Stockholm School of Economics
Department of Accounting and Financial Management
Bachelor Thesis, May 2021

Board Tenure: To Limit or Not To Limit?

A cross-country study investigating the relationship between board tenure, firm performance, and the role of corruption

Gustaf de la Motte
24324@student.hhs.se

Jakob Hägglund
24353@student.hhs.se

Abstract

This study investigates the relationship between board tenure and firm performance and how this relationship may be affected by corruption. We use two multivariable regression models on a dataset consisting of firm-year observations from 39 selected countries in different economic and political development stages during 2011-2019. In line with previous literature, our results indicate a positive relationship between board tenure and firm performance until a certain threshold, after which the costs of entrenchment outweigh the positive marginal effect of board learning. Moreover, our results indicate that for firms operating in more corrupt environments, there is a less positive relationship between board tenure length and firm performance than for firms operating in less corrupt environments. To the best of our knowledge, the role of corruption in the relationship between board tenure and firm performance has not been previously investigated. We believe that our study contributes to an increased understanding of how a firm's board of directors can be constructed to improve its effectiveness and how it is affected by the environment in which a firm operates.

Acknowledgements

First and foremost, we would like to extend our gratitude to our tutor Milda Tylaite, Assistant Professor at Stockholm School of Economics, for her invaluable input and guidance throughout the development of this thesis. We also greatly appreciate the final remarks from friends and family.

Tutor: Milda Tylaite
Keywords: Board Tenure, Corporate Governance, Corruption, Firm Performance

Table of Contents

1. Introduction

1.1 Background

According to the Institute of Directors (2018), the board's role is *"[...] to ensure the company's prosperity by collectively directing the company's affairs while meeting the appropriate interests of its shareholders and relevant stakeholders"*. Observing a company's governance structure – *"the system of rules, principles and processes by which a company is directed and controlled"* – the board of directors constitutes the intermediary between the chief executive officer ("CEO") and the shareholders. Consequently, the board seeks to align the interests of all stakeholders, including employees, suppliers, communities, and shareholders – where the alignment constitutes an important corporate governance mechanism. Given that the board is accountable for a company's ultimate success or demise, it is imperative to ensure that the elected board can effectively fulfil its responsibilities.

There is an increasing discussion regarding the optimal length of the board tenure among governance experts and investors (Jones Day, 2014). On the one hand, with board tenure comes increased expertise, experience, and stability. On the other hand, a longer tenure may increase entrenchment risk and impede director independence (Libit and Freier, 2015). Conversely, a shorter board tenure can be both beneficial and value-destroying. The discussion highlights that an inexperienced board might partially mitigate governance problems stemming from entrenchment – such as a decline in board oversight quality – but at the potential cost of lower efficiency (Pozen and Hamacher, 2015). The reasoning of the latter being that the level of understanding of the company's business and its history might be more limited for a shorter-tenured board. Naturally, these conflicting aspects make the optimal tenure a difficult yet important question for stakeholders.

In recent years, there has been a global movement towards implementing more restrictive corporate governance codes and term limits for directors. To exemplify, an independent regulator in the United Kingdom ("U.K.") known as The Financial Reporting Council ("FRC") released their new U.K. 2018 Corporate Governance Code in July 2018. The code stresses the importance of reflecting upon the tenure length of the board and regular board refreshment. More specifically, the FRC states that the maximal length of tenure should not be more than nine years for non-executive chair members, which includes any previous time spent as a non-executive director (Deloitte, 2018). Today, the French corporate governance codes are even stricter than their British counterparts, stipulating that directors can no longer qualify as independent if their tenure exceeds six years (The French

Commercial Code, 2020). After six years, they are assumed to be related to management and therefore no longer meet the criteria needed to be an independent director (McFarland, 2013). In contrast to developed countries, some countries are still at an early stage in compliance practices and implementing governance reforms. In Brazil, the prevalence of corruption scandals – such as the State apparatus getting entangled with corporate affairs – has led to movements requesting extensive reforms in corporate governance (O'Kelley et al., 2018; Papadopoulos, 2018). In India, the boards of listed companies must adhere to several regulations according to the Companies Act implemented in 2013. Notably, at least half the board's directors must be independent, and an independent director cannot hold office for more than two consecutive terms of five years. After these terms, the director can be re-appointed by the company but does not qualify as independent (Parekh et al., 2020).

1.2 Purpose

In light of the discussion regarding the optimal length of board tenures and the global movement towards stricter governance codes, we aim to examine the theoretical foundation of the debate. The purpose of our analysis is to conduct a cross-country study between 39 countries, examining the relationship between the tenure of the board and firm performance between 2011-2019. Furthermore, we aim to compare the results from countries with different Corruption Perceptions Index ("CPI") scores developed by the non-governmental organisation Transparency International. The reasoning behind the inclusion of CPI scores – where a lower score indicates higher perceived corruption – is to examine whether the effects of a longer-tenured board might differ in an environment where corruption is more prevalent compared to an environment with less corruption since corruption might have implications for the actions of corporate management. Moreover, our ambition is to contribute to the debate regarding general guidelines and legal term limits regarding board tenure – in developing and developed countries. The study aims to address the following research question: *What is the relationship between board tenure and firm performance, and how is it affected by corruption?*

1.3 Contribution

Our study aims to contribute to the current research and literature by providing a further understanding of the relationship between board tenure and firm performance. Our research also aims to provide a new understanding of this relationship, as we try to establish how the

effect board tenure length has on firm performance can vary depending on corruption level in the country where the company is based in terms of its country of exchange. To the best of our knowledge, no previous research has investigated if corruption levels affect the link between board tenure and firm performance, which is why we intend to address this gap in the academic literature.

1.4 Delimitation

The study is limited to publicly traded companies in 39 selected countries – seen in Appendix V – between 2011 and 2019. We also include partial data from 2010 due to the usage of some lagged variables in our models. Our focus on publicly listed firms is mainly due to data availability since the data needed for us to be able to conduct our research generally is difficult to obtain from private companies, especially for firms operating in developing countries. We select the 39 countries on two criteria; CPI score and data availability. To compare differing corruption levels, we need firm-year observations from countries with differing CPI scores. However, we also need to ensure the data availability of the selected countries and years are sufficient for our intended study.

1.5 Disposition

The study is divided into seven sections in total. The second section presents an overview of the previous literature and theories, covering the relationship between board tenure and firm performance and the relationship between corporate governance and corruption. This theoretical foundation then leads into a presentation of our developed and articulated hypotheses, also included in section two. In section three, we begin by presenting our variables, followed by describing our applied models, the data collection process, and the construction of our data sample. In section four, we cover the empirical data, including descriptive statistics, and address correlation and multicollinearity. Section five presents the regression results and the subsequent analysis of these, followed by a presentation of our fixed effects and robustness tests. In section six, we provide a broader discussion of these findings, our dependent variables, and issues related to endogeneity. Lastly, section seven summarises any eventual contributions, addresses the limitations of our study, and provides suggestions for future research.

2. Literature Review and Theory

This section presents an overview of the previous literature and theories on which we base our study – highlighting the consistencies and discrepancies in said literature. Subsequently, we connect the theoretical framework with the empirical findings, establishing a foundation on which we develop our hypotheses – presented in section 2.2.

2.1 Description of Literature Review

Regarding the relationship between board tenure and firm performance, several studies have been made on the subject. However, while some find the association to be linear, others find it to be nonlinear. Thus, there are apparent discrepancies in the empirical findings in the current state of the literature. Previous studies often investigate the relationship by studying a particular country rather than through cross-country studies, which leaves any eventual cross-country variations partially uninvestigated. There is also a lack of studies investigating the possible effect corruption levels can have on how board tenure affects firm performance.

2.1.1 The Relationship Between Board Tenure and Firm Performance

As found by most studies on board tenure and its effect on firm performance, there are certain benefits of longer board tenures (Fiegener et al., 1996). In Fiegener et al.'s (ibid.) study, they did not find any data that supported their hypothesis that there would be a curvilinear (inverted U-shaped) relationship between the average tenure length of a boards' outside directors and firm performance. Instead, they find that *"[...] the average length of tenure of a company's outside directors will be positively related to financial performance"* (p.91). They claim that this result supports the argument that when directors have longer tenures, the accumulated learning and the increased power and influence enable them to be more effective in corporate governance while also being less susceptible to peer pressure.

When Fiegener et al. (1996) discuss the fact that they did not see diminishing returns of any significance for these advantages, i.e., accumulated learning and increased power and influence, they argue the nature of how board interactions work may be the reason. Like most teams, boards need time to develop well-functioning group dynamics that create a productive environment for the complex, strategic decisions that a board has to make (Wiersema and Bantel, 1992). Since board meetings are both formal and infrequent, creating such a group dynamic may take even longer than it would have in most other settings (Fiegener et al., 1996). Aligning with the aforementioned, Singh and Harianto (1989) highlight the difficulties

a director may face at the beginning of his tenure in becoming familiar with the company's resources, technologies, operations, and culture. Their reasoning is further supported by Bacon and Brown (1975), arguing that it may take up to five years of experience for a director to become effective.

In contrast, several – and more recent – studies investigate the association between board tenure and firm performance and find that the association is nonlinear (Vafeas, 2003; McIntyre et al., 2007; Chamberlain, 2010). In line with this, Huang and Hilary (2014) – covering S&P 1500 firms in the United States ("U.S.") between 1998-2010 – find that the relationship between board tenure and firm performance takes the form of a curvilinear (inverted U-shaped) formation. Vafeas (2003) argues that the eventual negative effect on firm performance stems from the fact that long-term directors are more likely to befriend and less likely to monitor managers, creating a scenario in which corporate governance is weakened. Thus, consequently affecting the quality of monitoring and ultimately firm performance. Chamberlain (2010) further argues that while there are clear benefits of board members having longer tenures, such as accumulated learning and power effect, too long tenures brings a risk of board members being too entrenched in the company and thereby becoming difficult to dislodge if the firm's performance starts to deteriorate. Hwang and Kim (2009) and Fracassi and Tate (2012) also argue that an increased familiarity between the board and management can impede board independence, which negatively affects firm value.

Similarly, Huang and Hilary's (2014) findings highlight a positive relationship between board tenure and firm performance until a certain threshold, after which entrenchment dominates. This is argued to be associated with a decline in board oversight quality and an increased tendency towards value-destroying activities. In other words, they find that the costs of entrenchment outweigh the benefits – in terms of expertise, experience, and stability – in longer-tenured boards. Therefore, further emphasising that finding the optimal length of a board tenure often constitutes a trade-off between knowledge accumulation and board independence.

2.1.2 Corporate Governance and Corruption

While prior studies in Western countries provide evidence of the negative effect of longer board tenures, such patterns may not hold in countries with higher corruption levels – where the importance of avoiding short-termism might be higher. As Keig et al. (2015) and Lopatta et al. (2017) argue, there is an increased likelihood that short-term opportunistic managers engage in unlawful and corrupt behaviour. Wijayati et al. (2016), investigating the

relationship between corporate governance and corruption in Southeast Asia, argue that both managers and shareholders can gain from such behaviour in the short term. The reasoning behind this is that if company sales are positively affected, managers will, in turn, receive higher compensation. However, as Wu (2005) states, this positive relationship may not hold over the long term as such behaviour holds hidden costs that could turn into future risks. Highlighted examples include lawsuits, fines, and damaged reputation, which would impede a firm's governance ability and ultimately destroy firm value (Keig et al., 2015; Kochanova, 2012; Seker and Yang, 2012).

In line with this, Salter (2012) claims that short-termism invites institutional corruption. Even though the behaviour may not be unlawful, Salter argues that such behaviour may still undermine *"[...] a company's legitimate processes and core values, weakening its capacity to achieve espoused goals and eroding public trust"* (p.2). As stated by Malagueño et al. (2010), Islam et al. (2015), and Blanc et al. (2017), the harm of corruption – such as a decreased competitive advantage and number of opportunities – is amplified in developing countries, given their more limited resources and capabilities compared to developed countries. This is supported by Adegboye et al. (2019), examining the impact of corruption on firm performance of 135 listed companies in Nigeria between 2013-2017, who find that corruption is negatively related to both market value and ROA.

Meanwhile, Ferris et al. (2021) – investigating firms based in 12 Eastern European and Central European countries – find that while corruption harms a country's economy, it improves profitability for the corrupt firms. They argue that the latter is one of the key reasons why corruption persists. This theory is, in turn, referred to as the Corporate Advantage Hypothesis.

Earlier studies made by Uzun et al. (2004) and Farber (2004) on the U.S. market find empirical evidence indicating that firms engaging in fraudulent behaviour, in general, have a significantly lower percentage of outside directors and a lower percentage of independent outside directors. Farber (ibid.) also find that fraudulent firms have a higher percentage of CEO-chairman duality. Based on these studies, Wijayati et al. (2016) argue that a more robust governance structure inside and around the board of directors can help the company anticipate and stop opportunistic and fraudulent behaviour such as bribery and corruption in the management of the firm. Even though the management themselves can benefit from these actions, this kind of behaviour often brings a higher level of potential risks which eventually can work against shareholders' interests. For example, it may hinder the firm's growth (Kochanova, 2012) and damage its reputation (Eccles and Serafeim, 2013; Karpoff et al.,

2013). As argued by Wijayati et al. (2016), governance frameworks that can regulate and enforce the board's function are necessary to assess the boards' quality correctly. Therefore, to reduce the prevalence of bribery and corruption, reliable control mechanisms – such as improving the board of directors' competency, roles, and responsibilities – are needed. By doing this, there are more substantial incentives for the board to prioritise both short-term performance and long-term performance.

2.1.3 The Institutional Developments

As described in section 1.1, countries worldwide are moving towards more restrictive corporate governance codes and term limits for directors. However, they are doing so by varying degrees. In some countries, recommendations are emphasised while a specific number of years is proposed in others – after which a director is no longer seen as being independent (McFarland, 2013). To exemplify, The Financial Reporting Council ("FRC") released their new U.K. 2018 Corporate Governance Code in July 2018. The new code, which applies for periods commencing on or after 1 January 2019, emphasises the importance of companies considering their current tenure length of the board and for regular board refreshment. Notably, the code states that the maximal length of tenure should not exceed nine years (Deloitte, 2018). As of today, the French Commercial Code states that the maximal length of a director's term should not exceed six years (The French Commercial Code, 2020). The reasoning behind the tenure limit is that a director after six years is assumed to be related to management and therefore no longer meets the criteria needed to be an independent director (McFarland, 2013). In the U.S., the guidelines regarding tenure limitations are scarce. More specifically, in 2018, only 5% of the boards in the S&P 500 were found to have implemented specific term limits for non-executive directors, ranging from nine to 20 years – with a majority having a specified term limit at 15 years.

Furthermore, the average tenure of independent directors within the S&P 500 Index is 8.1 years, compared to 8.6 years in 2013 (Spencer Stuart, 2018). Even though regulatory intervention is relatively weak in the U.S., market forces are stressing board refreshments (Papadopoulos, 2018). In line with this, and as discussed by Papadopoulos (ibid.), markets such as Brazil and South Korea have been under pressure from investors and the general public following corruption scandals, consequently escalating to board overhauls and thus increasing their weight of new director appointees.

2.2 Theoretical Framework and Hypotheses Development

According to Fiegener et al. (1996), a longer-tenured board can use their accumulated learning and increased power and influence to improve a firm's financial performance. Supporting this argument, a director may face several difficulties in the early days of their tenure, as shown by Singh and Harianto (1989). These challenges include becoming familiar with the company's resources, technologies, operations, and culture (Singh and Harianto, ibid.). In connection with this, Bacon and Brown (1975) find that it may take up to five years for a director to become effective in their role.

As argued by the Stewardship Theory, managers can be deemed trustworthy and characterised as good stewards of the assets they have control over (Donaldson and Davis, 1991). If given a choice between self-serving behaviour and pro-organisational behaviour, a steward will prioritise the latter. In other words, the theory argues that directors and managers – classified as stewards – can be seen as the protectors of the shareholders, whose intrinsic motivation lies in maximising shareholder value (Davis et al., 1997). Thus, according to the Stewardship Theory, the increased knowledge, power, and influence a board can amass are inherently positive since the theory suggests that directors' intrinsic motivation lies in maximising shareholder value – and, in turn, firm performance.

This aligns with the Upper Echelons Theory, built on the premise that managerial characteristics – including experiences, values, and personalities – influence strategic choices and organisational outcomes (Hambrick and Mason, 1984). As argued by Hambrick and Mason (ibid.), the background behind this stems from the fact that characteristics of top management teams ("TMT") have a direct impact on the interpretation of certain situations, and therefore on decision-making. Over time, the Upper Echelons Theory has increasingly included boards besides TMT (Huse, 2007). The reasoning is that the board has direct control over the suggested implementations by TMT (Smith and Umans, 2013).

Correspondingly, Huang and Hilary (2014) also find that the average length of board tenure is positively related to financial performance. However – following Vafeas (2003), McIntyre et al. (2007), and Chamberlain (2010) – they find that this relationship only holds until a certain threshold. Afterwards, the costs of entrenchment – such as a decline in board oversight quality and an increased tendency towards value-destroying activities – outweigh the benefits. This dilemma is further supported by Libit and Freier (2015), who argue that a longer tenure might increase the risk of entrenchment and impede director independence.

According to the Management Entrenchment Theory, managers and directors often try to consolidate their position in the company by making themselves irreplaceable and making a takeover of the company difficult. As management successively entrenches itself in the company, e.g., through longer tenures, this affects the corporation's governance to favour the managers. When a manager owns a minor stake in a company, market discipline might force a manager towards acting value maximising for the company (Demsetz, 1983). However, this changes if a manager is entrenched deeply enough to own a more major stake. If a manager obtains enough voting power or influence, he can, in practice, guarantee his position at the firm and the remuneration it entails. Followingly, his incentives to fulfil his duties as a director by monitoring the firm's management and ensuring reliable control mechanisms are weakened (Vafeas, 2003). With that level of security, he can then engage in value-destroying actions without having to worry about repercussions (Morck et al., 1988).

Consequently, we predict the following directional hypothesis:

H1: There is a curvilinear (inverted U-shaped) relationship between the average tenure length of the board and firm performance.

Historically, academic literature has mainly used the Agency Theory to explain the corruption phenomenon (Groenendijk, 1997). One of the most conventional definitions of corruption is "the abuse of entrusted power for private gain". Based on this definition, where "abuse" and "entrusted power" are highlighted, corruption can be seen as a principal-agent problem. The reasoning is that "entrusted power" implies an agency relationship, whereas "abuse" implies that the agent is not acting in the principal's best interest. It is therefore imperative to understand the importance of the principal-agent framework for the practice of anti-corruption. Jensen and Meckling (1976) state that managers will only make optimal decisions if there are existing incentive mechanisms and the agent is monitored from shareholders' perspective.

As an alternative, theories such as the Collective Action Theory (Olson, 1965) have emerged, providing a possible explanation to the fact that despite anti-corruption efforts and laws, corruption persists as a significant issue in many countries. The logic behind Olson's theory is that a group should not be treated as an entity by itself but rather as an assembly of rational individuals (Czech, 2016). The theory implies that when understanding corruption, some of the most critical factors are trust and how individuals perceive others and their actions (United Nations Office on Drugs and Crime, 2021). It also implies that systemic corruption is a collective problem since people can rationalise their corrupt actions by

comparing themselves to what they believe other people would do in their situation (Persson et al., 2012). Therefore, the principal-agent model might not be effective in more corrupt environments since people will not act based on anti-corrupt norms. The Collective Action Theory thereby implies that the potential positive effects longer tenures can have on an individual's propensity for corruption can be negated if the corporate environment as a whole is perceived as corrupt by the individual. Thus, it can be argued that in a more corrupt environment, the eventual positive effect of longer-tenured boards on firm performance should be lowered.

However, as aforementioned, it is argued that there is a greater risk that short-term opportunistic managers engage in unlawful and corrupt behaviour (Keig et al., 2015; Lopatta et al., 2017). In line with this, Salter (2012) states that short-termism invites institutional corruption. While this behaviour can benefit the management of a firm in the shorter term, it holds hidden costs that can lead to future risks – ultimately impeding a firm's governance ability and destroying firm value (Kochanova, 2012; Eccles and Serafeim, 2013; Karpoff et al., 2013). Based on this and the phenomenon of corruption being interpreted as a principal-agent problem, we argue that longer-tenured boards – despite arguably being exposed to a greater risk of entrenchment and impeded independence – are more valuable for firms in environments where corruption is more prevalent than in less corrupt environments.

Thus, we propose the following directional hypothesis:

H2: There is a more positive relationship between the average tenure length of the board and firm performance in countries with a lower CPI score than in countries with a higher CPI score.

3. Methodology

In this section, we begin by describing our variables and the applied models, followed by explaining our data collection process and the construction of our data sample.

3.1 Variables

3.1.1 Dependent Variables

Return on Average Assets ("ROAA"): ROAA is calculated as Net Income divided by Average Total Assets and is measured in book value. The ratio is used as a measure of firm performance, indicating how profitable a company is relative to its average total assets. The

background behind the choice of ROAA as a measure of firm performance is explained in section 6.2.

Tobin's Q ("TQ"): Tobin's Q is calculated as Market Value of Equity, divided by Book Value of Equity, and was first introduced in 1969 by James Tobin. Since, the ratio has been used to explain a wide variety of phenomena, including as a proxy for firm performance (Tobin, 1969; Tobin, 1978; Chen and Lee, 1995). Several different methods have been proposed to calculate the Q ratio. However, these approaches tend to derive very similar values (Perfect and Wiles, 1994; Chung and Stephen, 1994). The background behind the choice of Tobin's Q as a measure of firm performance is explained in section 6.2.

3.1.2 Main Independent Variables

Average Board Tenure ("AvgBT"): The variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition is: "Average numbers of years each board member has been on the board".

Average Board Tenure Squared ("AvgBT²"): The Average Board Tenure Squared is calculated by squaring the Average Board Tenure and is fundamental in order to be able to test for any eventual curvilinearity in the relationship between Average Board Tenure and the dependent variables described under section 3.1.1.

Corruption Perceptions Index Tier × Average Board Tenure ("CPI Tier × AvgBT"): An interaction variable constructed from an original set of variables, namely Average Board Tenure and CPI Tier, which aims to capture either all of the interaction present between the two variables or some part of it. The interaction variable is included to measure how the corruption level of a country affects the relationship between Average Board Tenure and firm performance.

3.1.3 Control Variables

Board Gender Diversity ("BGD"): The firm-level control variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "The percentage of female directors of the board". Previous studies have shown that board gender diversity affects firm performance (Brahma et al., 2020), and it is an important control variable to include in our regressions.

Board Size ("BS"): The firm-level control variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "The total number of board members at the end of the fiscal year". Board Size is a commonly used

control variable when studying board characteristics and their impact on firm performance (Huang and Hilary, 2014).

Independent Board Members ("IBM"): The firm-level control variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "The percentage of independent board members as reported by the company". Like board size, the proportion of independent board members is a commonly used variable when studying board characteristics and firm performance (Huang and Hilary, 2014).

CEO-Chairman Separation ("CCS"): The firm-level control variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "Does the CEO simultaneously chair the board or has the chairman of the board been the CEO of the company?". Converted into a dummy variable where the value of 1 represents CEO-Chairman duality, and 0 represents CEO-Chairman separation – extracted from the Thomson Reuters Refinitiv Eikon database. CEO-Chairman separation has been shown to affect firm performance in several ways (Brickley et al., 1997) and is therefore included as a control variable.

Average Total Assets ("AvgTA"): The firm-level control variable is calculated as Total Assets for both the fiscal year and the previous fiscal year, both measured in book value, divided by two. The Total Assets for the fiscal year and the previous fiscal year are extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "Represents the total assets of a company". Aligned with Huang and Hilary (2014), assets as a proxy for firm size are included as a control variable in our regressions. However, to account for the skewness of the eventual year-to-year imbalances and the overall distribution in total assets, being aware that our sample includes large listed companies, we use the natural logarithm of Average Total Assets in our regressions.

Company Market Capitalisation ("MCap"): The firm-level control variable is extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the variable is as follows: "Company Market Capitalisation represents the sum of market value for all relevant issue-level share types. The issue-level market value is calculated by multiplying the requested shares type by the latest close price. This item supports Default, Free Float and Outstanding shares types". Aligned with Livnat et al. (2021), company market capitalisation is a common control variable as a proxy for firm performance. To account for the skewness of the distribution in Company Market Capitalisation, being aware that our sample includes large listed companies, we use the natural logarithm of Company Market Capitalisation in our regressions.

Leverage ("Lev"): The firm-level control variable represents a firm's debt-to-equity ratio and is used to measure a firm's leverage. It is calculated as Total Liabilities divided by Total Assets minus Total Liabilities, measured in book value and extracted from the Thomson Reuters Refinitiv Eikon database. Leverage is related to firm performance (Ibhagui et al., 2018) and is therefore included as a control variable in our regressions.

Revenue Growth ("RevG"): The firm-level control variable is calculated as Revenue FY divided by Revenue FY-1, both of which has been extracted from the Thomson Reuters Refinitiv Eikon database, whose definition of the respective variable is as follows: "Represents revenue from all of a company's operating activities after deducting any sales adjustments and their equivalents". Revenue growth is a commonly used variable in studies on firm performance and is used as a control variable by Huang and Hilary (2014).

Gross Domestic Product per Capita ("GDPC"): The country-level control variable represents a country's GDP divided by its total population. To account for the skewness of the distribution in GDP per capita, being aware that a majority of our selected countries are at a later stage of economic and political development, we use the natural logarithm of GDP per Capita in our regressions. The GDP per capita levels for our 39 selected countries are extracted from The World Bank. GDP per capita is a reasonable control variable to include in this type of cross-country study because of its potential effect on firm performance (Ji et al., 2020).

Corruption Perceptions Index Tier ("CPI Tier"): When evaluating the corruption levels of individual countries, a commonly used measurement is the CPI. The CPI score for each country, during each year, has been extracted from the non-governmental organisation Transparency International – which has published the index annually since 1995 – ranking the perceived level of public sector corruption in 180 countries and territories around the world. To evaluate the countries' corruption levels included in their reports, Transparency International gathers information from business people and experts. It then aggregates data from a minimum of three separate sources of information for each country. This information is then standardised and used to give each country a score on a scale from 0 ("highly corrupt") to 100 ("very clean") (Transparency International, 2021). As stated by many previous studies (Wu, 2005; Keig et al., 2015; Kochanova, 2012; Seker and Yang, 2012; Adegboye et al., 2019; Ferris et al., 2021), corruption can affect firm performance, and we have therefore included this as a control variable. After extracting the CPI scores of our 39 selected countries during 2011-2020, we categorised the firm-year observations by dividing them into three tiers, depending on their respective CPI score. The scores are divided into the

following tiers: $Tier_1$ (Bottom tier): 0-69 (up to the 25th percentile), $Tier_2$ (Mid-tier): 70-76 (between the 25th and the 75th percentile), and $Tier_3$ (Top tier): 77-100 (75th percentile and above).

3.2 Description of Applied Models

3.2.1 Multiple Regression Models

We use four separate multiple regression analyses with different fixed effects for the regressions in this thesis. The reasoning behind using multiple regression analyses is that they allow us to assess the relationship between our chosen dependent variable and several predictor variables (Petchko, 2018), which is valuable given the models we want to use. This type of regression model also allows us to create interaction variables, which we use to test our second hypothesis.

3.2.2 Model for First Hypothesis

The model for our first hypothesis, that there is a curvilinear (inverted U-shaped) relationship between the average tenure length of the board and firm performance – of which the latter is measured through both TQ and ROAA – is as follows:

$$TQ_{ikt} = \beta_0 + \beta_1 AvgBT_{ikt} + \beta_2 (AvgBT)^2_{ikt} + \beta_3 BGD_{ikt} + \beta_4 BS_{ikt} + \beta_5 CCS_{ikt} + \beta_6 IBM_{ikt} + \beta_7 Lev_{ikt} + \beta_8 RevG_{ikt} + \beta_9 Log(AvgTA)_{ikt} + \beta_{10} Log(MCap)_{ikt} + \beta_{11} Log(GDPC)_{ikt} + FE_{ikt} + \varepsilon_{ikt}$$

$$ROAA_{ikt} = \beta_0 + \beta_1 AvgBT_{ikt} + \beta_2 (AvgBT)^2_{ikt} + \beta_3 BGD_{ikt} + \beta_4 BS_{ikt} + \beta_5 CCS_{ikt} + \beta_6 IBM_{ikt} + \beta_7 Lev_{ikt} + \beta_8 RevG_{ikt} + \beta_9 Log(AvgTA)_{ikt} + \beta_{10} Log(MCap)_{ikt} + \beta_{11} Log(GDPC)_{ikt} + FE_{ikt} + \varepsilon_{ikt}$$

Where TQ and ROAA are the respective dependent variables and Average Board Tenure and Average Board Tenure Squared are the leading independent variables, where the latter independent variable is included to test for any eventual curvilinearity between Average Board Tenure and the dependent variable. Regarding the control variables, Board Size is the number of directors on the board, Board Gender Diversity is the proportion of female directors on the board, CEO-Chairman Separation is a dummy variable indicating whether the CEO of the company also is the chairman of the board, Independent Board Members is the proportion of independent board members, Leverage is the debt-to-equity ratio, Revenue Growth is the proportional change in revenue between the last two fiscal years, Log(Average

Total Assets) is the natural logarithm of the average total assets of the last two fiscal years, Log(Gross Domestic Product per Capita) is the natural logarithm of the Gross Domestic Product per Capita, and Log(Company Market Capitalisation) is the natural logarithm of the company's market capitalisation. Moreover, we control for country, firm, and year fixed effects. The subscripts *i*, *k*, and *t* correspond to firm *i* in country *k* in year *t* – depending on the combination of fixed effects taken into consideration.

3.2.3 Model for Second Hypothesis

The model for our second hypothesis, that there is a more positive relationship between board tenure and firm performance – of which the latter is measured through both TQ and ROAA – in countries with a lower CPI score than in countries with a higher CPI score, is as follows:

$$TQ_{ikt} = \beta_0 + \beta_1 CPI\ Tier_{ikt} + \beta_2 AvgBT_{ikt} + \beta_{3-5}(CPI\ Tier_j \times AvgBT)_{ikt} + \beta_6 BGD_{ikt} + \beta_7 BS_{ikt} + \beta_8 CCS_{ikt} + \beta_9 IBM_{ikt} + \beta_{10} Lev_{ikt} + \beta_{11} RevG_{ikt} + \beta_{12} Log(AvgTA)_{ikt} + \beta_{13} Log(MCap)_{ikt} + \beta_{14} Log(GDPC)_{ikt} + FE_{ikt} + \varepsilon_{ikt}$$

$$ROAA_{ikt} = \beta_0 + \beta_1 CPI\ Tier_{ikt} + \beta_2 AvgBT_{ikt} + \beta_{3-5}(CPI\ Tier_j \times AvgBT)_{ikt} + \beta_6 BGD_{ikt} + \beta_7 BS_{ikt} + \beta_8 CCS_{ikt} + \beta_9 IBM_{ikt} + \beta_{10} Lev_{ikt} + \beta_{11} RevG_{ikt} + \beta_{12} Log(AvgTA)_{ikt} + \beta_{13} Log(MCap)_{ikt} + \beta_{14} Log(GDPC)_{ikt} + FE_{ikt} + \varepsilon_{ikt}$$

Where Average Board Tenure Squared has been removed, as we are not investigating any eventual curvilinear relationship, whereas two new independent variables have been added. One of them is CPI Tier, describing tier *j* of the CPI scores. The other one is the interaction variable CPI Tier × Average Board Tenure, which describes how each CPI tier affects any eventual impact of Average Board Tenure on the dependent variables. We also control for fixed effects, including country, firm, and year fixed effects. The subscripts *i*, *k*, and *t* correspond to firm *i* in country *k* in year *t* – depending on the combination of fixed effects taken into consideration – whereas, for the interaction variable, the subscript *j* denotes CPI $\text{Tier}_{1\text{-}3}$.

3.3 Data Collection Process

Regarding our data collection process, we integrate three separate datasets from different sources. Our primary dataset in this study, covering firm-level board and financial data, is extracted from the Thomson Reuters Refinitiv Eikon database. We also extract the Global Industry Classification Standard ("GICS") industry codes for each firm-year observation

from the Thomson Reuters Refinitiv Eikon database. Given the nature of our thesis as a cross-country study, the study includes data from publicly listed companies across 39 countries – constituting both developed and developing countries – over the nine years of 2011-2019. Hence, we purposely exclude 2020, with the reasoning being that the year is an extreme outlier in corporate performance due to the COVID-19 pandemic. Moreover, in terms of country-level data, we manually collect datasets from Transparency International and The World Bank, respectively covering the historical CPI and GDP per Capita data of the 39 selected countries across the same period. To ensure the validity of the collected data from the Thomson Reuters Refinitiv Eikon database, we manually perform sample tests, cross-checking firm-level board and financial data with the related companies' annual reports. For the latter two datasets – namely, CPI and GDP per Capita – we deem cross-checking unnecessary. The reasoning is that the CPI data comes directly from its source of origin and that the World Bank bases its data on national accounts data and OECD National Accounts data files (Transparency International, 2020; The World Bank, 2020).

3.4 Sample Construction

We begin our sample construction by merging the three datasets, earlier described in 3.3, and match the firm-year observations with the GDP per Capita and CPI data of their country of exchange during the year of the observation. We then continue by removing all firm-year observations that did not contain complete firm-level board and financial data. These removed observations could have led to different findings in our study, as they may include certain tendencies or patterns in terms of the relationship between Average Board Tenure and firm performance – possibly constituting adjustments that are non-random – which could imply a selection bias in our study. However, as seen in Appendix VI, given our large number of firm-year observations under a more extended period and from many various countries, this risk is partially mitigated.

The initial step in our sample selection process is to determine which countries data would be collected from and during what period. Given that our thesis is a cross-country study and our focus on corruption levels, we need to examine firm-year observations from countries in different economic and political development stages – ultimately leading to a more balanced distribution of CPI scores and GDP per Capita levels. However, the significantly better data accessibility of firms in more developed – and often less corrupt – countries means there is a bias regarding which countries we selected for our study. This bias

affects our study by looking at a more significant number of less corrupt countries than the number of more corrupt countries. Thus, potentially making our CPI tier categorisation less evenly distributed than the case with a more equal balance between developed and developing countries. Simultaneously, our geographical delimitation enabled us to reliably cross-check firm-level board and financial data with the related companies' annual reports.

An adjacent issue is that for large countries with better data accessibility, there is generally a greater number of firm-year observations than for smaller countries with more limited data accessibility, affecting each country's weight of the total firm-year observations. More specifically, as seen in Appendix VI, the U.S. and Japan data account for approximately 45% of the total sample, which arguably raises concern that the data of these two countries may drive our results. We test our regressions with another sample to address this, excluding these two countries – where the findings are presented under Appendix I and Appendix II.

Moreover, we have to ensure that the selected countries and years contain sufficient data for our study – the same reasoning applying to our choice of solely looking at publicly listed firms. As aforementioned in section 3.3, in terms of the chosen period of 2011-2019, we purposely exclude 2020 since it constitutes an extreme outlier in corporate performance due to the COVID-19 pandemic. Furthermore, as observed during our sample construction process, we see diminishing data – especially in terms of board characteristic data – as we look further back in time. As such, we decide to set the fiscal year of 2011 as the starting point of our period.

Our sample tests indicate an overwhelming majority of mid-and large-cap firms in our firm-year observations regarding the firms in our data sample. While this is not necessarily a problem, we have to consider the possibility that the relationship between board tenure and firm performance might look different for smaller firms – especially since larger companies have to adhere to more strict corporate governance codes.

The sample construction process is then continued by filtering on board characteristics data – i.e., Board Size, Average Board Tenure, Board Gender Diversity, Independent Board Members, and CEO-Chairman Separation – in the Thomson Reuters Refinitiv Eikon database. Setting these as our initial criteria allowed us to filter out the firm-year observations that did not disclose such data without setting any arbitrary thresholds. Through performed sample tests, we conclude that a vast majority of the remaining firm-year observations fall under either the mid- or large-cap definition – where disclosure of such board characteristics generally is of greater importance and under stricter regulations. We also extract financial data for the selected firm-year observations – i.e., Total Assets, Total

Liabilities, Net Income, and Company Market Capitalisation. Subsequently, we manually remove the observations that lacked any financial data, ultimately resulting in 31,587 total firm-year observations. Based on the extracted financial data, we can derive the following financial measurements: Tobin's Q, ROAA, Revenue Growth, and Leverage, all used in our models.

Table I. Sample Selection Criteria

Criteria	*Total Firm Year Observations*
Full Sample: Number of Firm Year Observations for Publicly Listed Firms in 39 Selected Countries between 2011-2019	492,439
Firm Year Observations with:	
Board Size data	(-453,262) = 39,177
Average Board Tenure data	(-1,495) = 37,682
Board Gender Diversity (Percent) data	(-61) = 37,621
Independent Board Members (Percent) data	(-21) = 37,600
CEO-Chairman Separation data	(Δ=0) = 37,600
Total Assets (Reported; FY) data	(-54) = 37,546
Total Assets (Reported; FY-1) data	(-35) = 37,511
Total Liabilities (Reported; FY) data	(Δ=0) = 37,511
Net Income Reported (Actual) data	(-2,986) = 34,525
Company Market Capitalisation data	(-122) = 34,403
Total Revenue (FY) data	(-2,737) = 31,666
Total Revenue (FY-1) data	(-79) = 31,587
	31,587

Moreover, we perform a 10% truncation of the most skewed variables in terms of extreme values. These variables are Tobin's Q, ROAA, Revenue Growth, Leverage and Average Board Tenure. This approach of addressing outliers may also affect our study in similar ways as our removal of firm-year observations with non-complete data, but is deemed necessary to avoid results driven by outliers.

4. Empirical Data

This section presents the descriptive statistics of our main panel dataset and the Pearson correlation matrices and addresses the observed multicollinearity.

4.1 Descriptive Statistics

The first table under this section, Table II, displays the descriptive statistics of our main panel dataset – i.e., the selected 39 countries during 2011-2019.

We observe that the median value of Average Board Tenure is 7.12 years. According to, e.g., the French corporate governance codes, this tenure length would not qualify as independent. Regarding Board Size, we note that the average number of board members is 10.13. Another notable statistic is that the average Board Gender Diversity in our full sample, where 100% represents an entire female board, is 15%. Moreover, we note that the CEO-Chairman Separation – a dummy variable that takes the value of 1 if there is CEO-Chairman duality present – has an average of 0.63. Thus, indicating that a majority of our firm-year observations have CEO-Chairman duality. Regarding Independent Board Members, both the average and median values are above 0.5 – more specifically, being 0.59 and 0.64, respectively – meaning that most boards in our sample have a majority of independent members. Our first financial firm-level control variable is the debt-to-equity ratio, i.e., Leverage, with an average value of 2.05 and a notably significant standard deviation. Moreover, the average Revenue Growth in our full sample is 0.06 (6%), whereas the first 25th percentile has a negative value of -0.03 (-3%). Observing our dependent variables ROAA and Tobin's Q, we note that the respective average value in our sample is 0.05 (5%) and 2.50, respectively. The average and median of the CPI scores of our firm-year observations – who has been assigned its respective country of exchange's CPI score – are 70.25 and 74, respectively. An observation that is logical considering that the number of publicly listed firms, in general, is considerably higher in more developed countries.

Table II. Descriptive Statistics (Full Sample)

Variables	*N*	*Mean*	*STD*	*P25*	*Median*	*P75*
TQ	28,429	2.50	1.89	1.16	1.87	3.24
ROAA	28,428	0.05	0.05	0.01	0.04	0.07
AvgBT	28,433	7.12	2.86	4.84	6.66	9.05
AvgBT²	28,433	58.83	46.03	23.46	44.34	81.82
BGD	31,587	0.15	0.13	0.00	0.14	0.23
BS	31,587	10.13	3.40	8.00	10.00	12.00
CCS	31,587	0.63	0.48	0.00	1.00	1.00
IBM	31,587	0.59	0.26	0.40	0.64	0.82
Lev	28,428	2.05	2.00	0.76	1.36	2.49
RevG	28,429	0.06	0.14	-0.03	0.04	0.13
Log(AvgTA)	31,587	22.40	1.73	21.29	22.34	23.45
Log (MCap)	31,587	22.12	1.50	21.21	22.12	23.04
Log (GDPC)	31,587	10.54	0.80	10.58	10.80	11.00
CPI	31,587	70.25	13.86	69.00	74.00	77.00

4.2 Correlation and Multicollinearity

In Tables III and IV, we present the Pearson correlations and the respective variance inflation factor ("VIF") – between the dependent, independent, and control variables in our regression. Table III presents the Pearson correlations and VIF's with Tobin's Q as the dependent variable, whereas Table IV uses ROAA as the dependent variable. As expected, we note that our dependent variables are correlated to our main independent and control variables – to varying degrees. Thus, indicating that they contribute to the explanatory value of our models. Moreover, as expected, we note both generally low correlations between the control variables and VIF's – otherwise indicating multicollinearity. A notable observation in Table III and IV is the correlation between Log(Average Total Assets) and Log(Market Capitalisation). A correlation that in turn corresponds to relatively high VIF values. However, these correlations are not surprising due to their interconnectedness to Tobin's Q and ROAA, respectively. For both these variables, a more notable presence of multicollinearity is indicated. However, it should not be damaging to our models – as their respective VIF value is not above the cut-off point of 10 (O'Brien, 2007). Lastly, we can observe that Average Board Tenure and Average Board Tenure Squared are highly correlated, with notably high VIF values. Due to the nature of the second variable being a deterministic nonlinear function of the first one and the fact that there is no perfect multicollinearity present, multicollinearity is not a concern. Therefore, we decide not to remove any variables from our multivariable regression models.

Table III. Pearson Correlation Matrix and VIF's, Tobin's Q (Full Sample)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	VIF
TQ	1.000												
AvgBT	0.108	1.000											27.24
AvgBT²	0.100	0.981	1.000										26.95
BGD	0.093	-0.004	-0.019	1.000									1.18
BS	-0.120	0.007	0.001	0.034	1.000								1.46
CCS	-0.014	-0.085	-0.081	0.006	-0.040	1.000							1.02
IBM	0.156	0.202	0.183	0.312	-0.221	-0.027	1.000						1.44
Lev	-0.034	-0.008	-0.008	0.060	0.188	0.000	0.052	1.000					1.64
RevG	0.033	0.013	0.015	-0.021	-0.033	-0.032	0.023	-0.010	1.000				1.01
Log(AvgTA)	-0.268	-0.032	-0.036	0.091	0.514	-0.045	-0.056	0.369	-0.023	1.000			5.36
Log(MCap)	0.172	0.061	0.050	0.118	0.403	-0.062	0.029	0.068	0.013	0.752	1.000		4.40
Log(GDPC)	0.014	0.106	0.093	0.140	-0.158	-0.037	0.319	-0.026	-0.015	-0.103	-0.079	1.000	1.54
CPI Tier	-0.027	-0.040	-0.055	0.122	-0.175	0.013	0.077	-0.133	-0.137	-0.125	0.001	0.518	1.47

Notes: This table presents the Pearson Correlation Matrix and VIF's for our first hypothesis on the full sample, including Tobin's Q as the dependent variable – as a proxy for firm performance.

Table IV. Pearson Correlation Matrix and VIF's, ROAA (Full Sample)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	VIF
ROAA	1.000												
AvgBT	0.102	1.000											27.35
AvgBT²	0.096	0.981	1.000										27.02
BGD	0.028	-0.004	-0.019	1.000									1.19
BS	-0.098	0.007	0.001	0.034	1.000								1.44
CCS	-0.005	-0.085	-0.081	0.006	-0.040	1.000							1.02
IBM	0.031	0.202	0.183	0.312	-0.221	-0.027	1.000						1.46
Lev	-0.301	-0.008	-0.008	0.060	0.188	0.000	0.052	1.000					1.44
RevG	0.063	0.013	0.015	-0.021	-0.033	-0.032	0.023	-0.010	1.000				1.01
Log(AvgTA)	-0.219	-0.032	-0.036	0.091	0.514	-0.045	-0.056	0.369	-0.023	1.000			4.17
Log(MCap)	0.175	0.061	0.050	0.118	0.403	-0.062	0.029	0.068	0.013	0.752	1.000		3.45
Log(GDPC)	-0.029	0.106	0.093	0.140	-0.158	-0.037	0.319	-0.026	-0.015	-0.103	-0.079	1.000	1.55
CPI Tier	0.036	-0.040	-0.055	0.122	-0.175	0.013	0.077	-0.133	-0.137	-0.125	0.001	0.518	1.48

Notes: This table presents the Pearson Correlation Matrix and VIF's for our first hypothesis on the full sample, including ROAA as the dependent variable – as a proxy for firm performance.

5. Results and Analysis

In this section, we report the results of our regressions tested through two separate multivariable linear regression models per hypothesis, with Tobin's Q and ROAA as the respective dependent variable as a measure of firm performance. Moreover, we provide the subsequent analysis of our regression results.

5.1 Regression Results and Analysis

5.1.1 Hypothesis 1: Results

Using the regression model specified in 3.2.2, we first test if there is a curvilinear (inverted U-shaped) relationship between the average tenure length of the board and firm performance. As seen below in Table V, a total of four separate regressions are conducted. Namely, two of them having Tobin's Q as the dependent variable, and two of them having ROAA as the dependent variable. Moreover, all four regressions have robust standard errors, and include country and firm fixed effects, while (2) and (4) also take year fixed effects into account. The leading independent variables of interest are Average Board Tenure and Average Board Tenure Squared. The non-financial firm-level control variables are Board Gender Diversity, Board Size, CEO-Chairman Separation, and Independent Board Members. Furthermore, the financial firm-level control variables are Leverage, Revenue Growth, the natural logarithm of Average Total Assets, and the natural logarithm of Market Capitalisation. Lastly, the country-level control variable is the natural logarithm of GDP per Capita.

Our first regression (1) is performed taking country and firm fixed effects into account. By observing the results, we note that the coefficient of Average Board Tenure is positively related to the dependent variable Tobin's Q. Furthermore, the coefficient of our second leading independent variable in the model, Average Board Tenure Squared, is negatively related to Tobin's Q. Notably, both of these coefficients are statistically significant at the 5% level, indicating relatively strong significance. There are two implications of these coefficients. The first coefficient implies that boards with longer average tenures are more likely to have a high Tobin's Q than boards with shorter average tenures. However, this is somewhat complicated by the coefficient of our second leading independent variable. The negative coefficient of Average Board Tenure Squared related to Tobin's Q indicates that while there may be a positive relationship between board tenure and Tobin's Q in general, it is curvilinear rather than linear. Therefore, our first hypothesis is supported at a 5% significance level. To examine the curvilinear relationship more thoroughly, we performed a U-test, seen in Table VI. Through an overall test of the presence of an inverse U shape, the test implies that a U-shaped relationship exists, with an extreme value where Average Board Tenure is equal to approximately 10.31 years. This extreme value implies that when the Average Board Tenure exceeds approximately 10.31 years, the relationship between board tenure and Tobin's Q is negative. However, with a p-value of 0.116, it is not statistically significant at conventional levels.

Our second regression (2) is performed by taking country, firm, and year fixed effects into consideration. As is the case with (1), the Average Board Tenure coefficient is statistically significant, still at the 5% level. Notably, the statistical significance of the Average Board Tenure Squared coefficient is lower – this time, it is significant at the 10% level compared to the 5% level in (1). This implies that when taking firm and year fixed effects into account, the data support our first hypothesis, albeit this time at a significance level of 10%. As in (1), a U-test indicated the presence of an inverse U-shape – this time, with an extreme point of approximately 8.98 years, as seen in Table VI under (2). In contrast to (1), this test is statistically significant at the 10% level. Thus, the impact of including year fixed effects is evident, being the only difference between the two regressions.

Our third regression (3) is performed using ROAA as the dependent variable instead of Tobin's Q, whereas all other variables remain the same. As seen in Table V, this regression is done taking country and firm fixed effects into account. By observing the results from this regression, we note that, as is the case with (1) and (2), the coefficient of Average Board Tenure is positively related to the dependent variable. Additionally, the coefficient of Average

Board Tenure Squared is negatively related to the dependent variable. However, none of these are statistically significant at any level.

The same applies to our fourth regression (4) – with country, firm, and year fixed effects – where the coefficient of Average Board Tenure is positively related to ROAA. In contrast, the Average Board Tenure Squared coefficient is negatively related, neither one being statistically significant at conventional levels.

Table V. Regressions, Hypothesis 1 (Full Sample)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Firm FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
AvgBT	0.03242**	0.02736**	0.00042	0.00051
	2.44	2.07	0.64	0.78
AvgBT²	-0.00158**	-0.00152*	-0.00005	-0.00004
	-1.97	-1.92	-1.16	-0.93
BGD	0.33957***	0.11671	-0.01135***	-0.00058
	5.14	1.55	-3.12	-0.15
BS	0.00579*	0.00602*	-0.00004	-0.00007
	1.83	1.90	-0.25	-0.47
CCS	0.00489	-0.00113	0.00132***	0.00152***
	0.53	-0.12	2.87	3.31
IBM	-0.04772	-0.09508*	0.00514*	0.00775***
	-0.94	-1.85	1.95	2.91
Lev	0.58983***	0.58665***	-0.00454***	-0.00410***
	52.10	51.93	-12.99	-11.92
RevG	-0.24560***	-0.14034***	0.01308***	0.00644***
	-8.28	-4.51	8.06	3.78
Log(AvgTA)	-2.25482***	-2.29014***	-0.03395***	-0.03411***
	-64.36	-63.02	-25.18	-24.26
Log(MCap)	2.16114***	2.14117***	0.02963***	0.03318***
	107.02	102.93	39.05	41.10
Log(GDPC)	0.38510***	0.46436***	0.00527**	-0.00344
	7.00	7.94	2.00	-1.25
Constant	-0.32000	0.17903	0.10499***	0.11668***
	-0.45	0.24	3.30	3.28
N	20,577	20,577	20,181	20,181
R^2 (within)	0.6787	0.6653	0.1798	0.1930

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

Table VI. U-test, Tobin's Q (Full Sample)

Regression	*(1)*			*(2)*		
Country FE	*Yes*			*Yes*		
Firm FE	*Yes*			*Yes*		
Year FE	*No*			*Yes*		
VCE Robust	*Yes*			*Yes*		
	Lower Bound	*Upper Bound*	*Overall Test of Presence*	*Lower Bound*	*Upper Bound*	*Overall Test of Presence*
Interval	2.48077	14.59091	N/A	2.48077	14.59091	N/A
Slope	0.02462	-0.01345	N/A	0.01980	-0.01712	N/A
t-value	2.57662	-1.19445	1.19	2.08373	-1.52430	1.52
P>|t|	0.00499***	0.11616	0.116	0.01860**	0.06373*	0.0637*
Extreme Point	N/A	N/A	10.3125	N/A	N/A	8.97598

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

5.1.2 Hypothesis 1: Analysis of Results

In the first regression (1), with Tobin's Q as the dependent variable, the coefficient of Average Board Tenure is positive. In contrast, the coefficient of Average Board Tenure Squared is negative. Both coefficients are statistically significant at the 5% level. Similarly, in our second regression (2), the coefficient of Average Board Tenure is positive. In contrast, the Average Board Tenure Squared coefficient is negative, albeit the latter is now significant at the 10% level. Thus, we can identify a curvilinear relationship between Average Board Tenure and Firm Performance – as measured by Tobin's Q – leading us to accept our first hypothesis at the 10% level when taking both (1) and (2) into consideration. When performing a U-test of (2), we identify an inverse U-shaped relationship with a statistical significance of 10% and an extreme point of approximately 8.98 years. Thus, supporting our first hypothesis. Regarding (3) and (4), with ROAA as the dependent variable, the same coefficient pattern is observed as in (1) and (2). However, these are not statistically significant at conventional levels. Our reasoning behind this is further discussed in section 6.2.

As aforementioned, there are discrepancies in the empirical findings in the current state of the literature regarding the relationship between board tenure and firm performance. While some studies find a linear effect between board tenure and firm performance, as seen in section 2.1.1, the majority of the previous and recent studies covering the relationship have – to the best of our knowledge – found a nonlinear relationship. Therefore, our results from these regressions are consistent with previous literature on the subject.

5.1.3 Hypothesis 2: Results

Using the regression model specified in 3.2.3, we test if there is a more positive relationship between board tenure and firm performance – measured through Tobin's Q and ROAA – in countries with a lower CPI score than in countries with a higher CPI score. Moreover, all four regressions have robust standard errors and include country and firm fixed effects, while regression 2 and 4 also take year fixed effects into account. The dependent variable for all four regressions is either Tobin's Q or ROAA. In contrast, the leading independent variables of interest are the Average Board Tenure and the interaction variable CPI Tier × Average Board Tenure. The Average Board Tenure Squared variable is not included in these regressions since the second hypothesis does not aim to test any eventual curvilinearity in the relationship between Average Board Tenure and Tobin's Q.

Meanwhile, we add a new independent variable in CPI Tier, categorising the respective CPI scores into three tiers, where CPI Tier_1 has the lowest CPI scores – representing the highest corruption levels. As seen when comparing sections 3.2.2 and 3.2.3, the remaining control variables remain the same. As a comparable base for the other tiers, we used CPI Tier_2. In other words, the coefficient and t-value reported for Average Board Tenure – for all four regressions – represent the firm-year observations with a CPI score in CPI Tier_2.

As seen in Table VII, (1) is performed with Tobin's Q as the dependent variable and firm and country fixed effects taken into consideration. By observing our results, we note that the coefficient of Average Board Tenure is positively related to Tobin's Q but is not statistically significant at any conventional level. The interaction variable CPI Tier_1 × Average Board Tenure coefficient is negatively related to Tobin's Q, without any statistical significance. Meanwhile, the CPI Tier_3 × Average Board Tenure coefficient is positively related to Tobin's Q, without statistical significance at any conventional level. These coefficients imply that for firms operating in countries whose CPI score is classified as mid-tier (CPI Tier_2), there is a positive relationship between longer-tenured boards and firm performance. Notably, this relationship is less positive for firms operating in more corrupt counties, i.e., CPI Tier_1, and more positive for firms operating in less corrupt countries (CPI Tier_3). However, since none of these coefficients are statistically significant at any conventional level, we cannot draw any definitive conclusions.

By observing the results from (2), which takes country, firm, and year fixed effects into account, we note a similar pattern. Namely, the coefficient of Average Board Tenure related to Tobin's Q is still positive, the coefficient for the interaction variable (CPI Tier_1 × Average Board Tenure) is still negative. In contrast, the coefficient for the interaction variable

(CPI $Tier_3$ × Average Board Tenure) is still positive. As is the case with (1), neither of the three coefficients is statistically significant at any conventional level.

Our third regression (3), using ROAA as the dependent variable, is performed by taking firm and country fixed effects into account. By observing the findings in Table VII, we note that the coefficient of Average Board Tenure related to ROAA is negative but not statistically significant at conventional levels. The coefficient of (CPI $Tier_3$ × Average Board Tenure) related to ROAA is positive but not statistically significant at conventional levels. However, the coefficient of (CPI $Tier_1$ × Average Board Tenure) related to ROAA is negative and statistically significant at the 5% level. The results of (3) imply that while we cannot draw any definitive conclusions regarding the coefficients of Average Board Tenure and (CPI $Tier_3$ × Average Board Tenure), there is a statistically significant coefficient stating that for firms operating in a CPI $Tier_1$ country, the relationship between Average Board Tenure and ROAA is less positive than it is for firms operating in countries in CPI $Tier_2$.

The same patterns exist in our fourth regression (4), which takes country, firm, and year fixed effects into account. As was the case with (3), the coefficients of Average Board Tenure related to ROAA and (CPI $Tier_3$ × Average Board Tenure) related to ROAA are positive but not statistically significant at conventional levels. Meanwhile, the coefficient of (CPI $Tier_1$ × Average Board Tenure) related to ROAA is negative and statistically significant – this time at the 1% level, indicating strong statistical significance. These results support the implications of the results seen in (3), thus rejecting our second hypothesis.

Table VII. Regressions, Hypothesis 2 (Full Sample)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Firm FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
CPI Tier	-0.05746*	-0.02791	-0.00311*	-0.00657***
	-1.77	-0.84	-1.93	-4.05
AvgBT	0.00596	0.00200	-0.00032	-0.00008
	1.45	0.48	-1.57	-0.37
(CPI $Tier_1$ × AvgBT)	-0.00106	-0.00323	-0.00047**	-0.00052***
	-0.27	-0.79	-2.53	-2.75
(CPI $Tier_2$ × AvgBT)	-Comparable Base-	-Comparable Base-	-Comparable Base-	-Comparable Base-
(CPI $Tier_3$ × AvgBT)	0.00548	0.00580	0.00038	0.00038
	1.17	1.23	1.57	1.60
BGD	0.32525***	0.11589	-0.01044***	0.00064
	4.88	1.53	-2.86	0.16
BS	0.00534*	0.00597*	-0.00005	-0.00011
	1.71	1.88	-0.31	-0.70
CCS	0.00244***	-0.00123	0.00132***	0.00131***
	0.26	-0.13	2.84	2.84
IBM	-0.04818	-0.09252*	0.00516*	0.00775***
	-0.95	-1.79	1.95	2.91
Lev	0.58986***	0.58676***	-0.00453***	-0.00408***
	52.13	51.91	-12.97	-11.87
RevG	-0.24069***	-0.14179***	0.01311***	0.00664***
	-8.08	-4.56	8.04	3.90
Log(AvgTA)	-2.25808***	-2.28924***	-0.03384***	-0.03413***
	-64.14	-62.98	-24.98	-24.30
Log(MCap)	2.15892***	2.14115***	0.02963***	0.03310***
	106.92	102.97	38.93	41.05
Log(GDPC)	0.36462***	0.46181***	0.00612**	-0.00272
	6.54	7.73	2.27	-0.97
Constant	0.23288	0.32757	0.10255***	0.12727***
	0.32	0.43	3.09	3.52
N	20,577	20,577	20,181	20,181
R^2 (within)	0.6788	0.6653	0.1801	0.1942

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

5.1.4 Hypothesis 2: Analysis of Results

In our first two regressions (1 and 2), seen in Table VII, the coefficients of Average Board Tenure for CPI $Tier_2$ related to Tobin's Q are positive but lack any conventional statistical significance. The coefficients for the interaction variable (CPI $Tier_1$ × Average Board Tenure) related to Tobin's Q are negative for both regressions. In contrast, the coefficients of the interaction variable (CPI $Tier_3$ × Average Board Tenure) related to Tobin's Q are positive for both regressions. Both these interaction variables lack any statistical significance. However, despite the lack of conventional statistical significance, we can observe an interesting pattern that contradicts our second hypothesis – that there is a more positive relationship between the average tenure length of the board and firm performance in countries with a lower CPI score than in countries with a higher CPI score. Instead, these coefficients indicate that for firms operating in more corrupt environments, the relationship between longer board tenure and firm performance is less positive than in less corrupt environments.

When observing the results of (3) and (4), we can see a similar pattern using ROAA as the dependent variable. An interesting difference in these results, compared to the ones seen in (1) and (2), is that the coefficients for Average Board Tenure for CPI $Tier_2$ related to ROAA are negative while still lacking statistical significance at conventional levels. The coefficients of the interaction variable (CPI $Tier_3$ × Average Board Tenure) related to ROAA are positive for both regressions, but alike (1) and (2) they lack any statistical significance. More notably, the coefficients for the interaction variable (CPI $Tier_1$ × Average Board Tenure) are all negative, just like they are for (1) and (2), but they are both statistically significant. The coefficient for (3) is statistically significant at the 5% level, while the coefficient for (4) is significant at the 1% level, providing further support that the hypothesis cannot be accepted. Instead, our findings indicate the opposite pattern to what we anticipated. Our results indicate that longer board tenures might be more negatively linked to firm performance for companies operating in more corrupt environments than in less corrupt environments.

To the best of our knowledge, our study covers an unexplored area in terms of how corruption might affect the relationship between board tenure length and firm performance from a cross-country perspective. Thus, we are not able to compare our findings for our second hypothesis to any previous studies.

5.1.5 Control Variables

The *Board Gender Diversity* variable consistently has a positive coefficient related to Tobin's Q throughout all regressions, including both hypotheses in both samples, although varying levels of significance. However, the direction of the coefficients related to ROAA varied – depending on the model and fixed effects taken into consideration. These variations indicate that while the market seems to value board gender diversity, i.e., with Tobin's Q as the dependent variable, its effect on the operational performance of firms is questionable – even though we cannot draw any definitive conclusions.

Similarly to Board Gender Diversity, the *Board Size* variable consistently has positive coefficients related to Tobin's Q – being statistically significant at the 10% level for all full sample regressions. Related to ROAA, the coefficients are consistently negative, although not being statistically significant at conventional levels for the full sample regressions. Thus, there are similar implications as for Board Gender Diversity. Namely, while the market seems to value larger boards – in terms of Tobin's Q – its eventual positive relationship with operational performance is questionable.

The *CEO-Chairman Separation* dummy variable, which takes the value of 1 if there is CEO-Chairman duality, has coefficients whose direction related to Tobin's Q varies – depending on the panel dataset, model, and combination of fixed effects. However, its coefficients related to ROAA are consistently positive, with statistical significance levels at either 1% or 5%. These results imply that CEO duality positively affects operational performance, aligning with Jensen and Meckling (1976) and the Agency Theory, but does not seem to impact market valuation.

The *Independent Board Members* variable consistently have negative coefficients related to Tobin's Q, although only at a 10% significance level for our second model with country and firm fixed effects taken into consideration and with no statistical significance for the other regressions. In contrast, the coefficients related to ROAA are all positive, where all the full sample regressions have statistical significance – varying between 1%, 5%, and 10%. As such, we cannot draw any definitive conclusions regarding its relationship with Tobin's Q, whereas the findings indicate a positive relationship between Independent Board Members and ROAA.

Notably, the *Leverage* variable consistently has positive coefficients related to Tobin's Q and negative coefficients related to ROAA – all of which being at the 1% statistical significance level. However, most certainly, the background behind these findings is due to the calculation of the dependent variables, and they are therefore expected.

Conversely, the *Revenue Growth* variable has negative coefficients related to Tobin's Q and positive coefficients related to ROAA. As with Leverage, all coefficients are at the 1% statistical significance level, and the background behind these findings is likely due to how the respective dependent variable is calculated. Thus, these findings are logical.

The logarithmised *Average Total Assets* variable has negative coefficients for all regressions – including both data samples and Tobin's Q and ROAA as the respective dependent variable – at a 1% statistical significance level. As is likely the case with Leverage and Revenue Growth, the background behind these findings derives from how the respective dependent variable is calculated.

The logarithmised *Market Capitalisation* variable has positive coefficients for all regressions – including both data samples and Tobin's Q and ROAA as the respective dependent variable – at a 1% statistical significance level. The background to these findings is similar to those described for the other financial variables, i.e., the dependent variables' calculation.

Moreover, the logarithmised *GDP per Capita* variable is consistently positively related to Tobin's Q in our full sample regressions, with all coefficients being statistically significant at the 1% level. For the regressions using ROAA as the dependent variable, it is heavily dependent on which fixed effects are taken into account. When not taking year fixed effects into account, the GDP per capita variable's coefficient is consistently positive for the full sample regressions, with a statistical significance level of 5%. In contrast, when year fixed effects are taken into account, the coefficients are negative for the full sample regressions. This indicates that while GDP per Capita is positively related to Tobin's Q, its relationship with ROAA is more complex.

Lastly, the *CPI Tier* variable – solely used in our second model – is consistently negatively related to Tobin's Q as well as ROAA. The statistical significance of the coefficients varies depending on the respective dependent variable, the panel dataset, and the fixed effects taken into consideration. Using Tobin's Q as the dependent variable, we observe a 5% statistical significance for both our regressions based on the sample excluding Japan and U.S. – whereas, for the full sample, there is only a statistical significance at the 10% level when not considering year fixed effects. Observing ROAA, the two full sample regressions have a statistical significance at the 10% and 1% level, depending on whether year fixed effects are excluded or included. For the sample excluding Japan and U.S., the coefficient between ROAA and the CPI Tier variable does not have any statistical significance. As a whole, the coefficients indicate a positive relationship between corruption and firm

performance. While this relationship might seem counter-intuitive, it is in line with the Corporate Advantage Hypothesis (Ferris et al., 2021), earlier described in section 2.1.2.

5.2 Fixed Effects and Robustness Tests

5.2.1 Fixed Effects and Heteroskedasticity

As mentioned in 4.2, we include two combinations of the country, firm, and year fixed effects in our main regressions to ensure the validity of our results. These fixed effects control for average differences between the various dummies. The country fixed effects are included to mitigate the differences in differing external conditions – such as the economic and political development – firms might have depending on their country of exchange. Meanwhile, the firm fixed effects are included to account for otherwise not observed stable firm-level trends. Moreover, the year fixed effects are included to account for differences in general firm performance depending on the year. Hence, through the usage of these fixed effects, we can minimise omitted variable bias and the heterogeneity it might create. Regarding the choice between firm and industry fixed effects, we include the former in our main regressions. The reasoning being that previous studies have shown that while industry-level drivers have a stronger effect on strategy, firm-level drivers have a more substantial effect on performance (Mauri and Michaels, 1998). However, as a robustness test, we substitute firm fixed effects for industry fixed effects to capture cross-firm variation otherwise absorbed by firm fixed effects – seen in Appendices III and IV.

As aforementioned, we deliberately decide to include a robustness check in all our regressions. The reasoning is that we want to account for any eventual heteroskedasticity in the residual distribution. Moreover, due to our larger sample size, the inclusion of the robust standard errors is the safe and preferred approach for our regressions (Yamano, 2009).

5.2.2 Robustness Tests without the U.S. and Japan

In addition to our robust standard errors usage, being aware that the U.S. and Japan constitute approximately 45% of our total firm-year observations, we decide to perform our regressions with another sample – which excludes these two countries. Thus, constituting a robustness test of the validity of our findings, as we investigate if we receive similar findings to those using the full sample – where the U.S. and Japan may have driven the results.

As can be seen in Appendix I, covering the first hypothesis, the directions of the main independent variables' coefficients of (1) and (2) indicate a curvilinear relationship between

Average Board Tenure and Tobin's Q – similar to their respective precursors in Table V. The statistical significance of the coefficient of Average Board Tenure relative to Tobin's Q in (2) has improved, now being significant at the 5% level. However, while the directions of the main independent variables' coefficients remain the same in (3) and (4), the coefficients of Average Board Tenure and Average Board Tenure Squared related to ROAA are now all statistically significant. In (3), the coefficient of Average Board Tenure related to ROAA is now significant at the 5% level, while the coefficient of Average Board Tenure Squared is now significant at the 1% level. In (4), both of the coefficients for the two leading independent variables are statistically significant at the 1% level.

Since these regressions – related to our first hypothesis – are performed excluding the firm-year observations from the U.S. and Japan, they allow us to investigate if the same patterns appear without these countries possibly driving the results. As seen in Appendix I, the regression results with Tobin's Q as the dependent variable are almost indistinguishable from the regression results based on the full sample, in terms of the direction of the coefficients, which includes the firm-year observations in the U.S. and Japan – seen in Table V under section 5.1.1. More notable is the now 1% statistically significant coefficients for Average Board Tenure Squared for the regressions with ROAA as the dependent variable. The results indicate the existence of an inverse U-shaped relationship between Average Board Tenure and ROAA, similar to the findings between Average Board Tenure and Tobin's Q in the full sample regressions, and therefore provides further support for our first hypothesis.

The results of our robustness test, related to our second hypothesis, can be seen in Appendix II. For (1), we note that all coefficients of the main independent variables have the same directions as those seen for (1) in Table VII. However, the coefficient of (CPI $Tier_3$ × Average Board Tenure) related to Tobin's Q is now statistically significant at the 5% level. The same applies to (2), implying that in this data sample, there is a statistically significant coefficient stating that for firms operating in a CPI $Tier_3$ country, the relationship between Average Board Tenure and ROAA is more positive than it is for firms operating in countries in CPI $Tier_2$. In the results of the third regression (3), there is one key difference in the coefficient of (CPI $Tier_3$ × Average Board Tenure) related to Tobin's Q, which is now negative. However, it is not statistically significant at conventional levels. The coefficients of the remaining main independent variables in (3) and (4) are similar to their respective precursors in Table VII. However, the (CPI $Tier_1$ × Average Board Tenure) coefficients do not have any statistical significance in these regressions – which they have in our main panel, that included the U.S. and Japan firm-year observations.

When analysing the findings related to our second hypothesis, we note that for (1) and (2) the coefficients of Average Board Tenure for CPI $Tier_2$ related to Tobin's Q are positive but lack any statistical significance. In contrast, the coefficients for the interaction variable (CPI $Tier_1$ × Average Board Tenure) related to Tobin's Q are negative for both regressions, also lacking significance. These findings are in line with what can be observed in Table VII. However, a notable difference is that the coefficients of the interaction variable (CPI $Tier_3$ × Average Board Tenure), while still being positively related to Tobin's Q, are now both statistically significant at the 5% level. These results further support the rejection of our second hypothesis. There are two main differences between (3) and (4), compared to the Table VII results. The coefficient of the interaction variable (CPI $Tier_3$ × Average Board Tenure) related to ROAA is now negative for (3). In contrast, the coefficient of Average Board Tenure for CPI $Tier_2$ is now positively related to ROAA for (4). However, none of these are statistically significant at any conventional level.

5.2.3 Robustness Tests with Industry Fixed Effects

In addition to the robustness tests described in section 5.2.2, we also perform additional robustness tests by performing our regressions on the full data sample but substituting firm fixed effects for industry fixed effects to capture cross-firm variation otherwise absorbed by firm fixed effects.

As can be seen in Appendix III, covering the first hypothesis, the directions of the main independent variables' coefficients of (1) and (2) indicate a U-shaped relationship between Average Board Tenure and Tobin's Q – in contrast to their respective precursors in Table V. However, the coefficients lack statistical significance at any conventional level. Regarding (3) and (4), the Average Board Tenure and Average Board Tenure Squared coefficients are positive but lack statistical significance at any conventional level. Given the lack of significance of the coefficients of the main independent variables, we cannot draw any definitive conclusions regarding the association between board tenure and firm performance based on these tests.

The results of our robustness test, related to our second hypothesis, can be seen in Appendix IV. For all four regressions, we note that the direction of the coefficients of Average Board Tenure – related to both Tobin's Q and ROAA – for firms operating in countries in CPI $Tier_2$ are reversed compared to their precursors in Table VII. All four regressions are statistically significant at the 1% level. However, the directions of the coefficients for (CPI $Tier_1$ × Average Board Tenure) and (CPI $Tier_3$ × Average Board Tenure)

are the same as in Table VII. For the former, the coefficients are negative, with (1) and (2) lacking statistical significance at conventional levels, while (3) and (4) are statistically significant at the 1% level. For the latter, the coefficients are negative, with (1) being significant at the 1% level, (2) at the 5% level, while (3) and (4) lack statistical significance at conventional levels. Thus, these findings support our results from the main regressions in Table VII.

6. Discussion

This section consists of a discussion of our findings, our dependent variables and addresses issues related to endogeneity.

6.1 Discussion of Findings

The findings of our regressions for our first hypothesis – that "*There is a curvilinear (inverted U-shaped) relationship between the average tenure length of the board and firm performance*" – are in line with findings of previous studies (Vafeas, 2003; McIntyre et al., 2007; Chamberlain, 2010; Huang and Hilary, 2014). The observed curvilinearity can, in turn, at least partially, be explained by the Stewardship Theory, the Upper Echelons Theory, and the Management Entrenchment Theory. As explained in section 2.2, the Stewardship Theory argues that the increased knowledge, power, and influence a board can amass is inherently positive – as directors' intrinsic motivation lies in maximising shareholder value and, in turn, firm performance. Therefore, aligning with the Upper Echelons Theory, built on the premise that managerial characteristics influence strategic choices and organisational outcomes. However, following the Management Entrenchment Theory, the positive relationship between board tenure and firm performance only holds until a certain threshold. More specifically, the Management Entrenchment Theory argues that while there are evident benefits of longer-tenured boards – such as increased expertise, experience, and stability – they present an inevitable trade-off between the benefits and the potential entrenchment costs. These costs include a decline in board oversight quality, an increased tendency towards value-destroying activities, and impeded director independence (Libit and Freier, 2015).

Notably, however, the previous studies that have found this curvilinear relationship – such as Huang and Hilary (2014) – generally base their data on firm-year observations from a singular developed country and were not conducted in recent years. Thus, we realise the importance of examining the relationship with a more recent and broader data sample –

including developing and developed countries – being the background behind our choice of conducting a cross-country study during 2011-2019.

When comparing our findings to Huang and Hilary (2014), we note that our findings are very similar. Besides finding a curvilinear relationship between average board tenure and firm performance through the same measures of firm performance, we observed similar extreme points in terms of the optimal tenure length with Tobin's Q as a proxy for firm performance. More specifically, our performed U-test indicated a statistically significant extreme point of approximately 8.98 years at the 10% level, whereas Huang and Hilary (2014) find an extreme point of approximately ten years. Thus, suggesting that after around nine years, the benefits of longer board tenures are outweighed by its costs. From the perspective of financial performance, the current shift towards more restrictive board governance regulations – such as specific term limits after which a director is classified as dependent – aligns with our findings.

An interesting observation is that the observed curvilinear relationship is only statistically significant when firm performance is measured through Tobin's Q. While the pattern observed with ROAA as the dependent variable is similar to those where Tobin's Q is used, i.e., indicating a curvilinear relationship, it is not statistically significant at conventional levels. This lack of statistical significance suggests that while the average board tenure eventually negatively affects the market's valuation of a firm, it does not affect the firm's operational performance as heavily.

The findings from the regressions performed to test our second hypothesis – that *"There is a more positive relationship between the average tenure length of the board and firm performance in countries with a lower CPI score than in countries with a higher CPI score"* – are hard to evaluate from the perspective of previous studies. A similar study has not yet been conducted to the best of our knowledge, which hinders direct comparisons to results from previous studies. However, the results indicate that our hypothesis is incorrect and imply that the relationship seems to be the opposite of our conjecture. Namely, there is a less positive relationship between the average tenure length of the board and firm performance in countries with a lower CPI score than in countries with a higher CPI score. We can, therefore, not accept our second hypothesis. Previous literature and theories suggest two possible causes behind these results.

The first potential cause is based on the Collective Action Theory and the Management Entrenchment Theory – supported by the studies by Malagueño et al. (2010), Islam et al. (2015), and Blanc et al. (2017) – which claim that corruption is harmful to firm

performance. Previous studies have argued that short-termism, which can be caused by shorter tenures, invites corruption (Salter, 2012). Therefore, we believed that longer tenures affect firm performance more positively in environments where corruption is more prevalent. However, suppose the Collective Action Theory is correct. In that case, it might be that the reduction of corruption propensity caused by longer tenures is lessened when individuals perceive that their surroundings are intrinsically corrupt. Instead, our findings indicate that the potential costs of management entrenchment are higher in more corrupt environments, which causes longer board tenures to have a less positive effect on firm performance.

In contrast, the second potential cause for the observed relationship between corruption, average board tenure, and firm performance is built on the Corporate Advantage Hypothesis (Ferris et al., 2021). Given Salter's (2012) reasoning that short-termism invites corruption, it might be that for firms operating in more corrupt environments, longer tenures reduce corruption levels more than they do in less corrupt environments. However, this is not necessarily positive for firm performance. Since the results found by Ferris et al. (2021) indicate that corruption is positive for firm performance, it might be that the lessened corruption does more harm than good to firm performance. The Corporate Advantage Hypothesis would explain how the relationship between longer board tenures and firm performance is less positive in more corrupt environments and is supported by the fact that we observed a statistically significant positive relationship between corruption and firm performance among our control variables.

6.2 ROAA vs. Tobin’s Q

Return on Average Assets ("ROAA") is described in section 3.1.1, calculated as Net Income divided by Average Total Assets. Hence, it is solely measured in book value and is a commonly used indicator of how profitable a company is relative to its average total assets. For example, even though it arguably can capture disruptive effects from, e.g., financial choices, a considerable amount of well-cited studies in the area have included ROA as a measure of operational performance in their models – such as "Zombie Board: Board Tenure and Firm Performance" by Huang and Hilary (2014). Moreover, by instead using the average total assets, we minimise the risk of arriving at a skewed profitability ratio due to eventual year-to-year imbalances.

In contrast, the Q Ratio was initially introduced as a predictor of future investments (Tobin, 1969; Tobin, 1978). It has since then been used for a wide range of measures,

including measuring firm performance. To summarise, at its most fundamental level, Tobin's Q describes the relationship between market valuation and intrinsic value. Hence, by using it as a measure of firm performance, it can avoid or at least minimise specific problems that can arise when using accounting measures of performance such as Return on Equity ("ROE"), Return on Assets ("ROA"), and ROAA (Bharadwaj et al., 1999). Moreover, these performance measures are more backwards-looking and cannot successfully account for companies' relative risk and size.

Therefore, we decide to include both ROAA and Tobin's Q as dependent variables in order to be able to examine how Average Board Tenure is related to both operational performance and the market's assessment of the firm's value. Thus, better capturing both the current and future economic profits while considering companies' relative risk and size.

6.3 Issues Related to Endogeneity

For this study, a factor that needs to be taken into account is the possible endogeneity issues stemming from the fact that board tenure and firm performance might be correlated. On the one hand, well-performing firms might decide to retain their directors to a more significant extent. On the other hand, poorly performing firms may face difficulties attracting new directors, which could cause the already existing board members to stay on the board longer. Both these effects would cause endogeneity concerns, which may have affected the results of our study in either direction.

7. Conclusions

In this section, we summarise the contributions of our thesis, its limitations and present our suggestions regarding future research.

7.1 Contributions

As stated in section 1.3, our study aims to provide further understanding – through a cross-country perspective – on the relationship between board tenure and firm performance, as well as investigating how this relationship might be affected by the external factor of corruption. The latter constitutes an area that, to the best of our knowledge, has not been previously investigated. In line with the findings of previous literature, we find that while longer board tenures, in general, have a positive effect on firm performance – through both Tobin's Q and ROAA as a measure for firm performance – this only holds until a certain

threshold. This curvilinear relationship can arguably be explained partially by the Stewardship Theory, the Upper Echelons Theory, and the Management Entrenchment Theory – as previously discussed in section 6.1.

Furthermore, and in contrast to our second hypothesis, we found that for firms operating in more corrupt environments, the relationship between longer board tenures and firm performance is less positive than for firms operating in less corrupt environments. We believe that either of two different reasons can explain this – either corporate corruption is not reduced as much by longer tenures as we initially believed, or the reduction of corruption does not bring improved firm performance. Our observed coefficients of CPI Tier related to firm performance indicate that the latter might be more likely, but cannot be concluded definitively.

To summarise, our results indicate a positive relationship between board tenure and firm performance. However, the positive marginal effect of board learning is outweighed by the costs of entrenchment for boards whose average tenure length exceeds around nine years. Conversely, for boards whose average tenure length is below approximately nine years, the findings indicate that the marginal effect of board learning outweighs the costs of entrenchment. Moreover, the findings indicate that the positive effects of board learning relative to the costs of entrenchment are less significant in more corrupt environments. Therefore, we deem our research question – *What is the relationship between board tenure and firm performance, and how is it affected by corruption?* – to be answered.

We believe that our study contributes to an increased understanding of how a firm's board of directors should be constructed regarding tenure length to improve its effectiveness. Furthermore, we believe that the study is a step towards a deepened understanding of how the environment in which a firm operates affects the effect a longer board tenure has on the effectiveness of firm management.

7.2 Suggestions for Future Research

During the development of our thesis and its included regressions, we have realised that there are additional adjacent elements of interest, which could be considered and implemented for future research within the area.

For example, we believe that it would be of interest to take endogeneity into further consideration in future research. Huang and Hilary (2014) handle endogeneity issues using outside director deaths as exogenous shocks for the affected firm. Since their study is limited

to U.S. data, it would be interesting to see if their results might differ from those a cross-country study could obtain.

Another area of interest for further research could be investigating the results of the regressions done for our second hypothesis. As mentioned earlier, we observed that for firms operating in more corrupt environments, the relationship between board tenure length and firm performance is less positive than for firms operating in less corrupt environments. However, we cannot draw any conclusions about the underlying reasons for this. While we presented two different hypotheses for why this might be, we cannot be sure if they are correct or if the actual reason is something we have not yet considered.

Moreover, we recognise that to fully grasp the background to our observed relationships between corruption, board tenure length, and firm performance, a quantitative study similar to ours has its limitations. A more detailed study on the subject would be necessary to understand better what causes increased corruption levels to lessen the positive impact of board tenure length on firm performance. For example, a qualitative approach could be taken, as this might be better suited to understand the actions of managers and how they are affected by the environment around them.

Lastly, being out of the scope for this study, the relationships between corruption, board tenure length, and firm performance could also be tested by solely looking at private companies. However, due to data availability – especially for firms operating in developing countries – this would likely lead to a smaller data sample and less representative findings.

References

Adegboye, A., Ojeka, S., Adegboye, K., Ebuzor, E., Samson, D. (2019). Firm Performance and Condensed Corporate Governance Mechanism: Evidence of Nigerian Financial Institutions. Verslas: teorija ir praktika, 2019-10-29, Vol.20, p.403-416.

Bharadwaj, A.S., Bharadwaj, S.G. & Konsynski, B.R. (1999). Information Technology Effects on Firm Performance as Measured by Tobin's q. Management science, 1999-07-01, Vol.45 (7), p.1008-1024.

Bacon, J. & Brown, J. (1975). Corporate directorship practices: Role, selection and legal status of the Board. New York/N. Y.

Blanc, R., Islam, M.A., Patten, D.M. & Branco, M.C. (2017). Corporate anti−corruption disclosure: An examination of the impact of media exposure and country−level press freedom. Accounting, auditing, & accountability, 2017-08-01, Vol.30 (8), p.1746-1770.

Brahma, S., Nwafor, C. & Boateng, A. (2020). Board Gender Diversity and Firm Performance: The UK Evidence. International Journal of Finance and Economics, 2020-07-19.

Brickley, J.A., Coles, J.L. & Jarrell, G. (1997). Leadership Structure: Separating the CEO and the Chairman of the Board. Journal of Corporate Finance (Amsterdam, Netherlands), 1997, Vol.3 (3), p.189-220.

Carter, C.B., & Lorsch, J.W. (2004). Back to the Drawing Board. Boston: Harvard Business School Press.

Chamberlain, T.W. (2010). Board composition and firm performance: Some Canadian evidence. International Advances in Economic Research, 2010-11, Vol.16 (4), p.421-422.

Chen, K.C. & J. Lee (1995). Accounting measures of business performance and Tobin's q theory. Journal of Accounting, Auditing & Finance, 1995-07, Vol.10 (3), p.587-609.

Chung, K.H. & Stephen W.P. (1994). A simple approximation of Tobin's q. Financial Management, 1994-10-01, Vol.23 (3), p.70-74.

Czech, S. (2016). Mancur Olson's Collective Action Theory 50 Years Later. A View from The Institutionalist Perspective. Journal of International Studies (Kyiv), 2016-11, Vol.9 (3), p.114-123.

Davis, J.H., Schoorman, F.D., & Donaldson, R. (1997). Toward a Stewardship Theory of Management. The Academy of Management review, 1997-01-01, Vol.22 (1), p.20-47.

Demsetz, H. (1983). The Structure of Ownership and the Theory of the Firm. The Journal of Law & Economics, 1983-06-01, Vol.26 (2), p.375-390.

Deloitte (2018). Governance in brief: FRC issues new UK Corporate Governance Code.

Donaldson, L. & Davis, J.H. (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns. Australian Journal of Management, 1991-06, Vol.16 (1), p.49-64.

Eccles, R. & Serafeim, G. (2013). The performance frontier: Innovating for a sustainable strategy. Harvard Business Review, 2013-05, Vol.91 (5), p.50-150.

Farber, D. (2004). Restoring Trust After Fraud: Does Corporate Governance Matter? The Accounting Review, 2005-04-01, Vol.80 (2), p.539-561.

Ferris, S.P., Hanousek, J. & Tresl, J. (2021). Corporate profitability and the global persistence of corruption. Journal of Corporate Finance (Amsterdam, Netherlands), 2021-02, Vol.66, p.101855.

Fiegener, M., Nielsen, J. & Sisson J.R. (1996). Tenure characteristics of outside directors and financial performance: Results from the banking industry. American Business Review, 1996-01-01, Vol.14 (1), p.89.

Fracassi, C. & Tate, G. (2012). External Networking and Internal Firm Governance. The Journal of Finance (New York), 2012-02-01, Vol.67 (1), p.153-194.

Groenendijk, N. (1997). A principal-agent Model of corruption. Crime, law, and social change, 1997, Vol.27 (4), p.207-229.

Hambrick, D., & Mason, P. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. The Academy of Management review, 1984-04-01, Vol.9 (2), p.193-206.

Huang, S. & Hilary, G. (2014). Zombie Board: Board Tenure and Firm Performance. Journal of Accounting Research, 2018-09, Vol.56 (4), p.1285-1329.

Huse, M. (2007). Boards, Governance and Value Creation: The Human Side of Corporate Governance. Cambridge: Cambridge University Press.

Hwang, H. & Kim, S. (2009). It Pays to Have Friends. Journal of Financial Economics, 2009, Vol.93 (1), p.138-158.

Ibhagui, O. & Olokoyo, F. (2018). Leverage and firm performance: New evidence on the role of firm size. The North American Journal of Economics and Finance, 2018-07, Vol.45, p.57-82.

Institute of Directors (2018). Standards for the Board. What is the role of the board?

Islam, M.A., Haque, S., Dissanayake, T., Leung, P. & Handley, K (2015). Corporate Disclosure in Relation to Combating Corporate Bribery: A Case Study of Two Chinese Telecommunications Companies. Australian Accounting Review, 2015-09, Vol.25 (3), p.309-326.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 1976, Vol.3 (4), p.305-360.

Jones Day. (2014). Director Tenure: The New Frontier in Board Independence.

Ji, J., Peng, H., Sun, H. & Xu, H. (2020). Board Tenure Diversity, Culture and Firm Risk: Cross-Country Evidence. Journal of International Financial Markets, Institutions & Money, 2021-01, Vol.70, p.101276.

Karpoff, J., Lee, G. & Masulis, R. (2013). Contracting Under Asymmetric Information: Evidence From Lockup Agreements in Seasoned Equity Offerings. Journal of Financial Economics, 2013-12, Vol.110 (3), p.607-626.

Keig, D.L., Brouthers, L.E. & Marshall, V.B. (2015). Formal and Informal Corruption Environments and Multinational Enterprise Social Irresponsibility. Journal of Management Studies, 2015-01, Vol.52 (1), p.89-116.

Kochanova, A. (2012). The Impact of Bribery on Firm Performance: Evidence from Central and Eastern European Countries. CERGE-EI Working Paper Series No. 473.

Libit, W., & Freier, T. (2015a). Is 75 the New 68: Director Tenure, Mandatory Director Retirement and Related Issues. Insights (Clifton, N.J.), 2015-03-01, Vol.29 (3), p.2.

Libit, W., & Freier, T. (2015b). Director tenure: The Next Boardroom Battle. The Corporate Board.

Livnat, J., Smith, G., Suslava, K. & Tarlie, M. (2021). Board Tenure and Firm Performance. Global Finance Journal 47 (2021) 100535.

Lopatta, K., Jaeschke, R., Tchikov, M. & Lodhia, S. (2017). Corruption, Corporate Social Responsibility and Financial Constraints: International Firm−level Evidence. European management review, 2017, Vol.14 (1), p.47-65.

Malagueño, R., Ainge, C., Stephens, N. & Albrecht, C. (2010). Accounting and Corruption: A Cross−Country Analysis. Journal of Money Laundering Control, 2010-10-12, Vol.13 (4), p.372-393.

Mauri, A., & Michaels, M. (1998). Firm and Industry Effects within Strategic Management: An Empirical Examination. Strategic Management Journal, 1998-03-01, Vol.19 (3), p.211-219.

McFarland, J. (2013). Board Games: The Push for New Blood in the Boardroom. The Globe and Mail, 25 November, pp. B3-B6.

McIntyre, M.L., Murphy, S.A., & Mitchell, P. (2007). The top team: Examining Board Composition and Firm Performance. Corporate Governance (Bradford), 2007-10-23, Vol.7 (5), p.547-561.

Morck, R., Shleifer, A. & Vishny, R.W. (1988). Management Ownership and Market Valuation – An Empirical Analysis. Journal of Financial Economics, 1988, Vol.20 (1), p.293-315.

O'Brien, R. M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors, Quality & Quantity, vol. 41, no. 5, pp. 673-690.

O'Kelley, R., Goodman, A. & Martin, M. (2018). 2019 Global & Regional Trends in Corporate Governance.

Olson, M. (1965). The Logic of Collective Action: Public Goods and the Theory of Groups. 1965, pr. 1971.

Papadopoulos, K. (2018). Board Refreshment: Finding the Right Balance. ISS Analytics.

Parekh, H., Kothari, J. & Chakraborty, S. (2020). Corporate governance and directors' duties in India: Overview. Thomson Reuters Practical Law.

Perfect, S.B. & K.W., Wiles (1994). Alternative Constructions of Tobin's Q: An Empirical Comparison. Journal of Empirical Finance, 1994, Vol.1 (3), p.313-341

Persson, A., Rothstein, B., & Teorell, J. (2012). Why Anticorruption Reforms Fail—Systemic Corruption as a Collective Action Problem. Governance (Oxford), 2013-07, Vol.26 (3), p.449-471.

Petchko, K. (2018). How to Write About Economics and Public Policy. Academic Press.

Pozen, R., & Hamacher, T. (2015). The Trend Towards Board Term Limits is Based on Faulty Logic.

Salter, M. (2012). How Short-Termism Invites Corruption…And What to Do About it. Harvard Business School Research Paper No. 12-094, Harvard Business School General Management Unit Working Paper No. 12-094, Harvard Business School NOM Unit Working Paper No. 12-094.

Seker, M., & Yang, J. S. (2012). How Bribery Distorts Firm Growth: Differences by firm attributes. Policy Research Working Paper, The World Bank No. 6046.

Smith, E. & Umans, T. (2013). Organizational Ambidexterity at the Local Government Level: The Effects of Managerial Focus. Public Management Review, 2015-07-03, Vol.17 (6), p.812-833.

Spencer Stuart (2018). 2018 United States: Spencer Stuart Board Index.

Singh, H., & Harianto, F. (1989). Management-Board Relationships, Takeover Risk, and the Adoption of Golden Parachutes. Academy of Management Journal, 1989-03-01, Vol.32 (1), p.7-24.

The World Bank. (2020). GDP per capita.

Tobin, J. (1969). A General Equilibrium Approach to Monetary Theory. Journal of Money, Credit and Banking, 1969-02-01, Vol.1 (1), p.15-29.

Tobin, J. (1978). Monetary Policies and the Economy: The Transmission Mechanism. Southern Economic Journal, 1978-01-01, Vol.44 (3), p.421.

Transparency International. (2020). Corruption Perceptions Index 2019: Short Methodology Note.

Transparency International. (2021). Corruption Perceptions Index 2020.

Transparency International. (2021). Research.

United Nations Office on Drugs and Crime. (2021). Theories That Explain Corruption.

Uzun, H., Szewczyk, S. & Varma, R. (2004). Board Composition and Corporate Fraud. Financial Analysts Journal, 2004-05-01, Vol. 60 (3), p.33-43.

Vafeas, N. (2003). Length of Board Tenure and Outside Director Independence. Journal of Business Finance & Accounting, 2003-09, Vol.30 (7−8), p.1043-1064.

Wiersema, M.F. & Bantel, K.A. (1992). Top Management Team Demography and Corporate Strategic Change. Academy of Management Journal, 1992-03-01, Vol.35 (1), p.91-121.

Wijayati, N., Hermes, N., Holzhacker, R. (2016). Corporate Governance and Corruption: A Comparative Study of Southeast Asia.

Wu, X. (2005). Corporate governance and corruption: A cross-country analysis. Governance (Oxford), 2005-04, Vol.18 (2), p.151-170.

Appendices

Appendix I. Regressions, Hypothesis 1 (Sample excluding Japan and U.S.)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Firm FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
AvgBT	0.04254**	0.03749**	0.00198**	0.00255***
	2.53	2.24	2.19	2.87
AvgBT²	-0.00234**	-0.00226**	-0.00016***	-0.00017***
	-2.09	-2.04	-2.62	-2.82
BGD	0.23874***	0.06811	-0.00937**	0.00919*
	3.31	0.77	-2.31	1.95
BS	0.00120	0.00233	-0.00036*	-0.00055***
	0.28	0.54	-1.65	-2.58
CCS	-0.01097	-0.01116	0.00198***	0.00143**
	-0.91	-0.92	3.08	2.24
IBM	-0.07293	-0.08910	0.00254	0.00487
	-1.33	-1.62	0.84	1.62
Lev	0.50603***	0.50415***	-0.00325***	-0.00300***
	38.46	38.36	-6.83	-6.41
RevG	-0.25082***	-0.13433***	0.01277***	0.00637***
	-6.83	-3.52	6.21	2.96
Log(AvgTA)	-2.02530***	-2.05504***	-0.03628***	-0.03439***
	-55.08	-54.85	-21.04	-19.09
Log(MCap)	1.96477***	1.96461***	0.02930***	0.03137***
	79.94	77.84	31.23	31.84
Log(GDPC)	-0.02782	0.04654	0.01072***	0.00423
	-0.40	0.59	3.01	1.11
Constant	3.42096***	3.37981***	0.11233***	0.08508*
	4.17	3.78	2.66	1.81
N	11,134	11,134	11,024	11,024
R² (within)	0.6886	0.6789	0.1977	0.1948

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

Appendix II. Regressions, Hypothesis 2 (Sample excluding Japan and U.S.)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Firm FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
CPI Tier	-0.09382**	-0.09198**	-0.00033	-0.00228
	-2.45	-2.39	-0.17	-1.20
AvgBT	0.00452	0.00065	-0.00001	0.00034
	0.80	0.11	-0.04	1.16
(CPI $Tier_1$ × AvgBT)	-0.00380	-0.00600	-0.00045	-0.00029
	-0.65	-1.01	-1.61	-1.05
(CPI $Tier_2$ × AvgBT)	-Comparable Base-	-Comparable Base-	-Comparable Base-	-Comparable Base-
(CPI $Tier_3$ × AvgBT)	0.01113**	0.01191**	-0.00015	0.00011
	2.02	2.15	-0.52	-0.41
BGD	0.24551***	0.06501	-0.00811**	0.01001**
	3.39	0.74	-2.00	2.12
BS	0.00085	0.00210	-0.00037*	-0.00055***
	0.20	0.49	-1.70	-2.57
CCS	-0.01342	-0.01305	0.00198***	0.00136**
	-1.11	-1.07	3.07	2.11
IBM	-0.06883	-0.08612	0.00260	0.00500*
	-1.25	-1.57	0.86	1.67
Lev	0.50638***	0.50445***	-0.00325***	-0.00299***
	38.52	38.41	-6.82	-6.38
RevG	-0.24988***	-0.13511***	0.01270***	0.00628***
	-6.79	-3.54	6.19	2.91
Log(AvgTA)	-2.02486***	-2.05577***	-0.03621***	-0.03446***
	-55.08	-54.76	-20.94	-19.09
Log(MCap)	1.96350***	1.96395***	0.02930***	0.03141***
	80.05	78.00	31.27	31.89
Log(GDPC)	-0.02527	0.05305	0.01046***	0.00440
	-0.36	0.68	2.93	1.16
Constant	3.72245***	3.64808***	0.12078***	0.09613**
	4.46	4.04	2.83	2.04
N	11,134	11,134	11,024	11,024
R^2 (within)	0.6887	0.6790	0.1973	0.1946

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

Appendix III. Regressions, Hypothesis 1 – with Industry Fixed Effects (Full Sample)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Industry FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
AvgBT	-0.01033	-0.01084	0.00068	0.00058
	-1.02	-1.07	1.50	1.31
AvgBT²	0.00014	0.00015	0.00001	0.00001
	0.22	0.25	0.20	0.47
BGD	0.15891***	0.16487***	0.00193	0.01004***
	2.95	2.89	0.78	3.87
BS	0.00970***	0.00973***	-0.00014*	-0.00022***
	4.85	4.86	-1.68	-2.60
CCS	0.00004	-0.00178	-0.00007	0.00026
	0.00	-0.16	-0.14	0.52
IBM	-0.02178	-0.01770	0.00268	0.00358**
	-0.62	-0.50	1.60	2.15
Lev	0.64567***	0.64605***	-0.00194***	-0.00174***
	100.24	100.19	-10.10	-9.01
RevG	-0.21725***	-0.15569***	0.01339***	0.00836***
	-5.65	-3.84	7.60	4.53
Log(AvgTA)	-2.34958***	-2.35237***	-0.02758***	-0.02857***
	-169.75	-169.07	-37.30	-37.29
Log(MCap)	2.34364***	2.34493***	0.03086***	0.03157***
	173.36	172.36	38.41	37.86
Log(GDPC)	0.17677***	0.21699***	-0.01575***	-0.01708***
	3.05	3.47	-6.13	-6.19
Constant	0.01368	-0.37121	0.14631***	0.16544***
	0.02	-0.55	5.29	5.60
N	21,584	21,584	21,144	21,144
R² (within)	0.7714	0.7697	0.3125	0.3216

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

Appendix IV. Regressions, Hypothesis 2 – with Industry Fixed Effects (Full Sample)

	Tobin's Q		*ROAA*	
Regression	*(1)*	*(2)*	*(3)*	*(4)*
Country FE	*Yes*	*Yes*	*Yes*	*Yes*
Industry FE	*Yes*	*Yes*	*Yes*	*Yes*
Year FE	*No*	*Yes*	*No*	*Yes*
VCE Robust	*Yes*	*Yes*	*Yes*	*Yes*
CPI Tier	-0.02614	-0.00090	-0.00078	-0.00482***
	-0.91	-0.03	-0.62	-3.71
AvgBT	-0.01044***	-0.01050***	0.00089***	0.00088***
	-4.19	-4.15	8.05	7.91
(CPI Tier_1 × AvgBT)	-0.00129	-0.00193	-0.00061***	-0.00053***
	-0.36	-0.52	-4.15	-3.51
(CPI Tier_2 × AvgBT)	-Comparable Base-	-Comparable Base-	-Comparable Base-	-Comparable Base-
(CPI Tier_3 × AvgBT)	0.01042***	0.00995**	0.00008	0.00017
	2.67	2.50	0.44	0.95
BGD	0.15683***	0.16203***	0.00309	0.01055***
	2.90	2.84	1.23	4.06
BS	0.00976***	0.00986***	-0.00014*	-0.00022***
	4.88	4.92	-1.65	-2.64
CCS	0.00066	0.00031	0.00008	0.00017
	0.06	0.03	0.16	0.35
IBM	-0.01855	-0.01462	0.00278*	0.00359**
	-0.53	-0.41	1.66	2.16
Lev	0.64561***	0.64602***	-0.00192***	-0.00173***
	100.21	100.17	-10.01	-8.96
RevG	-0.21965***	-0.15755***	0.01324***	0.008568***
	-5.68	-3.89	7.49	4.65
Log(AvgTA)	-2.35005***	-2.35302***	-0.02762***	-0.02855***
	-169.65	-169.07	-37.20	-37.23
Log(MCap)	2.34422***	2.34537***	0.03082***	0.03154***
	173.39	172.45	38.26	37.81
Log(GDPC)	0.15708***	0.20512***	-0.01226***	-0.01624***
	2.62	3.20	-4.63	-5.76
Constant	0.27042	-0.25376	0.11204***	0.16595***
	0.41	-0.37	3.92	5.51
N	21,584	21,584	21,144	21,144
R^2 (within)	0.7714	0.7698	0.3134	0.3221

*Notes: T-values are presented in parentheses below the coefficients. *, **, and *** indicate the significance of the coefficients at levels of 0.1, 0.05, and 0.01, respectively.*

Appendix V. Corruption Perceptions Index ("CPI"), by country and year

Country / Year	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Argentina	30	35	34	34	32	36	39	40	45
Australia	88	85	81	80	79	79	77	77	77
Austria	78	69	69	72	76	75	75	76	77
Belgium	75	75	75	76	77	77	75	75	75
Brazil	38	43	42	43	38	40	37	35	35
Canada	87	84	81	81	83	82	82	81	77
Chile	72	72	71	73	70	66	67	67	67
China	36	39	40	36	37	40	41	39	41
Colombia	34	36	36	37	37	37	37	36	37
Denmark	94	90	91	92	91	90	88	88	87
Finland	94	90	89	89	90	89	85	85	86
France	70	71	71	69	70	69	70	72	69
Germany	80	79	78	79	81	81	81	80	80
Greece	34	36	40	43	46	44	48	45	48
Hong Kong	84	77	75	74	75	77	77	76	76
India	31	36	36	38	38	40	40	41	41
Indonesia	30	32	32	34	36	37	37	38	40
Israel	58	60	61	60	61	64	62	61	60
Italy	39	42	43	43	44	47	50	52	53
Japan	80	74	74	76	75	72	73	73	73
Malaysia	43	49	50	52	50	49	47	47	53
Mexico	30	34	34	35	31	30	29	28	29
Netherlands	89	84	83	83	84	83	82	82	82
New Zealand	95	90	91	91	91	90	89	87	87
Norway	90	85	86	86	88	85	85	84	84
Philippines	26	34	36	38	35	35	34	36	34
Poland	55	58	60	61	63	62	60	60	58
Republic of Korea (S. Korea)	54	56	55	55	54	53	54	57	59
Russia	24	28	28	27	29	29	29	28	28
Singapore	92	87	86	84	85	84	84	85	85
South Africa	41	43	42	44	44	45	43	43	44
Spain	62	65	59	60	58	58	57	58	62
Sweden	93	88	89	87	89	88	84	85	85
Switzerland	88	86	85	86	86	86	85	85	85
Thailand	34	37	35	38	38	35	37	36	36
Turkey	42	49	50	45	42	41	40	41	39
United Arab Emirates	68	68	69	70	70	66	71	70	71
United Kingdom	78	74	76	78	81	81	82	80	77
United States of America	71	73	73	74	76	74	75	71	69

Appendix VI. Distribution of Total Firm-Year Observations ("FYO"), by country and year

Country / Year	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*Total FYO*
Argentina	0	0	0	0	0	0	3	7	11	21
Australia	145	157	185	215	228	230	258	280	301	1,999
Austria	12	12	12	12	12	13	14	15	28	130
Belgium	16	19	20	16	21	21	19	24	36	192
Brazil	29	31	41	45	44	51	54	62	58	415
Canada	135	150	155	166	179	185	207	216	240	1,633
Chile	3	7	11	15	15	17	21	20	22	131
China	38	44	47	55	52	63	65	175	211	750
Colombia	0	1	2	4	3	6	7	9	11	43
Denmark	21	21	21	21	22	25	27	29	39	226
Finland	23	23	23	24	24	21	22	24	31	215
France	79	80	81	83	83	79	87	100	137	809
Germany	52	59	63	59	71	75	77	94	156	706
Greece	6	7	7	9	7	9	10	11	8	74
Hong Kong	102	129	130	131	147	141	141	181	192	1,294
India	56	62	69	82	78	86	83	100	124	740
Indonesia	19	19	22	32	30	36	36	38	40	272
Israel	7	6	6	10	5	10	11	8	10	73
Italy	24	25	25	32	26	34	37	45	71	319
Japan	317	328	336	339	362	361	369	363	371	3,146
Malaysia	23	29	32	37	39	45	43	47	57	352
Mexico	13	14	12	16	19	20	21	25	30	170
Netherlands	23	24	26	27	29	30	34	35	47	275
New Zealand	9	10	13	13	31	33	42	44	46	241
Norway	19	19	19	18	20	20	17	22	59	213
Philippines	12	15	13	19	17	17	22	25	22	162
Poland	11	14	17	25	20	24	24	26	35	196
Republic of Korea (S. Korea)	38	53	66	71	77	75	63	85	88	616
Russia	15	20	18	17	22	23	23	21	30	189
Singapore	32	35	36	36	37	36	38	37	43	330
South Africa	37	54	63	61	61	74	68	81	78	577
Spain	28	30	31	36	33	38	34	37	54	321
Sweden	35	36	37	42	43	50	62	61	111	477
Switzerland	48	49	52	51	53	54	51	62	106	526
Thailand	13	14	18	24	23	30	34	33	37	226
Turkey	5	6	7	15	12	16	18	22	30	131
United Arab Emirates	1	1	1	1	4	7	8	8	12	43
United Kingdom	205	217	228	220	244	273	270	301	346	2,304
United States of America	688	712	727	723	793	1,306	1,818	2,055	2,228	11,050
										31,587