first study to analyse the moderating impact of board effectiveness, block ownership, and national governance on the performance of ASEAN-6 non-financial listed firms. Previous studies often ignored important moderating variables, such as national governance quality, leverage, and political stability, that can significantly influence the effectiveness of CG.

5.3 Practical implications

Our study identifies several practical implications.

The results on the impact of board effectiveness on performance in ASEAN-6 non-financial listed firms show that good governance practices positively impact firm performance. The number of directors on the board (board size) is an important factor that may impact firm performance. However, no optimal size is documented in the literature (Nath et al., 2015). Previous CG literature suggests various arguments regarding the board size. Several researchers suggest that a bigger board size benefits a firm for many reasons (such as better monitoring, bringing independence, and solving agency problems) (Fauzi & Locke, 2012; Darko et al., 2016). However, other arguments suggest that bigger boards bring “free-rider” issues and ineffectiveness in decision-making. Our results show that board size is negatively associated with the performance of ASEAN-6 non-financial listed firms, which suggests that bigger boards are less likely to function effectively (Shakir, 2008), and communication delays may impact decision-making (Guest, 2009). Hence, ASEAN-6 countries should decide on the appropriate number of directors on boards because the number of directors impacts firm performance. Similarly, the results show that the separation of the CEO and the chair on the board leads to better performance of ASEAN-6 non-financial listed firms, which means ASEAN-6 countries should consider separating the roles. Ramdani and Witteloostuijn (2010) find that dual roles create conflict in leadership and unity in command, negatively affecting firm performance. Abdullah (2004) suggests that if one person holds both leadership and control, it reduces the monitoring effectiveness and weakens internal CG negatively, which impacts firm performance.

The results also show that a higher proportion of independent directors positively impacts the performance of ASEAN-6 non-financial listed firms. This implies that ASEAN -6 non-financial listed firms should follow the governance practice of appointing independent or non-executive directors. Independent directors bring their expertise and skills that enhance the board’s decision-making, thus improving firm performance. CG literature shows that board gender diversity positively impacts the performance of ASEAN-6 non-financial listed firms (Julizaerma & Sori, 2012; Vo & Phan, 2013; Duppati et al., 2020). This suggests that appointing female members to the board should be encouraged to enhance gender diversity and deal strategically with complex situations in ASEAN

firms (Julizaerma & Sori, 2012). Chotiyaputta and Yoon (2018) document that a higher female ratio on boards helps mitigate agency problems. Our results suggest that ASEAN-6 countries should follow countries like Norway, Germany and Spain, and appoint mandatory quotas for female directors on boards (Yang et al., 2019). For example, unlike in Norway and other European countries, where female director quotas are mandated, government interference in gender diversity in Asian countries is less apparent because of the male-dominant nature of Asian societies (Hampel-Milagrosa et al., 2010). ASEAN -6 non-financial listed firms should follow Western countries and appoint more female directors to firms' boards.

Our results show that block ownership negatively impacts the performance of ASEAN-6 non-financial listed firms. This means that block ownership should not be considered an effective CG mechanism to mitigate the agency problem and protect minority shareholders and other stakeholders. Since block owners negatively impact firm performance, instead of increasing equity with the hope of obtaining better performance, shareholders, in general, and block owners, in particular, should be involved in the day-to-day firm operations, or, in some cases, they should engage directly with the management team (Hoang, 2017). Block owners' involvement can reduce the information gap between shareholders and insider managers, thus mitigating information asymmetry. Some supporting policies should be imposed to improve CG efficiency (e.g., proactively measure, manage, and report on the factors that are most material to the firms; timely information disclosure; implement the best solution rather than routine practice; and be transparent) and market transparency needs to be improved to alleviate the information asymmetry; so that these monitoring mechanisms enhance outside stakeholders. In addition, managerial labour markets should be developed so that firms can benefit from professional managers and other benefits from the modern corporation model (e.g., raising additional capital and unlimited lifetime) (Allen, Brealey & Myers, 2011).

The findings on the impact of national governance quality on the performance of ASEAN-6 non-financial listed firms show that good practices (i.e., government effectiveness, the rule of law, and regulation quality) positively enhance firm performance. Filatotchev et al. (2013) suggest that the efficiency of the CG mechanism depends on institutional characteristics such as government effectiveness, the rule of law, and regulatory quality. Therefore, policymakers should adopt good national governance mechanisms with comprehensive reforms in the related regulation framework, legal system, and administrative procedures to protect shareholders and other stakeholders to enhance investor protection. It is strongly recommended that policymakers and regulatory legislators make more efforts to enhance national governance systems because they positively impact firm performance (Almustafa, 2017).

5.4 Limitations and recommendations for future studies

We focus on the impact of four common attributes of board structure: board size, board independence, gender diversity, and CEO duality, on the performance of ASEAN-6 non-financial listed firms. However, other board structural attributes not included in our study framework could influence firm performance. For instance, boards with different age group representation greatly benefit organizations. Cheng, Chan and Leung (2010) argue that young managers tend not to accept the status quo but are willing to accept new ideas and take risks. Boards of directors are responsible for increasing shareholders' wealth, so shareholders should ensure that the board is staffed with educated, competent members who will maximize shareholder's investments (Ujunwa, 2012).

We examine three common features of block ownership (institution ownership, foreign ownership, and insider ownership) on the performance of ASEAN-6 non-financial listed firms. However, state and family ownership is popular in some ASEAN countries (e.g., Vietnam and Thailand). Since our study includes countries that have both state and family ownership, future studies may include the impact of state and family ownership on firm performance in ASEAN-6 countries.

For the national governance-firm performance relationship, we explore the impact of only government effectiveness, regulatory quality, and the rule of law on the performance of ASEAN-6 non-financial listed firms. Consistent with Globerman and Shapiro (2002), we find that the six national indicators are highly correlated for use in a single regression; thus, three individual indexes (government effectiveness, regulatory quality and the rule of law) were combined with the factor analysis method to construct an aggregate proxy for the national governance index. However, control of corruption, voice and accountability, political stability and absence of violence could influence firm performance but were not included in our study. Future studies may explore the impact of these types of national governance variables on firm performance in ASEAN-6 non-financial listed firms.

We explore the relationship between board structure, block ownership and national governance on the performance of ASEAN-6 non-financial listed firms. However, several other governance mechanisms may interest future researchers. For example, board remuneration and board meeting frequency may improve director interactions, operational discussions and engagement with the decision-making, thus enhancing a firm's operating performance (Al-Daoud, Saidin & Abidin, 2016), could be considered in future research to explore the relationship between corporate governance and firm performance.

We use data from 2010 to 2019 of ASEAN-6 non-financial listed firms. A longer study period would probably facilitate a more inclusively analysis of the relationships between corporate governance,

national governance and firm performance. Hence, future studies may cover extend a longer study period to analyse the impact of corporate governance and national governance variables on the firm performance of ASEAN-6 non-financial listed firms.

The scope of this study explores the relationship between corporate governance, national governance and the performance of ASEAN-6 non-financial listed firms. Thus, our results are valid within ASEAN-6 non-financial listed firms. Because of small, and inactive stock exchanges, Brunei, Cambodia, Myanmar and Laos were not considered for our sample. including the other ASEAN countries when data are available.

This study uses ROE (a financial measure) and Tobin's Q (as a market- Future studies could consider based) to measure the performance of ASEAN-6 non-financial listed firms. Although ROE and Tobin's Q are recognized as commonly used measurements of firm performance in such research areas (Hussain et al., 2019; Tsafack & Guo, 2021), like any other measures, Tobin's Q does not reflect this study's investigations perfectly (Nguyen, Locke & Reddy, 2014). Therefore, future research may consider other measures like stock returns, returns and revenues per employee ratios when data are available.

COVID-19 pandemic rapidly spread worldwide and seriously affected all economies, especially the performance of listed firms. The pandemic disrupted global economies and corporations differently due differences in governmental measures, including stay-at-home orders, mobility restrictions, social distancing policies and community lockdowns. The impact of the pandemic is well-documented in the labour market (Mayhew & Anand, 2020), the stock market (Ashraf, 2020), the financial sector (Baicu, Gârdan, Gârdan, & Epuran, 2020), SMEs (Ratten, 2020), business modelling (Yahaya, Senin, Yusuf, Khatib, & Sabo, 2020), and other sectors (Abate, Christidis, & Purwanto, 2020; Song, Yeon, & Lee, 2021). The pandemic has impacted all industries across the globe, but the impact on some sectors was more severe than others. For example, demand in specific sectors, such as supermarkets increased during the pandemic's early weeks, while other sectors like hospitality and airlines have collapsed (Pantano, Pizzi, Scarpi, & Dennis, 2020). This impact has cost trillions of dollars as the global recession was rising, and companies needed to adopt different financial strategies and policies, operational flexibility, and technology design to confront the detrimental impact of COVID-19 pandemic (Foss, 2021).

We focus on the impact of four common attributes of board structure—board size, board independence, gender diversity, and CEO duality—on the performance of ASEAN-6 non-financial listed firms. However, other board structural attributes are not included in our study could also influence firm performance. For instance, boards with diverse age group representation can greatly benefit organizations. Cheng, Chan, and Leung (2010) argue that young managers tend not to accept

the status quo but are willing to embrace new ideas and take risks. Since boards of directors are responsible for increasing shareholders' wealth, shareholders should ensure that the board is staffed with educated, competent members who will maximize their investments (Ujunwa, 2012). Therefore, future research could include other corporate governance attributes that may influence firm performance in ASEAN-6 non-financial listed firms.

We use data from 2010 to 2019 to explore the performance of ASEAN-6 non-financial listed firms. A longer study period would likely facilitate a more inclusive analysis of the relationships between corporate governance, national governance, and firm performance. Therefore, future studies should extend the study period to analyze the impact of corporate governance and national governance variables on the firm performance of ASEAN-6 non-financial listed firms before and after economic crises.

The scope of this study explores the relationship between corporate governance, national governance, and the performance of ASEAN-6 non-financial listed firms. Thus, our results are valid within the context of ASEAN-6 non-financial listed firms. Due to small and inactive stock exchanges, Brunei, Cambodia, Myanmar, and Laos were not considered for our sample. Therefore, future studies could include Brunei, Cambodia, Myanmar, and Laos when data becomes available.

5.5 Summary

This chapter summarises the findings, contributions, implications, and limitations of the study. We investigated the relationship between board effectiveness, block ownership and national governance and the performance of ASEAN-6 non-financial listed firms. We find that board size and CEO duality are negatively associated with firm performance and board independence and gender diversity positively impact the performance of ASEAN-6 non-financial listed firms. Institution ownership, foreign ownership, and insider ownership negatively affect the performance of ASEAN-6 non-financial listed firms. The results also show that government effectiveness, regulatory quality, and the rule of law positively impact firm performance, suggesting that firms with better national governance exhibit higher performance.

The study contributes to the literature in several ways: we use the most robust techniques (TSLS and SYS-GMM) to control for endogeneity problems. Our study broadens understanding of the impacts of board effectiveness, block ownership and national governance on the performance of non-financial listed firms in ASEAN-6 countries by establishing indexes and providing more comprehensive estimation outcomes. We also provide several implications for policymakers and non-financial listed firms in ASEAN-6 countries.

Like any study, this study has some limitations. (e.g., a shorter study period because of data unavailability, Brunei, Cambodia, Myanmar and Laos are excluded from the sample because of small and inactive stock exchanges). Future research could extend the study period and include the remaining ASEAN countries.

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