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The Impact of Blockholders on Firm Performance: Evidence from Singapore Listed Companies

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made.

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ABSTRACT

Blockholder ownership (or shareholders with at least 5% of the common shares) in the firm is a common observation in many countries, including Singapore, however extant literature yields conflicting results on how blockholders affect firm performance. The aim of this thesis is to explain and predict the relationships between the diverse classes of blockholders and firm performance based on appropriate theories including agency, stewardship and resource dependence theory. A key motivation of this study is to uncover possible explanations for some of the conflicting results based upon the underlying institutional settings, laws and cultures. The Singapore context provides a unique setting for a developed economy with concentrated ownership, unlike prior studies undertaken in the United States (US) and the United Kingdom (UK), which have relatively dispersed ownership structures.

The study investigated the linear, as well as non-linear, relationships that blockholders have on firm financial performance using the market-based measure Tobin's Q and the accounting-based measures Return on Assets (ROA) and Return on Equity (ROE). Balanced panel data is obtained from 97 Singaporean listed firms on the Mainboard of the Singapore Exchange during the years 2006 to 2016 (the Study Period). To deal with the endogeneity concerns in the panel data, the study used the two-step system Generalised Method of Moments (GMM).

Key findings in this study include curvilinear relationships between the level of insider ownership and Tobin's Q, with results suggesting that Tobin's Q decreased initially when the insiders increased their equity holdings to around 17.7% (consistent with private benefits hypothesis) and then increased when the insiders increased their equity holdings beyond 17.7% (consistent with convergence of interests). However, further increases of equity by insiders beyond 66.9% resulted in a decrease in Tobin's Q (consistent with entrenchment hypothesis). The results indicate that when pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the

shareholdings of non-pressure resistant institutional investors, such as sovereign wealth funds and family owners in the firm, will have a positive relationship on Tobin's Q due to the monitoring effect. These non-pressure resistant institutional investors are deemed as independent and effective monitors of management. Generally, a higher percentage of blockholders on the board were found to have a positive effect on Tobin's Q. This thesis argues that this is probably explained by the higher levels of equity ownership of blockholders that align their interest with the other shareholders in the firm (Agrawal and Nasser, 2018; Jentsch, 2019). Finally, the results indicate that increases/decreases in relative blockholding size will have a negative/positive relationship on future market expectations with no corresponding impact on immediate accounting returns.

In considering the above, public policy toward shareholders should encourage owner-managers of family businesses and insider-controlled businesses to avoid amassing excessive authority, which can lead to entrenchment, nepotism and oligarchic behaviour. Furthermore, public policy on such dominantly owned firms should place a greater emphasis on the protection of minority shareholders. The findings support regulatory settings which promotes the active involvement and engagement of blockholders. Blockholders have more direct voting power, the capacity to join coalitions with other major owners and more influence on the board than other outside directors, who generally have minor shareholdings.

Finally, it is hoped that the findings of this thesis may motivate managers to consider their ownership and corporate governance structures in a broader context to improve company performance. The findings of this thesis imply that a business should be cognizant of the amounts of stock ownership held by insiders to avoid the accumulation of excessive powers that lead to entrenchment. Firms should encourage more participation by blockholders on the board as such board members have greater influence and provide better monitoring relative to other outside directors who typically have negligible shareholdings.

Keywords: blockholders; large shareholders; corporate governance; firm performance; system GMM

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Chapter 1: Introduction

1.1 Introduction

Large shareholders in listed firms are a common phenomenon in many countries. However, extant literature yields conflicting results on how large shareholders affect firm performance. Most studies focus on developed countries such as the United States (US) and the United Kingdom (UK) where dispersed ownership structures are prevalent. Other studies focus on emerging economies where concentrated ownership structures are prevalent. This research study (the Study) uses the Singapore context to provide a unique setting where concentrated ownership structures are prevalent in a developed economy. Because no one theory can explain the complexities of the connections, the Study used a multi-theoretical approach to investigate the links between major shareholders and firm performance.

This chapter will offer an overview of the Study by first describing the backdrop and context, then the research problem, the research aims, objectives and questions, the research rationale, an overview of the methodology and lastly, a summary of the main findings.

1.2 Background to the Research

Large shareholders dominate the ownership of corporations in developed countries such as the US and Western European countries according to the studies by Konijn, Kraussl and Lucas (2011) and Thomsen, Pedersen and Kvist (2006) respectively, as well as in emerging markets in Asia and Latin American countries according to Lins (2003). These large shareholders are sometimes known as blockholders whose equity ownership in the firm is at least 5%, as defined by the empirical literature of Edmans (2014), Nguyen, Locke and Reddy (2014) and Basu, Paeglis and Rahnamaei (2016). In addition, the level of 5% shareholding is significant in the US and Singapore as it triggers disclosure requirements. Thus, understanding the role of blockholders in the firm is important as they hold sizeable stakes in the firm.

In a simple model, the large blockholder can choose to exert governance and align their interests with the other shareholders, thus theoretically enhancing firm value and performance according to the literature by Shleifer and Vishny (1986) and Edmans and Manso (2011). Contrary to this, however, blockholders can diminish performance by expropriating from the firm, such as getting the firm to purchase at inflated prices from other firms that they own (Edmans 2014). Another instance that could reduce firm performance would be institutional blockholders, such as banking institutions that side with underperforming management to maintain business ties by, for example, providing credit and cash management services to the firms within which they own shares (Brickley, Lease, and Smith 1988).

This Study uses agency theory, stewardship theory and resource dependence theory for a better understanding of the behaviours of blockholders in the corporate governance of firms. One expectation is that some blockholders in the firm are motivated to think and act like agents by being self-interested and opportunistic, similar to the description of managers as agents by Jensen and Meckling (1976). Given this perspective, monitoring on blockholders and increased shareholder protection would be effective in aligning the interests of blockholders with other minority shareholders to address the principal-principal conflict. For instance, Pagano and Röell (1998) argued that the presence of other large shareholders enhances the monitoring effect on the controlling shareholders and according to Shleifer and Vishny (1997), the expropriation by large shareholders can be minimised when there is strong legal protection for shareholders' voting rights on important corporate matters. Another perspective is offered by stewardship theory, which suggests that blockholders who are part of management do act as trusted stewards of the firm. Based on this presumption, such blockholders are pro-firm rather than self-interested according to Davis, Schoorman and Donaldson (1997) and A. E. James, Jennings and Jennings (2017). The third perspective is the resource dependence theory, which focuses on the role of the board of directors to minimise dependence or gain resources (Pfeffer 1972). This Study argues that blockholders can play a significant role if they are co-opted into the board, as they are likely to be more committed not only in monitoring managers, but also

in securing the critical resources to the firm for its survival and better performance due to their larger equity stake.

As discussed by Edmans (2014), there are diverse classes of blockholders from different types of investors, such as private institutional investors (e.g. hedge funds, mutual funds and private equity funds), sovereign wealth funds , corporations, family owners and individuals. Broadly speaking, blockholders are either insiders or outsiders. Insiders hold positions in the firm such as managers or directors of the firm (Basu, Paeglis and Rahnamaei 2016), whereas outsiders do not.

Three different measures of firm performance, Tobin's Q, ROA and ROE are captured in this Study. Different measures of firm performance are known to yield different and sometimes conflicting results. Tobin's Q is considered a long-term firm performance measure (Kang et al., 2017; Muniandy, Tanewski and Johl, 2016), with the expectations of investors built into this measure (Ganguli and Agrawal 2009). On the other hand, ROA and ROE are both regarded as short-term accounting measures of firm performance (Copeland, Koller and Murrin, 2000; Muniandy, Tanewski and Johl, 2016) as well as backward-looking profitability indicators of the firm (Isakov and Weisskopf 2014). According to Kim, Hwang and Burgers (1989), ROA measures the efficiency with which a firm produces its output and is well-suited for the examination of the actual performance in business operations. Unlike the ROE, the ROA is independent of the capital structure or financing decisions of the firm (Gomez-Mejia and Palich 1997). ROE focuses on returns to shareholders of the firm and gives the shareholders a quick and easy metric to understand.

This Study investigates the non-linear relationship between blockholders' shareholdings and firm performance as some early research did not yield significant results when employing a linear relationship in the model. For example, insiders such as managers might initially align their interests with other shareholders when they hold relatively small stakes in the firm. However, further increases in managers' equity could lead to the managers' entrenchment in the firm leading to poorer performance. McConnell and

Servaes (1990) discovered a curvilinear relationship between the proportion of shares owned by inside blockholders and Tobin's Q in US businesses, with the maximum of Tobin's Q occurring at 37.6% board ownership. A similar study by Bhabra et al. (2003) on Singapore firms concluded that the directors' equity holdings have a cubic relationship with Tobin's Q; the maximum and minimum point occurs at ownership of 20.34% and 52.73% respectively. Such a cubic relationship would imply that directors' equity ownership from 5% to around 20.34% resulted in an increase in the firm value as the convergence-of-interest increases. However, further increases in equity ownership up to around 52.73% by directors brings about the entrenchment effect in the directors, which reduces firm value. Beyond the 52.73% ownership, the directors would seem to realign their interests with the other shareholders (to avoid the erosion in firm value) because of their much higher equity stake. With this in mind, this Study investigates the possibility of a cubic relationship between inside blockholdings (which includes directors' equity ownership) and the firms' performance measures.

Most empirical studies on family firms concluded that family firm performance has a concave (inverted U-shaped) relationship with family ownership (e.g. Anderson and Reeb, 2003; Isakov and Weisskopf, 2014; Poutziouris, Savva and Hadjielias, 2015). Le Breton-Miller, Miller and Lester (2011) argued that both the agency perspectives and stewardship perspectives are present in family firms. As family participation and influence grows, so does the scope for self-serving behaviour. With a larger number of family directors, officers and votes, stewardship behaviour will be less prevalent and agency behaviour will prevail. This Study goes a step further by considering the potential of a cubic relationship between family blockholdings and firm performance. Such a hypothesis is based on the belief that family owners will realign their interests with other shareholders to avoid erosion in the firm value because of their much higher equity stake.

Another area of study is the conflicting motivations of domestic sovereign wealth funds (SWFs) who might place emphasis not only on financial gains, but also pursue prosocial oriented objectives. The interaction of these

competing goals may result in a non-linear relationship between SWFs' shareholdings and firm performance. At lower levels of equity ownership, the SWFs have lesser control of the firm and their interests are aligned with the objectives of other shareholders in increasing the wealth of their investment. At higher levels of equity ownership, the SWFs have a dominant control and might put less emphasis on financial gains due to the pursuit of socially oriented projects for political objectives. Towards this intent, this Study considers the potential of an inverted U-shaped relationship between SWFs' ownership and business performance.

As per a literature search on other institutional investors, only mutual funds, pension funds and hedge funds are efficient management monitors among the pressure-resistant institutional investors according to Muniandy, Tanewski and Johl (2016). These pressure-resistant institutional investors do not have any business relationship with the firm that could affect their monitoring ability on management. However, the authors concluded that these pressure-resistant investors provided only monitoring ability for short-term performance, but no monitoring ability for long-term performance. A recent study by Chizema et al. (2020) on Chinese firms concluded that increasing the ownership does not lead to higher firm performance for concentrated ownership structures. The authors claimed that when mutual fund ownership exceeds a particular level, mutual funds are more likely to collaborate with the controlling shareholders of their invested businesses to safeguard their private interests, rather than threaten to leave due to higher costs. The findings showed that mutual fund ownership has an inverted-U relationship with both long-term firm performance as well as short-term firm performance. Thus, this Study hypothesises that pressure-resistant institutional investors might not always provide a monitoring role in concentrated ownership structures. In addition, the monitoring role could be restricted to either short-term or long-term monitoring.

Another key area of interest in this Study is the relationship between the controlling blockholder and other blockholders. This is a critical step in understanding blockholders' incentives in firms with a dominant blockholder. Fattoum-Guedri, Guedri and Delmar (2018) argued on the influence of voting

rights asymmetry between family and non-family blockholders on firm performance. If the family voting rights are significantly greater than those of non-family blockholders, the dominant family owners may be under-monitored. Based on the trade-off, more balanced voting rights between family and non-family blockholders would be advantageous since all stakeholders could jointly contribute to strategic decision making and wealth development. In this regard, Fattoum-Guedri, Guedri and Delmar (2018) showed that a greater imbalance in voting rights between family and non-family blockholders reduces firm performance, as assessed by Tobin's Q. However, based on the unique familiness perspective, family blockholders may not always behave opportunistically to shift resources for personal purposes. In some cases, families may supply the firm with unique bundles of resources and talents according to Le Breton-Miller, Miller, and Lester (2011). Non-family blockholders' intense supervision may have a negative impact if it inhibits the family from making the costly firm-specific expenditures required to develop these distinctive bundles of resources and skills. The authors reasoned that too much voting power in the hands of non-family blockholders might inhibit family firm performance due to over-monitoring. Thus, to contribute to extant literature, this Study investigated the impact on the firm performance when SWFs or pressure-resistant institutional investors change their equity stake in a firm controlled by the dominant family owners.

When SWFs have dominant control of the firm, they might place less emphasis on financial gains due to the pursuit of socially oriented projects for political objectives. However, a second dominant blockholder could have a monitoring effect on the SWFs or collude with the SWFs, depending on the motivation. In the case of family owners, this Study hypothesises that increases in family ownership could provide a monitoring effect on the SWFs and thus increase firm performance. Increases in shareholdings by pressure-resistant institutional owners, on the other hand, may have a positive effect on firm performance at lower levels of ownership due to the monitoring effect on SWFs, but may have a negative effect on firm performance at higher levels of ownership due to collusion.

As they have access to more resources and knowledge than smaller investors, pressure-resistant institutional investors such as mutual funds, hedge funds and pension funds may exercise direct monitoring on management. These pressure-resistant institutional investors may be seen as efficient monitors when they are the dominant shareholders in the business since they have a fiduciary obligation to safeguard the value of the investments for the fund beneficiaries. In line with this argument, performance of the firm will be enhanced further with a second dominant blockholder that provides added monitoring or contributes to the joint resources and capabilities of the firm. Thus, this Study hypothesises that when pressure-resistant institutional investors are the dominant shareholders in the firm, increases in the shareholdings by family owners or SWFs will increase firm performance due to the monitoring effect.

Most of the studies on private activism are based on surveys or interviews of a mixed or qualitative nature. It is envisaged that to capture the extent of private engagement for a broader scale of quantitative study, it could require the use of more novel quantitative measures to proxy the private engagement by blockholders. This Study proposed two measures to capture the long-term commitment of key blockholders that are likely to have an impact on firm performance, the lagged change in blockholding size of the largest blockholder to the total blockholding size and the proportion of directors in the board who are blockholders as well.

Trading-focused owners in liquid markets are more concerned with generating financial profits by churning assets rather than investing long-term in the firm's operations. The study of Lehmann and Weigand (2000) affirmed that committed shareholders do not exit from their investments at the first sign of trouble. The authors showed that committed shareholders participated actively in the governance of the firm, such as involvement in picking senior management or replacing incompetent managers, to ensure sound management of the firm. On the other hand, there are times when the direction of the firm changes, or the blockholder loses confidence in the board and management to execute the strategy. In these rare situations the blockholder’s

interest may no longer align with the firm. In such instances, selling shares could be the most appropriate response (*UniSuper* 2016). Therefore, this Study investigates the change in blockholding size of the largest blockholder to the total blockholding size over a one-year period on firm performance.

Prior research by Nguyen, Locke and Reddy (2014) and Wintoki, Linck and Netter (2012) have shown that independent blockholders and non-executive blockholders with negligible stockholdings on the board do not affect firm financial performance after taking into account the dynamic endogeneity which controls for firm's past performances. These results motivated this Study to seek other members of the community or shareholders that could provide effective monitoring and enhance firm financial performance. Thus, this Study proposes that board members are assumed to be more vigilant if they hold a sizeable equity stake in the firm. The presence of blockholders on the board can positively influence firm performance because it reduces the agency problems and could provide critical resources to the firm according to the resource dependence theory. In addition, this Study argues that a sufficient proportion of blockholders need to be on the board for effective monitoring of management to exist. Thus, this Study investigates the impact that the proportion of blockholders on the board has on firm performance.

1.3 Problem Statement

Until recently, corporate governance practices were researched using the prevalent concept that agency conflicts arise when the owner and management roles are separated (e.g. Anderson and Reeb, 2003; Brockman and Yan, 2009; Konijn, Kraussl and Lucas, 2011; Nguyen, Locke and Reddy; 2014; Singh et al., 2018). The classical agency problem developed by Berle and Means (1932) and later by Jensen and Meckling (1976) was based on the notion that most public companies shareholdings were widely held. A series of recent ownership structure studies, however, found that in most markets, a substantial proportion of listed firms do not have a broadly dispersed ownership structure (Isakov and Weisskopf 2014). High concentrated ownership structures are especially evident in emerging economies, withmost listed businesses in these markets having a high concentration of ownership

with one or more significant shareholders who can be classified as families, SWFs or financial institutions.

This Study examines the impact of blockholders on firm performance in the Singapore context, with high ownership concentration (Nguyen, Locke and Reddy 2014) by the domestic SWFs and families (Bhabra et al., 2003). The Singapore context provides a unique setting for a developed economy with concentrated ownership structures in listed firms. In this sort of setting, the examination of the relationship between the largest shareholder and other shareholders is more important (Huyghebaert and Wang, 2012; Pindado, Requejo and Torre, 2012). This Study attempts to incorporate the stewardship theory and resource dependence theory based on the arguments of concentrated ownership and principal-principal conflicts, as the agency perspective may not provide a complete picture because some blockholders, such as family blockholders, do not always act opportunistically and may bring critical resources for the firm's survival (Hillman, Withers and Collins, 2009; Le Breton-Miller, Miller and Lester, 2011).

1.4 Research Aim and Objectives

The aim of this Study is to investigate empirically the relationship between blockholders and firm performance under concentrated ownership structures, using a multi-theoretical approach that incorporates agency theory, stewardship theory and resource dependence theory. This Study specifically addresses the following research objectives:

1. To explain and predict the relationship between the diverse classes of blockholders and firm performance.

2. To explain and predict the relationship between the dominant blockholder class and the non-dominant blockholders on firm performance.

3. To explain and predict the effect of blockholder engagement on firm performance.

4. To provide a cohesive body of knowledge, for a better understanding, of the relationships between blockholders and company performance using different theoretical approaches such as agency theory, stewardship theory and resource dependence theory.

1.5 Research Questions

The research questions arising out of this Study to address the research objectives are:

1. Which blockholder classes affect the performance of Singapore listed firms in terms of market valuation of the firm and accounting returns to the firm?

2. For firms with more than one blockholder class, how is the overall firm performance of Singapore listed firms affected in terms of market valuation of the firm and accounting returns to the firm by the non-dominant blockholders?

3. Does blockholders' engagement matter to the performance of Singapore listed firms in terms of the market valuation of the firm and accounting returns to the firm?

1.6 Justification for the Research

The purpose of this Study is to investigate the complex relationships between blockholders and firm performance in concentrated ownership structures for a developed economy. The results of this Study will further the understanding in the following areas from the theoretical, as well as the practical perspectives:

Firstly, this Study provides a coherent body of knowledge that incorporates the different perspectives of competing theories such as agency theory, stewardship theory and resource dependence theory, in explaining and predicting the behaviour of blockholders in a concentrated ownership environment for a developed economy. Prior studies have focussed on listed companies in developed economies such as the US and the UK, where dispersed ownership structures are prevalent, or in emerging economies such

as China where concentrated ownership structures are prevalent. The Singapore context provides a unique setting for a developed economy where the majority of the listed firms are owned by families and the domestic SWFs Temasek Holdings or its subsidiaries (Puchniak and Tang 2019).

Secondly, this Study extends a limited stream of literature on Singapore which focuses on the effects of ownership structures on firm performance (e.g. Ang and Ding, 2006; Bhabra et al., 2003; Chen and Ho, 2000). Most of the developing streams of literature focus primarily on the effects of board structures on firm performance (e.g. Mak and Kusnadi, 2005; Nguyen, Locke and Reddy, 2014).

Thirdly, this Study investigates the effect of engaged blockholders on the performance of Singaporean listed companies. Engagement by shareholders takes on a generally longer-term outlook with regards to investment and involvement in the firm's affairs. Most of the private engagements are not observable to the researcher (Brown 2014; UniSuper 2016a). The research study proposed novel quantitative measures to proxy the private engagement by blockholders.

Fourthly, the results will help firms understand how their performance is impacted by the blockholders. Firms will be in a better position to understand how their market valuation and their accounting returns, such as ROA and ROE, are affected by their blockholders. This information could be useful for firms in attracting the right shareholders to be blockholders who will be able to provide good oversight and optimise the performance of the firm.

Fifthly, the results of this Study will improve the ability of investors to make well-informed decisions when faced with the different classes of blockholders in a concentrated ownership environment for a developed economy. Shareholders will be able to optimise their shareholding returns under different circumstances.

Finally, some findings of this Study may lead to implications for policy makers, in that it could provide a better understanding by regulatory authorities of blockholders' effect on firm performance. Some of these new findings could

motivate authorities to provide a more appropriate regulatory environment and corporate governance structures to optimise firm performance.

1.7 Overview of Methodology

This Study looks at Singaporean companies listed on the Mainboard of the Singapore Exchange during the Study Period. Out of these listed companies, 97 companies with complete data over the 11 year period were obtained, with a maximum of 1067 firm-year observations, resulting in a balanced panel data being used in this Study. The timespan of the data was chosen to include the most recent data available when this Study started.

Three empirical research models were created to answer the research's purpose and objectives. To fulfill the research objective 1, the first model is used to evaluate the effects of different types of blockholders on company performance. The second model is used to analyse the interactions between the dominant and non-dominant blockholders on business performance to fulfill research objective 2. Finally, to fulfill research objective 3, the third model is used to assess the influence of blockholder involvement on business performance.

Tobin's Q, ROA and ROE are used to evaluate a company's performance. Tobin's Q is a measure of the firm's long-term performance that considers investors' expectations, whereas ROA and ROE are accounting measurements of the firm's short-term performance that are backward-looking. ROA measures a company's profitability in relation to its total assets. Unlike the ROE, the ROA is unaffected by the firm's capital structure or financing decisions (Gomez-Mejia and Palich 1997). ROE focuses on returns to shareholders of the company and gives the shareholders a quick and easy metric to understand. The ownership variables include the equity stake of blockholders of insiders, family members, SWFs and pressure-resistant institutional investors. The lagged changes in the equity stake of the largest blockholder relative to the total blockholding size and the proportion of directors who are blockholders were used to measure the blockholders' engagement. The firm-specific factors used in the regression models were firm

size, firm age, leverage and capital expenditure to total assets. These firm-specific factors were chosen because they were deemed to be causal factors associated with firm performance. The inclusion of these firm-specific factors as control variables in the regression model can also make the coefficients of the independent variables more accurate by providing a better estimate of the relationship between the independent variables of interest and dependent variable in the study (Carlson and Wu 2012).

Descriptive analysis, correlational analysis and multivariate analysis were all used to analyse the data. The descriptive analysis of the dependent and independent variables in the sample gave a basic knowledge of the data and its distribution. When the variables are not normally distributed, data transformation is performed. The correlational analysis used Pearson's correlation coefficients to analyse the correlations between variables to discover possible multi-collinearity problems in the regression model. The multivariate analysis was used to test the hypotheses in Section 3.7 and Table 3.2. Regression analysis is predicated on a set of assumptions that must be validated before proceeding with this Study. Normality, linearity, homoskedasticity and error term independence are among the assumptions. Several tests were used to compare the data from this Study to the multivariate regression assumptions.

GMM was used in the multivariate regression analysis for the dynamic panel data models. According to Roodman (2006), GMM is well-suited for dynamic panel data analysis for the following situations:

1. Panels with “small T, large N”, meaning few time periods and many firms
2. A linear functional relationship in the model
3. Independent variables that are not absolutely exogeneous, i.e. they are correlated with the regression model's previous or current error term
4. Fixed firm effects in the model, and
5. Heteroskedasticity and autocorrelation within firms.

1.8 Main Findings

Research Question 1 was to investigate the blockholder classes that could have an impact on the firm performance of Singapore listed firms in terms of market valuation and accounting returns to the firm. This Study found curvilinear relationships between the level of insider or family ownership and Tobin's Q, but no significant relationship was observed for ROA and ROE. For example, the results suggest that Tobin's Q initially decreased when the insiders increased their equity holdings to around 17.7% (consistent with private benefits hypothesis) and then the Tobin's Q increased when the insiders increased their equity holdings beyond 17.7% (consistent with convergence of interests). However, further increases of equity by insiders beyond 66.9% resulted in a decrease in Tobin's Q (consistent with entrenchment hypothesis). The Study argues that the impact on a market-based and long-term performance (such as Tobin's Q) and accounting returns and short-term performance (such as ROA or ROE) can be different in line with a related study by Muniandy, Tanewski and Johl (2016).

Research Question 2 was to investigate the effect of non-dominant blockholder classes on firm performance in firms dominated by family, SWFs or pressure-resistant institutional ownership. The results of this Study support that when pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the shareholdings by non-pressure resistant institutional investors such as SWFs and family owners in the firm will have a positive relationship on Tobin's Q due to the monitoring effect. This is in line with the notion that family or state have greater incentives and can provide better monitoring on the controlling shareholder (Attig, El Ghoul and Guedhami 2009).

Research Question 3 was to investigate blockholders' engagement on the firm's performance in terms of market valuation and accounting returns to the firm. Two measures of blockholder engagement were proposed in this Study, namely the change in blockholding size of the largest blockholder relative to the total blockholding and the proportion of blockholders on the board. This Study found that the change in the largest blockholding size relative to the total

blockholding is positively related to Tobin's Q, but no significant relationships were observed for ROA or ROE. This Study argues that increases in the equity holdings by the largest blockholder reflected greater confidence and commitment in the firm, whilst decreases in the equity holdings by the largest blockholder indicated loss of confidence and/or reduced commitment in the firm. In addition, this Study found that a U-shaped relationship is observed between the lagged proportion of blockholders on the board and Tobin's Q, but had an insignificant relationship with ROA or ROE. Based on an average board size of 10.1 directors in 2016 (Stuart 2018), the results of this Study suggests that firms with at least two blockholders on the board have higher Tobin's Q than firms with only one or zero blockholders on the board.

Overall, the findings showed that the impact of blockholders is more significant on a market-based performance indicator such as Tobin's Q, relative to accounting-based performance indicators such as ROA and ROE. In some situations, it was found that although the relationship is maintained, there is a loss in the statistical significance when ROA and ROE are used as performance measures. This Study argues that as the effect of blockholder ownership takes longer to manifest itself on firm performance, the effect is observed more significantly in Tobin's Q as it is regarded as a market-based performance indicator as well as a long-term firm performance indicator.

1.9 Structure of the Thesis

The thesis is structured as follows:

Chapter 2 reviews the literature on firm performance and blockholder ownership. The review revealed that utilising a multi-theoretical approach to describe and analyse the relationship between blockholders and company performance is suitable. This chapter also highlighted the possible research gaps that this Study intended to investigate. Some of the research gaps involved questions that have not previously been asked, such as the conflicting roles that family firms have on corporate governance and firm performance. Other questions could include trying to address the differences in performance measures that lead to insignificant or conflicting results.

Chapter 3 develops the theoretical framework used for this Study. The theoretical framework aims to give an understanding of the theories and concepts used and provides a “blueprint” for this entire Study. An explanation of the conceptual framework that outlines how the research topic will be best examined, the precise path the research will have to follow, and the link between the different variables in the study is embedded in the theoretical framework (Grant and Osanloo 2014). The chapter concludes with the hypothesis development.

Chapter 4 introduces the research methodology, which is based on a quantitative research strategy. The data population, sampling procedure and data collection effort are all described in relation to the quantitative analysis of secondary data. Furthermore, the operationalisation of all variables, the model specification and statistical methods are discussed.

Chapter 5 reports the empirical findings on the relationship between the blockholders and firm performance. Descriptive statistics and correlational analysis are discussed in the chapter. The normality and data transformation are then carried out prior to the regression analysis. Finally, findings from the multivariate analysis using the two-step system GMM are presented against the hypotheses in this Study.

Chapter 6 discusses the findings of the hypothesis testing. It begins with a discussion of the findings on the relationship between the various classes of blockholder ownership and firm performance, then moves on to the moderating effects of non-dominant blockholders on firm performance, and lastly, the blockholders' engagement on company performance. This chapter critically engages with the findings and the discussion of these findings are presented in such a way that it relates back to the research aims, objectives, research questions and gaps.

Chapter 7 summarises the major results and highlights this Study’s contributions. This chapter also discusses the results' practical consequences for practitioners and regulators. The chapter concludes with an examination of this Study's possible shortcomings as well as future research directions.

1.10 Conclusion

This chapter established the groundwork for this Study. It provided context for the research by giving a brief overview of the associated literature, followed by a discussion of this Study's major research issues. The problem statement, research questions and research objectives were then stated. The research was justified, as was the methodology, which was briefly discussed and supported. Finally, the main findings of this Study were presented and briefly discussed. On these foundations, the thesis proceeds with a detailed description of the research.

Chapter 2: Literature Review

2.1 Introduction

The literature review is focussed on the problem statement and research questions highlighted in Section 1.2 and Section 1.3 respectively of Chapter 1. Most authors in finance journals advocate agency theory in explaining corporate governance issues. This Study argues that the agency theory might not be sufficient to explain the behaviours of blockholders in the role of corporate governance under all circumstances. Competing theories such as the stewardship theory and resource dependence theory, which are less discussed in finance literature, might be more appropriate in explaining the role of blockholders in corporate governance contributing to firm performance in some situations. Essentially, this Study argues that blockholders are a heterogenous class of shareholders with different motivations and interests. Thus, applying agency theory solely might be inadequate in a corporate world that should benefit all stakeholders instead of only the shareholders.

The literature review goes through the related works of prior authors on the relationship between blockholders and firm performance. It then identifies gaps or areas of future research that have been discussed in their works. In addition, the review covers the mainstream discourse and offers possible alternative perspectives. The literature review is organised logically into sections and sub-sections based on areas and conceptual themes pertaining to the research questions of this Study. At the end of each major section, key points are being made and overall evaluative statements are emphasised. This chapter concludes with highlighting the research gaps and describing how this Study fills these gaps.

2.2 Blockholders' Effect on Firm Performance

The literature review begins this section with an introduction on the two governance mechanisms employed by blockholders, namely 'voice' and 'exit', followed by the costs imposed by blockholders on firm performance when

blockholders act in an exploitative manner that can undermine firm performance.

The conceptual idea behind the ‘voice’ and ‘exit’ strategy was first coined in the book by Hirschman (1970) on responses by customers to declining firms. In ‘voice’, a person would choose to remain loyal to a declining firm by applying internal pressure of some sorts. The term ‘voice’ is associated with more than just a simple complaint and may extend to shareholders intervening to prevent managers from undertaking activities such as negative NPV mergers and ‘empire building’ projects that will destroy firm value. Such ‘loyalty’ to the declining firm makes it less likely for the dissatisfied shareholder to leave or ‘exit’ the firm as the dissatisfied shareholder will choose to exert some other form of pressure. On the contrary, some opine that the traditional economic solution to a declining firm or a firm that provides unsatisfactory service is to ‘exit’ or stop dealing with the firm (Tullock 1970).

Somewhat contrary, Shleifer and Vishny (1997) made the argument that large investors can pose a problem to the firm. Major investors, such as significant shareholders and large debtors, may wish to represent their own interests, which may differ from those of other investors, workers or managers of the firm. For example, a large shareholder with sizeable control rights can worsen firm performance when they extract private benefits to maximise their own welfare.

In the following two sub-sections, the review details why the ‘voice’ and ‘exit’ strategy are regarded as governance mechanisms that discipline firms, by looking through the lens of the blockholder rather than a dissatisfied customer as in the literature of Hirschman (1970). The next sub-section outlines the costs of blockholders to firm performance by analysing the relevant work of Shleifer and Vishny (1997) and other important authors related to this area.

2.2.1 Voice Mechanism

Instead of looking from the perspective of a dissatisfied customer as considered by Hirschman (1970), it could be viewed that the shareholder can play a similar role by employing the ‘voice’ strategy if he is dissatisfied with the

performance of the firm. Under the ‘voice’ mechanism, the shareholders can collectively undertake an intervention action directly in the firm such as a shareholder proposal for a strategic change to improve firm performance. In addition, shareholders can also intervene to prevent managers from taking on activities that are likely to destroy firm value, such as negative net present value (NPV) mergers and ‘empire building’ projects. In addition, blockholders can exercise considerable influence in removing underperforming managers or underperforming directors on the board.

However, such a 'voice' strategy entails costs borne by shareholders who choose to act for the benefit of all stakeholders in the firm. Logically, because the advantages of monitoring are shared by all shareholders, some of the shareholders, if not the majority, will choose to rely on the efforts of the monitoring shareholders. This then leads to the question of which shareholders are most inclined to play the role of active monitors.

Shleifer and Vishny (1986) were the first authors that claimed large shareholders were willing to monitor managers and look for ways to enhance firm performance. According to the authors, a major shareholder has a motivation to collect information and monitor management. Later authors, including Huddart (1993) and Maug (1998), concurred that large shareholders were willing to bear the significant monitoring costs. Typical monitoring activities would require blockholders to identify the actions of managers or directors that are in conflict with shareholders’ interests and then subsequently attempt to bring about change through negotiation with management or proxy fights. The blockholder incurs the monitoring costs but all shareholders share the benefits of monitoring. Thus, this creates a free-rider problem as the small and passive shareholders enjoy the benefits of the monitoring by blockholders, but do not incur any costs.

This leads to the question of why the large shareholder is willing to bear all the monitoring costs, but share the benefits with other shareholders who do not bear any of the cost According to Maug (1998), a higher shareholding increases the potential return on the firm’s stock. In addition, a larger proportion of the total shares held by the large shareholder reduces the liquidity

in the market. The reduced liquidity in the market makes it less profitable for the large shareholder to engage in trading or exiting from the market. Thus, it is logical that the larger the stake in the firm, the more likely that the blockholder will employ the ‘voice’ strategy to safeguard their own interests in the firm.

It is reasonable to add that a large shareholder will only monitor the manager when the benefits exceed the costs of monitoring. The benefits of monitoring increase with the proportion of shares owned by the large shareholder. Those shareholders who only own a fraction of the firm’s shares are unlikely to monitor because of the higher monitoring costs involved relative to the increase in shareholder value from monitoring. Thus, a shareholder will find it worthwhile to monitor the manager only when the shareholder owns more than the threshold quantity of shares. The small shareholder who owns less than the threshold amount will choose to delegate the monitoring to the large shareholder.

In conclusion, it seems logical that large blockholders are most motivated to monitor the management of a firm to protect their own interests. Large blockholders have enough voting power to put pressure on management or, in the case of a proxy war or takeover, to remove management (Shleifer and Vishny 1986). Thus, blockholders overcome the agency problem by having a general interest in maximising the firm's earnings through adequate control over the firm's assets.

2.2.2 Exit Mechanism and Exit Threat

In the view of Hirschman (1970), the dissatisfied customer can choose to stop dealing with the firm altogether rather than remain ‘loyal’. In the same vein, a dissatisfied shareholder can choose to ‘cut and run’ by exit mechanism or sell their shares because of poor firm performance. A survey undertaken on institutional investors from different regions around the world by McCahery, Sautner, and Starks (2016) noted that 49% of respondents had indicated selling shares of firms in the previous five years because of discontent with firm performance.

A more recent theory proposed that the threat of exit (as opposed to actual exit) is sufficient to discipline management (Bharath, Jayaraman, and Nagar 2013). The potential sale of a large number of shares by the informed blockholders would reduce the firm's market value through lower share prices according to Scholes (1972) and Mikkelson and Partch (1985). In turn, managers might be concerned about lower stock prices for two reasons. First, most managers have some form of compensation scheme (e.g. employee stock options and restricted shares) that is related to stock performance. Second, lower stock prices increase the attractiveness of a potential takeover which could threaten the managers' employability.

McCahery, Sautner and Starks (2016) found that institutional investors were concerned about the market liquidity when investors used the 'exit threat' strategy. Illiquid markets were not conducive for selling large volumes of shares as such actions could drive the share prices down too quickly. Even in liquid markets, selling a big blockholder's whole interest upon the introduction of unfavourable information was impossible, since the price effect would be too significant. As a result, there it was found that there was an ideal stake amount that the blockholder should retain for the 'exit threat' to be effective.

According to the survey results by McCahery, Sautner and Starks (2016), institutional investors such as pension funds, mutual funds and hedge funds employ the 'voice' and 'exit threat' mechanism complementarily. However, for other types of blockholders, it might be perceived that some of the overt forms of shareholder activism were hard to implement. Some blockholders, for example, were more competent in selecting stocks than in organising a proxy war or offering strategic counsel. Even for mutual funds and pension funds, the diversification requirements might restrict them from taking sufficiently large shareholdings to make intervention worthwhile. Thus, in such cases, the 'threat of exit' seemed the only viable alternative.

In summary, it is observed that the 'exit threat' itself is sufficient in curtailing managers from initiating value-reducing activities, such as 'empire-building' or other value-reducing mergers in mature and cash-rich firms. Thus, the 'exit

threat' is a viable alternative governance mechanism which could contribute to better firm performance.

2.2.3 Costs of Blockholders

The preceding sub-sections showed that blockholders could have a positive impact on a firm's performance. Shleifer and Vishny (1997), on the other hand, stated that significant shareholders may reflect their own interests, which may or may not match those of the firm's other stakeholders. Thus, it could be argued that blockholders may also worsen overall firm performance to the detriment of other stakeholders. This sub-section discusses the potential costs of blockholders to firm performance in response to their actions or behaviours under the following different scenarios:

i. Blockholders treating themselves preferentially
ii. Over-monitoring by blockholders, and
iii. Undiversified large blockholders.

First, blockholders may try to receive special treatment which could disadvantage other shareholders. For example, blockholders may influence managers to do business with another firm that they own with uncompetitive terms (Edmans 2014). Blockholders' ability to treat themselves preferentially is especially great if they have undue influence on management, such as superior voting rights through dual class shares or controlling a firm through a pyramid structure as discussed in the literature of Shleifer and Vishny (1997) and Villalonga and Amit (2009) on U.S. firms, and Cheng (2014) on Chinese firms. The above illustrations can be defined as a Type II agency principal-principal conflict. This is different from the classical Type I agency problem between shareholders and managers, as described by Jensen and Meckling (1976).

Second, the potential problem of large outside blockholders is the over-monitoring of managers (Burkart, Gromb and Panunzi 1997). Outside blockholders are likely to over-monitor because they can only benefit from increases in shareholder value and have less opportunity to expropriate from the firm. According to Burkart, Gromb and Panunzi (1997), over-monitoring

creates a cost to the firm due to potential diminished gains from managerial initiatives like searching for new investments. The authors showed that over-monitoring decreased managers' motivation to show such initiative, as these blockholders were more likely to interfere in their managerial decisions. They argued that a dispersed ownership structure induced the managers to exercise their initiative because of little interference by shareholders. Conversely, a concentrated ownership structure could result in high monitoring and control by the large blockholder, but inhibit managerial initiative leading to the firm passing on profitable investment opportunities. However, the model used by Burkart, Gromb and Panunzi (1997) is not based on any empirical data. Given the authors' claim may be more difficult to prove, this Study provides an opportunity to test the strength of the claim through the use of empirical data. Moreover, the conclusion of the authors regarding over-monitoring does not lend support to the agency theory.

Third, Faccio, Marchica and Mura (2011) argued that, based on a large sample of observations from large shareholders across multiple countries, large shareholders' portfolio diversification is associated with more risk taking. The authors noted that larger blockholders tended to be less diversified than smaller blockholders. Therefore, firms controlled by undiversified large blockholders were more conservative in their investment than firms controlled by more diversified smaller blockholders. Large blockholders have a larger concentration of wealth invested over one or two firms and would seek risk avoidance more than if they had been well diversified. The authors contended that such big blockholders might put pressure on management to pass on some positive NPV investments solely because of the high risk, without considering the possible high rewards. Passing on positive NPV investments (while risky) results in non-optimization of company value as well as performance. It is noted that the authors used volatility of ROA of the invested firms as the measurement of the risk-taking ability. However, the use of ROA is open to debate, as ROA is itself a measure of firm performance which is not only dependent on the actions of managers and blockholders but also the outcomes of the environment and the competency of managers. Furthermore, Ekholm and Maury (2014) asserted in a more recent study that ownership

concentration by blockholders was favourably connected to future company performance as assessed by ROA and Tobin's Q. As a result, there are competing assertions about the influence of undiversified large shareholders on business performance. This Study aims to bridge a knowledge gap about the influence of large undiversified shareholders on future business performance.

2.3 Impact of a Single Class of Blockholders on Firm Performance

This section reviews the literature on a single class of blockholders on firm performance. The classes of blockholders that are relevant to this Study are as follows:

i. Inside blockholders
ii. Outside blockholders
iii. Family owners
iv. Sovereign wealth funds, and
v. Other institutional investors.

As discussed by Edmans (2014), there are diverse classes of blockholders from different types of investors such as private institutional investors (e.g. hedge funds, mutual funds and private equity funds), sovereign wealth funds, corporations, family owners and individuals. Broadly speaking, blockholders are either insiders or outsiders. Insiders hold positions in the firm such as managers or directors of the firm (Basu, Paeglis, and Rahnamaei 2016), whereas outsiders do not. The following sub-sections analyse in more detail the impact of each of these single classes of blockholders on firm performance.

2.3.1 Inside Blockholders

In this Study, the inside blockholders are defined as directors or senior management, or both, with at least 5% of the common shares in the firm. Thus, these insiders have significant influence on the decision-making pertaining to the daily operations or the strategic direction of the firm, or both. The inside blockholders can work to the benefit of all stakeholders or make myopic or non-value maximising decisions with long-term detriment to the firm. The rest

of the sub-section investigates and analyses the literature pertaining to the motivations of inside blockholders which can impact firm performance.

After the seminal work of Berle and Means (1932) on the separation of ownership and management of major businesses, Jensen and Meckling (1976) were likely the first writers to establish the literature on the convergence-of-interests hypothesis between managers and shareholders. According to Jensen and Meckling (1976), greater shareholdings by managers aligned managers' interests with those of other shareholders and diminished managers' non-value-maximizing aims, such as empire-building, employee welfare and sales growth. Thus, the mitigation of the agency conflict between managers and shareholders increases the market value of the firm. However, the increase in managers' equity in the firm could lead to the entrenchment effect when managers possess sufficient voting power to ensure that their internal positions are secure. The conceptual idea of entrenchment hypothesis is not obvious in the papers of Demsetz (1983) and Fama and Jensen (1983); however, Morck, Shleifer and Vishny (1988) and Bhabra et al. (2003) cited these authors as the early contributors towards the literature on managers' entrenchment in the firm. Morck, Shleifer, and Vishny (1988) reasoned those managers with sizeable equity stakes in the firm can become insulated from external disciplining forces of the market, such as hostile takeovers and managerial labour market. Besides securing their managerial position, such managers might command high compensation and perks although they spend more time shirking their responsibilities or fail to engage in value maximising activities.

Based on the two opposing forces of convergence-of-interests and entrenchment that are possibly inherent in managers, authors such as Morck, Shleifer, and Vishny (1988), McConnell and Servaes (1990), Short and Keasey (1999) and Bhabra et al. (2003) developed the literature on the response of inside blockholders to these two opposing forces and the resultant effect on firm performance. The convergence-of-interests of inside blockholders with other shareholders, because of increased equity stake in the firm, would suggest a positive relationship on firm performance when inside blockholders

increased their equity stake. On the other hand, the entrenchment effect of managers would adversely affect firm performance.

Morck, Shleifer, and Vishny (1988) showed that, using piecemeal regression in their study, that the shareholdings of directors of U.S. firms had a slightly negative relationship with Tobin's Q for ownership between 5% and 25% but a positive relationship beyond the 25% board ownership. One potential problem with the results is the direction of causality as the firm performance could be influencing the board ownership. In another study by McConnell and Servaes (1990) on U.S. firms, the authors found a curvilinear relationship between proportion of shares held by inside blockholders and Tobin's Q with the maximum Tobin's Q occurring at 37.6% board ownership. Although McConnell and Servaes' study is closer to this Study as it includes all directors and managers as inside blockholders, the question of causality between insider ownership and Tobin's Q is not addressed. One could argue that inside blockholders are inclined to hold more shares in better performing firms. Another study by Short and Keasey (1999) found that the percentage of shares owned by directors had a cubic function relationship with the return on shareholders' equity and the valuation ratio in their research of U.K. businesses (determined by the market value of equity divided by the book value of equity). The maximum and minimum points given by the cubic function are at equity ownership of 15.58% and 41.84% respectively. Although this Study is quite similar to one of the models using ROE as the dependent variable, the main difference is that only director ownership, which does not include managerial ownership, is used as the independent variable. Thus, the study of Short and Keasey (1999) differs from this Study's definition of inside blockholders. One study by Bhabra et al. (2003) on Singapore firms concluded that the directors' equity holdings had a cubic relationship with Tobin's Q; the maximum and minimum point occured at ownership of 20.34% and 52.73 % respectively. However, when the study's sample is restricted to founder-controlled businesses, the influence of director ownership on Tobin's Q became statistically insignificant, despite the fact that the cubic relationship between director ownership and Tobin's Q remained. Bhabra et al. (2003) reasoned that founder-controlled firms were more focussed on survival rather

than firm valuation, and managerial entrenchment is more dominant leading to poorer performance (Gomez-Mejia, Nunez-Nickel and Gutierrez 2001).

A more recent study by Basu, Paeglis, and Rahnamaei (2016) concluded that inside blockholders had a positive effect on Tobin's Q. The authors did not consider the possibility of a curvilinear relationship, as in previous studies, because the focus of the study was on the largest inside blockholder's power (as measured by Shapley value, which takes into account both the size of the blockholder's ownership share as well as the presence and size of other blockholders' ownership stakes) on firm value. Although the measure is novel, however, Basu, Paeglis, and Rahnamaei (2016) acknowledged that the method suffers from the reverse causality effect as one could argue that firms with higher valuation are attracting blockholders to increase their shares and power. Another recent study by Shan (2019) reported that managerial ownership is positively related to Tobin's Q using the three-stage least squares method. However, the three-stage least squares regression specification did not account for past performance and thus could suffer from dynamic endogeneity.

Except for Basu, Paeglis, and Rahnamaei (2016) and Shan (2019), most of the studies discussed conclude that a curvilinear relationship exists between inside blockholders and the performance measures. At certain levels of insider ownership, the entrenchment of insiders dominates the positive effect from the convergence-of-interests with other shareholders, but at other levels of ownership, it could be the reverse. For example, in the study of Bhabra et al. (2003), it would be interpreted that directors' equity ownership from 5% to around 20.34% resulted in an increase in the firm value (represented by Tobin's Q) as the convergence-of-interest increased. However, further increases in equity ownership up to around 52.73% by directors brings about the entrenchment effect in the directors, which reduced the firm's value. Beyond the 52.73% ownership, the directors would seem to realign their interests with the other shareholders (to avoid the erosion in firm value) because of their much bigger stake in the equity.

In conclusion, a curvilinear relationship, such as a cubic function, seems more appropriate in capturing the effect of inside blockholders' shareholdings on firm performance measures. The only study that is close to this Study is by Bhabra et al. (2003) which used directors' equity holdings only, instead of both directors' and managers' equity holdings for inside blockholders as in this Study. This Study hypothesises that the inclusion of managers who are blockholders as well directors might reveal hidden impact on firm performance from the entrenchment of managers.

2.3.2 Outside Blockholders

The outside blockholders used in the definition of this Study are shareholders that hold at least 5% of the equity in the firm but are not officers or directors of the firm. Thus, this broad category of blockholders would include financial institutions, corporates, sovereign wealth funds and individuals.

As outside blockholders are such a diverse class, it would make sense to disaggregate the data rather than studying the outside blockholders in aggregate. This view is supported by the following empirical evidence. For example, the study of Mehran (1995) found no support for a relationship between outside blockholders and firm performance, but McConnell and Servaes (1990) found that the percentage of equity stake by institutional investors had a significant positive impact on the firm valuation. By focusing on a specific blockholder such as the largest outside blockholder, as in the study by Basu, Paeglis, and Rahnamaei (2016) on US firms, the authors found that the largest outside blockholder had a positive influence on firm value. These observations are supported by the study of Cronqvist and Fahlenbrach (2009) who found that different classes of outside blockholders had different sources of fixed effects on firm performance. Cronqvist and Fahlenbrach (2009) found evidence that there appeared to be a link between the difference in investment and governance styles of large shareholders to actual firm performance differences such as ROA and Tobin's Q. Therefore, this Study will disaggregate the data to investigate the different classes of blockholders for a more granular study.

2.3.3 Family Owners

There is no consensus on the definition of family firms used by authors in the literature on family firms. As the literature on family firms is wide-ranging, different authors have used different definitions in various studies around the world. For example, Anderson and Reeb (2003) and Belen Villalonga and Amit (2006) defined the family firm as one where the founding family has an equity stake in the firm and/or the presence of family members on the board of directors. Cheng (2014) used a broader form of definition of family firms as those in which the founders or descendants of the founding family are in senior management, serve on the board or are blockholders. However, some authors have used the level of equity ownership to define a family business. Maury (2006) considered a firm as a family business if the family controlling shareholder holds at least 10% of the voting rights. San Martin-Reyna and Duran-Encalada (2012) regarded a firm as family run only when the founder or family member owns a majority equity stake of more than 50%. Other authors used a combination of ownership level or the potential influence in the firm to define a family firm. In the study of Andres (2008), a company is deemed family managed if one of the following requirements is met:

a) the founder and/or family members possess more than 25% of the voting shares, or

b) the founding family is on the executive or supervisory board if ownership is less than 25% of the voting rights.

A more recent paper by Poutziouris, Savva, and Hadjielias (2015) on UK listed companies used a combination of a cut-off point of 10% share ownership by the founding families or when there is a family representation on the board of directors. Sometimes, the term ‘founding family’ might be attached to a broader meaning than being strictly restricted for one or more individuals or families that founded a company. In the study of Isakov and Weisskopf (2014), it was extended to a family that has controlled and managed the company for a long time. For example, the Swatch Group can be considered a family firm as the Hayek family have controlled and managed the firm over the last 30 years in

addition to owning approximately 40% of the shares, but they are not the founding family.

The majority of businesses have the family as the biggest shareholder, making family ownership the most common kind of corporate ownership in the world (Laeven and Levine 2008). According to La Porta, Lopez-De-Silanes, and Shleifer (1999) in an international study, 30% of businesses are family held by a controlling shareholder with at least 20% of direct and indirect voting rights. Anderson and Reeb (2003) stated that family businesses account for 33% and 46% of the Standard & Poor's (S&P) 500 and 1500 index companies respectively. According to Claessens, Djankov, and Lang (2000), Asian nations such as Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan and Thailand have comparatively higher percentages of family-controlled companies ranging from as high as 71.5% in Indonesia to 48.2% in Taiwan. Family businesses may be found in a wide range of sectors. According to Chen, Chen, and Cheng (2008) for firms in the S&P 1500 index, family firms represent two-thirds of the firms in the technology, wholesale business, retail services, transport and publishing. Even among the capital-intensive industries (steelworks and machinery, as well as oil and gas) and regulated industries (banking and insurance), over 30% are family firms.

As the literature on family firms is wide-ranging, the review will begin with the seminal work of Anderson and Reeb (2003). The study of Anderson and Reeb (2003) on companies in the S&P 500 index showed that the relationship between firm performance and founding-family ownership was concave. Using Tobin's Q and ROA, the authors showed that both measures initially increased with founding family equity ownership but decreased beyond a certain threshold. The turning points of the equity stake for Tobin's Q and ROA are 31% and 27.6% respectively. In the case of Tobin's Q, founding-family firm valuation increased with family ownership up to 31% and then started to decrease with ownership beyond 31%. Beyond the 31% family ownership level, the costs of family ownership were greater than the benefits of family ownership for every percentage increase above 31% (leading to declining valuation). The results can be similarly interpreted using ROA with the turning

point at 27.6%. Overall, the authors found that family businesses outperformed non-family businesses. However, the study of Anderson and Reeb (2003) using two-way fixed effects model suffers from a dynamic endogeneity problem; the issue of past performance having an influence on current performance.

A similar study by Belen Villalonga and Amit (2006), following the same definition for family ownership as Anderson and Reeb (2003), showed a linear positive relationship between family ownership and Tobin's Q. However, the regression model only used a linear relationship function, unlike Anderson and Reeb's (2003) study that incorporated a quadratic function into the regression model by including a squared term for family ownership. In a similar vein to the study of Anderson and Reeb (2003), the ordinary least squares (OLS) regression model used by Belen Villalonga and Amit (2006) suffers from endogeneity concerns such as dynamic endogeneity and the issue of reverse causality between firm performance and family ownership.

A later study by Miller et al. (2007) distinguished between family companies operated by numerous family members and lone founder family firms, which have one or more founders but no relatives in the business. When a family business is held by several owners or managed by numerous family members, the authors determined that there is no significant relationship between family equity share and firm valuation using Tobin's Q. However, the authors showed that for a family firm run only by the founders of the firm, a very significant relationship exists in which Tobin's Q initially increases with the founders' equity stake in the firm, but decreases beyond the threshold. In the case for which the equity stakes of both lone founder firms and family firms run by multiple family members are combined, the results show a similar but less significant relationship of the combined equity stake on Tobin's Q. Thus, the results seem to suggest that the founders of the firm can run the family business better when there are no other relatives who are blockholders or managers in the firm. However, this Study using OLS regressions, like the previous studies discussed, is plagued with endogeneity concerns such as

dynamic endogeneity and reverse causality issue between firm valuation and family ownership.

Another study by Kowalewski, Talavera, and Stetsyuk (2010) on listed Polish companies used 25% share ownership as a cut-off point to define a family firm. Using ROE and ROA as the performance measures, the results from this Study give a similar concave relationship with those of Anderson and Reeb (2003), using Tobin's Q and ROA, although the latter study did not have any specific cut-off point for family ownership. Since the turning points are higher than 25% for Anderson and Reeb (2003), it would be reasonable to expect that both of these studies could produce similar results. The results of the study of Kowalewski, Talavera, and Stetsyuk (2010) has less of endogeneity concerns as it uses a more superior two-step system GMM approach in the dynamic regression model. With a dynamic panel data modelling, the two-step system GMM can address many endogeneity concerns including dynamic endogeneity and the issue of reverse causality between firm performance and share ownership. This Study also addresses the endogeneity concerns including dynamic endogeneity and reverse causality by using the two-step system GMM in a dynamic panel data model. However, the cutoff point for the share ownership at 25% in the study of Kowalewski, Talavera, and Stetsyuk (2010) is much higher than the 5% stake used in the equity stake for a blockholder in the definition of this Study.

More recent papers by Isakov and Weisskopf (2014) and Poutziouris, Savva, and Hadjielias (2015) concurred that there is a concave relationship between firm performance measures (using Tobin's Q and ROA) and family equity stake. The turning points for the former study were 35.02% and 49.90% family ownership respectively for Tobin's Q and ROA. For the latter study, the turning points were 41.7% and 30.5% family ownership respectively for Tobin's Q and ROA.

However, a study by Gómez-Mejía et al. (2007) that incooperate behavioural theory in family firms found that the loss of their socioemotional wealth is more important than just financial returns. The socioemotional wealth refers to the non-financial aspects of the firm such as the ability to exercise authority

(Schulze, Lubatkin and Dino, 2003), the perpetuation of family values through the business (Handler, 1990), the preservation of the family dynasty (Casson, 1999) and the fulfilment of family obligations based on blood ties rather than on strict criteria of competence (Athanassiou et al. 2002). Gómez-Mejía et al. (2007) argued that family firms are willing to accept a greater performance hazard to mitigate the loss of socioeconomic wealth. The study showed that there is a clear preference for a population of 1,237 family-owned olive oil mills to remain independent rather than join a cooperative to lower business risk. However, since family firms must also keep the firm from failing, they may also act more conservatively by avoiding business decisions that may increase performance variability. To this extent, such family firms may be risk willing and risk averse at the same time.

Beginning with the seminal work of Anderson and Reeb (2003) and the works of other authors that were discussed earlier, it may be inferred that the writers agree that family business performance first improves to a maximum at a particular degree of family ownership, but thereafter declines at greater levels of family ownership. It may also be viewed as a quadratic function on company performance when family ownership is used as an independent variable. It is worth noting that none of the authors on family businesses addressed the potential of a cubic function on company performance using family ownership as a variable. Recall from the literature review in section 2.3.1 on inside blockholders that Short and Keasey (1999) and Bhabra et al. (2003) concluded that at much higher levels of director ownership, the interest of the directors are aligned to the other shareholders leading to higher firm performance. Specifically, Short and Keasey (1999) concluded that for U.K. firms, there is a cubic function relationship on ROE when using the directors' equity stake as an independent variable. However, Bhabra et al. (2003) showed that the cubic function relationship of director ownership for founder-controlled firms on Tobin's Q existed, but the relationship is not statistically significant. Therefore, this Study intends to investigate whether such a cubic function relationship exist between this Study's performance measures (Tobin's Q, ROA and ROE) and family ownership by including a cubic term for the family ownership in the regression model. Another difference between this Study and the studies of

Short and Keasey (1999) and Bhabra et al. (2003) is that the family ownership includes the equity stake of family members who are managers but are not part of the board of directors.

2.3.4 Sovereign Wealth Funds

Sovereign wealth funds (SWFs) are government-controlled entities that manage investments on behalf of the governments that own these investments (Dewenter, Han, and Malatesta 2010). According to the International Monetary Fund (IMF), a SWF is an investment fund or structure controlled by the government for a specific purpose, such as macroeconomic purposes. A SWF, in a broader sense, is a pool of money managed by a government or a government-related company that invests in assets with the goal of earning returns above the risk-free rate of return.

The main sources of funds for these SWFs is the capital deployed from current account and fiscal surpluses, income from commodity exports or funds from privatisation. The total assets under management by SWFs around the world, as of March 2015, amounted to around USD 6.31 trillion. This amount is more than twice the amount reported in December 2008 (Preqin Sovereign Wealth Fund Review 2015). During the early years of China's strong economic growth, the rapid increases in oil prices fuelled most of the growth of the SWFs of oil-exporters, namely Saudi Arabia, Kuwait, Norway and Russia. Other Asian countries, such as China, Singapore and South Korea established their SWFs from foreign exchange reserves accumulated from their current account surpluses (Heaney, Li, and Valencia 2011).

The two SWFs in Singapore are Temasek Holdings (Temasek) and GIC Private Limited (GIC), which were both established for different reasons by the Singapore Government (Y. C. Xu 2012). In 1974, Temasek was set up as a holding company by the Singapore Government to manage its assets in state-owned enterprises, statutory bodies and private companies, such as Singapore Airlines, Singapore Telecommunications Ltd and the Port of Singapore Authority. These companies were also known as government-linked companies (GLCs) operating in the local industries. In the 1990s, the

Singapore Government transferred more assets to Temasek and since then, Temasek has invested abroad in foreign companies such as Alibaba, China Construction Bank and Repsol. In 1981, the Singapore Government later created GIC to manage Singapore's foreign exchange reserves as these reserves played a critical part in backing its domestic currency. During the 1980s, Singapore experienced high savings rates and high capital inflows resulting in rapid growth of foreign exchange reserves, which amounted to betweenUSD 16 billion and USD 40 billion (Y. C. Xu 2012). More importantly, the focus of GIC under the new Deputy Prime Minister, Dr Goh Keng Swee, was to manage the accumulated reserves as long term and high return investments. This led to GIC investing in a wider range of asset classes, ranging from international equity, bond and real estate. Since this Study relates to Singaporean companies, foreign companies where GIC hold a stake are excluded.

As SWFs are government-controlled entities, their incentives and activities may differ from those of other institutional investors based purely on financial considerations. The growing size of SWFs is a concern for policy makers of countries (that SWFs are invested in) as SWFs might utilise their controlling share to pursue social and political goals at the expense of the firms' performance and value. One example is the recent development and magnitude of SWFs such as China Investment Corporation (CIC), which has sparked heated political discussion in Western nations (Fernandes 2014). Aside from political purposes, the primary worries about CICs and other SWFs include poor transparency, unclear motivations driving the purchase of critical assets, possible violation of national security from "pseudo-government" ownership, and impact on management of the businesses they control. For example, when Chinese National Offshore Oil Corporation (a Chinese state-owned company) tried to acquire U.S. oil company Unocal in 2005, the U.S. Government blocked the deal on grounds of "national security and strategic interests".

SWF's ownership in firms, on the other hand, may be advantageous to company performance. SWFs may be able to sway government policy in

favour of their invested firms, such as opening access to new markets. For example, following CIC's acquisition of a 4.9% interest in the Bank of East Asia in 2007, the People's Bank of China granted the bank permission to become the first foreign bank to offer debit cards in mainland China (Dewenter, Han, and Malatesta 2010). According to Fernandes' (2014) research, firms may more easily issue capital when an SWF gets a substantial ownership interest, as seen by the growth in equity capital following the SWF investment. In addition, Fernandes (2014) observed that SWFs are long-term investors due to the very low annual turnover rate of 7% when compared to other institutional investors whose turnover rates are nearly 100%. The longer-term investment horizon of SWFs could provide significant advantages for their invested companies to undertake promising capital projects with longer-run payoffs.

One of the first studies of Singapore's Government equity ownership in Singapore listed companies was done by Ang and Ding (2006) using data from 1990 to 2000. The authors concluded that equity ownership by Temasek or its subsidiaries was positively related to Tobin's Q. The authors reasoned that GLCs have better governance structures, such as different individuals for the roles of CEO and Chairman, and stronger monitoring of their companies, which in turn lead to the superior performance over non-GLCs. However, as the study used the fixed effects model, the results from the study could suffer from endogeneity bias for dynamic relationships.

Dewenter, Han, and Malatesta (2010) investigated the effect of SWF investments on the values of companies. The authors concluded that the size of the investment in the target companies had an inverted U-shaped relationship with the target company's cumulative abnormal return (CAR). Specifically, the CAR increased with acquisitions of up to around 40%-45% of the target's stock by the SWF and then decreased up to 100%. The key difference between that study and the research \undertaken in this Study, is the use of the performance measure. The use of Tobin's Q, ROA and ROE will not necessarily yield the same results as using CAR as the performance measure.

Another study by Heaney, Li, and Valencia (2011) focussed on the types of publicly listed companies that Temasek chose to invest in. The authors concluded that Temasek had a predisposition to invest in companies that had fewer director blockholders. In most of the firms that Temasek are invested in Singapore, Temasek held the largest shareholdings. In such firms, Temasek appointed directors to the board to take care of its interest. Most of these directors are employees of Temasek and do not hold a significant number of shares in the companies where Temasek have shareholdings. Using univariate tests, the authors also concluded that the ROE of firms where Temasek are invested were significantly higher in the years 2003 and 2004 than firms without Temasek shareholding. However, such univariate tests do not show a causal relationship between firm performance and ownership.

In a more recent study by Fernandes (2014), the author concluded that Tobin's Q increased with SWF ownership using the fixed effects model. However, the fixed effects model used by Fernandes (2014) did not address endogeneity concerns such as the possibility of omitted variables in the model. The study also concluded that SWF investment had a positive impact on the ROE of the target company. Specifically, it was observed that one year after SWF investment, the ROE of the target company on average increased from 11.73% to 14.09%. Fernandes (2014) reasoned that SWFs increase corporate values through their longer-term view, political connections and increased ability of invested companies to raise more capital.

The two more recent studies on SWFs by Liu (2016) and Urban (2017) do not provide conclusive evidence on the relationship between SWF ownership and firm performance. Although Liu (2016) concluded that there was a positive relation between SWF ownership and firm performance (using Tobin's Q and ROA), the ordinary least squares (OLS) regression model does not address the endogeneity concerns. Moreover, dummy variables were used for SWF ownership instead of the actual SWF ownership levels as in this Study. Urban (2017) concluded that there was no relationship between ROE and SWF ownership using non-panel data on Polish listed companies. The author

acknowledged the limitation in the findings due to the database constraint for a panel data analysis.

Perhaps, the closest study to this Study is the most recent study by Kubo and Phan (2019) on state ownership in Vietnamese firms. Kubo and Phan (2019) classified firms with state ownership into three types:

a) firms with state ownership under the control of the Vietnamese SWF, the State Capital Investment Corporation (SCIC)

b) firms with state ownership controlled by partially privatised state-owned enterprises, and

c) firms with state ownership controlled by a large state economic group or general corporation.

The authors concluded that the performance (using Tobin's Q and ROA) of firms with state ownership under SCIC performed the best. The results were obtained using OLS regressions with dummy variables to denote the three different types of state ownership. As for ownership levels, the authors concluded an inverted U-shaped function between the three types of state ownership and firm performance using OLS regressions. To address potential causality problems, Kubo and Phan (2019) went further by using instrumental variable (IV) regressions. The results from the IV regressions showed that government ownership (which includes all the three types of state ownership combined) had an inverted U-shaped function with firm performance. It could be reasoned that firm performance initially increases with SWF equity ownership due to better monitoring but further increases in equity ownership could lead to SWF placing less emphasis on financial gains by pursuing socially oriented projects if requested, due to political influence. However, the IV regression results could also suffer from dynamic endogeneity which could exist in the panel data.

In conclusion, although the literature on SWFs' ownership in firms have been around for the last two decades due to the emergence of the significance of SWFs, the research of SWF ownership on firm performance has been few and

far between. Some of the earlier research by Ang and Ding (2006), Heaney, Li, and Valencia (2011) and Fernandes (2014) failed to address the potential endogeneity issues such as potential causality problems or omitted variables in their models. A couple of other later studies by Liu (2016) and Urban (2017) are not conclusive due to database issues or the model used. Although Kubo and Phan (2019) is the closest study to this Study, the two-step system GMM approach in the dynamic panel data model proposed in this Study could produce more efficient estimators relative to IV regression estimates. The curvilinear relationship between SWF equity ownership and firm performance suggests that there is an interplay of monitoring activities and the pursuit of socially oriented projects due to political pressure. Monitoring activities enhance the firm performance, but the pursuit of socially oriented projects could result in sub-optimal firm financial performance. This Study investigated the turning point of the SWFs' equity stake at which the maximum firm performance could occur.

2.3.5 Other Institutional Investors

Besides SWFs, the other institutional investors in firms include the banks, insurance companies, pension funds and investment funds such as hedge funds and mutual funds (Viney and Phillips 2012). According to the study of Laeven and Levine (2008) on 13 countries in Western Europe, institutional shareholdings were the second largest in the firms of these countries.

The role played by institutional investors can be classified by their monitoring incentives on management: active monitoring, passive monitoring and siding with the management (Brickley, Lease and Smith, 1988; Elyasiani and Jia, 2010; Appel, Gormley and Keim; 2016). Under an active monitoring scenario, institutional investors have the motive and competence in watching management to have sufficient influence on the firm's course of action. The passive monitoring role is based on the notion that institutional investors may be short-term investors acting like "traders", reducing their incentives to favourably impact business governance and, as a result, performance. In the third scenario, certain institutional investors may support management to obtain private gains at the expense of minority shareholders. The rest of this

sub-section reviews the relevant literature related to these three categories of institutional investors' ownership on firm performance.

2.3.5.1 Pressure-Resistant Institutional Investors

Pressure-resistant institutional investors are also sometimes known as pressure-insensitive or independent investors. According to the active monitoring hypothesis, pressure-resistant institutional investors are effective monitors of management because they can induce managers to match their policies with the interests of shareholders. Because they have more access to resources and knowledge than smaller investors, institutional investors can exercise direct oversight of management. Furthermore, pressure-resistant investors often only have investment relationships with the companies that make up their investment portfolios. This kind of investment relationship means that fund managers of mutual funds are under constant pressure to deliver above par results to their fund participants for two main reasons. First, the commission paid depends on the value of their portfolios managed and second, fund participants are more likely to drop out of an open-end mutual fund due to under-performance (Yuan, Xiao, and Zou 2008). It might be claimed that because they have a fiduciary obligation to safeguard the value of the assets for the fund beneficiaries, the cost of monitoring is lower for pressure-resistant investors.

One of the earliest studies that categorised institutional investors that played an active monitoring role from other institutional investors that might side with management was undertaken by Brickley, Lease, and Smith (1988). The authors determined that certain institutions, such as foundations, mutual and public-employee pension funds, were more likely than others, such as banks, insurance companies and trusts, to resist management-initiated initiatives. The former group of institutions had been categorised as pressure-resistant by the authors as those types of institutions had a fiduciary duty to the beneficiaries in their funds. The study's implication was that pressure-resistant investors would be active monitors of management to ensure that management matched their interests with those of other shareholders to maximise the value of their investments.

A later study by Cornett et al. (2007), investigated the overall institutional ownership as well as the impact of pressure-resistant investors on firm operating performance. The initial findings showed that, taken as a whole, institutional ownership had a positive relationship on the industry-adjusted ROA. The industry-adjusted ROA was computed as a firm's ROA minus the total asset weighted average industry ROA. However, when the authors segregated the pressure-resistant investors (investment companies and independent investment advisors) from the other investors, the results showed that only share ownership by the pressure-resistant had a positive relationship on the industry-adjusted ROA. The share ownership by the latter group of investors did not have any significant relationship on the firms' operating performance.

The results of the study by Ruiz-Mallorquí and Santana-Martín (2011) on Spanish listed firms concurred with Cornett et al. (2007). Ruiz-Mallorquí and Santana-Martín (2011) concluded that if the dominant owner was an investment fund (which is a pressure-resistant investor), there was a positive effect on the size of the dominant owner's voting rights on the Tobin's Q of the firm. The dominant institutional owner was defined as the main shareholder with at least 10% of the firm's voting rights. The authors argued that firm value was enhanced when there was an increase in the voting rights of the investment fund for the following reasons:

1. The primary business objective of investment funds is to increase the value of their portfolio firms, and

2. Investment funds do not have conflicts of interest with the firms in which they hold shares because they do not have business relationships with these firms that could provide opportunities for expropriation.

Muniandy, Tanewski, and Johl (2016) investigated the effect of ownership by institutional investors in Australia on the long-term performance and the short-term performance of firms, by subdividing into sub-groups for the pressure-resistant institutional investors. In the study, the authors reasoned Tobin's Q as long-term performance as it captures the long value creation and potential

growth opportunities of the firm. On the contrary, the authors considered ROA as a historical and short-term based accounting performance measure. The authors classified the four groups of pressure-resistant institutions:

1. Foundations, research institutions, religious or charitable firms
2. Mutual and pension funds
3. Hedge funds, and
4. Venture capitalists or private equity firms.

Overall, the findings indicated that pressure-resistant investors did not play a significant long-term monitoring role in building value for businesses, as the influence on Tobin's Q was negative and significant. However, the findings revealed that, on average, pressure-resistant investors had monitoring capacity in terms of short-term performance, since the influence of share ownership on ROA was positive and substantial. On further investigation by the authors on the four sub-groups of pressure-resistant investors, it was found that only share ownership by mutual funds, pension funds and hedge funds had a positive impact on ROA. The other two sub-groups did not have any significant effect on ROA. In addition, all the sub-groups did have a significant relationship with Tobin's Q. As a result, the authors found that only mutual funds, pension funds, and hedge funds provided short-term performance monitoring (as assessed by ROA), but no long-term performance monitoring (as assessed by Tobin's Q).

A study by De-la-Hoz and Pombo (2016) on six Latin American countries concluded that the presence of a major shareholder who is an independent (pressure-resistant) institutional owner resulted in a positive premium of 0.10 units on Tobin's Q. An institutional investor is considered a major shareholder if it is one of the top three blockholders. The study used a fixed regression estimate with dummy variables to indicate the presence of independent investors. Similar to the classification by Brickley, Lease, and Smith (1988) and Cornett et al. (2007), the authors categorised pension funds and insurance companies as independent institutional owners.

Lin and Fu (2017) categorised the institutional investors in Chinese listed firms that are more actively monitoring investee firms as active (pressure-resistant) investors. The findings concluded that the shareholder ownership by pressure-resistant institutions such as mutual funds and Qualified Foreign Institutional Investors were positively and significantly related to both Tobin's Q and ROA. This result is different from the previous study by Muniandy, Tanewski, and Johl (2016), which showed that mutual funds had monitoring ability over the short-term performance using ROA, but an insignificant effect on long-term performance (Tobin's Q). Another important result in this Study was that international institutional investors were more active in monitoring investee businesses than local institutional investors. The latter group was usually hampered from strict supervision due to deeper commercial ties with local investee businesses. This is congruent with the Chinese view that developing relationships is an important part of the corporate culture. The study's findings revealed that the coefficient of foreign institutional ownership was larger than the coefficient of domestic institutional ownership. This result lends credence to the idea that overseas institutional investors manage their investee businesses more aggressively than domestic institutional investors.

However, a very recent study by Chizema et al. (2020) on Chinese firms concluded that increasing the ownership by mutual funds will not always lead to higher firm performance in concentrated ownership structures. The authors claimed that when mutual fund ownership exceeded a particular level, mutual funds were more inclined to collaborate with controlling shareholders of their invested businesses to maintain their private interests rather than threaten to leave owing to increased exit costs. To this extent, mutual funds play a passive monitoring role and do not effectively mitigate the tunnelling behaviour of controlling shareholders. According to the results, mutual fund ownership shows a concave (inverted-U) relationship with business performance. The findings are significant for both long-term (Tobin's Q) and short-term performance (ROA and ROE). Across multiple model settings, the calculated turning points of this concave relation ranged from 16% to 26% of mutual fund ownership. The findings from this Study are opposed to the linear relationship between mutual fund (pressure-resistant) ownership and firm performance.

Thus, future research should consider the roles that pressure-resistant investors play in restraining their controlling shareholders' tunnelling behaviour.

2.3.5.2 Passive Institutional Investors

Passive institutional investors may be short-term investors who behave as "traders," buying and selling equities to rebalance their portfolios in accordance with the investment fund's objective (Elyasiani and Jia 2010). One special case of a passive institutional investor would be a mutual fund that tracks the market index such as the S&P 500. The investing goal of such entities is to offer market index returns with low turnover, diversified portfolios and low expenditures. Unlike active fund managers who would have the incentive to beat the benchmark, these passive institutional investors use a 'buy and hold' approach by matching the index as closely as possible to minimize tracking mistakes.

According to Appel, Gormley and Keim 2016 passive investors have increased considerably in recent years, with the percentage of U.S. stock mutual funds tripling from 1998 to 2014, reaching 33.5%. Passive investors, it might be claimed, can undermine business governance and performance. Appel, Gormley and Keim 2016 suggests that passive investors may lack the desire to watch management as they strive to match the benchmark's performance. As a result, they have little motivation to enhance the performance of a single stock. In addition, passive investors are unable to build or exit holdings in order to exercise influence on managers since they strive to minimise deviations from the underlying index weights. Finally, as passive investors hold diversified holdings, they might have limited resources to research and monitor each individual firm in their portfolio.

However, Guercio and Hawkins (1999) suggested that, contrary to the preceding arguments, passive institutional investors may be driven to watch managers and improve business performance in order to raise the value of their assets under management. Furthermore, it is their fiduciary obligation to vote in the best interests of their beneficiaries. The authors further reasoned

that, unlike active mutual funds, which have greater turnover rates, corporate management may be more likely to heed the opinions of long-term investors.

One of the very few empirical studies on passive investors was done by Appel, Gormley, and Keim (2016) on the index funds that track the Russell 1000 and Russell 2000 indexes. The Russell 1000 index includes the largest 1,000 U.S. stocks by market capitalization, while the Russell 2000 index includes the next largest 2,000 firms. The authors' sample, however, only includes the lowest 250 businesses in the Russell 1000 and the top 250 firms in the Russell 2000 by market capitalization. The weightings of the Russell 2000's top 250 businesses are much greater than those of the Russell 2000's bottom 250 firms. During the study period, the total ownership stake of passive funds was 66% larger for a stock in the Russell 2000's top 250 stocks than for a stock in the Russell 1000's bottom 250 stocks. The study's findings revealed that when there were changes in passive fund ownership of stock because of a stock being assigned from the Russell 1000 to the Russell 2000, the higher ownership was positively related to the firm's future performance using the firm's ROA and Tobin's Q.

However, owing to limitations in the research's database, the study would be unable to capture the change in passive ownership of a stock because of index assignments. Additional procedures would be required to determine whether a business switched indexes in a given year. Because of the research's scope, this is beyond the scope of the study. As a result, without these controls, changes in passive ownership may not have a meaningful positive impact on company performance.

2.3.5.3 Pressure-Sensitive Institutional Investors

Pressure-sensitive investors are also known as grey investors. Unlike pressure-insensitive investors, the findings from the study by Brickley, Lease, and Smith (1988) suggested that pressure-sensitive institutional investors, such as banks, insurance companies, and trusts, suffer conflicts of interest between their fiduciary obligations to stock beneficiaries and other purposes, such as maximising wealth for their employers. Aside from an investment

relationship, pressure-sensitive investors may have additional business ties with the companies that make up their investment portfolios. To keep their business links, these investors are supportive of management. In the vote on anti-takeover measures, Brickley, Lease and Smith (1988) found that pressure-sensitive investors were more inclined to agree with management.

Pressure-sensitive institutional investors, such as banks and insurance corporations, have commercial links with the enterprises in which they are significant owners, such as providing loans, cash flow management, brokerage, or insurance services. Banks with commercial ties and stakes in the businesses, in particular, are driven to influence the firms' operations in a way that benefits the bank, as described by the majority of the authors in the literature (e.g. Ruiz-Mallorquí and Santana-Martín 2011; Muniandy, Tanewski and Johl 2016; De-la-Hoz and Pombo 2016; Lin and Fu 2017). Thus, the potential for expropriation is greater when a banking institution is a large blockholder. As a result, for the large institutional pressure-sensitive blockholders, there is uncertainty as to whether the benefits from private expropriation (leading to lower firm value) or the benefits of aligning their interest with other shareholders to increase firm value is greater.

A study on non-financial firms listed on the Spanish Stock Exchange by Ruiz-Mallorquí and Santana-Martín (2011) found that if the dominant shareholder (defined as the main shareholder with more than 10% of the voting rights) was a banking institution, the relationship between the dominant bank's voting rights and the firm value was significantly negative. Muniandy, Tanewski, and Johl (2016) found no significant relation between ownership by pressure-sensitive investors such as banks, finance and insurance firms and long-term firm performance (Tobin's Q) and short-term company performance (ROA and ROE). De-la-Hoz and Pombo (2016) concluded that insurance companies ownership had a negative effect on the firms' Tobin's Q. A more recent study by Lin and Fu (2017) on Chinese firms classified insurance companies, social security funds and broker dealers as pressure-sensitive institutional investors. The results showed that there was no significant relationship between the ownership by this type of investors and the firms' Tobin's Q. Thus, it seems to

suggest that the monitoring ability of these pressure-sensitive investors is weakened by the conflicts with the other business relationships that they might have with the firms. To this extent, the results from these studies are consistent with the view that the ownership by these pressure-sensitive investors would not influence the firm performance. In more serious conflicts, where these investors align with the business' leadership to obtain private gains at the expense of minority shareholders, a detrimental impact on corporate performance is possible.

However, there were some authors that concluded opposing results of the ownership by banks and insurance companies on the performance of firms. Gorton and Schmid (2000) concluded that higher equity ownership and voting rights by German banks improved the ROE of the firms. Lehmann and Weigand (2000) concluded that ownership by bank or bank-owned investment companies and insurance companies on German corporations led to improved firm performance in terms of ROA and ROE. In the study by Rose (2007) on Danish listed firms on the Copenhagen Stock Exchange, the author found that ownership by banks and, to a lesser extent, insurance firms had a favourable impact on business performance (Tobin's Q). However, the possible reasons provided by the authors as to why their results differed from other authors were less than convincing. Gorton and Schmid (2000) reasoned that one explanation was that there was a positive relationship between bank control rights derived from equity ownership and bank ownership of cash-flow rights. As banks own cash-flow rights, the authors argued that they had a financial incentive to improve firm performance. Rose (2007) gave a possible reason for why Danish banks and insurance companies may make superior investments in listed enterprises; a possible case that bank portfolio managers are exposed to a more competitive performance gauge since banks are continuously assessed by the stock market. However, this explanation would not provide a causal effect of bank ownership on firm performance and thus does not explain the monitoring ability of banks to enhance firm performance.

2.4 Impact of Multiple Blockholders on Firm Performance

So far, the review on blockholders has been on a single class of blockholders on the firm performance. However, many firms might have more than one blockholder, with some of these belonging to different classes as well. The study of Claessens, Djankov, and Lang (2000) showed that 32% of East Asian firms had more than one large owner. In another study by Faccio and Lang (2002), the data on Western European firms showed that 39% of firms had at least two large shareholders and 16% of the firms had at least three large shareholders. In an earlier study by R. La Porta, Lopez-De-Silanes, and Shleifer (1999) on 600 of the largest publicly listed companies across 27 countries in various parts of the world, the authors found that one-quarter had more than one large shareholder. Thus, the presence of multiple large shareholders in a firm leads us to question whether its presence benefits or harms minority shareholders.

Maury and Pajuste (2005) discovered that the relative distribution of voting rights among large owners is more relevant than the presence of several large shareholders in a study of Finnish listed businesses. A more equitable distribution of votes among major blockholders increased business value. Furthermore, the authors demonstrated that most of the businesses were family-controlled, and in such firms, the amount of the voting rights of the second and third highest non-family shareholders considerably increased the company value. However, when the second largest shareholder was likewise family, the value of the family-controlled business was considerably decreased, and when the third largest shareholder was family, the value was lowered to a lesser amount. Based on the findings presented above, the authors argued that a larger voting position held by a non-family shareholder enhanced the monitoring impact while decreasing expropriation by the dominant family shareholder and thus improved firm value.

Another study on Western European firms across 13 countries by Laeven and Levine (2008) looked at complex ownership structures where there is a dispersion between the cashflow rights and the control rights. In such complex ownership structures, the control rights could be much larger than the cashflow

rights because of indirect chains of control. The bigger the disparity between a major shareholder's control rights and cashflow rights (also known as the "wedge"), the greater the temptation for the shareholder to divert company resources for individual benefit. The authors discovered that the largest shareholder's 'wedge' was considerably adversely connected to the firm's Tobin's Q. Furthermore, the authors studied the impact of the difference in cashflow rights (also known as cashflow rights dispersion) between the largest and second largest shareholders on company performance. The findings revealed a negative relationship between the cashflow rights dispersion and the firm's Tobin's Q. Furthermore, the authors concluded that when the two largest shareholders are of different kinds, the results showed a greater negative relationship between Tobin's Q and the difference in their cashflow rights. This finding contradicts a previous research study undertaken by Maury and Pajuste (2005) which found a favourable influence on company valuation for family-controlled enterprises when the second largest shareholder was a non-family member. According to Laeven and Levine (2008), different types of owners found it difficult to collaborate, resulting in an increasing negative relationship between values and ownership dispersion.

In another study on nine East Asian firms undertaken by Attig, El Ghoul, and Guedhami (2009), the data showed that the Tobin’s Q of firms with multiple large shareholders was significantly and positively related to the following:

i. The presence of at least one large shareholder who controls at least 10% of the firm other than the largest shareholder

ii. The number of large shareholders (up to the fifth) who control at least 10% of the firm other than the largest shareholder; and

iii. The size of the second largest shareholder's voting rights relative to the largest shareholder.

Furthermore, the study indicated that the allocation of voting rights among blockholders was important. More uneven voting rights distribution between the largest and second largest owners, or unequal voting rights distribution among the five largest shareholders, resulted in a lower business valuation.

The authors argued that the presence of many large owners with more equal voting rights gave the other large shareholders stronger motivations and capacities to monitor the controlling shareholder. Consequently, the controlling shareholder's expropriation was reduced, and the firm's valuation increased. The presence and voting power of families or states as the second largest investor relative to the largest shareholder resulted in greater business valuation. The authors reasoned that the families or states had greater incentives and could provide better monitoring on the controlling shareholder.

Ruiz-Mallorquí and Santana-Martín (2011) studied the issue of how the voting rights of other important investors impacted business value when the dominant owner was a bank or investment fund with the most voting rights. As previously stated in the subsections, banks are considered to be pressure-sensitive investors since they are likely to keep commercial relations with the businesses in whom they have invested. Investment funds, on the other hand, have no business connections with the companies in which they invest. Furthermore, the major goal of investment funds is to increase the value of their portfolio companies. The authors concluded that the stronger the control exercised by the second and third most significant shareholders (regardless of type), the less a dominant bank shareholder was able to acquire private benefits, resulting in better company value. However, if the top two or three shareholders have voting rights, a "self-dealing" alliance forms, resulting in reduced business value. In the case of an investment fund as the majority shareholder, the more the influence exercised by the second and third most significant owners (non-investment funds), the less the dominant investment fund can maximise firm value. However, when the top two or three shareholders with the most voting rights are investment funds, a value-maximising coalition is formed to increase firm value.

Most of the writers in the preceding research believed that a higher distribution of voting rights to non-controlling significant shareholders offered stronger incentives and capacities to supervise the controlling shareholder. In such cases, the controlling shareholder's expropriation was reduced in order to increase business value. Attig, El Ghoul and Guedhami (2009) demonstrated

that Tobin's Q was positively related to the ratio of the second largest shareholder's voting rights to the largest shareholder's voting rights, suggesting larger advantages from the second largest shareholder's enhanced monitoring effects. However, a later study by Cai, Hillier, and Wang (2016) on Chinese listed firms showed that this relationship did not hold true for all levels of ownership by the second largest shareholder. According to the authors, the second biggest shareholder may have incentives to monitor or collaborate with the dominant shareholder in expropriating wealth from lesser owners. When the voting rights of the controlling shareholder outnumbered those of the second biggest shareholder, every increase in the voting rights of the second largest shareholder resulted in an increase in firm value. However, when relative shareholdings converged (approaches one), the temptation to collude with the dominant shareholder rose faster than the advantages from monitoring, resulting in decreased company value. In terms of the profile of the second biggest shareholder, the authors demonstrated that if the second largest shareholder was of the same kind as the top shareholder, the firm's Tobin's Q decreased.

Cai, Hillier, and Wang (2016) estimated in their study that the optimal ownership of the second largest shareholder relative to the controlling shareholder was 42.8%. This meant that the firm value increased when the second largest shareholder increased its stake up to 42.8% of the controlling shareholder and then decreased beyond 42.8%. In other words, the marginal benefits from monitoring by the second largest shareholder was higher than the marginal benefits from collusion at levels below 42.8%, but beyond 42.8% the second largest shareholder would choose to collude with the controlling shareholder due to higher marginal benefits from collusion over the marginal costs (leading to lower Tobin’s Q). In terms of the equity ownership of the second largest shareholder, this worked out to around 16.2% of equity ownership for the second largest shareholder based on an average equity ownership of 37.8% for the controlling shareholder. Tobin's Q grew as the second largest owner increased their interest to 16.2%. Beyond 16.2%, the collusion impact of the second biggest shareholder with the largest shareholder became more pronounced, resulting in decreased company

value. As a result, the authors found that there was a non-linear (concave) relation between Tobin's Q and the magnitude of the second biggest shareholder's voting rights compared to the largest shareholder.

A recent study by Fattoum-Guedri, Guedri, and Delmar (2018) examined how non-family blockholders affect firm performance. The authors investigated the impact of voting power imbalance between family and non-family blockholders on company performance. They argued that concentrating too much voting power in the hands of non-family blockholders may impair family company performance through over-monitoring. On the other hand, if the family voting power was significantly more than that of non-family blockholders, an under-monitoring scenario may develop, as predicted by the agency theory. Self-dealing, exorbitant pay and nepotism may be facilitated by inadequate supervision. Based on the trade-off, a more equal voting power between family and non-family blockholders would benefit all parties since they could participate in strategic decision making and value generation collaboratively. The Shapley power index was used to calculate the imbalance in voting power between family and non-family blockholders (Milnor and Shapley 1978). If the largest blockholder controls more than half of the voting rights, the Shapley index is equal to one, indicating that the biggest blockholder has complete control over the outcome of any vote. According to the findings of the study, the larger the imbalance in voting power between family and non-family blockholders, the poorer the business performance as assessed by Tobin's Q.

However, based on the unique familiness perspective, family blockholders may not always behave opportunistically to shift resources for personal purposes. According to Le Breton-Miller, Miller and Lester (2011), in some cases, the family may supply the company with unique bundles of resources and talents. Intense supervision by non-family blockholders may harm the business by discouraging the family from undertaking costly firm-specific investments that produce these distinctive bundles of resources and skills.

In addition, Fattoum-Guedri, Guedri and Delmar (2018) also suggested that the greater the number of blockholder types (i.e. family, individuals, corporations, pressure-sensitive institutional investors and pressure-resistant

institutional investors), the greater the negative relationship caused by the voting-power asymmetry between family and non-family blockholders on firm performance. The authors reasoned that group conflicts were more likely to be severe in bigger groups due to the greater range of motives and interests, which might lead to considerable divergence in suggested strategic actions. Larger groups would necessitate more time and effort for all participants to reach an agreement on important decisions. Furthermore, bigger groups were more likely to reject riskier initiatives since each proposal must be approved by all entities with varying levels of risk aversion (Cheng 2008). As a result, while having various categories of blockholders provides a larger range of experience, abilities and information for decision-making, the rise in coordination costs is likely to outweigh the potential benefits of having a varied pool of resources. This is confirmed by the study's findings, which demonstrates that the interaction of voting-power imbalance between family and non-family blockholders and the number of blockholder categories is negative and significant.

In summary, from the review completed so far on multiple blockholders in a firm, the literature suggests that there are three important factors that affect firm performance when there are multiple blockholders involved:

1. the dispersion in the voting rights between blockholders
2. a change in motivation of the blockholder, and
3. the type of blockholders.

Except for Cai, Hillier, and Wang (2016), most writers believed that a more equitable distribution of votes among big blockholders improved company value. (Maury and Pajuste 2005; Laeven and Levine 2008; Attig, El Ghoul, and Guedhami 2009; Fattoum-Guedri, Guedri, and Delmar 2018). However, the authors agreed that the greater the dispersion of voting rights among large shareholders, the more negative the effect on the firm performance. This phenomenon is likely to be more pronounced in firms with complex ownership structures that gives shareholders more control rights than their cashflow rights, because of indirect chains of control. In such firms, the incentive for the

large shareholder to divert corporate resource for private gain is greater. In terms of motivation, Cai, Hillier and Wang (2016) argued that the second largest blockholder could change his motivation from monitoring the controlling shareholder at lower ownership levels to collusion with the controlling shareholder at higher ownership levels. Finally, the identity of the large shareholders matters to the firm performance. Blockholders of the same type are likely to form a coalition because they share the same motivation and interests. Such coalitions could be 'self-dealing' (value-maximising) leading to lower (higher) firm performance depending on the identity of the blockholder which could govern their motivations and interest. Blockholders of different types, depending on the ownership dispersion among the top blockholders, might lead to conflicts or over-monitoring leading to lower firm performance (Ruiz-Mallorquí and Santana-Martín 2011; Cai, Hillier, and Wang 2016). In other situations, some types of blockholders could provide better monitoring of the controlling shareholder to enhance firm value. With all the above in mind, future research on the multiple blockholders in a firm should consider the differences in voting rights among the top blockholders, the changing motivation of blockholders and the type of blockholders.

2.5 Blockholders' Engagement

The concept of shareholder engagement as opposed to shareholder activism is discussed in the literature of Mcnulty and Nordberg (2016). Mcnulty and Nordberg (2016) developed the concept of active ownership or continual engagement of institutional investors with the investee companies through various means of "voice". The concept of engagement does not solely include shareholder activism defined as "actions taken by shareholders with the explicit intention of influencing corporations' policies and practices" as defined by Goranova and Ryan (2014); the continual engagement extends to a broader range of ownership behaviour that participates actively in the affairs of investee companies through a more constructive role that would help protect shareholders' interests (*Keeping Good Companies* 2013). Engagement or active ownership is different from passive ownership, which typically involves holding the shares, receiving dividends and trading.

2.5.1 Shareholder Activism

Shareholder activism can be described as an attempt by investors to resolve conflict with management or board decisions (Serafeim 2018). Shareholder activists aim to influence corporate executives, but their purpose is not to take managerial responsibilities by running targeted firms or make executive decisions. Thus, shareholder activists try to influence corporate decision-making without using the resources necessary for corporate control. Shareholder activism can arise out of a lack of focus by corporate managers on shareholder value or more generally, on environmental, social and governance (ESG) factors. Results from the study of McCahery, Sautner, and Starks (2016) showed that inadequate corporate governance, exorbitant management remuneration and bad company strategy were the primary motivators for shareholder activism.

According to Goranova and Ryan (2014), shareholders may use public or private activism. Public activism refers to the proxy voting process. It involves voting solicitation activities to submit a shareholder proposal or to contest a managerial proposal at the shareholders' meeting. It may also be characterised by publicised letters, media coverage and lobbying activities (Chowdhury and Wang 2009; Hillman et al. 2011; Reid and Toffel 2009). Private activism or 'quiet diplomacy' is typically unobservable to outsiders. Such private activism could include private negotiations, behind-the-scenes consultations, letters and phone calls (Carleton, Nelson, and Weisbach 1998; Logsdon and Buren 2009). According to David, Bloom, and Hillman (2007), private activism is seen as the more powerful alternative of the two because top management and directors may be more sensitive to activists' requests behind closed doors in order to avoid public shame and reputational damage. As a result, it is not unexpected that private activism outnumbers public activism (Brav et al. 2008; Gantchev 2013). According to Goranova and Ryan (2014), transparency is a double-edged sword in private advocacy. On the one hand, private activism may be a more effective and collaborative instrument in effecting the desired changes and reforms advocated by activists to benefit the business and its shareholders. On the other hand, due to knowledge asymmetry between shareholder activists and other shareholders, private

activism might lead to “rob Peter to pay Paul” scenarios. The impact of shareholder activism will benefit all shareholders only if the activist's interests coincide with those of the other shareholders.

Due to conflicts of interest, shareholder activists may opt to pursue objectives unrelated to shareholder value. Union pension funds, for example, are said to be more concerned with employee welfare than with the stock price of the targeted business (Agrawal 2012). Public pension funds have been accused of pursuing corporate social performance targets owing to political pressure or the political aspirations of its administrators (Wahal 1996; Woidtke 2002).

2.5.2 Impediments to Shareholder Activism

The five primary areas on which arguments for hurdles to shareholder activism might be founded are:

1. incentives to participate
2. conflicts of interest
3. regulatory barriers
4. investment structure, and
5. market liquidity.

The free rider problem is a disincentive for shareholder activists as the activists bear the costs of intervention, but the benefits are shared with all other shareholders. According to theory, the stake size will alleviate the free rider problem since a higher stake permits an investor to acquire a larger portion of the value arising from the intervention. Furthermore, theory suggests that a greater number of blockholders minimises free rider issues and improves the intervention's efficacy (Edmans and Manso 2011). Management or insider control over voting rights, on the other hand, diminishes incentives to interfere since such control reduces the likelihood that, for example, a proxy war will be successful.

Shareholder activism may also be hampered by conflicts of interest among shareholders. Shareholder activists may be conflicted by commercial relations at the target corporation that are not directly related to shareholder value (Ashraf, Jayaraman, and Ryan 2012; G. F. Davis and Kim 2007). Mutual funds, for example, with pension-related business links are more inclined to support management on CEO remuneration recommendations.

Furthermore, the fear of violating legal restrictions may limit activism. Diversification rules for mutual funds or pension funds, for example, may prevent investors from taking a substantial enough position to incentivise activism. The Takeover Code in Singapore will apply when ‘concert parties' control 30% or more of the voting rights, which may hinder shareholder activity.

The structure of the investing industry might sometimes make intervention difficult. If fund managers' own investors do not properly reward activism, or if the investing process is outsourced to other asset managers, they may choose not to participate. One study by Tilba and Mcnulty (2013) argued that the relationships within the investment chain undermined the ability of pension funds to be engaged owners. The authors reasoned that the trustees of the fund with fiduciary responsibility to pension fund beneficiaries relied on investment consultants and actuaries. In turn, these investment consultants and actuaries, with no direct responsibility to their recommendations, were likely to recommend fund managers that met the short-term returns. Such fund managers were more likely to churn their portfolios.

Lastly, for liquid markets, the shareholdings of shareholders of listed large companies are constantly changing as investors trade in the shares or switch to other asset classes (e.g. from equities to real estate). Trading-focused owners have short-term interests as they are more focussed in increasing capital gains by churning investments rather than investing long-term in the business of the firm. To ensure the commitment from certain large shareholders, Huddart (1993) proposed some restrictions on the blockholders’ selling of shares. The study of Lehmann and Weigand (2000) affirmed that committed shareholders did not exit from their investments at the first sign of trouble. The authors argued that committed shareholders participated actively

in the governance of the firm such as through involvement in picking top management or replacing incompetent managers, to ensure sound management of the firm.

2.5.3 Shareholder Activism Outcomes

The market reaction to shareholder activism has been mixed so far. A study by Del Guercio, Seery, and Woidtke (2008) showed when activists persuaded other shareholders to withhold votes in a director election to indicate displeasure with management performance or the firm's corporate governance, the firm's operating performance improved. The authors found a statistically significant 3% abnormal increase in the mean industry-adjusted and performance-adjusted operating return on assets over a three year period.

A study by Becht et al. (2010) analysed the private activism by a UK pension fund on its target companies. Numerous meetings and phone conversations with chairmen, CEOs, and CFOs were part of such engagements. In addition, the pension fund discreetly approached other institutional shareholders to discuss and request support for its engagement goals. The engagement objectives intended to effect significant changes in the governance structure of target organizations, such as reorganizing the activities of diverse enterprises to offer more focus (e.g. by selling non-core divisions and assets, and by limiting diversifying investments and acquisitions). The authors found that the fund substantially outperformed the benchmarks. Because the pension fund rarely engaged in public involvement, the authors concluded that the anomalous gains were mostly due to private activism rather than the fund managers' stock selecting abilities. However, the authors cautioned that the results were for a single pension fund and may not be generalisable to other shareholder activism funds in the UK or other nations.

A study on hedge fund activism by Brav et al. (2008) showed positive performance in the ROA. Around 48% of the activism activities in the study sample showed that hedge funds were concerned with the general undervaluation of the firms and intended to communicate with the board or management with the goal of enhancing shareholder value. The hedge fund

activists could employ friendly interactions with management, but when hedge fund activists considered target boards to be entrenched, they could be openly hostile. The authors concluded that the targeted firms had a greater ROA than their industry/size/book-to-market matched rivals. The ROA experienced significant improvement two years after the firms were targeted by the hedge funds. The improvements in ROA amounted to around 1.5 percentage points.

However, most studies of pension fund activism using shareholder proposals concluded that there was no significant change or a decrease in the firm performance (Guercio and Hawkins 1999; Prevost and Rao 2000; Wahal 1996). Guercio and Hawkins (1999) discovered little indication that pension fund activism through shareholder proposals had a substantial influence on stock returns or accounting metrics of performance three years after the first targeting. Wahal (1996) discovered that pension funds preferred to invest in businesses that underperformed the market. The author discovered that, on average, pension fund activism did not enhance the long-term stock price performance or the accounting measures of performance of targeted businesses in the post-targeting period. Prevost and Rao (2000) found that firms receiving shareholder proposals from pension funds for the first time experienced a momentary decrease in shareholder wealth. In addition, firms that received repeat shareholder proposals were more likely to experience a permanent decrease in shareholder wealth through lower stock returns, as well as longer run declines in the firm's operating performance.

2.5.4 Conclusions on Shareholder Activism

From the literature on shareholder activism in prior subsections, it can be concluded that the impact of shareholder activism on firm performance is mixed due to the type of activism, as well as the identity of the shareholder activist. Private activism or private engagement, which is more prevalent, is more effective than public activism or public engagement through shareholder proposals. For example, AustralianSuper often engages with the investee companies through private conversations regarding the long-term strategy of the company, long-term valuation drivers and the right governance processes in place to achieve these outcomes (Brown 2014). UniSuper believes that

private and respectful engagement (combined with voting) is the most effective way to communicate with and influence the investee companies (*UniSuper* 2016b).

Public activism through shareholder proposals by pension funds, in general, do not yield any significant impact on firm performance and could even lead to lower wealth for shareholders. Shareholder proposals are regarded as low-cost mechanisms to put pressure on management, signalling to the market the views of the fund and building shareholder support. Although there is no evidence to support motivations other than fund value maximisation, such shareholder proposals do not seem to support evidence for better firm performance in the long run (Guercio and Hawkins 1999). However, activists who encourage other shareholders to abstain from voting in a director election in order to indicate displeasure with management performance or the firm's corporate governance may see improved operating performance according to Del Guercio, Seery, and Woidtke (2008).

In contrast to pension fund activism, hedge fund activism is more successful in achieving their objectives according to the study by Brav et al. (2008). In most cases, hedge funds seldom sought control of the target firm and the activism employed was non-confrontational. Hedge funds, as opposed to mutual funds and pension funds, have a greater ability to influence business boards and management. Because hedge funds are not subject to the same regulations as mutual funds and pension funds, they can use leverage and derivatives to maintain highly concentrated stakes in a limited number of firms. Furthermore, hedge fund managers do not have conflicts of interest because hedge funds do not have other commercial connections with the companies in which they invest. As a result, hedge funds are better positioned than other institutional investors to serve as knowledgeable monitors.

In general, the active engagement by institutional investors takes on an owner mentality and a longer-term perspective in the investment approach of the firm’s affairs as discussed in the literature of stewardship behaviour by Hernandez (2012). Most of these engagements are done privately. This, in line with the claims of the investment philosophies of mutual fund managers like

BlackRock (*Keeping Good Companies* 2013) and pension fund managers like the Australian superannuation funds AustralianSuper (Brown 2014) and UniSuper (*UniSuper* 2016b). Hernandez (2012), also argued that two psychological mechanisms guide the institutional investors to act as stewards to their clients. Firstly, stewards personally value actions that enhance the long-term prospect of others rather than self-serving. Secondly, the stewards have a sense of emotional link to the beneficiaries of their decisions and feel compelled to influence positively the collective.

Finally, further research on shareholder activism or engagement should consider the type of engagement as well as the heterogeneity of the shareholder. The financial outcomes of the activism are very likely to hinge on these two critical factors. A common thread of private activism or engagement is that it is done mostly behind the scenes such as letters, meetings and soliciting support from other investors. Empirical research studies on these forms of private engagement are normally gathered from surveys. Other novel empirical quantitative data could be considered as proxies for the level of private engagement in a quantitative based study for a broader scale.

2.6 Research Gaps

From the preceding sections of the literature search in this chapter, this Study has managed to uncover the following gaps or areas requiring further research.

Firstly, the review has uncovered that some of the conflicting results of various studies could be resolved if the studies had taken on a more granular approach. The diverse classes of blockholders show that different blockholder classes have different motivations and could have other business relationships with the firms that they invest. For example, outside blockholders are made up of a very diverse group and the data should be disaggregated to different classes for a more granular study. In addition, for some classes of blockholders such as institutional investors, a further refinement into the type of institutional investor (e.g. hedge funds, mutual funds and pension funds) is required for a more granular study.

Secondly, non-linear relationships should be considered between the diverse types of blockholders and firm performance as some prior studies had insignificant results when only linear relationships were considered. For example, insiders such as managers might initially align their interests with other shareholders with small increases of equity stake. However, further increases in managers' equity could lead to the managers' entrenchment in the firm leading to poorer performance. This phenomenon could possibly extend out to other blockholders including directors. Related to the conflicting motivations, domestic SWFs and some large socially responsible institutional investors might also place emphasis on not only financial gains, but also on the prosocial oriented objectives. The interplay between these factors could suggest a non-linear relationship between the shareholdings of these types of blockholders and the firm's performance.

Third, multiple metrics of firm performance are known to provide disparate, and often contradictory, findings. Some performance indicators, such as ROA and ROE, are considered to be short-term accounting gauges of business performance. Tobin's Q, on the other hand, is regarded as a long-term business performance metric that incorporates investor expectations. Thus, assessing company performance on both a short-term and long-term basis may provide us with a better understanding of the blockholders' incentives.

Fourthly, the interaction effect between multiple blockholders is confounded by the identity of the blockholders and the dispersion of the voting rights among the blockholders. Most studies have focussed only on the dispersion of voting rights between the largest blockholders or the interaction between certain types of blockholder classes such as family blockholders and non-family blockholders in isolation (e.g. Attig, El Ghoul and Guedhami 2009; Maury and Pajuste 2005; Cai, Hillier and Wang 2016; Fattoum-Guedri, Guedri and Delmar 2018). The authors of these studies had concluded that both the dispersion of voting rights and the identity of the largest blockholders had an impact on the decision of blockholders to form a coalition that could lead to self-dealing or to provide better monitoring over management of the firm. It is believed that investigating the effects of dispersion of voting rights combined with the identity

of the blockholders could extend our understanding of the decisions between blockholders with varying motivations to form a coalition for their own interest or take care of the overall interest of the whole firm in relation to firm performance.

Fifthly, private activism or private engagement such as private negotiations, behind-the-scenes consultations and private letters are typically unobservable by researchers (Carleton, Nelson and Weisbach 1998). Most of the studies on private activism are based on surveys or interviews of a mixed or qualitative nature. It is envisaged that to capture the level of private engagement by blockholders for a broader scale of quantitative study could require the use of more novel quantitative measures. In fact, the literature search has not yet uncovered any empirical study on the relationship of blockholder's engagement that proxy longer term commitment on firm performance. This Study advocates that the largest shareholder would be a good proxy of a committed shareholder due to the large stake in the firm. In addition, this Study advocates that blockholders on the board can play an effective role in governance and enhance firm performance. Thus, an empirical study using variables such as change in blockholding size of the largest blockholder relative to the total blockholding size and the proportion of directors who are also blockholders could be used as proxies for blockholders' engagement. Such a study involving blockholders' engagement that are of a more long-term commitment could give us a better understanding on the relationship of these engaged blockholders on firm performance.

Finally, most of the studies in corporate governance on firm performance use the agency theory as the predominant theory. It is envisaged that in a more complex world, a multi-disciplinary approach using other theories such as the stewardship theory and resource dependence theory could provide a more comprehensive understanding on the complexities surrounding the motivations of blockholders, as well as the interactions with other blockholders of the same type or different type. For example, there are competing explanations regarding the relationship of family ownership on firm performance in terms of market valuation and accounting returns. According

to literature, on the one hand, agency theory can explain that family owners can extract private benefits or entrenched themselves to the detriment of minority shareholders. However, some authors supported the theory that family owners behaved as stewards and provided evidence in their studies to support the stewardship theory. Therefore, an empirical study on a location in Singapore where family firms have the largest presence could enhance our understanding through these competing explanations.

2.7 Conclusion

We have seen in this chapter the seminal works of authors related to this Study as well as the works of other authors that come after them. The review suggests that blockholders are made up of a diverse group of shareholders; thus, any meaningful study should investigate the motivations of blockholders relative to other stakeholders that would influence firm performance. In this regard a single theory such as the agency theory would not be able to provide a comprehensive understanding of blockholders' actions on firm performance. Accordingly, a more multi-disciplinary approach involving other theories such as the stewardship theory and resource dependence theory might be needed. For example, reconciling the agency theory with the stewardship theory will be needed to give a better perspective on the motivations of blockholders.

This chapter has also highlighted the research gaps that this Study intends to investigate. These research gaps inform the basis of the research design decisions in the subsequent chapters. Some of the research gaps involve questions that have not been asked before, such as the conflicting roles that family firms have on corporate governance and firm performance. Other questions could be trying to address the differences in performance measures that lead to insignificant or conflicting results.

In the next chapter, appropriate theories such as agency theory, stewardship theory and resource dependence theory are discussed in relation to blockholders on firm performance. These theories and concepts underpin the theoretical framework which is the "blueprint" for the entire thesis inquiry (Grant and Osanloo 2014).

Chapter 3: Theoretical Framework

3.1 Introduction

The theoretical framework is based on the findings in the literature review in the previous chapter as well as the problem statement and research questions. It presents an understanding of the philosophical framework within which this research undertakes and views knowledge. As there is no one theory that fits best with all the inquiries in this Study, a multi-theoretical approach is taken that best aligns and supports the structure of the study's purpose, research questions, significance and design (Grant and Osanloo 2014).

The theoretical framework aims to give an understanding of the theories and concepts that are adopted in this Study. In addition, unique application of the relevant theories for the theoretical constructs to this Study are provided in this chapter. These theories and concepts will also be used to analyse data and explain findings. An explanation of the conceptual framework is embedded within the discussion of the theoretical framework. The conceptual framework, as opposed to the theoretical framework, describes how the research problem will be best examined, the precise path the research will have to follow, and the link between the different variables in this Study (Grant and Osanloo 2014). The conceptual framework provides a logical structure of related concepts that aid in providing a picture or visual representation of how ideas in the research relate to one another within the theoretical framework.

The chapter begins by reviewing the relevant theories that can explain the performance of firms underpinning this Study: agency theory, stewardship theory and resource dependence theory. A discussion of each theory is provided in isolation as well as comparisons between theories. A discussion on the conceptual framework then follows so that applicable concepts can be applied to form a basis for the hypothesis development.

3.2 Agency Theory

Agency theory has become the dominant theory in corporate governance in the discipline of finance. The classical agency problem (also known as the

Type I agent-principal conflict) stems from the separation of ownership and control in modern corporations as described by Jensen and Meckling (1976). In such a case, the stockholders being principals have delegated authority to managers who are the agents to act on their behalf. The managers (agents) possess more expertise than the shareholders (principals), thus giving them more latitude for self-interested behaviour. The goals that the agents pursue are sometimes not aligned with those of the principals, which give rise to the typical agent-principal conflict. The information asymmetry between agents and principals provides opportunities for agents to increase their own utility (wealth) at the expense of the principals' utility. The economic model of man is the fundamental premise of agency theory (Davis, Schoorman and Donaldson 1997; Jensen and Meckling 1976). This model implies that individuals would attempt to maximise their personal utility. In the principal-agent relationship, an agent is engaged to maximise the utility of the principal. Agency theory, on the other hand, believes that agents would act opportunistically since they are self-serving.

Agency theorists suggest different governance measures to protect shareholders' interests, reduce agency costs, and achieve agent-principal interest alignment. Alternative executive remuneration plans, and governance structures are two of the most common approaches. According to Jensen and Meckling (1976) and Shleifer and Vishny (1997), financial incentives for managers, such as long-term compensation related to business performance, will drive managers to act in the best interests of investors. When there is knowledge asymmetry and monitoring is difficult, such incentive systems are especially attractive (Davis, Schoorman and Donaldson 1997). A major governance structure to curtail managers' self-serving behaviour is the board of directors. A board of directors provides a monitoring of managerial actions on behalf of shareholders by performing audits and performance evaluations. According to Davis, Schoorman and Donaldson (1997), non-management board directors are desirable to ensure that proper management oversight occurs. In addition, Shleifer and Vishny (1986) argue that large shareholders or blockholders can provide a partial solution to the free-rider problem in monitoring the performance of management.

Agency theory is useful in explaining relationships where there are divergences of interests of the agents from the principals. The assumption made by the agency theory is purely on the economic consideration that views managers as individualistic and opportunistic with self-serving motivations. Thus, a better monitoring and a well-designed renumeration system will align the interests of managers with shareholders. However, this model has been criticised in a later paper by Jensen and Meckling (1994) as being too simplistic and unrealistic in describing human behaviours. Furthermore, Doucouliagos (1994) argued that stereotyping all motivations as self-interested does not really explain the complexity of human actions. Thus, additional theory can better explain other types of human behaviours beyond the economic perspective. The stewardship theory fills this gap and follows in the next section.

A company may encounter Type II principal-principal conflicts, which relate to disputes between majority owners and minority shareholders, in addition to Type I agent-principal conflicts. The conflict between owners and management becomes less significant in a highly concentrated ownership structure (Lozano, Martinez and Pindado 2016). In this type of environment, the principal-principal conflicts between the largest shareholder and the other shareholders has a greater importance on the firm value (Huyghebaert and Wang 2012; Pindado, Requejo and Torre 2012). Sometimes, it is possible for both types of conflicts to exist simultaneously in a firm depending on the firm's composition of shareholders. As controlling shareholders hold substantial ownership and have controlling positions in the firm, controlling shareholders might seek preferential treatment at the expense of minority shareholders (Shleifer and Vishny 1986). For example, shareholdings of firms dominated by a large family owner could expose such firms to Type II principal-principal conflicts. Large shareholders may use their clout to expropriate wealth from the business through related party transactions in some cases.

According to Shleifer and Vishny (1997), Type II principal-principal conflict is minimised when there is strong legal protection for shareholders that includes the right to vote on crucial corporate decisions such as mergers, liquidations

and elections of directors. Although external governance mechanisms such as rules and regulations are vital, they may not always operate as intended and must frequently be complemented by internal mechanisms. The presence of several blockholders, rather than one dominant shareholder and numerous small owners, is an essential internal governance mechanism. Most writers believe that a more equitable distribution of votes among big blockholders improves company value (Maury and Pajuste 2005; Laeven and Levine 2008; Attig, El Ghoul and Guedhami 2009; Fattoum-Guedri, Guedri and Delmar 2018). The implication is that the greater the dispersion of voting rights among large shareholders, the more negative the effect on firm performance. This phenomenon is likely to be more pronounced in firms with complex ownership structures where shareholders are provided with more control rights than their cashflow rights because of an indirect chain of controls. In such firms, the incentive for the large shareholder to divert corporate resources for private gain is greater. In addition, the identities of the large shareholders matter to the firm performance. Blockholders of the same type are likely to form a coalition because they share the same motivations and interests. Such coalitions could be 'self-dealing' (value-maximising) leading to lower (higher) firm performance depending on the identity of the blockholder which could govern their motivations and interest. Blockholders of different types, depending on the ownership dispersion among the top blockholders, might lead to conflicts or over-monitoring leading to lower firm performance (Ruiz-Mallorquí and Santana-Martín 2011; Cai, Hillie, and Wang 2016).

3.3 Stewardship Theory

In contrast to the economic interpretation of agency theory, stewardship theory, which has its roots in sociology and psychology, presents a more humanistic image of man (Argyris 1973). Stewardship theory is based on a humanistic behavioural approach in which managers are viewed as stewards who will behave in the best interests of their principals (Donaldson and Davis 1991). In contrast to agents in agency theory, stewards' behaviour are regarded as collectivistic and cooperative, and hence pro-firm. Thus, even

where the interests of the stewards are not aligned with the principals, the stewards place the interests of the company as the top priority.

Both psychological and situational variables influence the choice of stewardship behaviour. Intrinsic drive, high identity and personal power are all psychological variables that might influence behavioural choices toward stewardship (Davis, Schoorman and Donaldson 1997; Zahra et al. 2008). Stewards prioritise intrinsic benefits that are difficult to quantify. Opportunities for growth, success, affiliation and self-actualisation are among the benefits. These intrinsic, intangible incentives strengthen subordinates in a stewardship relationship and drive them to perform more on behalf of the firm. Managers who identify strongly with their firm have a strong feeling of belonging to their firm and are more inclined to adopt stewardship. Such managers ascribe firm success to themselves, which improves the individual's self-image and self-concept (Sussmann and Vecchio 1982). A manager who identifies with a firmwill thereby work toward the firm’s goals and is motivated to help it succeed. Such a manager more readily engages in cooperative and altruistic behaviours.

The management philosophy, culture and power distance are examples of situational characteristics that describe the organizational structure. Davis, Schoorman and Donaldson (1997) contend that involvement-oriented, collectivist and low power distance cultures impact stewardship behaviour selection. A workplace in which people are trusted with challenges, opportunities and responsibilities exemplifies an involvement-oriented management style. Individuals in collectivist firms prioritise communal aims over individual personal goals; the focus is on belonging, identifying, and demonstrating loyalty as a result of the firm's tight-knit social structure (Nicholson 2008). Inequalities are minimized in low power distance societies, and the independence of the less powerful is cherished and promoted, while status and class symbols are frowned upon.

According to stewardship philosophy, the steward tries to achieve the organization's goals, such as sales growth or profitability. This behaviour will benefit the principals by improving business performance, which will result in

higher share prices and dividends (Davis, Schoorman and Donaldson 1997). As a result, the utility functions of the steward are maximized. Despite the fact that firms may have conflicting stakeholders and competing shareholders, stewards are driven to work in the best interests of the group. In general, the pro-firm steward will aim to maximise the performance of the firm, thus also satisfying shareholders' interests.

Individuals are driven by higher order needs fulfillment, according to the stewardship model. In the principal-steward relationship, a steward will prioritise the principal's interests over self-serving objectives. The steward's rational behaviour is guided by the notion that by striving to meet firm and communal goals, the steward's own needs are also satisfied (Davis, Schoorman and Donaldson 1997). According to the steward, the utility obtained by firm behaviour is higher than the benefit acquired from individualistic and self-interested behaviour. Thus, the steward will align their interests with that of the firm by working towards firm objectives rather than personal objectives.

Based on the steward's interests and utility motivations, stewardship theory reasons that the steward's level of autonomy in making decisions and taking actions will determine his or her performance. As the steward is someone that wants to be trusted and respected, the steward's autonomy should be maximised with empowering governance structures and mechanisms. This contrasts with the monitoring and incentive costs needed to bring alignment of interests between agent and principal, as prescribed by the agency theory. According to Argryis (1964), control on the steward can backfire because it undermines the pro-firm behaviour of the steward by reducing motivation. According to stewardship theory, when the firm structure has less monitoring and control systems, performance improves; this sort of governance structure empowers and inspires stewards to pro-firm behaviour. With restrictions in place, it is expected that stewards would feel deceived, and motivation and pro-organizational behaviour will suffer. Thus, applying the same agency prescriptions that work in agency theory on agents can be dysfunctional on the managers desire for a principal-stewardship relationship in the firm. A principal

will build a firm structure that allows these stewardship behaviours to flourish in order to get the greatest benefits from a principal-stewardship relationship. As a result, a stewardship structure is regarded as collectivistic and cooperative, leading in good organisational advantages.

Despite the fact that stewardship theory predicts improved performance, much of the existing work on company stewardship focuses on non-economic outcome factors (e.g. Davis, Allen and Hayes 2010; Miller, Le Breton-Miller and Scholnick 2007; Pearson and Marler 2010). One study by James, Jennings and Jennings (2017) found that compared to family managers, non-family managers had lower degrees of agency governance and similar levels of stewardship governance. The findings also suggested that, regardless of a manager's affiliation, stewardship governance was more strongly and positively related with pro-firm behaviours.

3.4 Comparison between Agency Theory and Stewardship Theory

As shown in Table 3.1, both theories characterise the principal-manager employment relationship in terms of the parties' behaviour and the ensuing firm structure. Furthermore, both theories attempt to address business performance. According to agency theory, higher performance is the outcome of the principal establishing governance mechanisms to restrict the agent's opportunistic behaviour based on the presumed economic model of man. Stewardship theory, on the other hand, says that enhanced performance is the consequence of the principal establishing a governance structure that empowers and encourages pro-firm behaviour of the steward based on the presumed humanistic image of man. Thus, agency theory and stewardship theory describe behaviour and governance structures in striking contrast.

Table 3.1: Summary of Agency and Stewardship Essential Elements

Agency Theory	**Stewardship Theory**
Describes the principal-manager (agent) employment relationship's behaviour and the ensuing structural processes	Describes the behaviour and structural processes that emerge from the employment relationship between the principal and the manager (steward)
The principal implements governance procedures to limit an agent's opportunistic behaviour	The principal fosters an atmosphere that encourages stewards to engage in pro-firm behaviour
Economic model of man: individual/self-serving	Humanistic model of man: collective/other serving

The assumptions in the psychological elements of motivation and identity of individuals in the firm represent the behavioural contrasts between agency and stewardship views (Lee and O'Neill 2003; Jaskiewicz and Klein 2007). Motivation is the urge or impulse to act, and it can be external or intrinsic. The urge for an extrinsic reward that is tangible and has a measured economic worth is exemplified by external motivation. In contrast, intrinsic benefits, such as chances for growth, success, connection, and self-actualisation, are difficult to quantify. Because of the presumed economic model of man, individuals are driven by the extrinsic motivation of measurable economic gain as characterised by agency theory. Stewardship theory, on the other hand, is differentiated by intrinsic motivation as a result of the presumed humanistic model of man, in which humans are driven by intangible, higher order benefits (Davis, Schoorman and Donaldson 1997).

Identification happens when a person feels a connection to the firm. Such individuals may identify with the firm's mission, vision and/or objectives (Davis,

Schoorman and Donaldson 1997). High degrees of identification generate a desire to contribute to the success of the firm. This is mirrored in the stewardship theory, which depicts managers as having high degrees of identification with their firm because they perceive themselves as an extension of it. Agency theory, on the other hand, presents managers as agents with low degrees of identification with the firm, enabling their own self-objectives to take precedence over the principal's interests.

Furthermore, agency theory and stewardship theory exhibit different viewpoints on organisational structure in terms of environment and culture. Control-oriented to involvement-oriented organisational environments are possible. The firm structure can be individualistic or collectivistic. Agency theory proposes a control-oriented and individualistic environment, because the theory’s principals place monitoring and regulating activities on agents in order to limit individualistic self-interest. Stewardship theory, on the other hand, proposes an organisational climate in which stewards are trusted and empowered. As a result, management and monitoring procedures are unnecessary because the principal and steward's aims are already aligned. In this way, involvement-oriented and collectivistic cultures emphasise the stewardship approach.

In conclusion, Figure 3-1 offers an illustration of the prescriptions and outcomes related to agency theory and stewardship theory. Agency theory, as shown, proposes that when governance and control systems are in place to monitor and limit the agent's opportunistic behaviour, performance will improve (i.e. high levels of governance mechanisms, high levels of performance). Without these safeguards, it is expected that agents will behave opportunistically, incurring expenses and lowering organisational effectiveness (i.e. low levels of governance mechanisms lead to low levels of performance). The tenets of stewardship theory propose the contrary, where fewer monitoring and control systems are required in order to empower and encourage stewards to engage in pro-organisational behaviour (i.e. low levels of governance mechanisms lead to high levels of performance). To this degree, it is believed that with additional restrictions in place, stewards will feel

deceived, resulting in a loss in motivation and pro-organisational behaviour (i.e. high levels of governance mechanisms lead to low levels of performance).

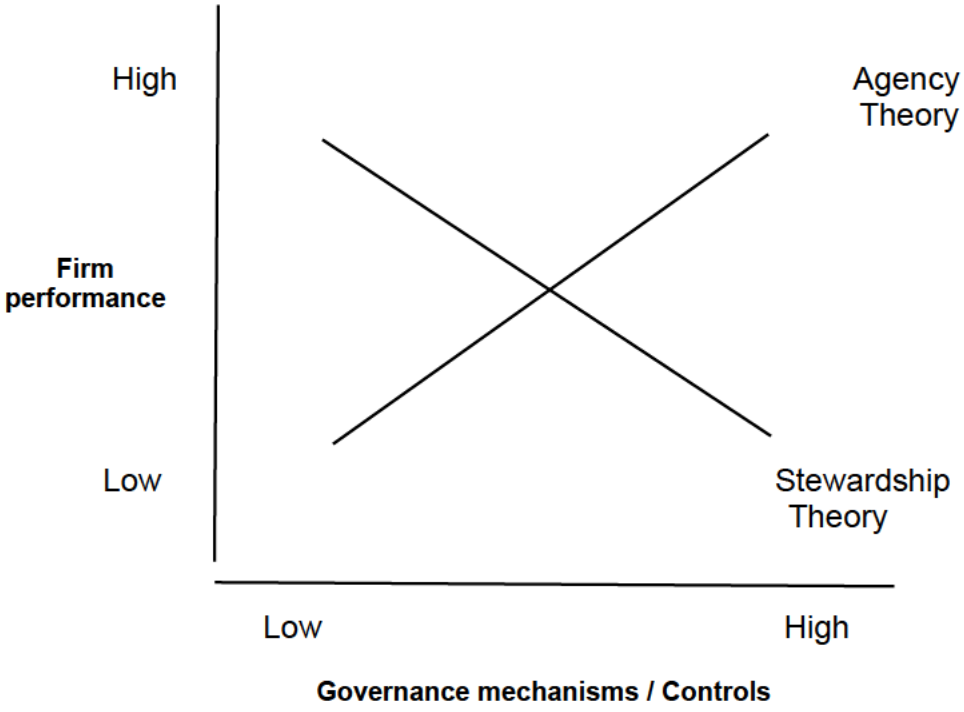

Figure 3-1: Agency and stewardship prescriptions and performance

3.5 Resource Dependence Theory

Resource dependence theory is the framework in which firms come together to secure resources critical to their survival and growth (Malatesta and Smith 2014). Putting this succinctly, firms require resources from their environment to secure power, influence and long-term stability. The seminal work on resource dependence theory was first published in the book by Pfeffer and Salancik (1978). The writers of this book described the firm as an open system that is depending on external circumstances. Power, or control, over essential resources is a key concept in this theory as advocated by Ulrich and Barney (1984). Thus, firms possessing necessary resources are in a power position over firms that are dependent on others for resources. However, as firms cannot produce all the resources needed due to resource scarcity, firms depend on external resources. To this degree, resource dependency theory focuses on strategic activities taken by companies to influence and regulate their interdependence with other enterprises in their environment.

One of the key focuses of resource dependence theory is the role of the board of directors to minimise dependence or gain resources (Pfeffer 1972). The mechanisms through which boards are supposed to have an influence on company performance, as predicted by the corporate governance resource dependency theory, are presented in Figure 3-2. According to Pfeffer and Salancik (1978), directors provide four benefits to organizations:

(a) reputation and legitimacy

(b) advice and counsel to management

(c) aid in gaining access to essential resources from the outside environment, and

(d) access to information conduits between the company and environmental contingencies.

Generally, as well as specifically, there is significant empirical evidence that supports these proposed benefits. For example, the work of Kor and Misangyi (2008) found that a lack of top management industry experience among younger entrepreneurial businesses was countered by the presence of outside directors with considerable managerial industry knowledge. This implies that the board provides critical guidance and counsel to senior management. The function of the board in engaging with the external environment to acquire vital resources is another key focus of resource dependency theory. This is reinforced by the study of Provan (1980), which discovered that businesses that can lure and co-opt influential members of the community onto their boards may gain important resources from the environment. In the resource dependent role, the board may act to reduce uncertainty to the firm as directors link the firm with its external environment (Malatesta and Smith 2014). The board of directors provides an essential resource in the form of relational capital, which consists of the directors' various official and informal relationships. A well-connected director has greater access to information, which benefits in strategic decision making and information dissemination throughout the business. As a result of their opportunities to acquire

information and network in diverse ways, this idea justifies the nomination of directors to numerous boards.

This Study argues that blockholders can play a significant role if they are co-opted into the board. Due to their larger equity stake, blockholders are likely to be more committed not only in monitoring managers, but also in securing the critical resources need by the firm for its survival and better performance. Indeed, there has been limited studies on blockholders on board and firm performance. A study by Agrawal and Nasser (2018) reported that firms with an independent director who is a blockholder have considerably:

(a) lower cash holdings, pay out and R&D spending

(b) greater capital expenditures, and

(c) reduced risk.

This appears to imply that the existence of independent blockholders is beneficial in influencing some company policies and allocating corporate resources. In terms of theory, this Study supports the integration of multiple theories to enhance the explanatory power when probing into the intriguing relationship between board composition and firm performance (Peng 2004). Towards that purpose, this Study combines agency theory and resource dependency theory to investigate how boards of directors and blockholders contribute to company performance.

In summary, resource dependence theory focuses on the function of board members in supplying or securing key resources required by the company through their connections to the external environment. To address uncertainty, outside directors may serve to connect external resources with the company. The directors, according to the resource dependency rule, contribute resources such as knowledge, expertise, important constituents (suppliers, customers, public policy decision makers, and social groupings), and legitimacy to minimise uncertainty (Gales and Kesner 1994). Thus, the perspective of the resource dependency theory differs from the perspective of the agency theory, which emphasises the board's monitoring function in

management. Although the agency theory is the most commonly used theory in board of directors' research, Hillman, Withers, and Collins (2009) opined that the resource dependency theory has the most research influence in this field.

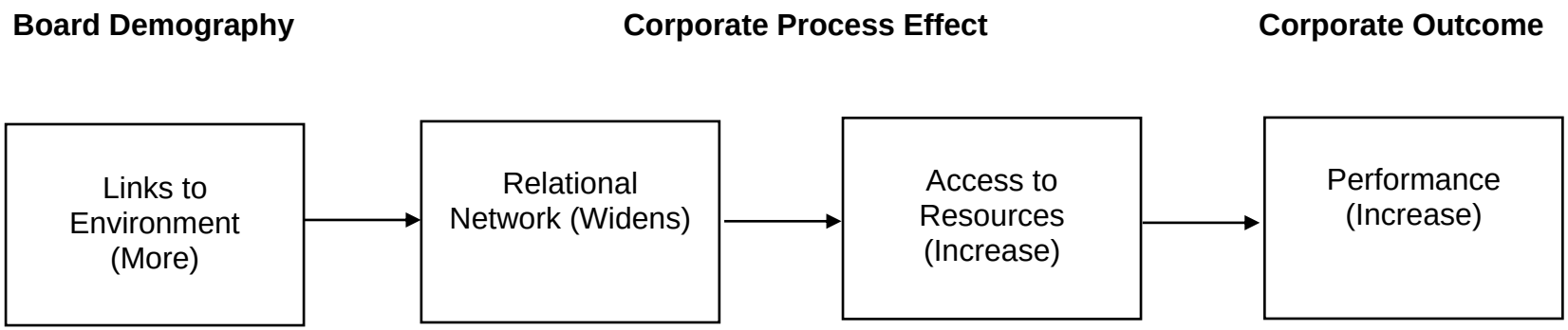

Figure 3-2: Board demography and firm performance

3.6 Conceptual Framework

Based on the extensive literature review presented in Chapter 2: and the discussion on the agency theory and stewardship theory in Sections 3.2, 3.3 and 3.4, this Study develops a conceptual framework as depicted in the conceptual model of Figure 3-3. A conceptual framework is a set of concepts, assumptions and beliefs that underpin and guide a research study. The conceptual framework, in particular, “lays out the key factors, constructs, or variables and presumes relationships among them” (Miles and Huberman 1994). Thus, the conceptual framework will inform us as to the type of study employed, data required, data variables involved and finally, to the research design in this Study in the next chapter.

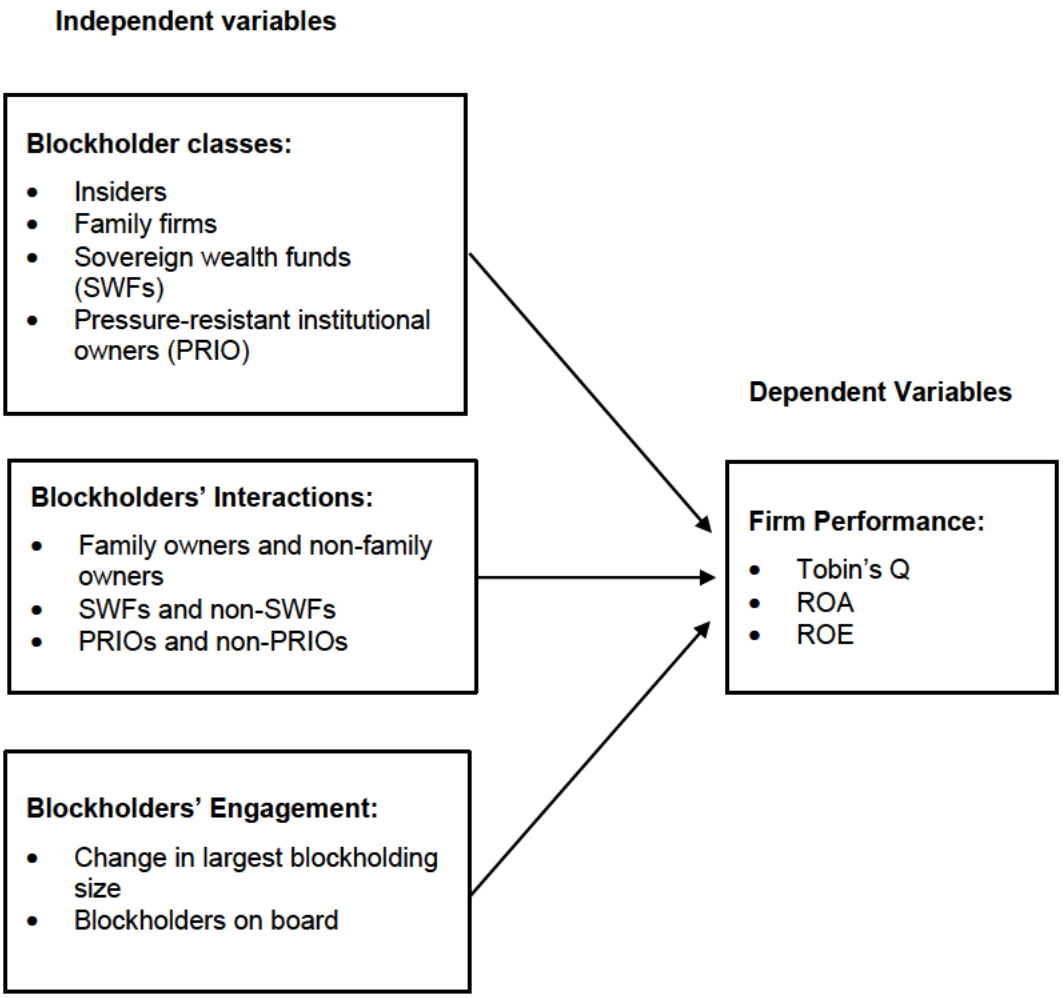

Figure 3-3: Conceptual model

The conceptual model in Figure 3-3 depicts an assumed multiple regression model.

In this Study, the dependent variables measure the firm performance across three financial measures, namely market valuation through Tobin's Q and accounting equity returns (ROA and ROE).

The independent variables are hypothesised to have a causal effect on the dependent variables in an assumed multiple regression model. The first group of independent variables are related to the effect of different blockholder classes on firm performance. They include the different blockholder classes

such as inside blockholders, founder/founding families, sovereign wealth funds and pressure-resistant financial institutions. The second group of independent variables relate to the factors that capture the blockholders' engagement. The blockholders' engagement reflects the commitment of blockholders to monitor and safeguard the interests of the firm. This Study proposed the following factors to capture blockholders' engagement: change in the largest blockholding size relative to the total blockholding size and the proportion of directors who are also blockholders.

This Study also investigated the interaction effects between the blockholders of two different types, namely, family and non-family, SWFs and non-SWFs, and pressure-resistant institutions and non-pressure resistant institutions. The interaction effect between two blockholder classes quantifies the simultaneous effect of two blockholder classes on the dependent variable when their combined effect is considerably higher (or significantly less) than the sum of the parts. In other words, the interaction impact quantifies the extra influence of both blockholder groups on company performance. By including interaction terms in a regression model, one may gain a better understanding of the relationships between the variables in the model and test additional hypotheses.

The next section develops further on the testable hypotheses to be subjected to empirical examination in this Study.

3.7 Hypothesis Development

Based on the theories and concepts in the conceptual framework in the previous sections and empirical studies in the literature review in Chapter 2:**Error! Reference source not found.**, the following hypotheses were developed in the next few sub-sections.

3.7.1 Impact of Diverse Classes of Blockholders

Blockholders are diverse in nature and do not affect every firm's performance in the same manner. In the preceding chapter, this Study regarded in broad typologies the following blockholders:

i. Insiders
ii. Family firms
iii. Sovereign wealth funds, and
iv. Pressure-resistant institutional investors.

In view of the diverse classes of blockholders with varying motivations, this Study takes on a granular approach to capture these motivations. Specifically, outside blockholders are made up of a very diverse group and the data should be disaggregated to different classes for a more granular study. In addition, for some classes of blockholders such as institutional investors, a further refinement into the type of institutional investor (e.g. hedge funds, mutual funds and pension funds) might be required for a more granular study.

3.7.1.1 Inside Blockholders

Inside blockholders who are either directors and/or a part of the senior management could have undue influence and exploit the firm through their private benefits of control. For example, such entrenched managers could enjoy perquisites (Jensen and Meckling 1976) or directors could influence the firm to deal in transactions at uncompetitive terms with other companies in which they have a controlling position (Edmans 2014). Such negative relationships on firm performance could be explained by the agency theory that regards blockholders as self-interested.

However, the impact of inside blockholders on firm performance is not always monotonic across all levels of ownership as evidenced by the empirical studies in the literature search. Morck, Shleifer and Vishny (1988) showed that using piecemeal regression in their study, that the shareholdings of directors of U.S. firms had a slightly negative relationship with Tobin's Q for ownership between 5% and 25%, but a positive relationship beyond the 25% board ownership. In another study by McConnell and Servaes (1990) on U.S. firms, the authors found a curvilinear relationship between the proportion of shares held by inside blockholders and Tobin's Q, with the maximum in Tobin's Q occurring at 37.6% board ownership. In a study by Short and Keasey (1999) on UK firms using only directors' shareholdings, the authors concluded that the relationship of

percentage of shares held by directors exhibited a cubic function relationship with the return on shareholders' equity and the valuation ratio (determined by the market value of equity divided by the book value of equity). The maximum and minimum points given by the cubic function were at equity ownership of 15.58% and 41.84% respectively. A similar study by Bhabra et al. (2003) on Singapore firms concluded that the directors' equity holdings had a cubic relationship with Tobin's Q; the maximum and minimum point occured at ownership of 20.34% and 52.73 % respectively.

The empirical studies discussed concluded that a curvilinear relationship exists between inside blockholders' ownership and firm performance. At certain levels of insider ownership, the entrenchment of insiders dominates the positive effect from the convergence-of-interests with other shareholders, but at other levels of ownership, it could be the reverse. For example, in the study of Bhabra et al. (2003), it could be interpreted that directors' equity ownership from 5% to around 20.34% resulted in an increase in the firm value, represented by Tobin's Q, as the convergence-of-interest increases. However, further increases in equity ownership up to around 52.73% by directors brought about the entrenchment effect in the directors which reduced the firm's value. Beyond the 52.73% ownership, the directors would seem to realign their interests with the other shareholders (to avoid the erosion in firm value) because of their much bigger stake in the equity. Therefore, a curvilinear relationship, such as a cubic function, is appropriate in capturing the effect of inside blockholders' shareholdings on firm performance. In addition, the inclusion of managers who are blockholders but not directors might reveal the additional impact on firm performance from the entrenchment of managers. Consequently, this Study proposes the following hypothesis:

Hypothesis 1a: *The blockholdings of insiders have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting returns on assets and equity.*

3.7.1.2 Family Ownership

Family owners have unique characteristics that differ from other blockholders. Some of these unique characteristics provide family owners stronger incentives to monitor managers or enable more efficient monitoring of managers. First, founding families are undiversified because most of their wealth is concentrated in the shareholdings of the firm. Thus, family owners are more motivated to monitor managers. Second, the substantial involvement of founding families with management makes family owners more knowledgeable about their firms' activities and enables them to be more efficient monitors of outside managers. Third, founding families have much longer holding periods than other shareholders. For example, the DuPont family in the U.S. has held a significant equity ownership of at least 15% for over 200 years in the firm bearing their name. Casson (1999), Chami (2001) and James (1999) argued that the founding family was concerned with firm survival as it viewed the firm as an asset to pass on to future generations. In addition, as part of its identity, the founding family, as good stewards, would be concerned for the family's well-being leading to more willingness to protect the firm's reputation. Overall, family firms expect to face less severe Type I agency problems because of more involvement with management and better monitoring of outside managers.

However, as family owners hold significant shareholdings with controlling power in the firm, family firms are more prone to Type II agency principal-principal conflict. First, family owners may seek preferential treatment to the disadvantage of other shareholders. For example, a family owner might appoint family members who are less than qualified to managerial positions or seek to expropriate wealth from the firm through excessive compensation or related-party transactions through crony capitalism (Claessens, Djankov and Lang 2000). Second, as family owners are mostly large undiversified shareholders, they tend to be more risk-averse and might pass on more risky but positive NPV projects (Faccio, Marchica and Mura 2011). Third, another potential problem is that family managers can be more entrenched in their positions over the years due to the presence of control-enhancing mechanisms such as dual-class shares, pyramid structures, disproportionate board

representation and cross-holdings among firms as discussed by Claessens, Djankov and Lang (2000) and Villalonga and Amit (2009). Volpin (2002) showed that the probability of turnover of top executives who belong to the family of the controlling shareholder and its sensitivity to firm performance are significantly lower than for other executives. Thus, there is evidence that family managers are entrenched when the controlling shareholder is a family.

Besides the prospect of facing more severe Type II agency issues, another potential problem of family ownership is the potential family feuds because of differences in the interest and vision of founders from that of descendants or, most of the time, disputes between descendants (Cheng 2014). One example of a family feud between founders and descendants is the Redstone family (Abelson 2007). Sumner Redstone, majority shareholder and Chairman of the National Amusement cinema chain, feuded publicly with his successor and daughter, Shari Redstone, over the operations and prospects of the business.

The seminal study of Anderson and Reeb (2003) on companies in the S&P 500 index showed that the relationship between firm performance and founding-family ownership was concave. Using Tobin's Q and ROA, the authors showed that both measures initially increased with founding family equity ownership but decreased beyond a certain threshold. The turning points of the equity stake for Tobin's Q and ROA are 31% and 27.6% respectively. In the case of Tobin's Q, founding-family firm valuation increases with family ownership up to 31% and then starts to decrease with ownership beyond 31%. Beyond the 31% family ownership level, the costs of family ownership are greater than the benefits of family ownership for every percentage increase above 31% (leading to declining valuation). The results can be similarly interpreted using ROA with the turning point at 27.6%. More recent papers by Isakov and Weisskopf (2014) and Poutziouris, Savva and Hadjielias (2015) concurred that there was a concave relationship between firm performance measures (using Tobin's Q and ROA) and family equity stake. The turning points for the former study were 35.02% and 49.90% family ownership respectively for Tobin's Q and ROA. For the latter study, the turning points were 41.7% and 30.5% family ownership respectively for Tobin's Q and ROA.

To reconcile the two contrary perspectives from agency theory and stewardship theory, Le Breton-Miller, Miller and Lester (2011) advocated that both the agency perspectives and stewardship perspectives are present in the family firms. As family participation and influence grow, so does the scope for self-serving behaviour. With a larger number of family directors, officers and votes, stewardship behaviour will be less prevalent and agency behaviour will be more widespread. This in turn exposes the firm's executives to greater family influence.

From most empirical studies on family firms, it can be concluded that family firm performance is not monotonic across all levels of family ownership. Most authors agree that firm performance initially increases up to a maximum point and at a certain level of family ownership, but subsequently firm performance decreases at higher levels of family ownership. It can also be interpreted that there is a quadratic function on firm performance using the family ownership as an independent variable. However, none of the authors on family firms discussed he possibility of cubic function on firm performance using family ownership as a variable. Recall from the literature review in Section 2.3.1 on inside blockholders, that Short and Keasey (1999) and Bhabra et al. (2003) concluded that at much higher levels of director ownership, the interest of the directors are aligned to the other shareholders leading to higher firm performance. Specifically, Short and Keasey (1999) on UK firms concluded that there was a cubic function relationship on ROE when using the directors' equity stake as an independent variable. Therefore, this Study proposed to investigate whether such a cubic function relationship exists between this Study's performance measures (Tobin's Q, ROA and ROE) and family ownership by including a cubic term for the family ownership in the regression model. Another difference between this Study and the studies of Short and Keasey (1999) and Bhabra et al. (2003), is that the family ownership includes the equity stake of family members who are managers but are not part of the board of directors. Thus, this Study proposes the following hypothesis:

Hypothesis 1b: *The blockholdings of family have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting returns on assets and equity.*

3.7.1.3 Sovereign Wealth Funds

As discussed in Chapter 2: in the literature review, the main SWF in Singapore listed companies is Temasek Holdings. The study by Ang and Ding (2006) on Singaporean GLCs and non-GLCs over the years from 1990 to 2000 showed on average that GLCs had higher Tobin's Q and higher firm profitability such as ROA and ROE. The authors argued that GLCs had better governance mechanisms (such as non-duality of CEO and Chairman) and stronger monitoring of their companies, which in turn lead to the superior performance over non-GLCs. An international study by Fernandes (2014) found SWFs increase corporate values and performance through their longer-term view, political connections and increased ability of invested companies to raise more capital. SWFs may be able to sway government policy in favour of their invested firms, such as opening access to new markets, for example, after CIC purchased a 4.9% interest in the Bank of East Asia in 2007, the People's Bank of China granted the bank permission to become the first foreign bank to offer debit cards in mainland China (Dewenter, Han, and Malatesta 2010). Fernandes' (2014) findings suggest that companies may issue capital more easily when an SWF gets a substantial ownership position, as seen by the growth in equity capital following the SWF investment. In addition, Fernandes (2014) observed that SWFs are long-term investors due to the very low annual turnover rate of 7% when compared to other institutional investors whose turnover rates were nearly 100%. The longer-term investment horizon of SWFs could provide significant advantages for their invested companies to undertake promising capital projects with longer-run payoffs.

As SWFs are government-controlled entities, their incentives and activities may differ from those of other institutional investors based purely on financial considerations. The growing size of SWFs is a concern for policy makers of countries (that SWFs invested in) as SWFs could use their controlling stake to achieve social and political objectives at the expense of the performance and

value of the companies. One example is the recent development and magnitude of SWFs such as CIC, which has sparked heated political discussions in Western nations (Fernandes 2014). Aside from political purposes, the primary worries about CICs and other SWFs include poor transparency, unclear motivations driving the purchase of key assets, possible violation of national security from pseudo-government ownership, and impact on the management of the businesses they control. For example, when Chinese National Offshore Oil Corporation (a Chinese state-owned company) tried to acquire the U.S. oil company Unocal in 2005, the US government blocked the deal on grounds of national security and strategic interests.

One of the first studies of Singapore's Government equity ownership in Singapore listed companies was done by Ang and Ding (2006) using data from 1990 to 2000. The authors concluded that equity ownership by Temasek or its subsidiaries was positively related to Tobin's Q. However, Dewenter, Han and Malatesta (2010) concluded that the size of the SWF investment in the target companies had an inverted U-shaped relationship with the target company's cumulative abnormal return (CAR). Specifically, the CAR increased with acquisitions of up to around 40%-45% of the target's stock by the SWF and then decreased up to 100%. A recent study by Kubo and Phan (2019) on state ownership in Vietnamese firms concluded that performance (using Tobin's Q and ROA) of firms with state ownership had an inverted U-shaped relation between the three types of state ownership and firm performance using OLS regressions and instrumental variable (IV) regressions.

This Study hypothesises that there is an interplay of monitoring activities and the pursuit of projects for social or political objectives for SWFs. At lower levels of equity ownership, the SWFs have lesser control of the firm and the interest are aligned with the objectives of the other shareholders in increasing the wealth of their investment. At higher levels of equity ownership, the SWFs have a dominant control and might have less emphasis on financial gains due to the pursuit of socially oriented projects for political objectives. To this extent, it is likely that a concave relationship exists between SWF equity ownership and firm performance. Thus, Study proposes the following hypothesis:

Hypothesis 1c: *The size of the equity stake of sovereign wealth funds in the firm will have a positive relationship on firm performance at lower levels of ownership due to stronger monitoring, but will have a negative relationship on firm performance at higher levels of ownership due to the pursuit of non-financial objectives.*

3.7.1.4 Pressure-Resistant Institutional Owners

In Section 2.3.5.1, the literature search revealed that, among the pressure-resistant institutions, only mutual funds, pension funds and hedge funds were efficient monitors of management according to Muniandy, Tanewski and Johl (2016). Because they have access to more resources and knowledge than smaller atomistic investors, institutional investors may exert direct oversight of management. Furthermore, these pressure-resistant institutions often only have investment relationships with the companies that make up their investment portfolios. This kind of investment relationship means that fund managers of mutual funds are under constant pressure to deliver above par results to their fund participants for two main reasons. First, the commission paid depends on the value of their managed portfolios and second, fund participants are more likely to drop out of an open-end mutual fund due to under-performance (Yuan, Xiao and Zou 2008). However, Muniandy, Tanewski and Johl (2016) concluded that mutual funds, pension funds and hedge funds provided only monitoring ability for short-term performance (as measured by ROA), but no monitoring ability for the long-term performance (as measured by Tobin's Q).

A very recent study by Chizema et al. (2020) on Chinese firms concluded that increasing the ownership by mutual funds did not lead to higher firm performance for concentrated ownership structures. The authors claimed that when mutual fund ownership exceeded a particular level, mutual funds were more inclined to collaborate with controlling shareholders of their invested businesses to maintain their private interests rather than threaten to leave owing to increased exit costs. To this sense, mutual funds serve as passive monitors and do not adequately counteract controlling shareholders' tunnelling behaviour. According to the findings, mutual fund ownership exhibits a

concave (inverted-U) relationship with business performance. The findings are important for both long-term (Tobin's Q) and short-term performance (ROA and ROE). The calculations of the turning points of this concave relationship ranged from 16% to 26% of mutual fund ownership across various model specifications. The findings from this study are opposed to the linear relationship between mutual fund (pressure-resistant) ownership and firm performance.

This Study hypothesises that pressure-resistant institutional investors might not always provide a monitoring role in concentrated ownership structures. In addition, the monitoring role could be restricted to either short-term or long-term monitoring. Thus, this Study proposes the following hypothesis:

Hypothesis 1d: *The blockholdings of pressure-resistant institutional investors will have a concave (inverted-U) relation with firm performance.*

3.7.2 Relationship between Dominant Blockholders and Non-Dominant Blockholders

The literature search in Section 2.4, revealed that a study on the interaction between blockholder classes on firm performance should take an approach that accounts for the dispersion in the shareholdings and the identities of the blockholders. Thus, this sub-section proceeds with a discussion on the interaction between the dominant blockholder classes and the non-dominant blockholder classes: family owners and non-family owners, SWFs and non-SWFs, and pressure-resistant institutional owners and non-pressure-resistant institutional owners. This Study proposes the hypotheses after the discussion.

3.7.2.1 Family Owners and Non-Family Owners

A recent study by Fattoum-Guedri, Guedri and Delmar (2018) examined how non-family blockholders affected firm performance. The writers debated the impact of asymmetry in voting power between family and non-family blockholders on business performance. On the one hand, if the family voting power is significantly greater than that of non-family blockholders, the agency theory suggested that there may be a scenario of under-monitoring. Self-

dealing, exorbitant pay and nepotism may be facilitated by inadequate monitoring. Based on the trade-off, a reasonably equal voting power among family and non-family blockholders may be a desirable compromise since all stakeholders may participate to strategic decision making and value generation collaboratively. According to the findings of the study, the larger the imbalance in voting power between family and non-family blockholders, the poorer the firm performance as assessed by Tobin's Q.

However, based on the distinct familiness perspective, family blockholders may not always operate as an opportunistic principal diverting resources for personal purposes. According to the resource-based approach, in some cases, family engagement in the business may bring unique bundles of resources and talents that improve the firm's advantages (Habbershon and Williams 1999). Dyer (2006) suggested that some of these businesses may have considerable human capital because family members offer the skills and dedication required for firm survival and development. Furthermore, families may supply companies with significant financial and physical assets, particularly during economic downturns and when establishing new operations. Thus, extensive supervision by non-family blockholders might backfire at times by discouraging the family from making costly firm-specific investments to establish and preserve distinctive familiness in attaining competitive advantage. (Sirmon and Hitt 2003). The authors reasoned that too much voting power in the hands of non-family blockholders might inhibit family firm performance due to over-monitoring.

In view of all the above arguments, the research study proposes the following hypothesis:

Hypothesis 2a: *When the family owners are the dominant shareholders in the firm, increases in the shareholdings by non-family owners in the firm will have a negative relationship on firm performance for lower levels of ownership due to greater contestability but will have a positive relationship for higher levels of ownership due to a more balanced voting power among family and non-family blockholders.*

3.7.2.2 SWFs and non-SWFs

As SWFs are government-controlled entities, their incentives and activities may differ from those of other institutional investors based purely on financial considerations. At lower levels of equity ownership, the SWFs have lesser control of the firm and their interests are aligned with the objectives of the other shareholders in increasing the wealth of their investment. At higher levels of equity ownership, the SWFs have a dominant control and might have less emphasis on financial gains due to the pursuit of socially oriented projects for political objectives.

In Sub-Section 2.3.5.1, Muniandy, Tanewski and Johl (2016) concluded that pressure-resistant institutional investors such as mutual funds, pension funds and hedge funds were known to provide monitoring ability over management and controlling shareholders. In a concentrated ownership structure, pressure-resistant institutional investors were not always efficient monitors on the controlling shareholder (Chizema et al. 2020). At higher levels of ownership, pressure-resistant institutional investors might collude with the controlling shareholder to preserve their private interests. With higher levels of ownership, the threat of exit is less viable due to the higher costs. This finding is consistent with the findings of Cai, Hillier and Wang (2016) that the second largest blockholder can change ttheir motivation from monitoring the controlling shareholder at lower ownership levels to collusion with the controlling shareholder at higher ownership levels. On the other hand, family owners can help alleviate the risk of corporate diversion and enhance firm value (Attig, El Ghoul and Guedhami 2009).

In view of all the above arguments, this Study proposes the following hypothesis:

Hypothesis 2b: *When SWFs are the dominant shareholders in the firm, increases in the shareholdings by non-SWFs will have a positive relationship on firm performance for lower levels of ownership due to the monitoring effect, but will have a negative relationship on firm performance for higher levels of ownership due to collusion.*

3.7.2.3 Pressure-Resistant Institutional Owners and non-Pressure-Resistant Institutional Owners

As discussed in previous the sub-section, family owners are good monitors on the controlling shareholders. In addition, as discussed in Sub-Section 2.3.5.1, pressure-resistant institutional investors do not have any other business relationships with their invested firms and thus are primarily concerned with the value of their investments.

Attig, El Ghoul and Guedhami (2009) found that the presence and voting power of families or the state as the second biggest stockholder resulted in greater business valuation in a study of nine East Asian enterprises. The authors reasoned that the family or state had greater incentives and could provide better monitoring on the controlling shareholder. Thus, this Study proposes the following hypothesis:

Hypothesis 2c: *When pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the shareholdings by non-pressure resistant institutional investors, such as SWFs and family owners, will have a positive relationship on firm performance due to the monitoring effect.*

3.7.3 Blockholder Engagement on Firm Performance

The continual engagement of shareholders with investee companies through a constructive role would help to protect shareholders' interests (*Keeping Good Companies* 2013). This continual engagement by shareholders (or active ownership) is different from passive ownership, which typically involves holding the shares, receiving dividends and trading. The active ownership by institutional investors takes on an owner mentality with a longer-term perspective in their investment approach. Such engaged institutional investors also participate actively in the affairs of the firm as discussed in the literature of psychological ownership on stewardship behaviour by Hernandez (2012).

Most of the studies on private activism are based on surveys or interviews of a mixed or qualitative nature. It is envisaged that to capture the effect of private engagement on firm performance for a broader scale, the use of more novel

quantitative measures to proxy the private engagement by blockholders could be required. In addition, the role of shareholder activists and even proxy advisory firms has been extremely limited in Singapore (Puchniak and Tang 2019). Unlike many developed countries where private pension funds are major institutional investors, this phenomenon does not exist as such in Singapore. Thus, this Study investigated the relationship between firm performance and blockholders' engagement using proxies for longer term commitment. To this extent, more novel quantitative measures were used to proxy the private engagement by blockholders using variables such as change in blockholding size of the largest blockholder relative to the total blockholding size and the proportion of directors who are blockholders.

3.7.3.1 Change in Blockholding Size of Largest Blockholder

In liquid markets, trading-focused owners are more focussed on increasing capital gains by churning investments rather than investing long-term in the business of the firm. Furthering the concept of Pound (1995) on a governed corporation rather than a managed corporation, Lehmann and Weigand (2000) claimed that committed shareholders do not exit from their investments at the first sign of trouble. The authors advocated that committed shareholders should participate actively in the governance of the firm, for example, through involvement in picking senior management or replacing incompetent managers, to ensure sound management of the firm. On the other hand, there are times when the direction of the company changes, or the blockholder loses confidence in the board and management to execute the strategy. In these rare situations, the blockholder's interest may no longer align with the company. In such instances, selling shares can be the most appropriate response (*UniSuper* 2016). This Study advocates that the largest shareholder would be a good proxy of a committed shareholder due to their large stake in the firm. In addition, this Study reasons that increases in the equity holdings by the largest blockholder reflected greater confidence and commitment in the firm, whilst decreases in the equity holdings by the largest blockholder indicated loss of confidence and/or reduced commitment in the firm. The change in the blockholding size of the largest blockholder which proxies the

change in commitment level is assumed to have an impact on firm performance.

However, financial literature suggests the impact of some types of investors on future market expectations such as Tobin's Q could be significant, but might have no impact on immediate accounting returns such as ROA according to Muniandy, Tanewski and Johl (2016). This Study argues that there is a signalling effect to investors when there is a change in the equity stake of the largest blockholder. A larger Tobin's Q signals greater investors' expectations of the firm's future cash flows and value. In addition, Kang et al. (2017) and Muniandy, Tanewski and Johl (2016) claimed that Tobin's Q captures the long-term value creation and long-run firm value. In contrast, the change in equity stake of the largest blockholder will not have an impact on immediate accounting returns such as ROA and ROE. Both ROA and ROE are regarded as backward-looking accounting profitability indicators of the firm (Heaney, Li and Valencia, 2011; Isakov and Weisskopf, 2014).

To normalise the data in the interval from zero to one, the change in the blockholding size of the largest blockholder to the total blockholding size is used. Therefore, the research study proposes the following hypothesis:

Hypothesis 3a: *Decrease (increase) in blockholding size of the largest blockholder to the total blockholding size will have a negative (positive) relationship on firm performance in terms of future market expectations, with no impact on immediate accounting returns.*

3.7.3.2 Blockholders on the Board

According to agency theory, a higher proportion of independent directors will result in better board oversight (Fama and Jensen 1983; Jensen and Meckling 1976). It is anticipated that these independent directors will perform their monitoring job more effectively since they are less reliant on management and are more concerned with maintaining their image in the labour market. However, Nguyen, Locke and Reddy (2014) and Wintoki, Linck and Netter (2012) reported that board independence did not have a statistically significant effect on firm performance after controlling for the unobservable heterogeneity

and past performance. In addition, Jentsch (2019) reported that a larger fraction of independent directors for public companies in Switzerland had a significantly negative relationship with Tobin's Q and ROA. Jentsch (2019) reasoned that after a certain threshold was met, adding more independent directors on the board decreased firm performance. Nguyen, Locke, and Reddy (2014) reported that the ratio of independent directors to the total number of directors on board had no statistically significant effect on the Tobin's Q of Singaporean listed companies. Similarly, Wintoki, Linck and Netter (2012) reported that the proportion of outside (non-executive) directors on the board had no statistically significant effect on the ROA of 6000 firms over the period from 1991 to 2003. Wintoki, Linck and Netter (2012) reasoned that past good firm performance caused a less independent board because such firms are better managed and are monitored less intently by shareholders. By taking into consideration the dynamic relationship between board independence and past performance, the relationship between board independence and current or future performance had become insignificant. Thus, independent directors that do not impact performance and other types of directors should be considered that can have an impact on firm performance.

One possible source of director that could provide more effective monitoring on management could be blockholders, as they have a large equity stake according to Agrawal and Nasser 2019. This view is also supported by the study of Bhagat and Bolton (2019) who reported that director stock ownership was positively related to future ROA for U.S. companies from the period 1998 to 2016. The high shareholdings provided blockholders with direct voting power, the potential to create coalitions with other major owners, and more influence on the board in comparison to other outside directors who generally had small shareholdings. Generally speaking, it could be expected that those directors who are blockholders would be motivated to conduct their monitoring function more rigorously because their higher ownership levels lead to a convergent of interest with other shareholders. In addition, this Study argues that a sufficient proportion of blockholders need to be on the board for effective monitoring of management to exist.

Like Hypothesis 3a, this Study argues that there is a signalling effect to investors when a sufficient proportion of blockholders is on the board to provide effective montoring of management and contribute to the acquisition of critical resources from the environment, according to the resource dependence theory. However, this signalling effect is not expected to have an impact on immediate accounting returns, so to this extent, this Study proposes the following hypothesis:

Hypothesis 3b: *A U-shaped relation exists between the proportion of blockholders on the board and firm performance in terms of future market expectations, with no impact on immediate accounting returns.*

3.8 Conclusion

This chapter has described the development of hypotheses based on the theories and concepts in the conceptual framework to address the research gaps in Section 2.6. A summary of these hypotheses is presented in Table 3.2.

Table 3.2: Summary of Hypotheses

Hypothesis 1a The blockholdings of insiders have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting returns on assets and equity.
Hypothesis 1b The blockholdings of family have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting returns on assets and equity.
Hypothesis 1c The size of the equity stake of sovereign wealth funds in the firm will have a positive relationship on firm performance at lower levels of ownership due to stronger monitoring, but will have a negative relationship on firm performance at higher levels of ownership due to the pursuit of non-financial objectives.
Hypothesis 1d The blockholdings of pressure-resistant institutional investors will have a concave (inverted-U) relation with firm performance.
Hypothesis 2a When the family owners are the dominant shareholders in the firm, increases in the shareholdings by non-family owners in the firm will have a negative relationship on firm performance for lower levels of ownership due to greater contestability but will have a positive relationship for higher levels of

ownership due to a more balanced voting power among family and non-family blockholders.
Hypothesis 2b When SWFs are the dominant shareholders in the firm, increases in the shareholdings by non-SWFs will have a positive relationship on firm performance for lower levels of ownership due to the monitoring effect, but will have a negative relationship on firm performance for higher levels of ownership due to collusion.
Hypothesis 2c When pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the shareholdings by non-pressure resistant institutional investors, such as SWFs and family owners, will have a positive relationship on firm performance due to the monitoring effect.
Hypothesis 3a Decrease (increase) in blockholding size of the largest blockholder to the total blockholding size will have a negative (positive) relationship on firm performance in terms of future market expectations, with no impact on immediate accounting returns.
Hypothesis 3b A U-shaped relation exists between the proportion of blockholders on the board and firm performance in terms of future market expectations, with no impact on immediate accounting returns.

Chapter 4: Research Methodology

4.1 Introduction

The main objectives of this chapter are as follows. First, it sets out to justify the reasons for choosing a specific research paradigm and then explain the research design taken to answer the research questions and to test the hypotheses. Second, the data sources are identified, and the steps involved in collecting and processing the raw data are outlined as appropriate to the research design. Next, details on how the measurements were carried out are provided. For each variable, justification is provided for the selection. Following this, justification of the research methods employed over other methods is provided in addition to explanations on how the data analysis is carried out. In addition, potential problems, shortages in data and other issues are discussed in the relevant sections and sub-sections.

4.2 Research Philosophy

A social science researcher is likely to adopt and justify a specific research philosophy (research paradigm), which includes key assumptions about how the researcher sees the world. These assumptions are as follows:

1. Ontological assumptions that take into consideration the nature of the world and of reality. Specifically, ontology is concerned with the question of “what is reality?”

2. Epistemological assumptions that deal with the best way of investigating the world and its reality. Specifically, epistemology is concerned with the question of “how can I know reality?”

3. Methodological assumptions that deal with the research process and is primarily concerned with the question of “how do you go about finding out knowledge?”

Positivism and interpretivism are the two dominant philosophical views that are commonly used to conduct research and acquire knowledge in the social sciences (Collis and Hussey 2009). In general, positivism and interpretivism

represent two extremes of a paradigm continuum, and many more paradigms exist along this continuum with differing philosophical assumptions. Table 4.1 summarises the comparison of the positivism and interpretivism research philosophies.

Table 4.1: Comparison of Positivism and Interpretivism

Philosophical view	**Ontology** (nature of reality or being)	**Epistemology** (what constitutes acceptable knowledge)	**Typical methods**
Positivism	Genuine, outward, and self-sufficient One undeniable fact Granularity (things) Ordered	The scientific procedure Facts that can be seen and measured Generalizations like laws Numbers Contributions include causal explanation and prediction.	Deductive, highly structured, large samples, measurement, and quantitative techniques of analysis are usual, although a wide range of data can be analysed.
Interpretivism	Rich, complex Culture and language have a role in social construction. There are several interpretations, meanings, and realities. Processes, experiences, and practices are in flux.	Theories and concepts that are overly simple Pay attention to narratives, stories, perceptions, and interpretations. New perspectives and understandings as a contribution	In most cases, inductive reasoning is used. Small sample sizes, in-depth studies, and qualitative data analysis methodologies are used, yet a wide variety of data may be understood.

Source: Research Methods for Business Students, Saunders, Lewis and Thornhill (2016), Pearson

4.2.1 Positivism

The positivist principle refers to working with an observable social reality in order to generate law-like generalisations comparable to those established by natural scientists (Saunders, Lewis and Thornhill 2016). Positivism is linked

with the use of a deductive approach, in which theories and hypotheses are first created, then data is gathered to evaluate these hypotheses. Positivists like to employ measurable data from a large sample, which permits quantitative approaches to give causal explanations for observable facts (variables). To prevent influencing the conclusions, the positivist researcher would attempt to stay impartial and detached from the research and data (Crotty 1998). As a result, positivists claim to be outside of the data gathering process because there is little that can be done to change the substance of the data obtained.

4.2.2 Interpretivism

Unlike positivism, which emphasizes quantifying social phenomena, interpretivism focuses on investigating the complexities of social phenomena in order to gain interpretative knowledge (Collis and Hussey 2009). According to interpretivism, humans and their social surroundings cannot be examined in the same way that physical things can. To this sense, interpretivists believe that social sciences research should be distinct from natural sciences research rather than attempting to replicate the latter. As a result, interpretivists typically employ qualitative approaches (e.g. case studies, interviews and ethnographic investigations) to capture the world's complexity, richness, and numerous interactions in order to acquire valuable insights. Because of considerable variations across individual social actors and social institutions (businesses), the conclusions provided under this technique may not be generalisable according to Saunders, Lewis and Thornhill (2016).

4.2.3 Rationale for Adopting a Positivist Paradigm

Adopting an appropriate research paradigm has traditionally been argued in the context of a decision between a positivist or interpretivist approach, or between quantitative or qualitative methodologies (Saunders, Lewis and Thornhill 2016). As discussed in the literature review in Chapter 2, prior research on blockholders have primarily used a positivist (and quantitative) approach to examine the relationship between blockholders and company performance. As a result, using a positivist approach would be in line with the

literature. It will also be useful in comparing the findings of this research study to those of previous investigations. Positivist researchers often employ quantitative research methodologies to examine the relationship between observable company-specific governance mechanisms (such as blockholding size and blockholder categories) and business performance, as assessed by financial ratios (such as Tobin's Q and ROE). The application of one or more theories to create hypotheses that can be investigated using proper quantitative methods is an essential component of the positivist paradigm. The predicted blockholder-performance relationship has been given in the form of several hypotheses using multiple theoretical viewpoints in Section 3.7. The blockholder-related factors and company performance variables will be quantified in this Study. With a relatively large sample (97 companies) and longitudinal data (2006-2016), using a positivist approach and quantitative technique to answer the research questions and address the hypotheses regarding the relation between blockholders and company performance can be regarded suitable. As a result, in this Study, a positivist method will be used.

4.3 Research Design

To address the research objectives and hypotheses, this Study used a correlational and causal design to investigate the occurrence of a causal effect when variation in one phenomenon (an independent variable) results, on average, in variation in another phenomenon (the dependent variable). Thus, the research study is quantitative in nature. One advantage of a quantitative research method is that it allows for anyone to replicate both the test and results. This makes the data gathered more reliable and less open to argument. A causality study strategy assists us in understanding why the world functions the way it does by establishing a causal relationship between variables and ruling out other options. However, due to a range of extraneous and confusing elements that occur in a social context, conclusions concerning causal links in a social environment may only be inferred, not proven.

This Study used secondary data collected from eleven years of observations for the non-financial listed firms in the Singapore Exchange Main Board (SEMB) over the period the Study Period. The observation period chosen for

this Study includes the most recent data available when this Study commenced. As secondary data is only used, this Study is quantitative in nature. One advantage of a quantitative research method is that it allows for anyone to replicate both the test and the results. This makes the data gathered more reliable and less open to argument. Specifically, a panel data (sometimes referred to as longitudinal data) study design was used. The panel data contained firms' observations across different cross sections over time.

4.4 Construction of the Balanced Panel Data

This Study used secondary data collected from eleven years of observations for the non-financial listed firms in the SEMB over the Study Period. The observation period chosen for this Study includes the most recent data available at the time of commencement. Thus, a panel data study design that contains firms' observations across different cross sections over time was used. As each panel member (i.e. firm) is observed every year, a balanced panel data set is obtained in this Study. The choice of publicly listed firms gives better accessibility to information and the presence of audited financial statements. The study period spanned over the global financial crisis year of 2008 so that it is possible to observe the effects of the global financial crisis on the firm performance.

The panel data used in this Study were based on the end of each financial year for the firms during the study period to ensure consistency with the use of audited financial statement data. Most of the firms have the reporting periods as at the end of the calendar year. However, some firms had reporting periods ending in March. In such cases, as these firms had a good nine months of firm performance based on the previous calendar year, they were grouped together with those firms with reporting periods in the previous calendar year.

Collected data can be grouped into the following types:

i. Accounting data on firm performance and control variables for firm size, firm age, leverage and capital expenditure
ii. Data on ownership by shareholders and blockholders

iii. The senior management team and the board of directors as well as their relationships to shareholders, and

iv. Data on group affiliation and interconnectedness between members of the board, family and management team.

4.4.1 Sources of Data

Table 4.2 categorises the secondary data collected according to the different sources used. The study draws the main source of data from the Orbis database in the Curtin University Library online database. Other information and data were obtained from the following:

1. Singapore Exchange (SGX) website
2. Yahoo Finance Singapore website, and
3. Published annual reports on individual firms' websites.

Table 4.2: Sources of Secondary Data

Sources	Data Type
Orbis	Financial performance Financial year end stock prices and dividends Firm size Firm leverage Capital Expenditure Industry sector
Singapore Exchange	Year of listing Listing Boards i.e. Mainboard or Catalist Industry sector
Yahoo Finance	Stock prices adjusted for dividends, splits and rights
Annual Reports	Financial performance Common Shareholders' Holdings Blockholders' information Senior management team and board of directors, as well as their relationships to shareholders Ultimate ownership Interconnectedness between management, directors and family members Firm's affiliation

Most of the detailed information on blockholders, such as blockholder classes and blockholders' engagement, is hand collected from the annual reports of the respective firms through the following approach:

1. The list of substantial shareholders, as well as the top 20 shareholders under the statistics of shareholdings are found in the annual report. The list of substantial shareholders shows only shareholders who own 5% or more shares of the common shares outstanding in the firm. Thus, by definition in this Study, the list of substantial shareholders contains the list of blockholders.

2. The separation of insiders (i.e. managers or directors in the firm) from the outsiders is done based on the names of substantial shareholders or the names in the top 20 shareholders. Often the top 20 shareholders list contains nominee accounts that provide anonymity of the beneficial shareholder. Financial institutions are likely to be hidden in the nominee accounts in the top 20 shareholders as such financial institutions prefer anonymity. However, if the shareholdings are 5% or more, the list of substantial shareholders will reveal the actual beneficiaries' names.

3. The blockholders that are of corporate entities and the relationships with their affiliates or subsidiaries are sometimes revealed in the statistics of shareholdings in the annual report.

4. The relationships between family members can be found in the notes under the statistics of shareholdings.

5. The list of members in the senior management team as well as the board of directors are available in the annual report of the companies. The relationship of the members of the management team and board of directors with the firm is also revealed in the annual report as well. In addition, the interconnectedness between the various managers and directors is sometimes revealed in the annual report.

6. If there is insufficient information about the ultimate blockholder or blockholder's relationship with the firm from the annual reports, additional information from newspaper articles and corporate websites are used.

4.4.2 Selection of Data Sets

The following criteria, as with a corporate governance study by Nguyen, Locke and Reddy (2014), for data selection are:

1. Firms must be listed on the SGX continuously for 11 years over the Study Period This selected period includes before and after the financial crisis in 2008 to have a better understanding of the blockholders' effect on firm performance after consideration for the year fixed effects.

2. Firms listed on the SGX Catalist are excluded since the listing requirements on SGX Mainboard have more stringent financial requirements than on SGX Catalist. The listing requirements for SGX Main Board and Catalist are in Appendix 1:.

3. This Study excludes foreign firms that have a primary listing in their home country with a secondary listing on SGX Main Board for the following reasons. First, although SGX examines and evaluates secondary listing applications to determine if these applicants meet SGX's admission standards and are appropriate for listing, SGX depends on the home regulator to administer the home exchange regulations and maintain the home exchange's regulatory standard. Second, the majority of the firm's shares are typically traded on the home exchange, and the majority of the firm's owners are typically situated in the home jurisdiction.

4. This Study also excludes firms in the financial sector from the data set since the high leverage that is normal for these firms does not infer higher likelihood for financial distress as in the case of non-financial firms. Thus, the calculation of the profitability and valuation of financial firms are difficult to compare with firms in other sectors (Claessens et al. 2002).

Following the aforementioned criteria, the final dataset in this Study comprises of 97 firms which were chosen based on the availability of their annual reports and associated financial data the Study Period. Therefore, a panel dataset comprising of a maximum of 1067 firm-year observations is the initial dataset.

For a balanced panel data, it is critical to ensure that only firms operating for the full period of this Study are added in the observations. Thus, this Study excludes delisted or newly listed firms during the study period. However, firms that have changed their names but operate in the same industry during the study period are included. It is inevitable that there will be missing observations in the panel data after the raw data is processed, for example, when working on the differences between observations. In addition, some missing data in panel data should not affect the final outcome significantly in the panel data analysis process in most cases.

4.4.3 Adequacy of Data Sets

Many firms only have five years of annual reports published on their respective firms' websites. In addition, some firms were not listed throughout the whole Study Period due to either delisting during that period or were listed after 2006. In addition, several oil and energy firms faced financial distress during the downturn in oil prices during the 2014-2015 period and did not publish their annual reports during that time. Due to survivorship bias, the exclusion of these firms could bias the results of this Study.

After excluding listed firms on the SGX Mainboard that did not fulfill the criteria set out in Section 4.4.2, this Study obtained complete data over the Study Period on 97 firms with a maximum of 1067 firm-year observations. This gave a balanced panel data where each observation of the firm is observed every year from the Study Period. The number of firm-year observations for panel data analysis seems acceptable compared to a recent study done by Nguyen, Locke and Reddy (2014) with 1028 firm-year observations on 257 Singapore firms over the period 2008-2011, and another study by Isakov and Weisskopf (2014) with 1193 firm-year observations on 185 Swiss firms. In addition, another study on the performance of government-linked companies (GLCs) in Singapore by Ang and Ding (2006) looked at a sample of 25 GLCs due to the limited availability of data. A recent research on firm performance in the U.S. marine sector was also conducted, with just 26 to 32 firms comprising of 97 to 114 firm-year observations (depending on the regression model specification employed) by Andreou, Louca and Panayides (2014).

4.5 Variable Definition

In this section all the dependent, independent and control variables used in this Study are defined and elaborated to justify their use in the regression model adopted. The definition of the variables is summarised in Appendix 2:.

In a study of a cause-and-effect relationship the two main variables of interest are the dependent variable and independent variable. The dependent variable (also known as the response variable or outcome variable) is the effect in a study of a cause-and-effect relationship. The independent variable (sometimes

known as explanatory variable or predictor variable) is the cause in a study of a cause-and-effect relationship.

The control variables function in a similar way to the independent variables in the multiple regression, but they are not the main variables of interest used to investigate the cause-and-effect relationship in this Study. To obtain an unbiased estimate of a causal effect in multiple regression, it is important to ensure that the regression model specification is correct. One of the causes of model misspecification is the omitted variable bias. Omitted variable bias can be addressed by adding control variables to the model specification or by including other variables that, while not themselves causal, are sufficiently correlated with omitted causal factors.

As including all the relevant variables in a regression equation is impossible, some omitted variable bias is therefore unavoidable. However, Clarke (2016) and York (2018) argued that unless all omitted variables are included in the model, adding a subset of the omitted variables could worsen or mitigate the biasness of the coefficients of the independent variable of interest. The effect of including such a subset in a regression model depends on the correlations between the included and excluded variables as well as the variances of all the variables. Thus, a more robust approach or condition is needed to ensure that the control variables will be good enough to eliminate the omitted variable bias in the coefficient of the independent variable of interest. This will be discussed in the multiple regression assumptions in Sub-Section 4.6.1.

4.5.1 Dependent Variable (DV): Firm's Performance

This Study used multiple dependent variables related to firm performance so that more questions could be answered. The performance measures selected for this Study are Tobin's Q as used in the study of Tobin (1969), ROA and ROE. As the dependent variables could take on any value within a range, they were classified as continuous variables. It is worth emphasising that the performance variables are measured in terms of future performance. This is being done for two reasons. Initially, because ownership characteristics are assessed first and business performance is monitored afterwards, utilising

future performance which may mitigate the reverse causality problem (Benamraoui et al. 2019; Yin, Ward and Tsolacos 2018). Second, because interaction between blockholders and managers takes time, and the influence of blockholders on company performance is likely to be delayed.

The rest of this sub-section will justify the use of these three dependent variables for this Study.

4.5.1.1 Tobin's Q

Financial literature uses Tobin's Q ratio extensively as a proxy for a firm's growth prospects and firm value (e.g. Fattoum-Guedri, Guedri and Delmar 2018; Muniandy, Tanewski and Johl 2016; Yin, Ward and Tsolacos 2018). A larger Tobin's Q signals greater investors' expectations of the firm's future cash flows and value. A ratio higher than one indicates that market valuation of the firm is higher due to better business prospects and thus provides a signal to financial managers that it is worthwhile to inject capital investments into the firm and increase productive capacity. In addition, Kang et al. (2017) and Muniandy, Tanewski and Johl (2016) claimed that Tobin's Q captures the long-term value creation and long-run firm value. Thus, this Study views Tobin's Q as a proxy measure of long-term firm performance.

However, until the article by Fu, Singhal and Parkash (2016), which presented evidence on the link between the Tobin's Q ratio and future operational performance for a sample of publicly listed U.S. businesses, the relationship between Tobin's Q and firm performance had not been firmly demonstrated. According to the authors, companies with greater Q ratios have stronger long-term operating performance.

Barney (2002) suggested that Tobin's Q offers benefits over accounting-based metrics of performance since its computation does not rely on accounting earnings, which may be manipulated. Furthermore, because Tobin's Q is based on market performance measures, it is future oriented and indicates the present value of future cash flows based on current and future information (Ganguli and Agrawal 2009).

The Tobin's Q ratio is defined as a firm's market value divided by the replacement cost of its assets. Because it is difficult to acquire the market worth of a firm and the replacement cost of its assets, several proxies for Tobin's Q have been employed in most financial research. The market value of a firm is proxied by the market value of its ordinary stock plus the book value of its preferred stock and long-term debt. Due to the lack of information on the replacement cost of a firm's assets, the book value of total assets will be used as a proxy in this Study. As a result, Tobin's Q was employed in this Study, which is defined as the ratio of the market value of ordinary shares plus the book value of preference shares and long-term debt to the book value of total assets. This version of Tobin's Q is exactly the same as that used in the studies of Demsetz and Villalonga (2001) and Seifert, Gonenc and Wright (2005). Because the value of a firm's assets is not susceptible to the same degree of volatility as share price, using the book value of assets leads to a more stable way of determining firm value.

The market value of the shares is computed from the product of the number of common shares outstanding and the share price obtained from the firm's balance sheet and Yahoo Finance respectively. The balance sheet yields the book values of total assets, preference shares and total debt. To mitigate the impact of outliers, the natural logarithm of Tobin's Q is used as the regressor in the models as in the study of Nguyen, Locke and Reddy (2014).

4.5.1.2 Return on Assets

ROA is a backward-looking accounting profitability measure of a firm, as opposed to Tobin's Q, which is considered as a market-based indication of firm performance (Isakov and Weisskopf 2014). The return on assets (ROA) measures a firm's profitability in relation to its total assets. In this sense, the ROA gauges a firm's efficiency in generating earnings from its assets. The amount of net income returned as a percentage of the firm's total assets is used to calculate the ROA. A higher ROA reflects greater asset efficiency. The ROA is acquired in this Study from a firm's annual reports, which are available on corporate websites. Alternatively, the ROA may be calculated using the net

income at the bottom of the income statement and the total assets on the balance sheet.

According to Kim, Hwang and Burgers (1989), ROA measures the efficiency with which a company produces its output and is well-suited for the examination of the actual performance in business operations. At the end of the day, business is about making the most of limited resources. Unlike the ROE, the ROA is unaffected by the firm's capital structure (Gomez-Mejia and Palich 1997). The ROA is not affected by the financing decisions of the firm. The total assets in the balance sheet accounting equation are also the sum of the total liabilities and shareholders' equity. As a result, a firm's assets are either financed by debt or by equity. In this sense, ROA accounts for a firm's debt, but ROE does not. In addition, Joh (2003) highlighted accounting profitability has an edge over stock market-based measurements for the following reasons. First, when the stock market is inefficient, stock prices are less likely to represent all relevant information. Second, accounting profitability is more directly connected to a firm's financial viability than stock market valuation. Third, accounting measures enable us to assess the performance of both privately held and publicly listed firms.

However, there are limitations on the use of ROA as a performance measure. First, ROA can vary substantially across different industries due to different asset bases. As a result, when considering ROA as a comparison metric, it is better to compare it to a firm's prior ROA or the ROA of a similar company. Second, there could be potential problems arising from the use of accounting performance indicators due to poor implementation of accounting standards in some countries. However, this is likely to be a smaller problem in this Study compared with cross-country studies as all firms in Singapore are subjected to the same accounting standards.

4.5.1.3 Return on Equity

Like ROA, the ROE is regarded as a backward-looking accounting profitability indicator of the firm. According to Heaney, Li and Valencia (2011), ROE measures a firm’s profitability as it essentially captures a firm’s efficiency in

using all the available resources to generate income. The ROE is the amount of net income returned as a percentage of shareholders' equity. ROE is the percentage return that a firm achieves with the capital provided by its shareholders. As a result, most Wall Street analysts and investors use ROE as their major indicator of a firm's performance. Furthermore, because of the investing community's interest in this measure, many executives place a high priority on it.

Although ROE focuses on the firm's return to shareholders and provides shareholders with a quick and easy statistic to comprehend, ROE can hide possible issues in the firm. Firms might use financial methods to maintain a good ROE while masking declining performance in firm fundamentals in the short run. One option is to increase debt leverage and stock buybacks supported by accumulated cash in order to maintain a firm's ROE as operational profitability declines. A firm facing mounting competitive pressures in a low interest rate environment has an incentive to adopt this strategy to keep investors happy. However, excessive debt leverage creates more risk for the firm in bad times when market demand for its products is declining. Authors such as Copeland, Koller and Murrin (2000) and Muniandy, Tanewski and Johl (2016) claimed that ROE measures the short-term performance of the firm. Copeland, Koller and Murrin (2000) argued that too much emphasis on it may cause a firm to ignore long-term growth possibilities that might improve shareholder value. In some cases, a firm may increase its ROE while producing a return that is lower than its weighted average cost of capital, destroying shareholder value. This Study views the ROE as a short-term performance measure for the firm.

The formula for ROE is the ratio of net income to average shareholder’s equity and is usually expressed as a percentage. The net income and average shareholders’ equity are obtained from the income statement and balance sheet of the firm, respectively. The average shareholders’ equity for the fiscal year better reflects the amount of equity financing in the firm. The shareholders’ equity includes the common shares as well as the preferred shares. Generally, most firms in Singapore do not issue preference shares.

4.5.2 Independent Variables

The independent variables used in this Study to address the hypotheses can be categorised broadly into the following types:

i. blockholdings of individual classes of blockholders

ii. interaction variables between blockholder classes, and

iii. variables determining the blockholder's engagement in the firm.

4.5.2.1 Blockholdings of Individual Classes of Blockholders

The individual blockholder classes identified for investigation in this Study are:

i. inside blockholders

ii. family blockholders

iii. sovereign wealth funds, and

iv. pressure-resistant institutional investors.

In line with Basu, Paeglis and Rahnamaei (2016), this Study considers inside blockholders to be officers and/or directors of the firm. Unlike most other studies that focus on the blockholdings of managers only, this Study considers those directors who might not be holding executive positions in the firm to be able to exercise significant influence on the firm's management and strategy. The total proportion of ordinary shares held by inside blockholders to the total number of ordinary shares outstanding in the firm provides a measure of the influence held by insiders on the performance of the firm. As Hypothesis 1a in Sub-Section 3.7.1.1 takes into account, the possibility of a cubic relationship of insider blockholdings on firm performance means the squared and cubic terms of this measure need to be included in the regression model.

The literature on family business is diverse, and it is difficult to get agreement on the precise definition of a family enterprise. The traditional family business, on the other hand, has been defined as an organisation controlled and often managed by numerous family members, frequently from multiple generations

(Shanker and Astrachan 2016). Consistent with this definition, a family firm is defined as one in which many family members from the same family have been involved as key owners or managers over time according to this Study. This Study computes the family holdings as an aggregate figure for the percentage of shares held by the family as a group. Thus, it is assumed that the incentives of all family members are aligned with each other. Family shareholders were identified as having the same family name or other family relationships, such as marriage, as disclosed in the list of top 20 shareholders or substantial shareholders in the annual report of the firm. The proportion of ordinary shares held by family members to the total number of ordinary shares outstanding provides a measurement of the influence held by family members on firm performance. To take into account the possibility of a cubic relationship of family blockholdings on firm performance as proposed in Hypothesis 1b in Sub-Section 3.7.1.2, the squared and cubic terms of this measure were included in the regression model.

SWFs play a significant role in the ownership and performance of firms as evidenced in the literature review in Sub-Section 2.3.4. However, as SWFs are government-controlled entities, their incentives and activities may differ from those of private investors. SWFs could pursue non-financial objectives when asked by their controlling governments who wish to further their political objectives. Thus, this Study excluded this class of blockholders from the other financial institutions. Most of the SWFs ownership in Singapore are held by Temasek Holdings directly or indirectly through Temasek's subsidiaries. However, there are some foreign SWFs that are invested in the listed firms in Singapore. This Study treats all ownership stakes held by both domestic SWFs and foreign SWFs as a single block. The proportion of ordinary shares held by the SWFs to the total number of ordinary shares outstanding provides a measurement of the influence on the performance of the firm. To take into account the possibility of a concave relationship of SWFs' ownership on firm performance as proposed in Hypothesis 1c in Sub-Section 3.7.1.3, the squared terms of this measure were included in the regression model.

Other financial institutions (excluding SWFs) consist of the following:

i. pressure-resistant institutional owners
ii. passive institutional investors, and
iii. pressure-sensitive institutional investors.

In Sub-Sections 2.3.5 and 3.7.1.4, the literature concluded that only pressure-resistant institutional owners such as mutual funds, pension funds and hedge funds are efficient monitors of management (Muniandy, Tanewski and Johl 2016). However, the monitoring effect did not extend beyond a threshold range for mutual funds in China according to Chizema et al. (2020), as the authors argued that in order to protect their private interests, mutual funds were more inclined to collude with controlling owners of the firms in which they invest instead of threatening to exit due to higher exit costs. Thus, the focus in the regression model will be on these types of pressure-resistant institutional owners. To this extent, the aggregate shareholdings held by pressure-resistant institutional investors such as mutual funds, pension funds and hedge funds as a proportion of total shares outstanding would provide a good measurement of the influence by such institutional investors on firm performance. Identification and checks in the respective institution websites will be made to ensure that only the shareholdings of mutual funds, pension funds and hedge funds are considered in the measure. As hypothesis 1d in sub-section 3.7.1.4 caters for the possibility of a concave relationship of pressure-resistant institutional investors on firm performance, the squared term of the measure had to be included in the regression model.

4.5.2.2 Interaction with Dominant Shareholder

The dominant shareholder is the shareholder with the highest percentage of shares in the firm. In this thesis the dominant shareholder could be family, SWF or pressure-resistant (insensitive) institution. As discussed in sub-section 3.7.2, other large blockholders could provide monitoring on the dominant shareholder so as to improve firm performance or collude with the dominant shareholder to expropriate from the minority shareholders. In some instances, over-monitoring on the dominant shareholder who behave as stewards could have an adverse effect on firm performance. The fundamental idea is that various types of owners may have different motives and abilities to supervise

the dominant shareholder. A dummy variable indicating the blockholder class is set to 1 if that blockholder class has the highest percentage of shares in the firm and 0 otherwise. The percentage of shares owned by the other two blockholder classes are also computed. In the regression model, the interaction effect of the other blockholder classes on the largest blockholder class is observed by taking the product of the dummy variable and the percentage of shares owned by the other blockholder classes. To consider the possibility of a quadratic relationship on firm performance due to collusion with an increased shareholding of the non-dominant shareholder, the product of the dummy variable and the squared term of the percentage of shares of the non-dominant shareholder needs to be included in the regression model.

With the hypotheses in sub-section 3.7.2 in mind, Table 4.3 summarises the set of interaction variables to be included in the regression model.

Table 4.3: Interaction Variables

Variable	**Description**
Familydom	Dummy variable set to 1 if the largest shareholdings in the firm are from family members and 0 otherwise
SWFdom	Dummy variable set to 1 if the largest shareholdings in the firm are from the sovereign wealth funds
InstResdom	Dummy variable set to 1 if the largest shareholdings in the firm are from pressure-resistant institutional owners
Nonfamily	Percentage of shares owned by non-family members in the firm
NonSWF	Percentage of shares owned by non-SWFs in the firm

Variable	Description
NonInstRes	Percentage of shares owned by non-pressure resistant institutional owners
Nonfamilysquared	The square of the percentage of shares owned by non-family owners
NonSWFsquared	The square of the percentage of shares owned by non-SWF owners

4.5.2.3 Blockholders' Engagement

Committed blockholders are likely to invest for the long-term and remain engaged with the firm according to Brown (2014). The largest blockholders in the firms are assumed to be committed as they do not exit at the first sign of trouble according to Lehmann and Weigand (2000), and participate actively in the governance of the firm. On the other hand, there are rare instances when the blockholder loses confidence in the board and management or when the direction of the firm changes. On such rare occasions, the blockholder's interest may no longer align with the firm and selling shares can be the most appropriate course of action for them to take (*UniSuper* 2016). The percentage change in the blockholding size of the largest blockholder relative to the total blockholding size in the firm over a one-year period measures the change in commitment level of the largest blockholder to the firm.

Directors on the board, who are blockholders as well, are likely to be more vigilant and exercise more influence on the firm as they hold sizeable equity stakes in the firm. A balanced proportion of blockholders on the board could be preferred to maintain board independence and reduce the entrenchment effect of the directors. The proportion of blockholders on the board in a year

measures the extent of the influence of these blockholders in the Board and on the firm performance.

4.5.3 Control Variables

The control variables function in a similar way to the independent variables in the multiple regression, but they are not the main variables of interest used to investigate the relationships in this Study. Adding control variables to the multiple regression can make the coefficients of the independent variables more accurate in providing a better estimate of the relationship between the independent variables of interest and dependent variable in the study (Carlson and Wu 2012). However, it is equally important to justify the inclusion of these control variables (Spector and Brannick 2011). The control variables selected should be causal factors with the dependent variable, so as to mitigate the issue of omitted variable bias which affects the estimate of the coefficient of the independent variable of interest in the regression model. In essence, omitted variable bias is a form of selection bias that arises in regression analysis when the appropriate controls are not included. In addition, as the independent variables are blockholder related variables, it is important to select controls that are not directly influenced by blockholders. If blockholders can affect the controls directly, then the inclusion of such controls may confound the estimates of the blockholder related variables (Konijn, Kraussl and Lucas 2011). For example, if blockholders can influence sales growth directly, then the estimated relation between blockholders and Tobin's Q will be biased if sales growth is included as a control in the regression model.

The following sub-sections explain the rationale for including the control variables used in this Study.

4.5.3.1 Firm Size

Firm size represents the physical and financial resources of a firm. Thus, firm size can positively affect firm performance because of these resources. Larger businesses often have better access to external financial markets, making it cheaper to raise capital to finance initiatives with a positive net present value.

Furthermore, larger firm size gives economies of scale, which may either increase profitability or act as a barrier to entrance for potential rivals (Bhabra et al. 2003). Firm size, on the other hand, may have a negative impact on firm performance since larger firms face greater bureaucratic interference, higher agency costs, and are less able to adapt quickly to changes in market circumstances (Sun and Tong 2003; Xu and Wang 1999). In addition, larger firms tend to have fewer growth opportunities and the market prefers smaller start-up companies that are largely driven by technology and knowledge (Kiel and Nicholson 2003). In view of all these arguments, the effect of firm size on performance is ambiguous.

It is becoming increasingly difficult for huge corporations to establish substantial blockholder holdings. As a result, no blockholder can readily alter firm size, making this variable a viable control for this Study. The firm size is measured by the book value of total assets of the firm. Consistent with most other studies related to firm performance (e.g. Andreou, Louca and Panayides 2014; Benamraoui et al. 2019; De-la-Hoz and Pombo 2016; Lin and Fu 2017), the natural logarithm of the book value is used in the regression model to improve the normality of the data.

4.5.3.2 Firm Age

Firm age is included as a control in the regression model since it affects radical innovations and a firm's worldwide activities (Chen and Yu 2012). To some extent, firm age is correlated with the size of the firm. Mature businesses have amassed a wealth of information about the nation and the market. They are also likely to have amassed a level of market share that newer businesses may find difficult to match (Ciftci et al. 2019). Furthermore, older and more established businesses have lower cost structures, which improves company performance (Ang, Cole and Lin 2000).

In terms of growth opportunities, the literature has shown mixed results regarding firm age on the performance of firms. Konijn, Kraussl and Lucas (2011) suggested that in general, mature businesses have fewer chances for expansion than organisations at an earlier point of their life cycle. However,

Bernardo and Chowdhry (2002) found that young firms usually have fewer investment opportunities and less capability to enter new industries. On the contrary, newer firms could be driven by technology and innovation which could partially explain why younger firms perform better due to over-optimism by investors (Ritter 1991). This is also supported by the study of Anderson and Reeb (2003), which concluded that younger family firms have better performance that older family firms for U.S. firms in the S&P 500 index. Considering all of the above arguments, it is reasonable to hypothesise that the effects of firm age on firm performance are ambiguous.

Additionally, as firm age is not directly determined by blockholder presence, the inclusion of firm age is a suitable control for the regression model. Firm age is measured by taking the number of years since the firm's incorporation and is hand-collected from the Orbis database, disclosures in the annual report, or information on the firm's website. As with most studies (e.g. Andreou, Louca and Panayides 2014; Chen and Yu 2012; Konijn, Kraussl and Lucas 2011; Muniandy, Tanewski and Johl 2016), the natural logarithm of the firm age is used to improve the normality of the data.

4.5.3.3 Leverage

Leverage gauges the extent to which the firm finances the assets of the firm with debt. This Study included leverage of the firm as a control for a couple of reasons. On one hand, leverage provides control for the possibility that the creditors exert an influence over the decisions and operations of the firm to protect their own interests (Chen and Jaggi 2000; Hutchinson and Gul 2004). To this extent, leverage can be negatively related to firm performance. Previous studies of Chang and Wang (2007) and Lu and Beamish (2004) have shown that firm leverage is negatively related to firm performance. On the other hand, debt might be used as a disciplining role since it mitigates agency costs by reducing management's ability to consume excessive perquisites as the firm needs to achieve higher levels of cash flow necessary to meet the debt repayments (Bhabra et al. 2003; Konijn, Kraussl and Lucas 2011). To this extent, we hypothesise that debt is positively related to firm performance.

All else being equal, Edmans (2011) suggested that it becomes easier to acquire a larger equity stake of a firm when the leverage is high. Consistent with most other studies (e.g. Chen and Yu 2012; De-la-Hoz and Pombo 2016; Muniandy, Tanewski and Johl 2016), this Study uses the ratio of the firm's total debt to total assets as the leverage of the firm. Information on the firm's total debt and assets are found in the balance sheet of the financial statements in the annual report or the firm's website.

4.5.3.4 Capital Expenditures

Capital expenditures are funds spent by a corporation to buy, enhance and maintain tangible assets such as property, buildings, technology, or equipment. Capital expenditures can also be used to fund new projects or investments. As such, capital expenditure decisions can be considered operational, but with a strategic focus (Alkaraan and Northcott 2006). Some studies such as Konijn, Kraussl and Lucas (2011) and Yin, Ward and Tsolacos (2018) considered a high capital investment might suggest that a firm has great growth potential. The majority of the literature on the impact of capital expenditures on firm performance has been conflicting. According to certain writers, there is a negative relationship between capital expenditures and future earnings (e.g. Abarbanell and Bushee 1997; Kim, Saha and Bose 2020; Ou 1990). Cordis and Kirby (2017) reported a negative association between capital expenditures and stock returns. Other researchers, on the other hand, observed a positive correlation between capital expenditures and earnings (Jiang, Chen and Huang 2006) or excess stock returns (Kerstein and Kim 1995).

Blockholder presence is likely to be correlated to capital expenditures but it is very unlikely to directly influence capital expenditures, as capital expenditure decisions are the purview of management and the board. This Study used the ratio of the capital expenditures incurred in a year by the firm to the total assets of the firm. Information on capital expenditures of firms is obtained from the financial statements in the annual reports. It is not possible to use the natural logarithm of the amount of capital expenditure of the firm in a year because in

some years the firms incurred negative capital expenditures due to higher proceeds from sales of long-term assets or investments.

4.5.3.5 Industry Dummies

Dummy variables are variables that can only have a value of 0 or 1. A dummy variable with a value of 0 in a regression model causes its coefficient to disappear from the equation. Because of the identity property of multiplication by 1, the value of 1 permits the coefficient of the dummy to measure the supplemental intercept (Garavaglia, Sharma and Hill 1998). In a linear regression, this form of specification is helpful for defining subgroups of observations with various intercepts and/or slopes without creating separate models.

The industry dummies are used as control for the effect of the industry sector on the performance of the firm. To parsimoniously capture all potentially relevant industry-level effects, this Study uses the 11 industry sectors according to the Global Industry Classification Standard (GICS) Methodology. The industry sectors are as follows:

i. ulti-Industry
ii. Consumer Discretionary
iii. Consumer Staples
iv. Energy
v. Financials
vi. Health Care
vii. Industrials
viii. Information Technology
ix. Materials
x. Telecommunication Services, and
xi. Utilities.

The industry dummy takes the value of 1 if the firm belongs to the particular industry sector and zero otherwise. Therefore, the total number of industry dummies is 11.

4.5.3.6 Year Dummies

Year dummies (also known as year effects) capture the influence of aggregate (time-series) trends. In general, time series regressions (and hence panel regressions) that do not account for year effects will pick up on aggregate trends that have nothing to do with causal relationships. Controlling for the year effects allows the regression model to eliminate bias from factors that change over time but are constant over entities for a given year. Specifically, the year dummies allow control for time-specific fixed effects i.e. shocks which impact a given year.

The coefficient of the year dummy measures the contribution to firm performance after controlling for time effect. All the years from the Studay Period are coded as dummy variables which take the value of 1 if the firm performance relates to that particular year and 0 otherwise. The total number of year dummies is 11.

4.6 Estimation Methodology

This Study investigates the causal relationship between blockholders and firm performance using a panel analytical methodology. The regression analysis with both a spatial and temporal dimension is used with a panel data set. The spatial dimension in a panel data set is a composite of the cross-section dimension, which in this Study comprises of the Singapore listed firms. The temporal dimension of this Study, on the other hand, consists of a number of observations of a set of variables related to these businesses throughout a certain time period. In this Study,, the maximum observation periods are over 11 years as the data for firm performance measures and blockholder related variables were collected from 2006 to 2016. As there is data observed for every period from the Study Period in each firm, a balanced panel data is obtained. However, there is some missing information in some years for certain firms, but this is not a problem as the Stata software used by this Study is able to handle the missing observations in the panel data set.

According to Hsiao (2007), there are many benefits of using panel data analysis over cross-sectional or time-series data only because panel data

blends the inter-individual differences and intra-individual dynamics. The following are some of the advantages of panel data analysis:

1. Panel data analysis allows for more accurate inference of model parameters because of the increased number of observations (Wooldridge, 2002). Panel data usually contains more degrees of freedom than cross-sectional data which may be viewed as a panel with T = 1 and more sample variability than time series data, which is a panel with N = 1. Thus, time series and cross-sectional studies do not control for individual heterogeneity and run the risk of obtaining biased results. To this extent, this makes the estimate from panel data analysis more efficient.

2. According toEdwards (2014), the use of panel data may allow one to control the impact of certain unobserved variables in one's model specification. It is commonly suggested that the true reason one discovers (or does not find) certain effects is due to disregarding the effects of certain variables that are associated with the included independent variables in one's model specification. As panel data contains information on both the intertemporal dynamics and the individuality of the entities, a technique such as first differencing allows one to remove the unobserved time-invariant variable from the original equation after transformation to the first differenced equation.

3. Panel data analysis allows one to uncover certain dynamic relationships. These dynamic relationships imply that past variables are likely to be correlated to current or future variables. Current and lagged time series observations are likely to be extremely collinear. Panel data enables the use of inter-individual differences to decrease collinearity between current and lag variables in order to evaluate time-adjustment trends (e.g. Pakes and Griliches 1984).

4. Panel data allows the analysis of non-stationary time series data. When time series data are not stationary, the large sample approximation of the least-squares or maximum likelihood estimators are no longer normally distributed (e.g. Dickey and Fuller 1981; Phillips and Durlauf 1986).

However, if panel data are available and observations across cross-sectional units are independent, the central limit theorem may be used to demonstrate that the limiting distributions of many estimators remains asymptotically normal (e.g. Binder, Hsiao and Pesaran 2005; Im, Pesaran and Shin 2003; Levin, Lin and Chu 2002).

Initially, the panel data regression model in its general form was estimated as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it-1} + \cdots + \beta_k X_{kit-1} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.1)$$

where: i = 1 …,N firms and t = 1 …, T time periods; Y_{it} is a dependent variable on performance measure; X_{it-1} represents an independent variable measured in year t-1; β_0 represents the constant term, β_1 is the coefficient of the independent variables; u_{it} represents the error term.

This configuration guarantees that the independent factors, such as ownership variables, are assessed first and firm performance is tracked thereafter. As a result, the one-year forward performance measurements are unlikely to cause the prior-year ownership measures. Overall, the temporal difference between the dependent variable and the set of independent variables alleviates some of the worries regarding the reverse causality problem as in the works of Benamraoui et al. (2019) and Harford, Kecskés and Mansi (2018).

In addition, the error term can further be decomposed into two components in the form of a firm-specific error v_i, and an idiosyncratic error ε_{it}. Thus:

$$Y_{it} = \beta_0 + \beta_1 X_{it-1} + \cdots + \beta_k X_{kit-1} + v_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.2)$$

The empirical model specification would be determined by the behaviour of the error term u_{it} as well as whether the independent variable is serially correlated with the components of error term v_i, and ε_{it}. Fundamentally, four typical panel regression models may be derived from the generic model stated in equation 2, based on particular assumptions about the independent variables, the characteristics of the error term, and the relationship between the independent variables and the error term. Furthermore, assumptions about the variability of the regression coefficient among firms must be established. A panel data regression can be estimated in this way using pooled OLS (ordinary least

squares), fixed effects, random effects, or the generalised method of moments (GMM).

The following sub-section discusses the set of assumptions about the variables used in the regression analysis to ensure the validity of the results in a general multiple regression model. This is followed by sub-sections that discuss the appropriate use and underlying assumptions in each of the regression methods.

4.6.1 Multiple Regression Assumptions

Multiple regression analysis necessitates a set of assumptions about the variables employed to assure the validity of the results and the reliability of this Study's conclusions. The five important key assumptions are linearity relationship, little or no multicollinearity, normal distribution of error terms, homoscedasticity and no autocorrelation (see e.g. Greene 2018; Gujarati and Porter 2009; Tabachnick and Fidell 2013). Inferences drawn from the analysis are not valid if all assumptions are not met. When assumptions are violated, sometimes a quick fix is possible, and the approach is still considered valid. A discussion on these five assumptions is appropriate before a discussion on the estimates obtained from different plausible regression methods.

4.6.1.1 Linearity

This assumption requires a linear relationship between the independent variables (IVs) and the dependent variable (DV). Because multiple linear regression is susceptible to outlier effects, it is critical to check for outliers in each variable. The linear relationship can be validated by plotting a scatter plot of the DV against each IV and visually inspecting the scatter plot for signs of non-linearity. When this assumption is breached, a curvilinear relationship or low linearity relationship appears, resulting in biased estimations. However, the breach can potentially be addressed by proper data transformations (Tabachnick and Fidell 2013). By redefining IVs, the researcher may include non-linear relationships (such as squared values, cubed values, and cross-products of variables) in the analysis. For example, curvilinear relationships

can be included for analysis by squaring or raising original IVs to a higher power and including it with the originals in the analysis.

4.6.1.2 Multicollinearity

When an independent variable in a multiple regression equation is highly correlated with one or more of the other independent variables, multicollinearity exists (Allen 1997). Other factors being equal, an independent variable that is strongly correlated with the other independent variables will have a significantly large standard error. According to Hair et al. (2006), the problems associated with multicollinearity are as follows:

1. Because the standard errors are too large, the partial regression coefficient may not be calculated correctly.

2. The partial regression coefficient is unstable, and its signs and magnitudes might vary from one sample to the next.

3. It is time-consuming to evaluate the relative importance of the independent variables. Because of the significant multicollinearity, the confidence intervals for the coefficients tend to be quite large. When there is multicollinearity in the data, it becomes more difficult to reject the null hypothesis. At the conventional five percent probability level, a regression coefficient must be almost twice as large as its standard error to be statistically significant.

There are two popular ways to detect for multicollinearity in the data. One quick way is a scan of the correlation matrix of the variables, for example the Pearson's correlation. This correlation should not be higher than 0.8 (Gujarati and Porter 2009). A more precise measure is the variance inflation factor (VIF). VIF can be calculated as follows:

$$VIF = \frac{1}{1 - R^2}$$

where R^2 is the variance of the IV that is explained by other IVs.

If the R^2 for a particular variable is closer to 1, it indicates the variable can be explained by other IVs and having the variable as one of the IVs can cause the multicollinearity problem. A common cut-off threshold for VIF is 10 (Hair et al. 2006). If there is an issue with multicollinearity (Pearson's correlation more than 0.8 or a VIF larger than 10), one or more highly correlated variables will be eliminated. Both Pearson's correlation and VIF of the independent variables were calculated in this Study.

4.6.1.3 Normal Distribution of Error Terms

Multiple regression assumes that the residuals are normally distributed. This usually implies that the variables themselves should be normally distributed. If the residuals are not normally distributed, evaluating whether the regression coefficients are significantly different from zero and computing confidence intervals for forecasts may be difficult. The calculation of confidence intervals and other significance tests for coefficients are all predicated on the assumption that errors are normally distributed. Confidence intervals may be excessively large or too small if the error distribution is considerably non-normal. Non-normality, on the other hand, does not add to bias or inefficiency in regression models. It is only relevant for calculating p values for significance testing. However, this is only a factor when the sample size is very small. When the sample size is big enough (>200), the normality requirement is unnecessary since the Central Limit Theorem guarantees that the distribution of error terms will near normality (Fischer 2011).

Skewness and kurtosis are often used to assess the data's fit to the normal distribution. Skewness is a measure of the asymmetry of a random variable's probability distribution around its mean. The quantity and direction of skew are determined by the skewness. Kurtosis informs the probability distribution of the tails and around the centre of the distribution relative to that of a normal distribution. If a distribution is normal, skewness should be zero, or near zero, but kurtosis should be 3 or close to 3. According to Field (2009), data is deemed normally distributed if the skewness value is within ±1.96 and the kurtosis value is within 0 to 6. There will be a substantial bias in the distribution

of the variable for skewness and kurtosis with greater or lower values, signifying an aberration from the normal distribution.

If the data distribution is not normally distributed, procedures like outlier removal and data transformation can be used to normalise the data. Outliers increase the variability of the data which in turn decreases the statistical power. Consequently, excluding outliers can make the result significant. Transformations such as reciprocal, square root, natural log and winsorising can improve normality and reduce the influence of outliers (Tabachnick and Fidell 2013). However, some transformations can complicate the outcomes and should be handled with caution and knowledge. (Osborne 2013). As will be discussed in Sub-Section 5.2.5, natural log and winsorisation of data are two data transformations used in this Study.

4.6.1.4 Homoscedasticity

Homoscedasticity indicates that the variance of errors (the noise or random disturbance in the relation between the independent and dependent variables) is the same across all independent variable values. Heteroscedasticity is shown when the variance of errors varies at various values. Because of heteroscedasticity, determining the real standard of forecast errors is challenging. Thus, when heteroscedasticity is strong, it can cause substantial misinterpretation of findings and seriously undermine the study (Tabachnick and Fidell 2013). The assumption of homoscedasticity can be checked by plotting standardised residuals with the predicted values. This is an option in most current statistical software (for example, STATA and SPSS). In an ideal scenario, the residuals are randomly distributed about 0 (the horizontal line), resulting in a reasonably equal distribution. Typical heteroscedasticity is a case in which the band enclosing the residuals becomes wider at larger predicted values. When the residual plot deviates significantly from normal, a more formal test for heteroscedasticity, such as the Breusch-Pagan test, might be used. This test's null hypothesis implies that the variance of residuals is constant (i.e. heteroscedasticity is not present). Transformation of the variables may reduce or eliminate heteroscedasticity. Heteroscedasticity may

also be addressed using robust standard errors regression and weighted least squares regression (Tabachnick and Fidell 2013).

4.6.1.5 Autocorrelation

This assumption necessitates that the error terms be independent of one another. In some instances, this assumption is violated as a function of something associated with either time or distance. If the error terms are correlated over time, then there is autocorrelation (also known as serial correlation). Inefficient estimate of the regression coefficients, underestimation of the error variance, erroneous estimation of the variance of the regression coefficients, and inaccurate confidence intervals are all consequences of autocorrelation. Autocorrelation can pose issues in traditional analyses that presume observation independence (such as ordinary least squares regression). Two possible causes of autocorrelation are omitted variables and model misspecification.

The Durbin-Watson test is a popular method for determining autocorrelation. When performing a regression analysis, statistical tools such as STATA and SPSS provide the option of executing the Durbin-Watson test. This test yields a test statistic ranging from 0 to 4. Values around 2 imply no autocorrelation, while values near 0 or 4 indicate positive or negative autocorrelation, respectively. Values of 1.5 to 2.5, as a rule of thumb, indicate that there is no autocorrelation. The Durbin-Watson test, on the other hand, examines linear autocorrelation between immediate neighbours, which are first order effects. Thus, it is not applicable when a lagged dependent variable is used in the regression equation, as it is unable to take into account a higher order of autocorrelation. In this case, the Durbin’s h test can be used when there are lagged dependent variables.

4.6.2 Pooled Ordinary Least Squares

The pooled OLS is a pooled linear regression with no fixed or random effects. It assumes a constant intercept and slopes across group (firm) and time-period. Furthermore, the normal assumptions of constant variance of errors

and uncorrelated observations must be maintained in the panel data. If there is no firm-specific or temporal impact, it may be possible to pool all of the data and run a pooled OLS regression model. The pooled OLS regression can be defined in the following general form:

$$Y_{it} = \beta_0 + \beta_1 X_{it-1} + u_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.3)$$

Essentially, the estimate in a pooled OLS regression will be biased and inconsistent due to unobserved heterogeneity (X_{it} and u_{it} are correlated). This indicates that in a pooled OLS model, the common variance in the series, is not taken into account across all cross-sectional entities and throughout time. To put it in another way, it means that the error terms could vary across firm (fixed effect) and/or year (random effect). In order to overcome this issue, panel data analysis employs either a fixed effect model or a random effect model. The key distinction between the two models is how they interpret unobserved individual firm effects.

4.6.3 Fixed Effects

The fixed effects model assumes constant slopes but different intercepts for groups (or individual firms in this Study). Thus, the intercept differs from firm to firm. The fixed effect model assumes that there are significant differences among firms, but no significant temporal effects. Therefore, when controlling for time-invariant unobserved individual firm characteristics that can be correlated with the observed independent variables in a panel data situation, the fixed effects model is used. In general, the fixed effects model may be stated as follows:

$$Y_{it} = \beta_1 X_{it-1} + v_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.4)$$

where: Y_{it} is the dependent variable; X_{it} is a vector of independent variables; v_i is a fixed effect for firm i that remains constant over time t; ε_{it} is the idiosyncratic error term. Specifically, the time-invariant firm specific error term v_i is correlated with an independent variable X_{it}, thus making the independent variable X_{it} endogenous and the regression coefficient estimate of X_{it} biased.

4.6.4 Random Effects

The random effects model is based on the assumption that unobserved differences are unrelated to any of the independent variables. Thus, the model assumes that the individual firm effect v_i in equation 5 is not correlated with any independent variable and then estimates error variance specific to firms (or times). The random effects model can be described in a general form as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it-1} + v_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.5)$$

where v_i is an individual firm specific random heterogeneity that is assumed to be constant over time and regarded as a component of the composite error term. Regressor intercepts and slopes are the same across firms. The difference across firms (or time periods) is due to firm-specific errors, not intercepts.

The Hausman test is used to determine if a fixed or random effects model is the best method to handle the error structure statistically (Baltagi 2008; Park 2011). The null hypothesis of the Hausman test analyses whether the individual (firm) effects are uncorrelated with the model's other regressors. Under the null hypothesis of the Hausman test, the random effects model is more efficient. If the null hypothesis is rejected, the random estimates are inconsistent, and a fixed effects model is recommended.

4.6.5 Generalised Method of Moments (GMM)

According to Schultz, Tan and Walsh (2010) and Wintoki, Linck and Netter (2012), when evaluating the results of corporate governance studies that use OLS regression or a fixed effects model to predict the relationship between governance and performance, researchers should take care. These studies' econometric models fail to account for various types of endogeneity — a situation that could lead to inconsistent and biased estimates of the regression coefficients. The existence of any source of endogeneity in the data can generate biased results. There are three possible sources of endogeneity:

1. Unobserved heterogeneity;

2. Simultaneity or reverse causality, and

3. Dynamic endogeneity.

Prior to Wintoki, Linck and Netter (2012), most researchers acknowledged only the first two potential sources of endogeneity. Unobserved heterogeneity occurs when the relation between an independent variable and a dependent variable is influenced by an unobservable variable that the researcher is unaware of. For example, a dependent variable such as firm performance could be affected by a firm-specific characteristic that may be unobservable to the researcher. Fixed effects estimates can account for bias caused by unobservable heterogeneity. Simultaneity, also known as reverse causality, occurs when the independent and dependent variables both impact each other at the same time. For instance, the size of the blockholdings could enhance firm performance because of better monitoring by blockholders. However, it is possible to argue that blockholders choose firms with better firm performance. When either unobserved heterogeneity or simultaneity is present in the panel data, the error term in the regression model is likely to be correlated with an independent variable resulting in a biased estimate for the regression coefficient of the independent variable.

Dynamic endogeneity occurs when a firm's history or current performance influences existing or future governance factors (Wintoki, Linck and Netter 2012). For example, past poor firm performance may cause blockholders to leave the firm or reduce their blockholding size. Thus, to resolve all forms of endogeneity, a dynamic GMM is proposed (Schultz, Tan and Walsh 2010; Wintoki, Linck and Netter 2012). The GMM model provides significant advantage over the OLS regression, fixed effects model and random effects model. Unobserved heterogeneity and dynamic endogeneity are ignored by the OLS and fixed effects models respectively. As a result, using these approaches may provide biased estimations. The fixed effects model, on the other hand, can account for unobserved heterogeneity under the condition of strict exogeneity, which means that the error term is uncorrelated with any occurrence of the independent variable; past, present, and future. This indicates that current dependent variable observations are fully independent of previous dependent variable values (firm performance in this Study). This

premise of strict exogeneity, however, is breached since a firm's previous or current performance may impact the firm's current or future governance structure. Furthermore, both fixed effects and random effects models are static panel models, which implies that the lag of the dependent variables cannot be incorporated as an independent variable in the regression model (Wooldridge 2020). Because the relationship between blockholders and company performance may be dynamic, both the fixed effects and random effects models would provide inconsistent and biased findings.

Arellano and Bond (1991) presented the difference that GMM allows for the existence of lagged dependent variables in order to account for simultaneity, control for the fixed effect, and deal with the endogeneity of independent variables. The difference GMM model does a first-difference transformation (hence the name “difference GMM”) of the panel data to eliminate the time-invariant fixed effect. The Arellano and Bond (1991) model proposes to use the second lags of the dependent variable and all available lags thereafter as instruments for the differenced equation. However, the difference GMM method has a couple of limitations.

The first limitation is that it magnifies the gaps in unbalanced panels. If a variable value is missing from the panel data, the first-difference transformation (which subtracts a variable's prior value from its present value) will result in a loss of two observations. This might result in the loss of a large number of observations according to Roodman (2009). To minimise potential data loss due to internal transformation issues with the difference GMM, Arellano and Bover (1995) proposed an alternative transformation called “forward orthogonal deviations” or “orthogonal deviations”. Instead of subtracting the previous value from the current value, it subtracts the average of all future available observations of a variable from its current value. Therefore, in the case of unbalanced panel data, transformation by orthogonal deviations provides more efficient and consistent estimates for the regression coefficients.

The difference GMM method's second weakness is that it suffers from weak instrument bias when the lag dependent variables and independent variables

are extremely persistent over time. As a result, the correlation between the lagged instruments and the first-differences is poor. The lagged levels of variables employed as instruments in this case give minimal information on the first-difference variables. To overcome this problem, Blundell and Bond (1998) proposed the system GMM. The key to system GMM is that it instruments the lagged variables with differences (transformed model) and simultaneously instruments the first-differences with the original model. Hence, system GMM uses more instruments than difference GMM.

The dynamic panel GMM estimate is appropriate for panel data with a large number of observations and a limited number of time periods (Roodman 2009). A dynamic GMM panel estimator can be used to provide consistent and unbiased estimates for short time periods (under the premise that unobserved heterogeneity exists but is constant or time-invariant) (Wintoki, Linck and Netter 2012). The key exogeneity assumption in the GMM model is that the firm's past performance and characteristics are exogenous to present performance shocks. To this extent, Arellano and Bond (1991) suggest two key tests of this assumption.

The first is a second-order serial correlation test. If the specification model's assumptions are correct, the residuals in first-differences AR(1) should be correlated, but there should be no correlation in second-differences AR(2). A correct model specification requires that the model include enough lags of the dependent variable (firm performance) to control for the dynamic relationship between performance variables and blockholder related variables. Any past value of firm performance beyond those lags has the potential to be a viable instrument since it is exogeneous to present performance shocks. The Sargan or Hansen test is used to determine the joint validity of the identifying restrictions when the model is over-identified. Both assess the instruments' reliability. However, if heteroscedasticity exists in the panel data, the Sargan test is inconsistent; hence, the Hansen test is regarded as more dependable (Roodman 2009). Under the null hypothesis of the instruments' validity, the Hansen test produces a J-statistic that is distributed Chi-squared. The

instruments are valid if the null hypothesis is not rejected at a significance level of 5% or 10%.

GMM includes one-step and two-step estimators. The one-step estimator is efficient under homoskedasticity but is not robust to heteroskedasticity. In the presence of heteroskedasticity, a two-step estimator would produce efficient estimates. The two-step model employs an estimated weighting matrix based on the residuals of the one-step model but produces downward biased standard errors. This can be corrected by using robust standard errors. Thus, efficiency of the GMM estimator as well as the power of the associated tests is improved with the use of a two-step procedure (Hwang and Sun 2018). Statistical software such as STATA specify the one-step GMM as the default.

Similar to Wintoki, Linck and Netter (2012), but using one-year lagged blockholder related variables and control variables, the general dynamic GMM model with p lags of firm performance is as follows:

$$Y_{it} = \alpha + \sum k_s y_{it-s} + \beta X_{it-1} + \gamma_k Z_{it-1} + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(4.6)$$

where:

s = 1,…,p

y_{it} represent firm performance across N observations and I firms over the time period t;

X_{it-1} represent blockholder related variables over the time period t-1;

Z_{it-1} represent control variables over the time period t-1;

η_i is firm-specific fixed effects; and

ϵ_{it} is a random error term

The number of lags of past performance needed to ensure dynamic completeness is determined empirically. OLS regressions will be used in this Study to determine the number of lags of performance that are significant. According to Wintoki, Linck and Netter (2012), dynamic completeness is important for two reasons:

1. Failure to capture all the necessary lags of performance could lead to model misspecification due to omitted variable bias, and

2. More importantly, all older lags of performance can be argued to be exogenous with respect to the residuals of the present and thus they can be used as instruments.

4.7 Conclusion

This chapter has detailed all the steps involved in designing this Study, collecting data and the appropriate estimation methodology. Because this Study employs a multi-theoretical approach (agency theory, stewardship theory, and resource dependency theory), the method, in conjunction with the empirical literature, provides a solid foundation for developing hypotheses that can be evaluated using secondary data. As a result, the positivist paradigm and panel technique were used in this Study to evaluate previously formulated hypotheses in Section 3.7.

This chapter also provided a discussion on the development of the variable measurements covering blockholder related variables (blockholding sizes of different classes of blockholders and blockholder engagement), firm performance (i.e. Tobin's Q, ROA and ROE) and firm specific factors (i.e. firm size, firm age, leverage, capital expenditure and industry). In Section 4.6, a detailed discussion of the different estimation methodologies was provided. Following the works of Schultz, Tan and Walsh (2010) and Wintoki, Linck and Netter (2012), a dynamic GMM model was used in this Study because it accounts for many types of endogeneity concerns such as unobserved heterogeneity, simultaneity (or reverse causality), and dynamic endogeneity. The system GMM was chosen over the difference GMM because the latter suffers from weak instrument bias when the lagged dependent variables and independent variables are extremely persistent over time.

However, no methodological approach is without flaws, but effort may be applied to improve this Study's strength by careful selection of methodological instruments. The aim of the methodological approach has been to achieve not only rigour in the results, but also generalisability of the findings.

The next chapter will present the empirical results from the data analysis.

Chapter 5: Data Analysis and Results

5.1 Introduction

Chapter 4 outlined the research philosophy that underpins this Study, as well as the empirical study models that were designed. Furthermore, the data sources used, sample choices and data collecting techniques were given. Finally, the measurement of variables was justified.

This chapter presents the findings from the diagnostic analysis of the data collected. In addition, the statistical techniques used in data analysis are explained. The chapter begins with the section on the univariate analysis of the variables used in this Study. This is followed by an examination of the correlation between the variables used to get a first assessment of potential multi-collinearity problems within the variables. Finally, findings from a multivariate analysis using multivariate regression to test the hypotheses are presented.

In conclusion, a summary of the chapter is provided.

5.2 Descriptive Statistics

This section describes the descriptive statistics of the firms' characteristics in the panel data set as well as other key variables related to the study. Descriptive statistics are an essential first step in data analysis because they allow one to grasp the nature of the variables and their underlying statistical distribution. The statistical analyses used in this Study included the maximum, minimum, mean, standard deviation skewness and kurtosis for blockholder related variables, firm characteristics and firm performance.

Table 5.1 presents the summary of descriptive statistics for the variables used in this Study from the Study Period, namely the dependent variables, independent variables and control variables. Most of the variables have 1067 observations except for ROA, ROE, change in blockholding size of largest blockholder to total blockholding size and percentage of directors who are blockholders. In the case of ROE, there was missing data for the ROE of one

of the firms, GP Industries Limited, in the year 2016. As for ROA, it was only possible to obtain 996 observations as the data was gathered at a later stage in this Study and ORBIS only carried the most recent data from the year 2010 onwards. In the case of the relative change in largest blockholder to the blockholding size and the percentage of directors who are blockholders, the number of observations were 941 (out of a possible of 970) and 1023 (out of a possible 1027) respectively because of missing data from the firms such as Addvalue Technologies Ltd, AEI Corporation Ltd, CWT Ltd and PCI Ltd. CWT Ltd and PCI Ltd were both delisted from the SGX Mainboard after 2016.

The summarised statistics of variables for the firm performance, blockholder related variables and firm specific factors are discussed in the following sub-sections.

Table 5.1: Descriptive statistics

	Obs	Mean	Median	SD	Min	Max	Skewness	Kurtosis
Dependent Variables:								
Tobin's Q ratio	1067	0.95	0.72	0.80	0.00	6.35	2.72	12.71
ROA	996	5.93	5.14	8.28	-72.95	54.16	-0.67	16.44
ROE (%)	1066	10.88	9.24	27.02	-262.37	373.77	3.15	79.91
Independent Variables:								
Insiders (%)	1067	29.54	32.04	25.75	0.00	88.94	0.24	1.81
Family firms (%)	1067	15.68	0.00	22.86	0.00	81.90	0.97	2.30
SWFs (%)	1067	10.00	0.00	20.70	0.00	82.20	1.98	5.72
Insensitive FIs (%)	1067	3.12	0.00	8.25	0.00	48.56	3.45	16.19
Nonfamily (%)	1067	13.15	0.00	21.69	0.00	82.20	1.56	4.28
NonSWF (%)	1067	18.79	0.00	23.92	0.00	81.90	0.81	2.11
NonInsensitive (%)	1067	25.70	25.38	25.30	0.00	82.20	0.33	1.70
Change in largest block to total block (%)	941	0.26	0.00	11.14	-60.08	111.56	4.48	50.55
% of directors who are blockholders	1023	18.71	12.50	20.09	0.00	71.43	0.89	2.83
Control Variables:								
Firm age (years)	1067	27.21	23	20.94	0	133	2.28	11.08
Firm size (SGD millions)	1067	3,423.30	597.92	9,663.15	16,854.00	184,933.42	8.41	125.99
Leverage (%)	1067	11.00	5.08	12.89	0.00	65.10	1.15	3.58
Capital exp / total asset	1067	0.0356	0.0303	0.1015	-1.3094	0.7195	-2.49	39.76

5.2.1 Dependent Variables

The mean of Tobin's Q in this Study is 0.95 with a median of 0.72. Given that a Tobin's Q ratio of greater than 1 is desirable, the results suggest that the firms, on average, did not create value for the shareholders during the Study Period. The ROA of the firms has a mean (median) of 5.93% (5.14%) and the ROE has a mean (median) of 10.88% (9.24%). The mean of the ROE is relatively larger than its median, meaning that the distribution of ROE is positively skewed with large positive values of outliers that increase their respective means. This is further evidenced by the high skewness of the ROE of 3.15. Thus, the median is more appropriate in describing the central measures of tendency for the distributions of the ROE. In addition, the kurtosis is relatively high for the three performance variables Tobin's Q, ROA and ROE which are 12.71%, 16.44% and 79.91% respectively. Thus, some data transformation is required for this data to ensure its normality. This will be discussed in Sub-Section 5.2.5.

5.2.2 Independent Variables

There are two types of independent variables that are of interest in this Study: the blockholdings of certain classes of blockholders and the measures of engagement of blockholders.

The inside blockholders hold a mean (median) percentage of 29.54% (32.04%) of the shares with a high of 88.94% and minimum of 0%. Family blockholders hold a mean (median) percentage of 15.68% (0%) with a minimum of 0% and maximum of 81.90% of the shares. SWFs blockholders hold a mean (median) of 20.70% (0%) with a minimum of 0% and a maximum of 82.20% of the shares. Insensitive financial institutions hold a mean (median) percentage of 3.12% (0%) with a minimum of 0% and a maximum of 48.56%.

The two variables, pertaining to the blockholders' engagement, are the change in the blockholding size of the largest blockholder to the total blockholding size and the percentage of directors who are also blockholders as discussed in Sub-Section 4.5.2.3. The change in the blockholding size of the largest

blockholder to the total blockholding size is given by the mean (median) 0.26% (0%) with a minimum of -60.08% and a maximum of 111.56%. The percentage of directors who are blockholders is given by the mean (median) of 18.71% (12.50%) with a minimum of 0% and a maximum of 71.43%.

Inference from the data indicated that there is some skewness and kurtosis for the SWF blockholdings, insensitive financial institutions blockholdings and change in the blockholding size of the largest blockholder to the total blockholding size. According to Field (2009), if the skewness value is within ±1.96 and kurtosis value is within ±3, the data is deemed normally distributed. There will be a strong bias in the variable's distribution for values higher (lower) than the upper (lower) bound, resulting in a deviation from the normal distribution. In such situations, data transformation is required to improve the normality of the data.

5.2.3 Control Variables

The average age of the firms is 27.21 years with a median of 23 years as presented in Table 5.1. The age of the firm is computed from the year of incorporation to the year of the report. The firms' ages range from 0 to 133 years. The mean and median ages are relatively consistent with that used in a previous study on Singapore listed firms by Nguyen, Locke and Reddy (2014). The firm size as measured by book total assets varied from SGD184,933 million to SGD17 million with a mean of SGD3,423 million and a median of SGD598 million. The leverage of the firms in this Study ranges from a maximum of 65.10% to a minimum of 0.00% with a mean and median of 11.00% and 5.08% respectively. Lastly, the capital expenditure to total asset ratio has a mean of 0.0356 and a median of 0.0303 with a minimum of -1.3094 and a maximum of 0.7195.

In this Study the distribution of the control variables for firm age, firm size and capital expenditure to total asset exhibit both skewness and kurtosis according to the guidelines that the skewness value should be within ±1.96 and the kurtosis value should be within ±3. Only leverage showed moderate skewness and a higher kurtosis. Thus, data transformation is required to improve normality.

5.2.4 Ownership Structures

Table 5.2 shows the ownership concentration by family dominant firms, SWF dominant firms and pressure-resistant institution dominant firms. As can be seen from the table, most of the firms were either family dominant or SWF dominant where the controlling shareholder is family or a SWF respectively. In such firms, the family or SWF control on average 45% of the shares in the firm. Thus, there was a very high concentration of share ownership in the hands of family and SWFs. This is consistent with the findings of Puchniak and Tang (2019) on Singapore companies who reported that most corporates in Singapore were dominated by family members and Temasek Holdings or its subsidiaries through their shareholder voting rights.

Table 5.2: Ownership Concentration

Type	Number of firms	Percentage of shares by dominant blockholder class	Percentage of shares by non-dominant blockholder classes
Family dominant	33	45.73	2.47
SWF dominant	21	45.29	1.78
Pressure-resistant institution dominant	13	14.11	2.40

Table 5.3 shows the inside blockholder ownership as well as the number and percentage of firm-years for each industry. In terms of industry characteristics, the industrial sector is the largest, making up 36.08% of the firms in this Study. The smallest sectors were the financials, information technology and utilities which each has 1.03% of the firms. The only financial firm included in this Study is Singapore Exchange. Although Singapore Exchange was classified as being in the financial sector, the business operation is very different from other financial firms, such as banks and insurance companies, since it does not have any banking activities or functions as a financial intermediary. In terms of inside blockholder ownership, 68.32% of the firms had an inside blockholder. Thus, this showed the prevalence of inside blockholders in Singapore listed firms.

After analysing the ownership pattern by family, SWFs and insensitive financial institutions, the ownership proportion depicted in Table 5.4 shows the number and percentage of firm-years for each industry according to ownership structure. 35.52% of the firms did not have any blockholders who are either family or SWF or insensitive financial institution. As such, 64.48% of the firms had at least one blockholder who is either family, SWF or insensitive financial institution. Family blockholders were present in 35.24% of the firms, SWF blockholders were present in 23.24% of the firms and insensitive financial institution blockholders were present in 18.65% of the firms.[1] Thus, family blockholders had the highest presence in this Study making it consistent with most other studies. However, the percentage of 35.24% was lower than that in a previous study by Claessens, Djankov and Lang (2000) that had 52% of the firms controlled by family. One plausible reason could be that the complete data for a number of the family firms for the Study Period were missing and thus excluded from this Study. Across sectors, family blockholders had the highest shareholdings in the industrials, consumer discretionary and materials sectors. SWF blockholders had a higher presence in the industrials, real estate and telecommunication services sectors, while insensitive institutional blockholders had a higher presence in industrials. Singapore Exchange, the only firm included in this study for the financial sector, did not have any blockholders.

After analysing the ownership pattern of the various blockholder classes over the Study Period, the evolution of the ownership stakes for the various blockholder classes is depicted in Table 5.5. The ownership stakes held by the various blockholder classes remained quite constant over time.

[1] 35.24% is the sum of 27.93%, 6.28% and 1.03%. 23.24% is the sum of 17.90%, 4.31% and 1.03%. 18.65% is the sum of 7.03%, 6.28%, 4.31% and 1.03%.

Table 5.3: Number and percentage of firm-years for each industry and inside blockholder ownership

Industry	Inside blockholders (firm-years)	Percentage of Inside Blockholders	Industry Total (firm-years)	Percentage of Industry firm-years
Consumer Discretionary	118	11.06	143	13.40
Consumer Staples	70	6.56	88	8.25
Energy	44	4.12	55	5.15
Financials	0	0.00	11	1.03
Industrials	283	26.52	385	36.08
Information Technology	2	4.00	11	1.03
Materials	77	7.22	77	7.22
Multi-Industry	43	4.03	77	7.22
Real Estate	65	6.09	143	13.4
Telecommunication Services	16	15.00	66	6.19
Utilities	11	1.03	11	1.03
Total	729	68.32	1,067	100

Table 5.4: Number and percentage of firm-years for each industry according to ownership structure

Industry	No family or SWF or institutional blockholder	Family blockholder only	SWF blockholder only	Insensitive institutional blockholder only	Family and SWF blockholders	Family and Insensitive institutional blockholders	SWF and Insensitive institutional blockholders	Family, SWF and Insensitive institutional blockholders	Total
Consumer Discretionary	55 5.15%	76 7.12%	0 0.00%	0 0.00%	0 0.00%	1 0.09%	0 0.00%	11 1.03%	143 13.4%
Consumer Staples	39 3.66%	13 1.22%	0 0.00%	13 1.22%	0 0.00%	20 1.87%	3 0.28%	0 0.00%	88 8.25%
Energy	55 5.15%	0 0%	0 0%	0 0.00%	0 0%	0 0%	0 0%	0 0%	55 5.15%
Financials	11 1.03%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	11 1.03%
Industrials	106 9.93%	128 12.00%	75 7.03%	46 4.31%	0 0%	15 1.41%	16 1.50%	0 0%	385 36.08%
Information Technology	5 0.47%	1 0.09%	0 0%	4 0.37%	0 0%	1 0.09%	0 0%	0 0%	11 1.03%
Materials	22 2.06%	44 4.12%	0 0%	11 1.03%	0 0%	0 0%	0 0%	0 0%	77 7.22%
Multi-Industry	33 3.09%	0 0.00%	29 2.72%	0 0.00%	0 0.00%	11 1.03%	4 0.37%	0 0.00%	77 7.22%

Industry	No family or SWF or institutional blockholder	Family blockholder only	SWF blockholder only	Insensitive institutional blockholder only	Family and SWF blockholders	Family and Insensitive institutional blockholders	SWF and Insensitive institutional blockholders	Family, SWF and Insensitive institutional blockholders	Total
Real Estate	32 2.30%	33 3.09%	45 4.22%	1 0.09%	0 0.00%	11 1.03%	21 1.97%	0 0.00%	143 13.4%
Telecommunication Services	22 2.07%	0 0.00%	42 3.94%	0 0.00%	0 0.00%	0 0.00%	2 0.19%	0 0.00%	66 6.19%
Utilities	0 0%	3 0.28%	0 0%	0 0%	0 0%	8 0.75%	0 0%	0 0%	11 1.03%
Total	379 35.52%	298 27.93%	191 17.90%	75 7.03%	0 0.00%	67 6.28%	46 4.31%	11 1.03%	1,067 100%

Table 5.5: Evolution of ownership stakes for blockholding classes (in percent)

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**Mean**
Insider	28.91	27.71	28.46	28.95	28.47	29.30	29.44	30.48	30.74	31.17	31.27	29.54
Family	17.60	16.11	16.18	15.75	15.21	15.30	15.35	15.41	15.27	15.27	14.98	15.68
SWF	10.81	10.73	10.69	10.21	10.04	10.02	9.89	9.49	9.45	9.49	9.48	10.03
Insensitive FIs	3.14	3.48	3.65	3.12	3.61	3.41	3.51	2.95	2.75	2.46	2.21	3.12

5.2.5 Data Transformation

The importance of data normality is discussed in Sub-Section 4.6.1.3. The techniques used in this Study for data transformation, such as logarithmic transformation and winsorisation to improve normality of the data, is discussed in this sub-section.

The logarithmic transformation can be applied for statistical data that do not contain negative values, but are positively skewed or have a strong deviation from normality (Tabachnick and Fidell 2013). This Study used the natural logarithm of Tobin's Q and firm size to reduce the skewness and kurtosis of the data. However, the natural logarithm of the firm age plus one is used as the panel data contains two values with a firm age of zero. This transformation avoids the loss of data that are undefined. The use of the natural logarithm of the firm size and firm age in the regression model is justified to control for the effects of outliers as in most studies (e.g. Chen and Ho 2000; Mak and Kusnadi 2005; Isakov and Weisskopf 2014; Nguyen, Locke and Reddy 2014).

For data that contains negative values, the logarithmic transformation would not work as the logarithm of negative values are undefined. In such cases, the techniques commonly used in corporate governance literature to reduce the influence of outliers are usually trimming and winsorising data (Coles, Daniel, and Naveen 2008; Yu and Ashton 2015). Trimming is simply excluding the outliers by discarding the extreme values. Winsorising, as opposed to trimming, is the transformation of data by restricting extreme values in statistical data to decrease the influence of probable false outliers. Tail values are set equal to some defined percentile of the data to winorise it. Winsorised estimators are often more robust to outliers than unwinsorised estimators. The variables ROA, ROE, insensitive FIs, SWFs, change in the blockholding size of the largest blockholder to total blockholding size, leverage and the ratio capital expenditure to total asset were winsorised at the 5^{th} and 95^{th} percentile to mitigate the effect of outliers and improve the normality of the data. Thus, values below the 5th percentile were set to the 5th percentile value, while values above the 95th percentile were put to the 95th percentile value. After

data transformation, the skewness and kurtosis were generally near to ±1.96 and ±3 respectively, as shown in Panel B in Table 5.6.

Table 5.6: Data Transformations

		Obs	Mean	Median	SD	Min	Max	Skewness	Kurtosis
Panel A: Untransformed Variables									
Tobin's Q		1067	0.95	0.72	0.80	0.00	6.35	2.72	12.71
ROA (%)		996	5.93	5.14	8.28	-72.95	54.16	-0.67	16.44
ROE (%)		1066	10.88	9.24	27.02	-262.37	373.77	3.15	79.91
Insiders (%)		1067	29.54	32.04	25.75	0.00	88.94	0.24	1.81
Family firms (%)		1067	15.68	0.00	22.86	0.00	81.90	0.97	2.30
SWFs (%)		1067	10.00	0.00	20.70	0.00	82.20	1.98	5.72
Insensitive FIs (%)		1067	3.12	0.00	8.25	0.00	48.56	3.45	16.19
Nonfamily (%)		1067	13.15	0.00	21.69	0.00	82.20	1.56	4.28
NonSWF (%)		1067	18.79	0.00	23.92	0.00	81.90	0.81	2.11
NonInsensitive (%)		1067	25.70	25.38	25.30	0.00	82.20	0.33	1.70
Change in largest block to total block (%)		941	0.26	0.00	11.14	-60.08	111.56	4.48	50.55
% of directors who are blockholders		1023	18.71	12.50	20.09	0.00	71.43	0.89	2.83
Firm age (years)		1067	27.21	23	20.94	0	133	2.28	11.08
Firm size (SGD millions)		1067	3,423.30	597.92	9,663.15	16,854.00	184,933.42	8.41	125.99
Leverage (%)		1067	11.00	5.08	12.89	0.00	65.10	1.15	3.58
Capital exp / total asset		1067	0.0356	0.0303	0.1015	-1.3094	0.7195	-2.49	39.76
Panel B: Transformed Variables									
Tobin’s Q	Ln	1067	-0.30	-0.32	0.71	-7.10	1.85	-0.62	10.87
ROA (%)	WS95	996	6.12	5.14	5.82	-4.40	18.68	0.48	2.78
ROE (%)	WS95	1066	10.65	9.24	10.37	-9.33	33.74	0.40	2.97
SWFs (%)	WS95	1067	9.28	0.00	18.52	0.00	56.3	1.73	4.30
Insensitive FIs (%)	WS95	1067	2.47	0.00	5.63	0.00	19.56	2.15	6.19
Change in largest block to total block (%)	WS95	941	-0.33	0.00	2.96	-9.51	5.80	-1.34	6.75
Firm age (years)	Ln(x+1)	1067	3.10	3.18	0.73	0.00	4.90	-0.39	3.47
Firm size (SGD millions)	Ln	1067	20.34	20.21	1.73	16.64	25.94	0.44	2.69
Leverage (%)	WS95	1067	10.56	5.08	12.00	0.00	36.52	0.88	2.38
Capital exp / total asset	WS95	1067	0.0387	0.0303	0.0576	-0.0757	0.1619	0.30	2.92

Notes: Ln means natural logarithm of the variables; Ln(x+1) means natural logarithm of the variable plus 1; WS95 means the variables were winsorised at the 5th and 95th percentile, that is values below 5th were set to the value at the 5th percentile and values above the 95th percentile were set to the value at the 95th percentile.

5.3 Correlation Analysis

This Study used the Pearson correlation coefficients which are appropriate for evaluating relationships between two continuous variables. The correlation coefficient r, which ranges between -1 and +1, indicates the degree and direction of the association between variables. A positive (negative) value indicates a positive (negative) association. A greater number indicates a more powerful association (Field 2009). The correlations and signs give a fundamental knowledge of the direction and size of the association between dependent and independent variables. Furthermore, the correlation coefficients give an initial evaluation of potential multi-collinearity issues within the variables.

Table 5.7 shows the Pearson correlation coefficients of the transformed variables used in this Study. Although the correlations do not infer any causal effects, it is possible to obtain some preliminary results from the association between the firm future performance and the explanatory variables.

The correlation coefficient between one-year lags of the natural logarithm of Tobin's Q with the current natural logarithm of Tobin's Q is 0.77 with a 1% level of significance. For both the ROA and ROE, a slightly smaller but very significant correlation coefficients of 0.66 between their one-year lags with the current values are also observed in the data. This shows that past performance is very positively correlated with current performance. Thus, using a dynamic model which includes past performance as an independent variable could be appropriate as suggested by Wintoki, Linck and Netter (2012).

Table 5.7: Pearson Correlation Coefficients between Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	lnq	1															
2	lnq(-1)	0.77**	1														
3	ROA	0.56**	0.46**	1													
4	ROA(-1)	0.54**	0.55**	0.66**	1												
5	ROE	0.53**	0.43**	0.92**	0.60	1											
6	ROE(-1)	0.51**	0.52**	0.61**	0.92**	0.66**	1										
7	Insiders(-1)	-0.31**	-0.32**	-0.10**	-0.10**	-0.16**	-0.15**	1									
8	Family(-1)	-0.15**	-0.15**	-0.05	-0.05*	-0.04	-0.05	0.54**	1								
9	SWFs(-1)	0.34**	0.34**	0.17**	0.18**	0.23**	0.23**	-0.55**	-0.34**	1							
10	InsensitiveFIs(-1)	0.07*	0.08**	-0.05	-0.04	0.02	0.01	-0.11**	-0.01	-0.04	1						
11	Changeblk(-1)	-0.01	-0.06	-0.01	0.05	-0.05	0.02	0.14**	0.00	-0.04	0.03	1					
12	Directorblk(-1)	-0.26**	-0.28**	-0.13**	-0.14**	-0.14**	-0.15	0.50**	0.46**	-0.46**	0.01	-0.05	1				
13	lnageplus1(-1)	-0.00	-0.02	0.03	0.04	-0.03	-0.01	0.16**	-0.04	-0.11**	-0.03	0.08*	0.01	1			
14	Lnsize(-1)	0.16**	0.15**	-0.02	0.01	0.06	0.09**	-0.32**	-0.27**	0.49**	0.17**	0.02	-0.52**	0.09**	1		
15	Leverage(-1)	-0.02	-0.02	-0.08*	-0.10**	-0.11	-0.13	-0.04	0.09**	0.03	-0.04	0.02	-0.16**	-0.12**	0.06	1	
16	CapexTA(-1)	0.09**	0.08*	0.02	-0.05	0.11**	0.05	-0.03	0.06	0.08*	-0.03	-0.07*	0.03	-0.19**	0.02	0.03	1

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

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

Notes: *lnq* is the natural logarithm of the firm's Tobin's Q. *lnq(-1)* is the natural logarithm of the Tobin's Q lagged by one year. *ROA* is the return on asset. *ROA(-1)* is the firm's ROA lagged by one year. *ROE is the return on equity. ROE(-1)* is the return on equity lagged by one year. *Insiders(-1)* is the percentage of equity ownership of insiders in the firm lagged by one year. *Family(-1)* is the percentage of equity ownership by the founding family or family members lagged by one year. *SWF(-1)* is the percentage of equity ownership by sovereign wealth funds lagged by one year. *InsensitiveFIs(-1)* is the total percentage of equity ownership by pressure-resistant financial institutions lagged by one year. *Changeblk(-1)* is the change in the blockhoding size of the largest blockholder to the total blockholding size lagged by one year. *Directorblk(-1)* is the proportion of directors who are blockholders lagged by one year. *lnageplus1(-1)* is the natural logarithm of the firm's age plus 1 lagged by one year. *Lnsize(-1)* is the natural logarithm of the firm's book value of total assets lagged by one year. *Leverage(-1)* is the ratio of the firm's total debt to its total assets lagged by one year. *CapexTA(-1)* is the ratio of the capital expenditure to the total asset of the firm lagged by one year.

Insider blockholdings size give a strong negative correlation with the future performance measures by Tobin's Q, ROA and ROE. This seems to suggest that firms with a large presence of insiders are associated with a lower long-term future performance (Tobin's Q), as well as a lower short-term future performance (ROA and ROE). Family blockholdings size negatively correlates significantly with the Tobin's Q, but no significant correlations are found between ROA or ROE. This seems to suggest that firms with a large family presence are associated with lower long-term future performance. SWF blockholdings size positively correlates significantly with the Tobin's Q, ROA and ROE. Thus, firms with a large presence of SWF equity holdings tend to have better long-term future performance as well as short-term future performance. The blockholdings of pressure-resistant financial institutions are significantly correlated with Tobin's Q, but do not exhibit any significant correlation with ROA and ROE. Thus, firms invested by pressure-resistant institutions tend to have better long-term future performance.

In terms of blockholder engagement, the proportion of directors who are also blockholders have a very significant negative correlation with Tobin's Q, ROA and ROE. Thus, firms with a larger presence of directors who are also blockholders tend to have lower long-term future performance, as well as lower short-term performance.

In terms of the firm-specific characteristics, firm size has a positive and significant correlation with Tobin's Q at the 1% level. This may suggest that larger firms tend to have better long-term future performance. No significant correlation is found between the firm age and firm future performance. The leverage of the firm has a negative correlation with the firm future performance, but this is only significant at the 5% level and 1% level with ROA and ROE respectively. This may suggest firms with higher leverage tend to have lower short-term future performance. The size of the capital expenditure relative to the total assets of the firm has a positive and very significant correlation with Tobin's Q and ROE at the 1% level. This seems to suggest that firms with larger capital expenditure tend to have better long-term future performance as well as short-term future performance.

One of the checks for potential collinearity between explanatory variables in the regression model is the size of the correlation coefficients between the explanatory variables. Though there is no specific cut-off, Bedeian (2014) suggested that if the absolute value of the correlation coefficient between two explanatory variables was not more than 0.7 (suggesting not more than 50% shared variance), collinearity was unlikely an issue. The highest and lowest correlation coefficients between the explanatory variables are 0.46 and -0.52 respectively. Thus, as all the correlation coefficients between explanatory variables are between -0.70 and +0.70, multi-collinearity issue is not likely in our estimations for the regression analyses.

To allay any residual concerns about the occurrence of multi-collinearity among the independent variables, an OLS regression is run with each of the performance variables and the possible independent variables. Subsequently, the VIFs are calculated with STATA. As can be seen from Panel B in Table 5.8, the highest variance inflation factor score is 2.10, which is well below the commonly used threshold value of 10 (e.g. Freund 2006; Gujarati and Porte, 2009). Thus, there is no indication of multi-collinearity amongst the independent variables.

Table 5.8: Variance Inflation Factors

Panel A: Dependent Variable lnq	VIF	1/VIF
Insiders(-1)	2.09	0.48
SWF(-1)	1.91	0.52
Directorblk(-1)	1.87	0.53
Lnsize(-1)	1.72	0.58
Family(-1)	1.62	0.62
Lnq(-1)	1.21	0.82
Lnageplus(-1)	1.14	0.88
InsensitiveFIs(-1)	1.13	0.89
Leverage(-1)	1.09	0.92
CapexTA(-1)	1.06	0.94
Changeblk(-1)	1.05	0.95
Panel B: Dependent Variable ROE	**VIF**	**1/VIF**
Insiders(-1)	2.10	0.48
SWF(-1)	1.88	0.53
Directorblk(-1)	1.87	0.53
Lnsize(-1)	1.73	0.57
Family(-1)	1.63	0.61
Lnageplus(-1)	1.13	0.88
ROE(-1)	1.12	0.89
InsensitiveFIs(-1)	1.12	0.89
Leverage(-1)	1.11	0.90
CapexTA(-1)	1.06	0.95
Changeblk(-1)	1.05	0.95
Panel C: Dependent Variable: ROA	**VIF**	**1/VIF**
Insiders(-1)	2.07	0.48
SWF(-1)	1.82	0.55
Directorblk(-1)	1.85	0.54
Lnsize(-1)	1.72	0.58
Family(-1)	1.62	0.62
Lnageplus(-1)	1.13	0.89
ROA(-1)	1.01	0.99
InsensitiveFIs(-1)	1.12	0.89
Leverage(-1)	1.09	0.92
CapexTA(-1)	1.05	0.95
Changeblk(-1)	1.05	0.95

5.4 Multivariate Analysis

Multivariate analysis is the method of analysis that employs multivariate regression in instances where the dependent variable is hypothesized to be dependent on more than one independent variable. By maintaining the influence of the other factors' constant, multivariate regression allows the researcher to isolate the contribution of each independent variable to explain variance in the dependent variable (Gujarati and Porter 2009). To ensure the validity of the results and conclusions derived from the analysis, multiple regression analysis relies on a set of assumptions about the variables employed in this Study. When these assumptions are not satisfied, the findings may be unreliable. These assumptions have been discussed in Section 4.6.1.

5.4.1 Validity of the Dynamic Panel System GMM Estimator

In the presence of the dynamic structure in Equation (6) in Sub-Section 4.6.5, the OLS estimations will be upward biased and inconsistent because of the correlation between the lagged dependent variables and the firm-specific fixed effects (Nickell 1981). In contrast, the traditional fixed-effects (within-group) estimations will be downward biased and inconsistent. To produce consistent and unbiased estimates (on the premise that unobserved heterogeneity exists but is constant or time-invariant), this Study used a dynamic GMM panel estimator to evaluate the relationship between blockholder related variables and performance. A dynamic relationship is assumed between blockholder related variables and performance based on the arguments presented in Sub-Section 4.6.5. Specifically, this Study used the xtabond2 dynamic panel estimator in Stata (Roodman 2009) and adapted Wintoki, Linck, and Netter's (2012) method for modelling the relationship between ownership structure and company performance.

To avoid any possible bias caused by time-invariant unobserved heterogeneity, the GMM method first converts the equation into a first-differenced model. However, first-differencing introduces another problem as the first lagged differences of the dependent variable are now correlated with

the first lagged differences of the residuals in the differenced model. Thus, the first lagged difference of the dependent variable needs to be instrumented with the second lags, or higher lags of the dependent variable, either differenced or in levels. Furthermore, GMM use lagged values of the independent variables as instruments for the contemporaneous endogenous independent variables. However, Arellano and Bover (1995) suggested that level variables may be poor instruments for first-differenced equations. Furthermore, first-difference may amplify the effect of measurement errors on the dependent variables (Griliches and Hausman 1986). To address these flaws and enhance the GMM estimator, Arellano and Bover (1995) and Blundell and Bond (1998) advocated including the equations in levels in the estimation procedure. The lagged first-differenced variables are used as instruments for the equations in levels in a 'stacked' system of equations that contains equations in both levels and differences, yielding a system GMM estimator. An important assumption to deal with the unobserved heterogeneity in the equation in levels is that the governance and control variables may be associated with the unobserved effects, but the correlation should be consistent across time. This is a plausible assumption over a reasonably short time period if the unobserved influences proxy for characteristics such as unobserved director skill and management productivity. Thus, the system GMM estimator can generate efficient estimates while accounting for time-invariant unobserved heterogeneity, simultaneity, and the dynamic relation between current values of the independent variables and previous values of the dependent variables.

A Hansen test of over-identification is used to assess the validity of the instruments in order to ensure that the dynamic model is effectively dealing with endogeneity. Because the system GMM estimator employs several lags as instruments, the system is over-identified. Under the null hypothesis of the instruments' validity, the Hansen test produces a J-statistic that is distributed chi-squared. As a result, failing to reject the null hypothesis lends credence to the model. A second-order serial correlation test is used in the second test. If the model's specification assumptions are correct, the residuals in first differences AR(1) should be correlated, but there should be no serial correlation in second differences AR(2). As a result, in the Arellano-Bond test,

AR(2) should be insignificant while AR(1) should be significant in order to validate the hypothesis. In addition to the Arellano-Bond and Hansen tests, Stata's xtabond2 command offers difference-in-Hansen tests of exogeneity to subsets of system GMM-type instrumental variables and standard instruments. The difference-in-Hansen tests of exogeneity of instrument subsets examine the validity of the system GMM-type instrumental variables and standard instruments used in the model, including:

i. All GMM instruments for levels equation as a group

ii. GMM instruments for lagged dependent variable for levels equation

iii. GMM instruments for lagged dependent variable for first-differenced equation

iv. GMM instruments for blockholder related variables such as the equity holdings of insiders, family, SWFs, pressure-resistant institutional investors, change in the blockholding size of the largest blockholder to the total blockholding size and proportion of blockholders in the board

v. GMM instruments of control variables namely firm size, leverage and capital expenditure to total assets, and

vi. Standard instruments for levels equation including the year dummies from 2006 to 2016 and firm age.

5.4.2 Lags of performance needed

According to Wintoki, Linck and Netter (2012), the main problem is whether the dynamic model has enough lags to account for the dynamic features of the empirical relationship. Insights from the theoretical work by Raheja (2005) and Harris and Raviv (2008) suggest that the firm's information environment, earnings potential and opportunity cost of outside directors are all directly affected by prior performance. To this extent, these factors may affect the blockholder composition as proposed in this Study. In addition, Wintoki, Linck and Netter (2012) found empirical evidence that some firm characteristics, such as firm size and market-to-book ratio, are themselves related to past

performance. Therefore, sufficient lags of the dependent variable (performance) are needed to capture all information from the past. According to Wintoki, Linck and Netter (2012), sufficient lags of performance will ensure dynamic completeness and address the potential issue of omitted variable bias. Failure to capture all impacts from the past on the present may indicate that the model is incorrectly defined, since there may be an omitted variable bias.

Following in the steps of Wintoki, Linck and Netter (2012) and Nguyen, Locke and Reddy (2014), this Study empirically tested the required number of lags of the dependent variable for the dynamic regression model by estimating an OLS regression of current performance on four lags of prior performance. Results of the regression in Table 5.9 show that the coefficients up to the third lags of Tobin's Q, ROA and ROE were significant at the 1% level, but the fourth lag was not significant at any conventional level. Thus, the results suggest that including three lags of performance is sufficient to capture the dynamic relationship for the firm characteristics and the performance measures.

The general dynamic GMM model with 3 lags of firm performance is as follows:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta X_{it-1} + \gamma_k Z_{it-1} + n_i + \epsilon_{it} \dots\dots Eq(5.1)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- X_{it-1} represent blockholder related variables over the time period t-1
- Z_{it-1} represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

This configuration assures that independent factors such as ownership variables are monitored first, and firm performance is tracked later. As a result, it is improbable that the one-year forward performance measurements will cause the prior-year ownership measures. Overall, the temporal lag between the dependent variable and the set of independent variables and control

variables alleviates some of the concerns regarding reverse causation, as in the works of Benamraoui et al. (2019) and Harford, Kecskés and Mansi (2018).

Table 5.9 OLS Regression of Lags of Firm Performance

Dependent variable	lnq	ROA	ROE
Performance(-1)	0.832***	0.419***	0.443***
	(17.77)	(7.757)	(8.174)
Performance(-2)	0.00776	0.140***	0.140***
	(0.184)	(2.756)	(2.739)
Performance(-3)	0.138***	0.168***	0.143***
	(3.249)	(3.113)	(2.730)
Performance(-4)	-0.00429	0.0690	0.0226
	(-0.203)	(1.463)	(0.573)
Age(-1)	-0.00905	0.0575	0.0655
	(-0.617)	(0.213)	(0.156)
Size(-1)	-0.00194	-0.0550	0.111
	(-0.376)	(-0.614)	(0.770)
Lev(-1)	0.0416	-0.832	-2.965
	(0.556)	(-0.592)	(-1.315)
CapexTA(-1)	-0.292*	2.534	6.202
	(-1.779)	(0.632)	(0.914)
R-squared	0.864	0.523	0.528
Observations	679	608	676

*** p<0.01, ** p<0.05, * p<0.1

T-statistics are reported in parenthesis. All t-statistics are based on robust, firm-clustered standard errors.

Notes: *Performance(-1)* to *Performance(-4)* measures the lagged performance by one year to four years. *Age(-1)* is the natural logarithm of the firm's age plus 1 lagged by one year. *Size(-1)* is the natural logarithm of the firm's book value of total assets lagged by one year. *Lev(-1)* is the ratio of the firm's total debt to its total assets lagged by one year. *CapexTA(-1)* is the ratio of the capital expenditure to the total asset of the firm lagged by one year. Year dummies are included in all specifications.

5.4.3 Models and Regression Results

This Study developed several models to investigate the relationship between blockholder related variables and firm performance to validate the hypotheses discussed in Section 3.7. All the regression models used the user-written command xtabond2 by David Roodman in Stata (Roodman 2009). An advantage of using the xtabond2 over the other official commands in Stata, is that the post-estimation commands for the Hansen test, Arellano-Bond test and the difference-in-Hansen tests of exogeneity of instrument subsets are provided automatically after the regression results.

5.4.3.1 Multivariate Analysis: Impact of Insiders

Hypothesis 1a predicted that the blockholdings of insiders would have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting ROA and ROE. To test Hypothesis 1a, this Study developed the following model with the squared and cubed terms of the insider equity holdings to capture the relationship:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 insider_{it-1} + \beta_2 insider_{it-2}^2 + \beta_3 insider_{it-3}^3 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(5.2)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $insider_{it-1}$ represent insider equity holdings over the time period t-1
- $insider_{it-1}^2$ represent insider equity holdings squared over the time period t-1
- $insider_{it-1}^3$ represent insider equity holdings cubed over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.10 presents the results from the system GMM estimation of Model 1, Model 2 and Model 3 using the natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). All available lags

from lag 2 of performance (Tobin's Q, ROA and ROE) were employed as GMM-type instruments for the first-differenced equation. The insider blockholdings had to be treated as endogenous variables as indicated by the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, all available lags from lag 2 of the one-year lagged value of insider blockholdings, squared term of the one-year lagged value of insider blockholdings and cubed term of the one-year lagged value of insider blockholdings were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of firm performance, one-year lagged value of insider blockholdings, squared term of the one-year lagged value of insider blockholdings and cubed term of the one-year lagged value of insider blockholdings are employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the insider blockholdings to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and the control variables were treated as exogeneous variables and employed as standard instruments in the equation in levels.

Table 5.10 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.000 for all three models. The AR(2) test yielded a p-value of 0.654, 0.604 and 0.673 respectively for Model 1, Model 2 and Model 3 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.243, 0.295 and 0.359 respectively for Model 1, Model 2 and Model 3 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.10, the difference-in-Hansen tests of exogeneity of instrument subsets which included GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the insider blockholdings, and standard instruments for the control variables and year dummies were also

insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.10 show that the one-year lagged performances were found to be statistically positive at the 1% level of significance for all three models (Model 1: $\beta = 0.554$, $p < 0.01$; Model 2: $\beta = 0.263$, $p < 0.01$; Model 3: $\beta = 0.332$, $p < 0.01$). This suggests that past firm performance has a substantial impact on current firm performance. As a result, prior firm performance should be regarded as an essential factor in order to account for the dynamic character of the corporate governance-firm performance relationship. However, for the insider blockholdings, only a significant cubic relationship is observed for Model 1, but no significant relationship is observed for Models 2 and 3. For Model 1, the lagged value of the insider blockholdings had a negative effect on Tobin's Q ($\beta = -2.588$, $p < 0.1$), the lagged value of the insider blockholdings squared had a positive effect on Tobin's Q ($\beta = 9.232$, $p < 0.1$) and the lagged value of the insider blockholdings cubed had a negative effect on Tobin's Q ($\beta = -7.273$, $p < 0.1$). To calculate the inflection points of a cubic function, it is assumed that all other variables are constant. Thus, the following equation is used:

$$lnq = 2.588 * insiderlag + 9.322 * insiderlag^2 - 7.272 * insiderlag^3. Eq(5.3)$$

The turning points were determined by differentiating lnq with respect to insiderlag, letting d(lnq)/d(insiderlag) = 0 and solving for insiderlag. If $d^2(lnq)/d(insiderlag)^2 > 0$, then the turning point is a minimum. If $d^2(lnq)/d(insiderlag)^2 < 0$, then the turning point is a maximum. The calculation of the turning points for the cubic function of insider blockholdings showed 17.7% (minimum) and 66.9% (maximum).

Figure 5-1 depicts the curvilinear relationship between lnq and the size of insider blockholdings with a 95% confidence interval enveloping the plots. As can be evidenced from Figure 5-1, Tobin's Q initially decreases when the insiders increase their equity holdings to around 17.7% and then the Tobin's Q increases when the insiders increase their equity holdings beyond 17.7%. However, further increases of equity by insiders beyond 66.9% results in a

decrease in Tobin's Q. In addition, based on the mean of insider shareholdings of 29.54% and a standard deviation of 25.75% as given in the descriptive statistics in Section 5.2, it would mean that most frm-years in the dataset surround the first turning point (17.7%) and therefore implying greater significance to the initial negative relation and subsequent positive relation. In contrast, relatively fewer firm-years define the negative relation after the second turning point (66.9%).

As can be seen from Table 5.10, the coefficients for the one-year lagged insider blockholdings, lagged insider blockholdings squared and lagged insider blockholdings cubed for Model 2 and Model 3 were all statistically insignificant. Thus, there is no support for a curvilinear relationship between firm performance and insider blockholdings in these two models.

In conclusion, a cubic function relationship between insider blockholdings and firm performance is supported when firm performance is measured by Tobin's Q, but is not supported when firm performance is measured by ROA or ROE. The turning points for the insider blockholdings showed 17.7% (minimum) and 66.9% (maximum).

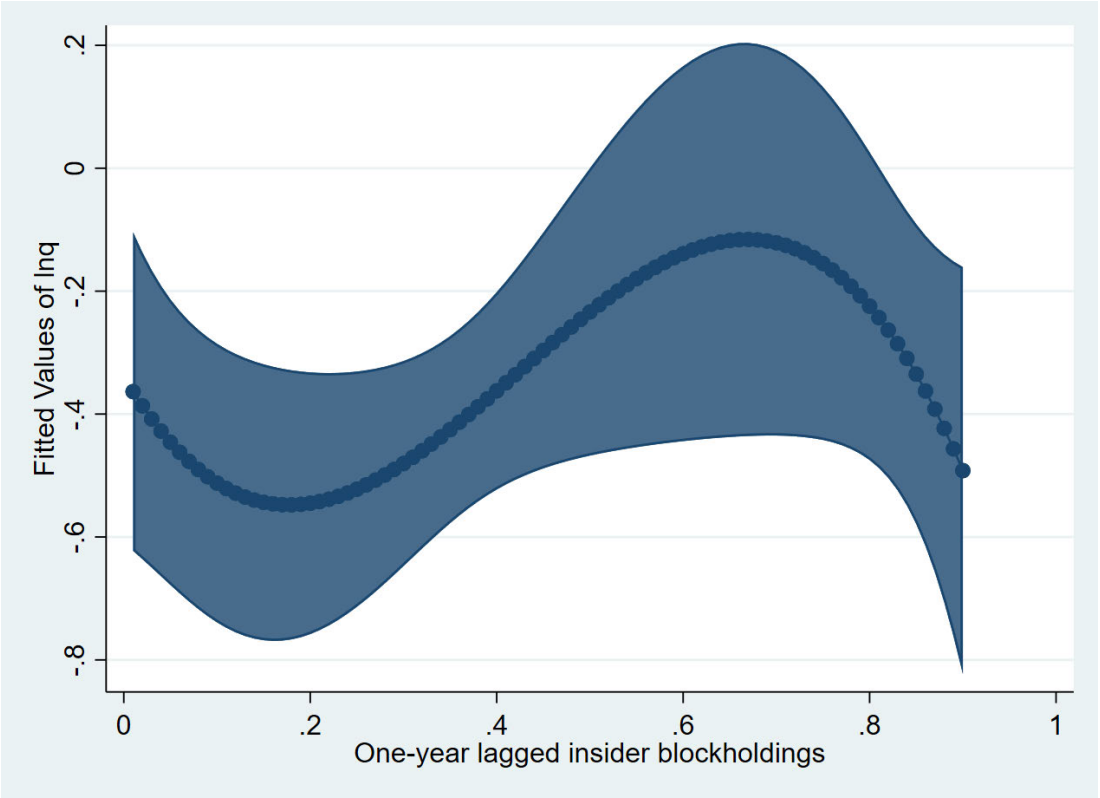

Figure 5-1: Plots of the relationships between Tobin's Q and insiders

Table 5.10 The Effect of Inside Blockholders on Firm Performance

Dependent variable	Model 1 lnq	Model 2 ROA	Model 3 ROE
Performance(t-1)	0.554***	0.263***	0.332***
	(7.995)	(3.696)	(4.426)
Performance(t-2)	0.00608	-0.00519	0.0330
	(0.153)	(-0.0984)	(0.621)
Performance(t-3)	0.0547	0.0566	0.0613
	(1.395)	(1.003)	(1.069)
insider(t-1)	-2.588*	6.077	-33.70
	(-1.726)	(0.264)	(-1.073)
insidersquared(t-1)	9.232*	-6.296	92.91
	(1.922)	(-0.0976)	(1.062)
insidercubed(t-1)	-7.273*	2.443	-65.58
	(-1.895)	(0.0491)	(-1.004)
Age(t-1)	-0.0299	1.985	0.443
	(-0.617)	(1.054)	(0.545)
Size(t-1)	0.0326	-2.496**	-0.153
	(1.157)	(-1.975)	(-0.299)
Lev(t-1)	-0.154	4.677	-7.376*
	(-0.797)	(0.961)	(-1.780)
CapexTA(t-1)	0.147	10.88**	14.75**
	(0.434)	(2.358)	(2.041)
Constant	-0.843	46.11**	11.32
	(-1.285)	(1.989)	(0.905)
Serial correlation (p value)			
AR(1)	0.000	0.000	0.000
AR(2)	0.654	0.604	0.673
Hansen (p value)	0.243	0.295	0.359
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	89	89	89

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. All available lags from lag 2 of performance (Tobin's Q, ROA and ROE), insider(t-1), insidersquared(t-1) and insidercubed(t-1) are employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of firm performance, insider(t-1), insidersquared(t-1) and insidercubed(t-1) were employed as GMM-type instruments for the equation in levels. Year dummies and the control variables were treated as exogenous variables.*

5.4.3.2 Multivariate Analysis: Impact of Family

Hypothesis 1b predicted that the blockholdings of family have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting ROA and ROE. To test hypothesis 1b, this Study developed the following model with the squared and cubed terms of the family equity holdings to capture the relationship:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 family_{it-1} + \beta_2 family_{it-2}^2 + \beta_3 family_{it-3}^3 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (5.4)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $family_{it-1}$ represent family equity holdings over the time period t-1
- $family_{it-1}^2$ represent family equity holdings squared over the time period t-1
- $family_{it-1}^3$ represent family equity holdings cubed over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.11 presents the results from the system GMM estimation of Model 4, Model 5 and Model 6 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). All available lags from lag 2 of performance (Tobin's Q, ROA and ROE) were employed as GMM-type instruments for the first-differenced equation. The family blockholdings had to be treated as endogenous variables as indicated by the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, all available lags from lag 2 of the one-year lagged value of family blockholdings, squared term of the one-year lagged value of family blockholdings and cubed term of the one-year lagged value of family blockholdings were employed as GMM-type instruments for the first-differenced equation. Accordingly, lag 1 of the first differences of firm performance, one-year lagged value of insider blockholdings, squared term of the one-year lagged value of insider blockholdings and cubed term of

the one-year lagged value of family blockholdings were employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the family blockholdings to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and the control variables were treated as exogeneous variables and were employed as standard instruments in the equation in differences for Model 4 and Model 5, but were employed as standard instruments in the equation in levels for Model 6.

Table 5.11 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.000 for all three models. The AR(2) test yielded a p-value of 0.934, 0.729 and 0.648 for Model 4, Model 5 and Model 6 respectively, which means that there is no second order serial correlation in the three models. Therefore, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.137, 0.509 and 0.425 for Model 4, Model 5 and Model 6 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.11, the difference-in-Hansen tests of exogeneity of instrument subsets which included GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the family blockholdings, and standard instruments for the control variables and year dummies were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.11 show that the one-year lagged performances were found to be statistically positive at the 1% level of significance for all three models (Model 4: $\beta = 0.440$, $p < 0.01$; Model 5: $\beta = 0.259$, $p < 0.01$; Model 6: $\beta = 0.338$, $p < 0.01$). This suggests that past firm performance has a substantial impact on current firm performance. As a result, prior firm performance should be regarded as an essential factor to account for the dynamic character of the corporate governance-firm performance relationship. For Model 4 the lagged

value of the family blockholdings had a negative effect on Tobin's Q (β = -6.752, p < 0.05), the lagged value of the family blockholdings squared had a positive effect on Tobin's Q (β = 25.92, p < 0.05) and the lagged value of the family blockholdings cubed had negative effect on Tobin's Q (β = -22.13, p < 0.1). Thus, a significant cubic relationship is observed between the family blockholdings and Tobin's Q. To calculate the turning points of a cubic function, it is assumed that all other variables are constant. Thus, the following equation is used:

$$lnq = -6.752 * familylag + 25.92 * familylag^2 - 22.13 * familylag^3 Eq(5.5)$$

The turning points were determined by differentiating lnq with respect to familylag, letting d(lnq)/d(familylag) = 0 and solving for familylag. If $d^2(lnq)/d(familylag)^2 > 0$, then the turning point is a minimum. If $d^2(lnq)/d(familylag)^2 < 0$, then the turning point is a maximum. The calculation of the turning points for the cubic function of family blockholdings showed 16.5% (minimum) and 61.6% (maximum). Figure 5-2 depicts the curvilinear relationship between lnq and the size of family blockholdings with a 95% confidence interval enveloping the plots. A much wider confidence interval of the predicted values of lnq is observed for insider blockholdings beyond 60% due to the smaller sample size.

As can be evidenced from Figure 5-2, Tobin's Q initially decreased when the family increased their equity holdings to around 16.5% and then the Tobin's Q increased when the insiders increased their equity holdings beyond 16.5%. However, further increases of equity by insiders beyond 61.6% resulted in a decrease in Tobin's Q. In addition, based on the mean of family shareholdings of 15.68% and a standard deviation of 22.86% as given in the descriptive statistics in Section 5.2, it would mean that most frm-years in the dataset surround the first turning point (16.5%) and therefore implying greater significance to the initial negative relation and subsequent positive relation. In contrast, relatively fewer firm-years define the negative relation after the second turning point (61.6%).

The coefficient of the squared one-year lagged value of the family blockholdings was significant and positively related to ROA (β = 291.0, p < 0.1) in Model 5. However, a negative but statistically insignificant relationship is observed for the one-year lagged value of the family blockholdings (β = -73.57) and the cubed one-year lagged value of the family blockholdings (β = -365.9) with ROA. Non-significant negative relationship is observed for the one-year lagged family blockholdings (β = -76.65, p > 0.1) and the one-year lagged family blockholdings cubed (β = -365.9, p > 0.1) with ROE in Model 6, as well as a non-significant positive relationship for the one-year lagged family holdings squared (β = 306.7, p > 0.1). A point worth noting is that similar cubic relationships were observed in all three models, but the statistical significance were diminished in Model 5 and Model 6 with ROA and ROE respectively.

In conclusion, cubic function relationship between family blockholdings and firm performance is supported when firm performance is measured by Tobin's Q, but is not supported when firm performance is measured by ROA and ROE. The turning points for the family blockholdings showed 16.5% (minimum) and 61.6% (maximum).

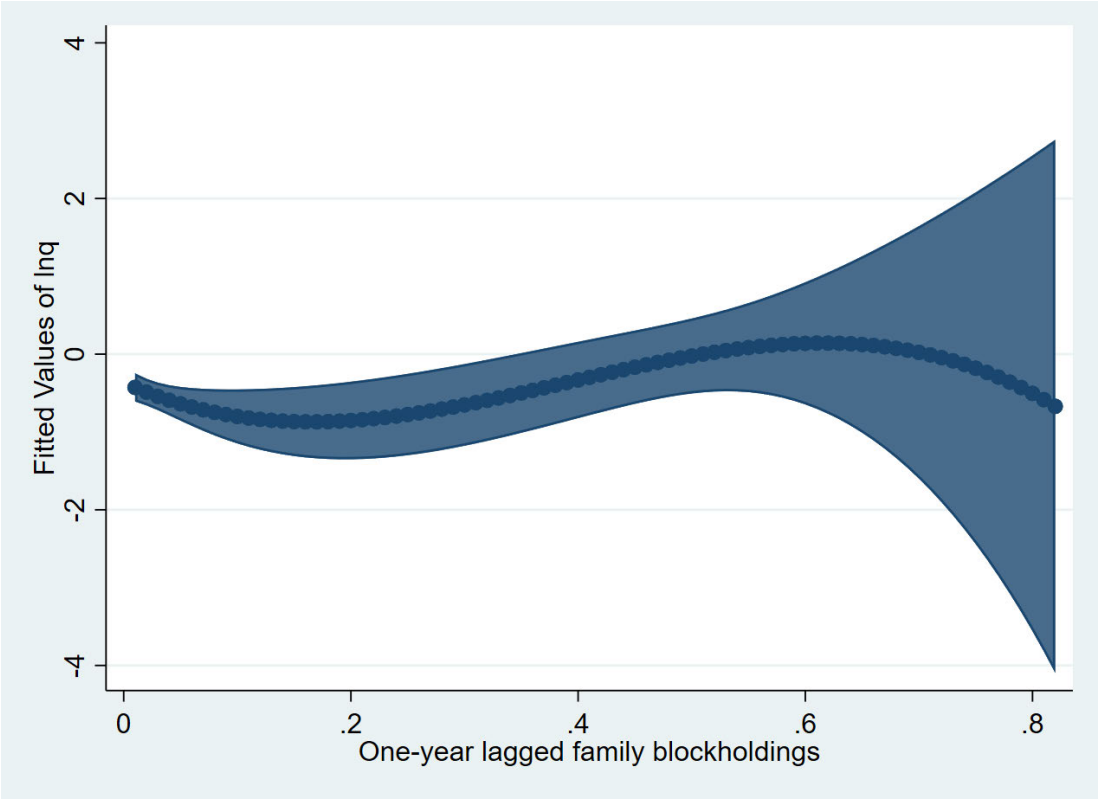

Figure 5-2: Plots of the relationships between Tobin's Q and family

Table 5.11 The Effect of Family Blockholders on Firm Performance

Dependent variable	Model 4 lnq	Model 5 ROA	Model 6 ROE
Performance(t-1)	0.440***	0.259***	0.338***
	(6.132)	(3.645)	(5.378)
Performance(t-2)	-0.0315	-0.00185	0.0247
	(-0.655)	(-0.0347)	(0.360)
Performance(t-3)	0.0581	0.0390	0.0590
	(1.543)	(0.793)	(0.929)
family(t-1)	-6.752**	-73.57	-76.65
	(-2.231)	(-1.619)	(-1.212)
familysquared(t-1)	25.92**	291.0*	306.7
	(2.445)	(1.704)	(0.950)
familycubed(t-1)	-22.13*	-298.3	-365.9
	(-1.918)	(-1.532)	(-0.853)
Age(t-1)	0.239	-0.648	0.238
	(1.115)	(-0.311)	(0.197)
Size(t-1)	-0.0629	-2.396**	-0.311
	(-0.765)	(-2.276)	(-0.555)
Lev(t-1)	0.0305	3.782	-2.341
	(0.151)	(0.889)	(-0.302)
CapexTA(t-1)	0.0106	11.22**	23.95
	(0.0353)	(2.334)	(1.607)
Constant	0.178	55.31***	15.50
	(0.119)	(2.613)	(1.198)
Serial correlation (p value)			
AR(1)	0.000	0.000	0.000
AR(2)	0.934	0.729	0.648
Hansen (p value)	0.137	0.509	0.425
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	89	89	89

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. All available lags from lag 2 of performance (Tobin's Q, ROA and ROE), family(t-1), familysquared(t-1) and familycubed(t-1) were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of firm performance, family(t-1), familysquared(t-1) and familycubed(t-1) were employed as GMM-type instruments for the equation in levels. Year dummies and the control variables were treated as exogenous variables.*

5.4.3.3 Multivariate Analysis: Impact of Sovereign Wealth Funds

Hypothesis 1c predicted that the size of the equity stake of SWFs in the firm would have a positive relationship on firm performance at lower levels of ownership due to stronger monitoring, but would have a negative relationship on firm performance at higher levels of ownership due to the pursuit of non-financial objectives. To test Hypothesis 1c, this Study developed the following model with the squared terms of the SWF equity holdings to capture the relationship:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 SWF_{it-1} + \beta_2 SWF_{it-2}^2 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(5.6)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- SWF_{it-1} represent SWF equity holdings over the time period t-1
- SWF_{it-1}^2 represent SWF equity holdings squared over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.12 presents the results from the system GMM estimation of Model 7, Model 8 and Model 9 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). All available lags from lag 3 of lnq, but available lags from lag 2 of ROA and ROE, were employed as GMM-type instruments for the first-differenced equation. Lag 2 of lnq was not employed as GMM-type instrument for the first-differenced equation as it affected the validity of the instrument subsets in the difference-in-Hansen tests and thus could be endogenous. The SWF blockholdings had to be treated as endogenous variables as indicated by the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, all available lags from lag 2 of one-year lagged value of SWF blockholdings and squared term of the one-year lagged value of SWF blockholdings were employed as GMM-type instruments

for the first-differenced equation. Accordingly, lag 2 of the first differences of lnq, but lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Similarly, lag 1 of the first differences of lnq was not employed in the equation for levels as it affected the validity of the instrument subsets in the difference-in-Hansen tests and thus could be endogenous. The collapsed suboption was employed in the xtabond2 command for the SWF blockholdings to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and the control variables were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.12 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.00 for all three models. The AR(2) test yielded a p-value of 0.60, 0.39 and 0.49 for Model 7, Model 8 and Model 9 respectively, which means that there is no second order serial correlation in the three models. Therefore, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.20, 0.64 and 0.52 for Model 7, Model 8 and Model 9 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.12, the difference-in-Hansen tests of exogeneity of instrument subsets which included GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the SWF blockholdings, and standard instruments for the control variables and year dummies were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.12 show that the one-year lagged performances were found to be statistically positive at the 1% level of significance for all three models (Model 7: $\beta = 0.729$, $p < 0.01$; Model 8: $\beta = 0.234$, $p < 0.01$; Model 9: $\beta = 0.348$, $p < 0.01$). As a result, previous firm performance has a substantial

impact on current firm performance and should be included as an essential variable to account for the dynamic character of the corporate governance-firm performance relationship. However, there were no significant relationships on firm performances (Tobin's Q, ROA and ROE) for the one-year lagged value of the SWF blockholdings as well as the squared term of the one-year lagged value of the SWF blockholdings in all the three models.

In conclusion, no significant relationship is observed between SWF blockholdings and firm performance when firm performance is measured by Tobin's Q, ROA or ROE.

Table 5.12 The Effect of SWF Blockholders on Firm Performance

Dependent variable	Model 7 lnq	Model 8 ROA	Model 9 ROE
Performance(t-1)	0.729***	0.234***	0.348***
	(6.393)	(3.658)	(5.954)
Performance(t-2)	0.0424	-0.0489	0.0192
	(0.524)	(-0.851)	(0.393)
Performance(t-3)	0.0749	0.0397	0.0532
	(1.462)	(0.850)	(1.005)
SWF(t-1)	1.006	10.69	2.758
	(0.493)	(0.377)	(0.0691)
SWFsquared(t-1)	-0.283	0.118	20.05
	(-0.0711)	(0.00191)	(0.232)
Age(t-1)	0.0303	0.371	0.818
	(0.790)	(0.592)	(0.911)
Size(t-1)	-0.0332	-0.613	-0.464
	(-1.236)	(-1.642)	(-0.978)
Lev(t-1)	0.0651	-2.018	-4.107
	(0.429)	(-0.896)	(-1.275)
CapexTA(t-1)	-0.316	6.494	17.35**
	(-1.116)	(1.644)	(2.101)
Constant	0.325	13.64*	13.27
	(0.689)	(1.859)	(1.595)
Serial correlation (p value)			
AR(1)	0.001	0.000	0.000
AR(2)	0.600	0.390	0.492
Hansen (p value)	0.199	0.638	0.518
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	73	80	80

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. All available lags from lag 3 of Tobin's Q but available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of SWF(t-1) and SWFsquared(t-1) were employed as GMM-type instruments for the first-differenced equation. Lag 2 of the first differences of Tobin's Q but lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and the control variables were treated as exogenous variables*.

5.4.3.4 Multivariate Analysis: Impact of Pressure-Resistant Institutions

Hypothesis 1d predicted that the blockholdings of pressure-resistant institutional investors would have a concave (inverted-U) relation with firm performance. To test Hypothesis 1d, this Study developed the following model with the squared terms of the InsensitiveFI equity holdings to capture the relationship:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 InsensitiveFI_{it-1} + \beta_2 InsensitiveFI_{it-2}^2 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(5.7)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $InsenstiveFI_{it-1}$ represent pressure-resistant institutional equity holdings over the time period t-1
- $InsensitiveFI_{it-1}^2$ represent pressure-resistant institutional equity holdings squared over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.13 presents the results from the system GMM estimation of Model 10, Model 11 and Model 12 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). All available lags from lag 3 of lnq but available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 2 of lnq was not employed as GMM-type instrument for the first-differenced equation as it affected the validity of the instrument subsets in the difference-in-Hansen tests and thus could be endogenous. The pressure-resistant institutional blockholdings were treated as endogenous variables as they affected the validity of the instrument subset in the difference-in-Hansen test. Thus, all available lags from lag 2 of one-year lagged value of pressure-resistant institutional blockholdings and squared term of the one-year lagged value of pressure-resistant institutional blockholdings were employed as GMM-type

instruments for the first-differenced equation. Accordingly, lag 2 of the first differences of lnq but lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Similarly, lag 1 of the first differences of lnq was not employed in the equation for levels as it affected the validity of the instrument subsets in the difference-in-Hansen tests and thus could be endogenous. The collapsed suboption was employed in the xtabond2 command for the pressure-resistant blockholdings to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and the control variables were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.13 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.00 for all three models. The AR(2) test yielded a p-value of 0.43, 0.43 and 0.72 for Model 10, Model 11 and Model 12 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.15, 0.75 and 0.32 for Model 10, Model 11 and Model 12 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.13, the difference-in-Hansen tests of exogeneity of instrument subsets which included GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the pressure-resistant blockholdings, and standard instruments for the control variables and year dummies were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.13 show that the one-year lagged performances were found to be statistically positive at the 1% level of significance for all three models (Model 10: $\beta = 0.514$, $p < 0.01$; Model 11: $\beta = 0.215$, $p < 0.05$; Model 12: $\beta = 0.343$, $p < 0.01$). This suggests that previous firm performance has a

substantial impact on current firm performance and past performance should be regarded as an essential component in order to account for the dynamic character of the corporate governance-firm performance relationship. However, there were no significant relationships for the one-year lagged value of the pressure-resistant institutional blockholdings as well as the squared term of the one-year lagged value of the pressure-resistant institutional blockholdings with Tobin's Q (Model 10) and ROE (Model 12). However, in Model 11 a significant negative relation is observed between the one-year lagged value of the pressure-resistant institutional blockholdings and ROA (β = -80.08, $p < 0.05$), but a statistically insignificant positive relation is observed between the squared term of the one-year lagged value of the pressure-resistant institutional blockholdings with ROA (β = 302.1, $p > 0.1$). Thus, a curvilinear relationship is observed between the pressure-resistant institutional blockholdings and ROA. To calculate the turning points of a quadratic function, it is assumed that all other variables are constant. Thus, the following equation is used:

$$ROA = -80.08 * InsensitiveFIlag + 302.1 * InsensitiveFIlag^2 \ldots\ldots Eq(5.8)$$

The turning points were determined by differentiating ROA with respect to InsensitiveFIlag, letting d(ROA)/d(InsensitiveFIlag) = 0 and solving for InsensitiveFIlag. If $d^2(ROA)/d(InsensitiveFIlag)^2 > 0$, then the turning point is a minimum. If $d^2(ROA)/d(InsensitiveFIlag)^2 < 0$, then the turning point is a maximum. The calculation of the turning points for the quadratic function of InsensitiveFI blockholdings showed 13.3% (minimum). Contrary to Hypothesis 1d, this suggests that initially as pressure-resistant institutions increase their equity holdings to around 13.3%, the ROA declines. Subsequently, the ROA increases with further increases in equity holdings beyond the 13.3% level by pressure-resistant institutions. Figure 5-3 illustrates the relationship between ROA and the size of pressure resistant institutional blockholdings with a 95% confidence interval enveloping the plots. A wider confidence interval of the predicted values of ROA is observed for larger pressure resistant institutional blockholdings due to the smaller sample size.

In conclusion, a U-shaped relationship is partially supported between pressure-resistant institutional blockholdings and firm performance when firm performance is measured by ROA, but no significant relationship is observed when firm performance is measured by Tobin's Q or ROE. The turning point for the InsensitiveFI blockholdings showed 13.3% (minimum).

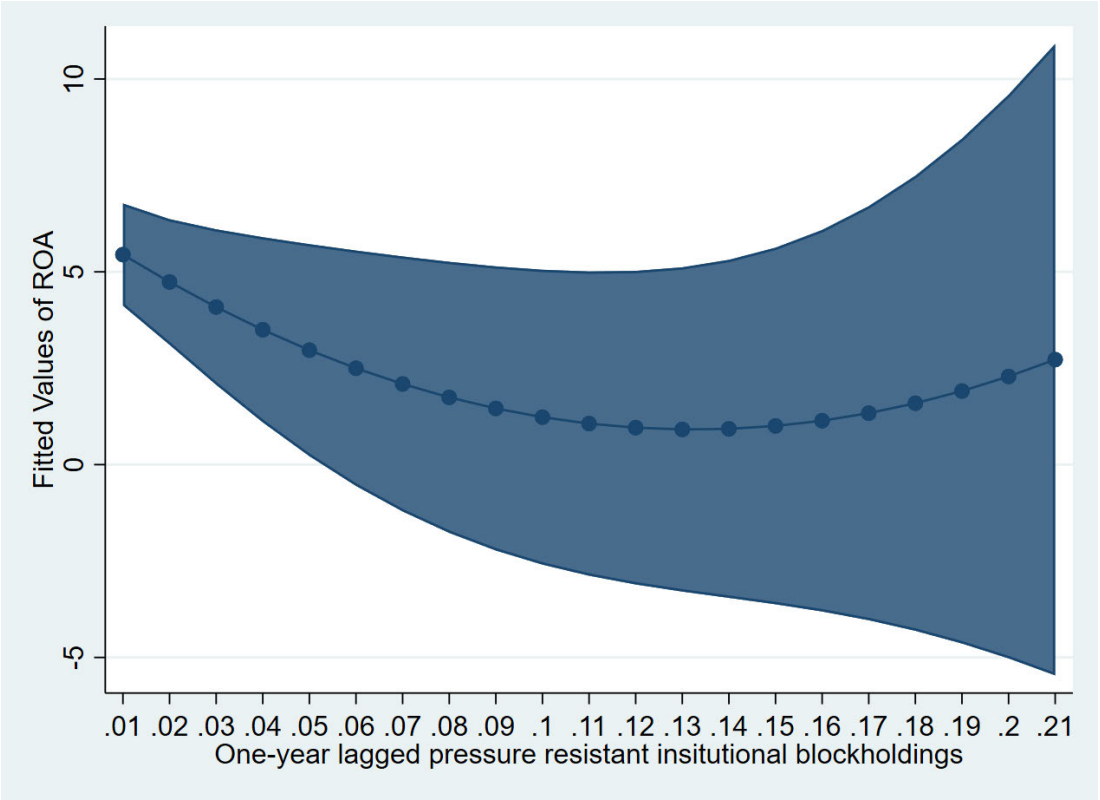

Figure 5-3: Plots of the relationships between ROA and pressure resistant institutions

Table 5.13 The Effect of Insensitive FI Blockholders on Firm Performance

Dependent variable	Model 10 lnq	Model 11 ROA	Model 12 ROE
Performance(t-1)	0.514***	0.215**	0.343***
	(4.706)	(2.550)	(4.865)
Performance(t-2)	0.115	-0.0304	0.0389
	(1.390)	(-0.591)	(0.817)
Performance(t-3)	0.0897*	0.0573	0.0686
	(1.817)	(1.057)	(1.127)
InsensitiveFI(t-1)	1.526	-80.08**	-105.1
	(0.627)	(-2.084)	(-1.212)
InsensitiveFIsquared(t-1)	-9.369	302.1	620.2
	(-0.653)	(1.394)	(1.310)
age(t-1)	0.0493	-0.0245	-2.866
	(0.353)	(-0.0376)	(-0.949)
size(t-1)	-0.00141	-0.00857	-4.236
	(-0.0328)	(-0.0330)	(-1.603)
lev(t-1)	-0.0704	-2.102	-0.861
	(-0.283)	(-0.808)	(-0.163)
CapexTA(t-1)	-0.214	7.660	23.21***
	(-0.750)	(1.191)	(2.647)
Constant	-0.335	3.925	101.4*
	(-0.357)	(0.747)	(1.915)
Serial correlation (p value)			
AR(1)	0.004	0.000	0.000
AR(2)	0.429	0.426	0.722
Hansen (p value)	0.153	0.748	0.320
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	73	80	80

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but were unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. All available lags from lag 3 of Tobin's Q but available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of InsensitiveFI(t-1) and InsensitiveFIsquared(t-1) were employed as GMM-type instruments for the first-differenced equation. Lag 2 of the first differences of Tobin's Q but lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and the control variables were treated as exogenous variables.*

5.4.3.5 Multivariate Analysis: Impact of Non-Family Blockholders on Family Firms

Hypothesis 2a predicted that when the family owners are the dominant shareholders in the firm, increases in the shareholdings by non-family owners in the firm would have a negative relationship on firm performance for lower levels of ownership due to greater contestability, but would have a positive relationship for higher levels of ownership due to a more balanced voting power among family and non-family blockholders. This Study developed the following model to capture the moderating effect of the size of the blockholdings of non-family owners in a dominant family firm:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 familydom_{it-1} + \beta_2 nonfamily_{it-1} + \beta_3 familydom_{it-1} \times nonfamily_{it-1} + \beta_4 nonfamily_{it-1}^2 + \beta_5 familydom_{it-1} \times nonfamily_{it-1}^2 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots . Eq(5.9)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $familydom_{it-1}$ is a dummy variable which is equal to 1 for a family dominant firm and zero otherwise over the time period t-1
- $nonfamily_{it-1}$ represent nonfamily equity holdings over the time period t-1
- $familydom_{it-1}$ x $nonfamily_{it-1}$ represent the moderating effect of nonfamily equity holdings in a dominant family firm over the time period t-1
- $nonfamily_{it-1}^2$ represent nonfamily equity holdings squared over the time period t-1
- $familydom_{it-1}$ x $nonfamily_{it-1}^2$ represent the moderating effect of nonfamily equity holdings squared in a dominant family firm over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.14 presents the results from the system GMM estimation of Model 13, Model 14 and Model 15 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). Firm size, leverage and capital expenditure to total asset are treated as endogenous in

the model specification as these variables affected the validity of the instruments in the Hansen test or the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, lag 2 to lag 6 of lnsizelag, leveragelag and CapexTAlag were employed as GMM-type instruments for the first-differenced equation. In addition, the non-family equity holdings were treated as endogenous variables as they affected the validity of the instrument subset in the difference-in-Hansen test. Thus, all available lags from lag 2 of nonfamilylag and nonfamilylagsquared were employed as GMM-type instruments for the first-differenced equation. As lag 2 and lag 3 of lnq affected the validity of the instrument subsets in the difference-in-Hansen tests of exogeneity, all available lags from lag 4 of lnq are employed as GMM-type instruments for the first-differenced equation. However, all available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. In accordance, lag 1 of the first differences of lnsizelag, leveragelag, CapexTAlag, nonfamilylag and nonfamilylagsquared were employed as GMM-type instruments for the equation in levels. Lag 3 of the first differences of lnq was employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the variables lagged ROA, lagged ROE, lnsizelag, leveragelag, CapexTAlag, nonfamilylag and nonfamilylagsquared to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and firm age were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.14 also reports the results of the specification tests—the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.06, 0.00 and 0.00 for Model 13, Model 14 and Model 15 respectively. The AR(2) test yielded a p-value of 0.15, 0.47 and 0.51 for Model 13, Model 14 and Model 15 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test

revealed a J-statistic with a p-value of 0.38, 0.65 and 0.75 for Model 13, Model 14 and Model 15 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.14, the difference-in-Hansen tests of exogeneity of instrument subsets which include GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the nonfamily blockholdings, GMM instruments for the endogenous control variables (firm size, firm leverage and capital expenditure to total asset), and standard instruments for year dummies and firm age were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.14 show that in Model 13 the coefficients of the one-year lagged Tobin's Q ($\beta = 0.420$, $p < 0.05$) and two-year lagged Tobin's Q ($\beta = 0.264$, $p < 0.05$) were found to be statistically significant positive. This suggests that previous firm performance has a substantial impact on current firm performance and past performance should be regarded as an essential component in order to account for the dynamic character of the corporate governance-firm performance relationship. In addition, the coefficients of the one-year lagged value of ROA ($\beta = 0.287$, $p < 0.05$) and ROE ($\beta = 0.319$, $p < 0.05$) are both positive and statistically significant. The coefficient of the three-year lagged value of ROE in Model 15 was also positive and statistically significant ($\beta = 0.0945$, $p < 0.1$).

In Model 13, the coefficients of main effects of the lagged value of nonfamily blockholdings ($\beta = 0.960$, $p > 0.1$) and squared lagged value of nonfamily blockholdings ($\beta = 0.655$, $p > 0.1$) on Tobin's Q were both relatively small and statistically insignificant. The moderating effect of the lagged value of nonfamily blockholdings on Tobin's Q in family firm was significantly negative statistically ($\beta = -9.104$, $p < 0.1$), but the moderating effect of the squared lagged value of nonfamily blockholdings had an insignificant positive relation on Tobin's Q ($\beta = 35.62$, $p > 0.1$). Thus, a curvilinear relationship is not observed on the effect of nonfamily blockholdings on Tobin's Q in a family dominant firm.

In Model 14, insignificant relations were observed for the main and moderating effects of the lagged value and squared lagged value of nonfamily blockholdings on ROA. In Model 15, the coefficients of main effects of the lagged value of nonfamily blockholdings (β = 14.22, p > 0.1) and squared lagged value of nonfamily blockholdings (β = -28.70, p > 0.1) on ROE were both relatively small and statistically insignificant. However, the moderating effect of the lagged value of nonfamily blockholdings on ROE in family firm was negative and statistically significant (β = -529.5, p < 0.1), but the moderating effect of the squared lagged value of nonfamily blockholdings had an insignificant positive relation on ROE (β = 2814, p > 0.1). Thus, a curvilinear relationship is not observed on the moderating effects of nonfamily blockholdings on ROE in a family dominant firm.

In conclusion, Hypothesis 2a is not supported when firm performance is measured by Tobin's Q, ROA and ROE.

Table 5.14 The Effect of Non-Family Blockholders in a Family Firm

Dependent variable	Model 13 lnq	Model 14 ROA	Model 15 ROE
Performance(t-1)	0.420**	0.287**	0.319***
	(2.536)	(2.265)	(3.533)
Performance(t-2)	0.264**	-0.00536	0.0119
	(2.128)	(-0.0625)	(0.238)
Performance(t-3)	0.0651	0.0705	0.0945*
	(1.473)	(1.108)	(1.667)
Familydom(t-1)	0.650	-1.674	6.503
	(1.560)	(-0.121)	(0.190)
Nonfamily(t-1)	0.960	6.263	14.22
	(0.645)	(0.207)	(0.384)
Familydom(t-1) x nonfamily(t-1)	-9.104*	-270.5	-529.5*
	(-1.752)	(-1.188)	(-1.708)
Nonfamilysquared(t-1)	0.655	-14.91	-28.70
	(0.356)	(-0.391)	(-0.601)
Familydom(t-1) x nonfamilysquared(t-1)	35.62	1,561	2,814
	(1.175)	(1.225)	(1.568)
age(t-1)	0.0754	0.727	-0.534
	(0.891)	(0.380)	(-0.237)
size(t-1)	0.0656	0.750	2.920
	(0.717)	(0.620)	(0.586)
lev(t-1)	0.174	-2.459	-20.33
	(0.297)	(-0.184)	(-0.965)
CapexTA(t-1)	1.533**	18.20	33.35
	(2.310)	(1.385)	(0.946)
Constant	-1.906	-10.15	-49.77
	(-1.074)	(-0.512)	(-0.441)
Serial correlation (p value)			
AR(1)	0.059	0.000	0.000
AR(2)	0.149	0.470	0.513
Hansen (p value)	0.381	0.646	0.754
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	80	55	55

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. Lag 2 to lag 6 of size(t-1), lev(t-1) and CapexTA(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of nonfamily(t-1) and nonfamilysquared(t-1) were employed as GMM-type instruments*

for the first-differenced equation. All available lags from lag 4 of lnq but available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of size(t-1), lev(t-1) and CapexTA(t-1), nonfamily(t-1) and nonfamilysquared(t-1) were employed as GMM-type instruments for the equation in levels. Lag 3 of the first differences of lnq was employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and age(t-1) were treated as exogenous variables.

5.4.3.6 Multivariate Analysis: Impact of Non-SWF Blockholders on a SWF dominant firm

Hypothesis 2b predicted that when SWFs are the dominant shareholders in the firm, increases in the shareholdings by non-SWFs in the firm would have a positive relationship on firm performance for lower levels of ownership due to the monitoring effect, but would have a negative relationship on firm performance for higher levels of ownership due to collusion. This Study developed the following model to capture the moderating effect of the size of the non-SWF blockholdings in a dominant SWF firm:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 SWFdom_{it-1} + \beta_2 nonSWF_{it-1} + \beta_3 SWFdom_{it-1} \times nonSWF_{it-1} + \beta_4 nonSWF^2_{it-1} + \beta_5 SWFdom_{it-1} \times nonSWF^2_{it-1} + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots Eq(5.10)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $SWFdom_{it-1}$ is a dummy variable which is equal to 1 for a SWF dominant firm and zero otherwise over the time period t-1
- $nonSWF_{it-1}$ represent non-SWF equity holdings over the time period t-1
- $SWFdom_{it-1}$ x $nonSWF_{it-1}$ represent the moderating effect of non-SWF equity holdings in a dominant SWF firm over the time period t-1
- $nonSWF_{it-1}^2$ represent non-SWF equity holdings squared over the time period t-1
- $SWFdom_{it-1}$ x $nonSWF_{it-1}^2$ represent the moderating effect of non-SWF equity holdings squared in a dominant SWF firm over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.15 presents the results from the system GMM estimation of Model 16, Model 17 and Model 18 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). Firm size, leverage and capital expenditure to total asset are treated as endogenous in the model specification as these variables affected the validity of the

instruments in the Hansen test or the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, lag 2 to lag 6 of lnsizelag, leveragelag and CapexTAlag were employed as GMM-type instruments for the first-differenced equation. More remote lags from lag 2 of nonSWFlag and nonSWFlagsquared were employed as GMM-type instruments for the first-differenced equation in Model 16 and Model 17 as non-SWF blockholdings are endogenous and affected the validity of the instrument subsets in the difference-in-Hansen tests of exogeneity. Similarly, more remote lags from lag 3 of nonSWFlag and nonSWFlagsquared were employed as GMM-type instruments for the first-differenced equation in Model 18 as the recent lags were endogenous as indicated in the difference-in-Hansen tests of exogeneity of instrument subsets. All available lags from lag 2 of lnq, ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of lnsizelag, leveragelag and CapexTAlag were employed as GMM-type instruments for the equation in levels. Accordingly, lag 1 of the first differences of nonSWFlag and nonSWFlagsquared were employed as GMM-type instruments for the equation in levels in Model 16 and Model 17 but lag 2 of the first differences of nonSWFlag and nonSWFlagsquared are employed as GMM-type instruments for the equation in levels in Model 18. Lag 1 of the first differences of lnq, ROA and ROE were employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the variables lagged ROA, lagged ROE, lnsizelag, leveragelag, CapexTAlag, nonSWFlag and nonSWFlagsquared to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and firm age were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.15 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.00 for all three models. The AR(2) test yielded a p-value of 0.97, 0.89 and 0.75 for Model 16, Model 17 and Model 18 respectively, which means that there is no second order serial correlation in

the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.36, 0.59 and 0.63 for Model 16, Model 17 and Model 18 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.15, the difference-in-Hansen tests of exogeneity of instrument subsets which include GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the non-SWF blockholdings, GMM instruments for the endogenous control variables (firm size, firm leverage and capital expenditure to total asset) and standard instruments for year dummies and firm age were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.15 show that the one-year lagged performance was found to be statistically positive at the 1% level of significance for all three models (Model 16: $\beta = 0.498$, $p < 0.01$; Model 2: $\beta = 0.367$, $p < 0.01$; Model 3: $\beta = 0.297$, $p < 0.01$). This suggests that previous firm performance has a substantial impact on current firm performance, and past performance should be regarded as an essential component in order to account for the dynamic character of the corporate governance-firm performance relationship.

In all three models the coefficients for the main effects of the lagged value of non-SWF blockholdings on Tobin's Q ($\beta = 0.551$, $p > 0.1$), ROA ($\beta = 5.262$, $p > 0.1$) and ($\beta = 105.2$, $p > 0.1$) ROE are insignificant. In addition, the coefficients for the main effects of the squared lagged value of non-SWF blockholdings on Tobin's Q ($\beta = 2.110$, $p > 0.1$), ROA ($\beta = -2.050$, $p > 0.1$) and ROE ($\beta = -99.75$, $p > 0.1$) are also insignificant. In Model 16 and Model 17 the moderating effect of the lagged value of non-SWF blockholdings on Tobin's Q ($\beta = 3.855$, $p > 0.1$) and ROA ($\beta = 18.45$, $p > 0.1$) in SWF dominant firms had an insignificant positive relation. An insignificant negative relation is observed for the moderating effect of the squared lagged value of non-SWF blockholdings on Tobin's Q ($\beta = -44.39$, $p > 0.1$) and ROA ($\beta = -247.9$, $p > 0.1$). In Model 18, the signs of the coefficients for the moderating effect of the lagged value of non-SWF blockholdings ($\beta = -194.9$, $p > 0.1$) and the squared lagged

value of nonSWF blockholdings (β =975.4, p > 0.1) on ROE were reversed but also statistically insignificant. Thus, no significant relationships are observed by the non-SWF blockholdings on firm performance in a SWF dominant firm.

Table 5.15 The Effect of Non-SWF Blockholders in a SWF Dominant Firm

Dependent variable	Model 16 lnq	Model 17 ROA	Model 18 ROE
Performance(t-1)	0.498***	0.367***	0.297***
	(5.192)	(3.977)	(3.141)
Performance(t-2)	-0.0273	0.0462	-0.00295
	(-0.496)	(0.458)	(-0.0361)
Performance(t-3)	0.0540	0.0745	0.0677
	(1.408)	(1.250)	(1.237)
SWFdom(t-1)	0.745	5.798	69.03
	(1.106)	(0.427)	(1.457)
NonSWF(t-1)	0.551	5.262	105.2
	(0.257)	(0.140)	(0.942)
SWFdom(t-1) x NonSWF(t-1)	3.855	18.45	-194.9
	(0.449)	(0.130)	(-0.506)
NonSWFsquared(t-1)	2.110	-2.050	-99.75
	(0.592)	(-0.0579)	(-0.693)
SWFdom(t-1) x NonSWFsquared(t-1)	-44.39	-247.9	975.4
	(-0.897)	(-0.385)	(0.430)
age(t-1)	0.114	0.638	2.549
	(0.949)	(0.471)	(1.166)
size(t-1)	-0.0325	-0.889	-3.001
	(-0.342)	(-0.832)	(-1.424)
lev(t-1)	-0.406	-1.336	-13.62
	(-0.667)	(-0.187)	(-1.439)
CapexTA(t-1)	1.461	15.53*	19.79
	(1.464)	(1.727)	(0.987)
Constant	-0.463	-11.36	-49.56
	(-0.239)	(-0.388)	(-0.497)
Serial correlation (p value)			
AR(1)	0.000	0.000	0.000
AR(2)	0.972	0.889	0.753
Hansen (p value)	0.361	0.594	0.632
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	95	55	53

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. Lag 2 to lag 6 of size(t-1), lev(t-1) and CapexTA(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from*

lag 2 of nonSWF(t-1) and nonSWFsquared(t-1) were employed as GMM-type instruments for the first-differenced equation in Model 16 and Model 17. All available lags from lag 3 of nonSWF(t-1) and nonSWFsquared(t-1) were employed as GMM-type instruments for the first-differenced equation in Model 18. All available lags from lag 2 of lnq, ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of size(t-1), lev(t-1) and CapexTA(t-1) were employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of nonSWF(t-1) and nonSWFsquared(t-1) were employed as GMM-type instruments for the equation in levels in Model 16 and Model 17 but lag 2 of the first differences of nonSWF(t-1) and nonSWFsquared(t-1) were employed as GMM-type instruments for the equation in levels in Model 18. Lag 1 of the first differences of lnq, ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and age(t-1) were treated as exogenous variables.

5.4.3.7 Multivariate Analysis: Impact of Non-Pressure Resistant Institutions on a Pressure-Resistant Institutional dominant firm

Hypothesis 2c predicted that when pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the shareholdings by non-pressure resistant institutional investors such as SWFs and family owners in the firm would have a positive relationship on firm performance due to the monitoring effect. This Study developed the following model to capture the moderating effect of the size of the non-pressure resistant institutional blockholdings in a firm dominantly owned by pressure resistant institutions:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 InstResdom_{it-1} + \beta_2 nonInstRes_{it-1} + \beta_3 InstResdom_{it-1} \times nonInstRes_{it-1} + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots Eq(5.11)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $InstResdom_{it-1}$ is a dummy variable which is equal to 1 for a firm dominantly owned by pressure resistant institutions and zero otherwise over the time period t-1
- $nonInstRes_{it-1}$ represent non-pressure resistant institutional equity holdings over the time period t-1
- $InstResdom_{it-1}$ x $nonInstRes_{it-1}$ represent the moderating effect of non-pressure resistant institutional blockholdings in a firm dominantly owned by pressure resistant institutions over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.16 presents the results from the system GMM estimation of Model 19, Model 20 and Model 21 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). Firm size, leverage and capital expenditure to total asset were treated as endogenous in the model specification as these variables affected the validity of the instruments in the Hansen test or the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, lag 2 to lag 6 of lnsizelag, leveragelag and

CapexTAlag were employed as GMM-type instruments for the first-differenced equation. As the non-pressure resistant equity holdings are endogenous and affected the validity of the instrument subsets in the difference-in-Hansen tests of exogeneity, all remote lags from lag 2 of NonInstRes(t-1) were employed as GMM-type instruments for the first-differenced equation. In addition, as lag 2 and lag 3 of firm performance were endogenous as indicated in the difference-in-Hansen tests of exogeneity, more remote lags from lag 4 of lnq, ROA and ROE are employed as GMM-type instruments for the first-differenced equation. Accordingly, lag 1 of the first differences of lnsizelag, leveragelag and CapexTAlag and NonInstReslag were employed as GMM-type instruments for the equation in levels. Lag 3 of the first differences of lnq, ROA and ROE were employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the variables lnsizelag, leveragelag, CapexTAlag and NonInstReslag to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and firm age were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.16 also reports the results of the specification tests—the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.07, 0.02 and 0.03 for Model 19, Model 20 and Model 21 respectively. The AR(2) test yielded a p-value of 0.34, 0.86 and 0.97 for Model 19, Model 21 and Model 21 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.62, 0.76 and 0.51 for Model 19, Model 20 and Model 21 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.16, the difference-in-Hansen tests of exogeneity of instrument subsets which include GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the non-pressure resistant institutional blockholdings, GMM instruments for the

endogenous control variables (firm size, firm leverage and capital expenditure to total asset), and standard instruments for year dummies and firm age were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.16 show that in Model 19, the coefficient of the one-year lagged Tobin's Q is found to be positive and statistically significant ($\beta = 0.290$, $p < 0.1$). However, the coefficients of the three-year lagged ROA and ROE are observed to be positive and statistically significant (Model 20: $\beta = 0.163$, $p < 0.01$; Model 21: $\beta = 0.193$, $p < 0.01$). This suggests that previous company performance has a major impact on the current one. As a result, prior firm performance should be regarded as an essential component in order to account for the dynamic character of the corporate governance-firm performance relationship.

In Model 19, the main effect of non-pressure resistant institutional blockholdings had an overall significant positive effect on Tobin's Q ($\beta = 2.693$, $p < 0.05$). However, the interaction effect of non-pressure resistant institutional blockholdings in firms dominated by pressure resistant blockholders was positive but not significant ($\beta = 1.537$, $p > 0.1$). Figure 5-4 depicts the relationship between lnq and one-year lagged non-pressure resistant institutional blockholdings in firms dominated by pressure resistant institutions as well as non-pressure resistant institutions where the interaction effect of non-pressure resistant blockholders is taken into account. In such a situation, non-pressure resistant institutional blockholdings exhibited a greater positive relation with Tobin's Q in firms dominated by pressure resistant institutions. This is observed from the steeper positively sloped line of the firms dominated by pressure resistant institutions versus non-pressure resistant institutions.

In Model 20 and Model 21, the coefficients of the main effects of non-pressure resistant institutional blockholdings are positive with ROA ($\beta = 2.580$, $p > 0.1$) and ROE ($\beta = 11.81$, $p > 0.1$) respectively, but they were not statistically significant. In addition, the interaction effects of non-pressure resistant institutional blockholdings in firms dominated by pressure resistant blockholders were positive but not statistically significant (Model 20: $\beta = 1.504$,

$p > 0.1$; Model 21: $\beta = 2.710$, $p > 0.1$). Thus, in firms dominated by pressure resistant institutions, there was no significant positive relation between non-pressure resistant blockholdings and firm performance measured by ROA or ROE.

In conclusion, for firms dominated by pressure resistant institutions, the blockholdings of non-pressure resistant from family and SWFs have a statistically positive relation with Tobin's Q, but the positive relations with ROA and ROE were not statistically significant at any conventional levels.

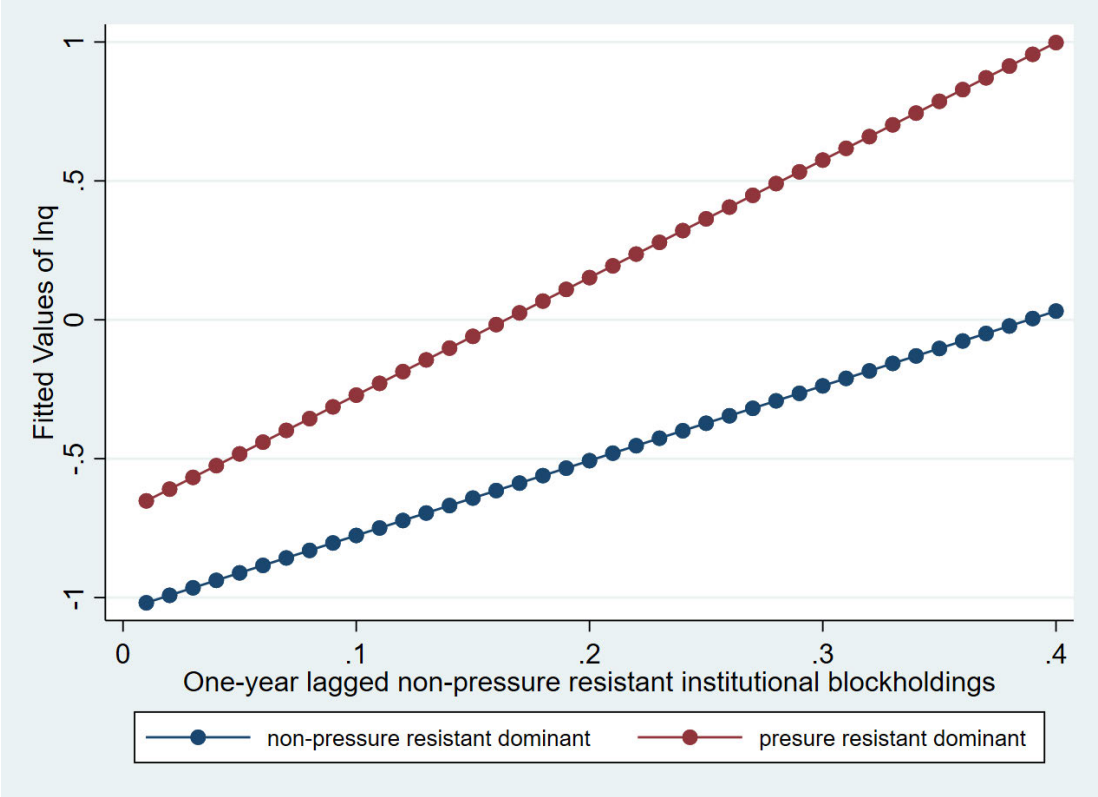

Figure 5-4: Plots of the relationships between Tobin's Q and non-pressure resistant institutional blockholdings

Table 5.16 The Effect of Non-Pressure Resistant Institutional Blockholders in a Firm dominantly owned by Pressure Resistant Institutions

Dependent variable	Model 19 lnq	Model 20 ROA	Model 21 ROE
Performance(t-1)	0.290*	0.180	0.0967
	(1.854)	(1.050)	(0.676)
Performance(t-2)	0.186	0.0265	0.0492
	(1.520)	(0.234)	(0.418)
Performance(t-3)	0.0758	0.163***	0.193***
	(1.440)	(2.806)	(3.148)
InstResdom(t-1)	0.351	-0.957	0.800
	(0.629)	(-0.218)	(0.122)
NonInstRes(t-1)	2.693**	2.580	11.81
	(2.514)	(0.419)	(0.865)
InstResdom(t-1) x NonInstRes(t-1)	1.537	1.504	2.710
	(0.171)	(0.0358)	(0.0284)
age(t-1)	0.0838	0.926	3.198
	(0.557)	(0.608)	(1.136)
size(t-1)	-0.0408	-0.0786	1.724
	(-0.601)	(-0.0907)	(1.109)
lev(t-1)	0.188	0.0952	-5.703
	(0.407)	(0.0170)	(-0.774)
CapexTA(t-1)	0.976*	13.12	-0.268
	(1.668)	(1.206)	(-0.0187)
Constant	-0.464	-0.649	-39.53
	(-0.322)	(-0.0292)	(-1.116)
Serial correlation (p value)			
AR(1)	0.072	0.023	0.028
AR(2)	0.343	0.861	0.965
Hansen (p value)	0.615	0.760	0.508
Observations	776	704	773
Number of firms	97	96	97
Number of instruments	71	71	71

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. Lag 2 to lag 6 of size(t-1), lev(t-1) and CapexTA(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of NonInstRes(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 4 of lnq, ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of size(t-1), lev(t-1) and CapexTA(t-1) and NonInstRes(t-1) were employed as GMM-type instruments for the*

equation in levels. Lag 3 of the first differences of lnq, ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and age(t-1) were treated as exogenous variables.

5.4.3.8 Multivariate Analysis: Change in Largest Blockholding on Firm Performance

Hypothesis 3a predicted that decreases (increases) in blockholding size of the largest blockholder to the total blockholding size would have a negative (positive) relationship on firm performance in terms of future market expectations with no impact on immediate accounting returns. To test Hypothesis 3a, this Study developed the following model to capture the relationship of the change in equity holdings of the largest blockholder relative to the total blockholding size on firm performance:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 Relchangeblk_{it-1} + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \quad Eq(5.12)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $Relchangeblk_{it-1}$ represent the change in equity holdings of the largest blockholder relative to the total blockholding size over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1
- η_i is firm-specific fixed effects, and
- ϵ_{it} is a random error term.

Table 5.17 presents the results from the system GMM estimation of Model 22, Model 23 and Model 24 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). Firm size, leverage and capital expenditure to total asset were treated as endogenous in Model 24 as these variables affected the validity of the instruments in the Hansen test or the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, lag 2 to lag 6 of lnsizelag, leveragelag and CapexTAlag were employed as GMM-type instruments for the first-differenced equation in Model 24. More remote lags from lag 4 of lnq and ROA were employed as GMM-type instruments for the first-differenced equation as lag 2 and lag 3 affected the validity of the instrument subset in the difference-in-Hansen test. Available lags from lag 2 of ROE are employed as GMM-type instruments for the first-

differenced equation. As the change in equity holdings of the largest blockholder is endogenous and affected the validity of the instrument subsets in the difference-in-Hansen tests of exogeneity, available lags from lag 2 of Relchangeblklag were employed as GMM-type instruments for the first-differenced equation for Model 22 and Model 24. However, more remote lags from lag 4 of Relchangeblklag were employed as GMM-type instruments in Model 23, as lag 2 and lag 3 affected the validity of the instrument subset in the difference-in-Hansen test. Accordingly, lag 3 of the first differences of lnq and ROA but lag 1 of the first differences of ROE were employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of Relchangeblklag were employed as GMM-type instruments for the equation in levels for Model 22 and Model 24, but lag 3 was employed in Model 23. The collapsed suboption was employed in the xtabond2 command for the variables lnsizelag, leveragelag, CapexTAlag and Relchangeblklag to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. Year dummies were treated as exogenous. All the control variables were treated as exogenous variables in Model 22 and Model 23, but the control variables lnsizelag, leveragelag and CapexTAlag were treated as endogenous in Model 24. Exogenous variables were employed as standard instruments in the equation in levels for Model 22 and Model 23. However, in Model 24, the exogenous variables were employed as standard instruments for the first-differenced equation.

Table 5.17 also reports the results of the specification tests—the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.03, 0.05 and 0.00 for Model 22, Model 23 and Model 24 respectively. The AR(2) test yielded a p-value of 0.18, 0.49 and 0.93 for Model 22, Model 23 and Model 24 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.20, 0.42 and 0.38 for Model 22, Model 23 and Model 24 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported

in Table 5.17, the difference-in-Hansen tests of exogeneity of instrument subsets which include GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the change in equity holdings of the largest blockholder relative to the total blockholding size, GMM instruments for the endogenous control variables (firm size, firm leverage and capital expenditure to total asset) and standard instruments for year dummies and firm age were also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.17 show that the coefficients of the one-year lagged Tobin's Q and ROE are observed to be positive and statistically significant (Model 22: $\beta = 0.557$, $p < 0.01$; Model 24: $\beta = 0.391$, $p < 0.01$). In addition, the two-year lagged Tobin's Q is observed to be positive and statistically significant ($\beta = 0.335$, $p < 0.05$). This suggests that previous company performance has a major impact on the current one. As a result, prior firm performance should be regarded as an essential component in order to account for the dynamic character of the corporate governance-firm performance relationship. However, the one-year lagged ROA is positive but not statistically significant ($\beta = 0.193$, $p > 0.1$). In Model 22, the change in equity holdings of the largest blockholder relative to the total blockholding size has a significant positive effect on Tobin's Q ($\beta = 4.426$, $p < 0.05$). Figure 5-5 illustrates the relationship between Tobin's Q and the one-year lagged change in the equity holding of the largest blockholder to the total blockholding size with a 95% confidence interval enveloping the plots. The wider confidence intervals of the predicted values of Tobin's Q for larger changes in the largest blockholding were observed as a result of the smaller sample size. Overall, a positive relation is observed between the change in the largest blockholding and Tobin's Q.

In contrast to Tobin's Q, the results in Table 5.17 indicate that the lagged change in equity holdings of the largest blockholder relative to the total blockholding size had a negative effect on ROA and ROE, but were not statistically significant (Model 23: $\beta = -31.19$, $p > 0.1$; Model 24: $\beta = -10.15$, p

> 0.1). Therefore, no significant relations are supported between the one-year lagged change in the equity holding of the largest blockholder to the total blockholding size and short-term firm performances (ROA and ROE).

In conclusion, the results seem to suggest that the one-year lagged change in equity holdings of the largest blockholder relative to the total blockholding size had a positive relation with the long-term firm performance (Tobin's Q), but there were no significant effects on the short-term firm performances (ROA and ROE).

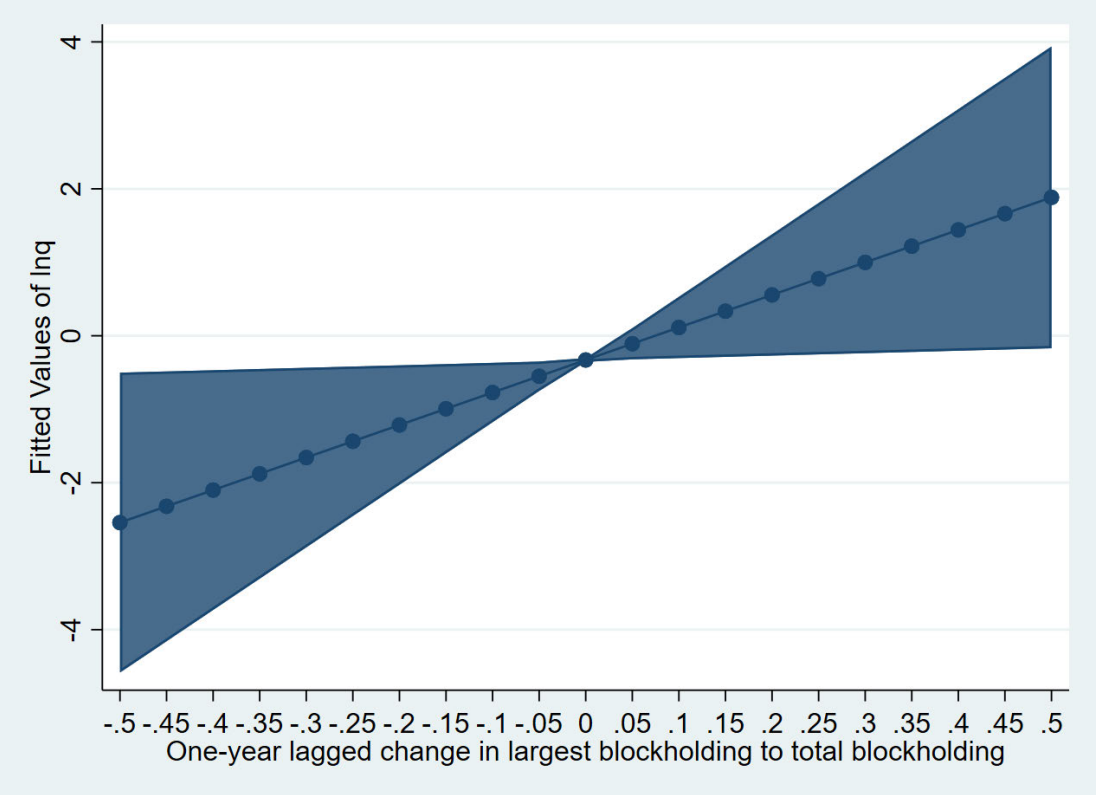

Figure 5-5: Plots of the relationships between Tobin's Q and change in largest blockholding

Table 5.17 The Effect of the Change in Equity Holdings of Largest Blockholder on Firm Performance

Dependent variable	Model 22 lnq	Model 23 ROA	Model 24 ROE
Performance(t-1)	0.557***	0.193	0.391***
	(3.737)	(1.011)	(6.809)
Performance(t-2)	0.335**	0.193	0.0772
	(2.227)	(0.994)	(1.403)
Performance(t-3)	0.0266	0.0652	-0.000845
	(0.502)	(0.618)	(-0.0186)
Relchangeblk(t-1)	4.426**	-31.19	-10.15
	(2.119)	(-1.521)	(-0.272)
age(t-1)	-0.0128	0.493	0.728
	(-0.605)	(0.980)	(0.466)
size(t-1)	0.00538	-0.0181	-0.473
	(0.594)	(-0.109)	(-0.302)
lev(t-1)	0.0440	-2.170	-10.58
	(0.460)	(-0.896)	(-1.554)
CapexTA(t-1)	-0.135	1.210	23.17
	(-0.497)	(0.208)	(0.964)
Constant	-0.268	0.458	15.29
	(-1.241)	(0.114)	(0.446)
Serial correlation (p value)			
AR(1)	0.030	0.053	0.000
AR(2)	0.178	0.494	0.930
Hansen (p value)	0.204	0.416	0.378
Observations	760	692	757
Number of firms	97	96	97
Number of instruments	55	53	85

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics are based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. All available lags from lag 4 of lnq and ROA but available lags from lag 2 of ROE are employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of Relchangeblk(t-1) are employed as GMM-type instruments for the first-differenced equation for Model 22 and Model 24 but available lags from lag 4 of Relchangeblk(t-1) are employed as GMM-type instruments in Model 23. Lag 2 to lag 6 are employed as GMM-type instruments for the first-differenced equation in Model 24. Lag 3 of the first differences of lnq and ROA but lag 1 of the first differences of ROE are employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of Relchangeblk(t-1) are employed as GMM-type instruments for the equation in levels for Model 22 and Model 24, but lag 3 is employed in Model 23. Year dummies are treated as exogenous. All the control variables are treated as exogenous variables in Model 22 and Model 23 but the control variables size(t-1), lev(t-1) and CapexTA(t-1) are treated as endogenous in Model 24.*

5.4.3.9 Multivariate Analysis: Impact of Blockholders in the Board on Firm Performance

Hypothesis 3b predicted that a U-shaped relation exists between the proportion of blockholders on the board and firm performance in terms of future market expectations with no impact on immediate accounting returns. To test Hypothesis 3b, this Study developed the following model to capture the relationship of the change in the proportion of blockholders in the board on firm performance:

$$Y_{it} = \alpha + k_1 y_{it-1} + k_2 y_{it-2} + k_3 y_{it-3} + \beta_1 propdir_{it-1} + \beta_2 propdir_{it-2}^2 + \gamma_1 age_{it-1} + \gamma_2 size_{it-1} + \gamma_3 lev_{it-1} + \gamma_4 CapexTA_{it-1} + year\ dummies + n_i + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(5.13)$$

where:

- y_{it} represent firm performance across N observations and I firms over the time period t
- $propdir_{it-1}$ represent the proportion of blockholders in the board over the time period t-1
- $propdir_{it-1}^2$ represent the squared term of the proportion of blockholders in the board over the time period t-1
- age_{it-1}, $size_{it-1}$, lev_{it-1} and $CapexTA_{it-1}$ represent control variables over the time period t-1;
- η_i is firm-specific fixed effects. and
- ϵ_{it} is a random error term.

Table 5.18 presents the results from the system GMM estimation of Model 25, Model 26 and Model 27 using natural logarithm of Tobin's Q (lnq), ROA and ROE respectively as the dependent variable (performance). Firm size, leverage and capital expenditure to total asset were treated as endogenous in the model specification as these variables affected the validity of the instruments in the Hansen test or the difference-in-Hansen tests of exogeneity of instrument subsets. Thus, lag 2 to lag 6 of lnsizelag, leveragelag and CapexTAlag were employed as GMM-type instruments for the first-differenced equation. As the proportion of blockholdlers in the board are endogenous and affected the validity of the instrument subsets in the difference-in-Hansen tests of exogeneity, all available lags from lag 2 of propdirlag and propdirlagsquared

were employed as GMM-type instruments for the first-differenced equation. More remote lags from lag 3 of lnq were employed as GMM-type instruments for the first-differenced equation as lag 2 affected the validity of the instrument subset in the difference-in-Hansen test. All available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Accordingly, lag 1 of the first differences of lnsizelag, leveragelag, CapexTAlag, propdirlag and propdirlagsquared were employed as GMM-type instruments for the equation in levels. Lag 2 of the first differences of lnq was employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. The collapsed suboption was employed in the xtabond2 command for the variables lagged ROA, lagged ROE, lnsizelag, leveragelag and CapexTAlag, propdirlag and propdirlagsquared to reduce the instrument count, thus mitigating instrument proliferation that can distort both estimation and inference. The year dummies and firm age were treated as exogeneous variables and employed as standard instruments in the equation in levels for all three models.

Table 5.18 also reports the results of the specification tests - the AR(1) first-order autocorrelation of errors, the AR(2) second-order autocorrelation of residuals and the Hansen J test of overidentifying restrictions. The AR(1) test yielded a significant value p-value of 0.00 all three models. The AR(2) test yielded a p-value of 0.80, 0.64 and 0.79 for Model 25, Model 26 and Model 27 respectively, which means that there is no second order serial correlation in the three models. Thus, the model specification cannot be rejected. In addition, the results of the Hansen test revealed a J-statistic with a p-value of 0.37, 0.34 and 0.65 for Model 25, Model 26 and Model 27 respectively, and as such, the overall validity of the instruments cannot be rejected in each of these models. Although not reported in Table 5.18, the difference-in-Hansen tests of the instrument subsets which include GMM instruments for levels equation as a group, GMM instruments for lagged dependent variable, GMM instruments for the proportion of blockholders in the Board, GMM instruments for the endogenous control variables (firm size, firm leverage and capital expenditure to total asset), and standard instruments for year dummies and firm age were

also insignificant as indicated by their respective p-values. Thus, all these further confirm the validity of these instrument subsets.

The results in Table 5.18 show that the one-year lagged performances were found to be statistically positive at the 1% level of significance for all three models (Model 25: $\beta = 0.692$, $p < 0.01$; Model 26: $\beta = 0.330$, $p < 0.01$; Model 27: $\beta = 0.389$, $p < 0.01$). In addition, the three-year lagged lnq was also positive and statistically significant ($\beta = 0.090$, $p < 0.1$). This suggests that prior firm performance had a major impact on the current one, and past firm performance should be regarded as an essential variable in order to account for the dynamic character of the corporate governance-firm performance relationship. In Model 25 the lagged value of the proportion of blockholders in the Board had a negative effect on lnq ($\beta = -1.192$, $p < 0.1$), but the lagged value of the squared term of the proportion of blockholders in the board had a positive effect on lnq ($\beta = 2.911$, $p < 0.1$). Thus, a U-shaped relationship is observed for the effect of the proportion of blockholders in the board on Tobin's Q. To calculate the turning point of a quadratic function, it is assumed that all other variables are constant. Thus, the following equation is used:

$$lnq = -1.192 * propdirlag + 302.1 * propdirlag^2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Eq(5.14)$$

The turning point was determined by differentiating lnq with respect to propdirlag, letting d(lnq)/d(propdirlag) = 0 and solving for propdirlag. If $d^2(lnq)/d(propdirlag)^2 > 0$, then the turning point is a minimum. If $d^2(lnq)/d(propdirlag)^2 < 0$, then the turning point is a maximum. The calculation of the turning point for the quadratic function of the proportion of blockholders in the board showed 20.5% (minimum). This seems to suggest that initially when the proportion of blockholders in the Board increased, the effect is a decrease in Tobin's Q. However, further increases in the proportion of blockholders in the board beyond 20.5% had a positive effect on Tobin's Q. Figure 5-6 confirmed that a U-shaped relation is observed between Tobin's Q and the one-year lagged change in the proportion of blockholders on board.

The results in Table 5.18 did not show any significant relationship for the lagged value of the proportion of blockholders in the board (Model 26: β =

14.74, p > 0.1; Model 27: β = 0.130, p > 0.1) and the lagged value of the squared term of the proportion of blockholders in the board (Model 26: β = -12.30, p > 0.1; Model 27: β = 14.12, p > 0.1) on ROA and ROE. Thus, the results seem to suggest that there is no significant effect on short-term performances (ROA and ROE) by the change in the proportion of blockholders in the board.

In conclusion, a U-shaped relationship between the proportion of blockholders on the board and firm performance is supported when firm performance is measured by Tobin's Q, but is not supported when firm performance is measured by ROA or ROE. The minimum turning point of the proportion of blockholders in the board is estimated at 20.5%.

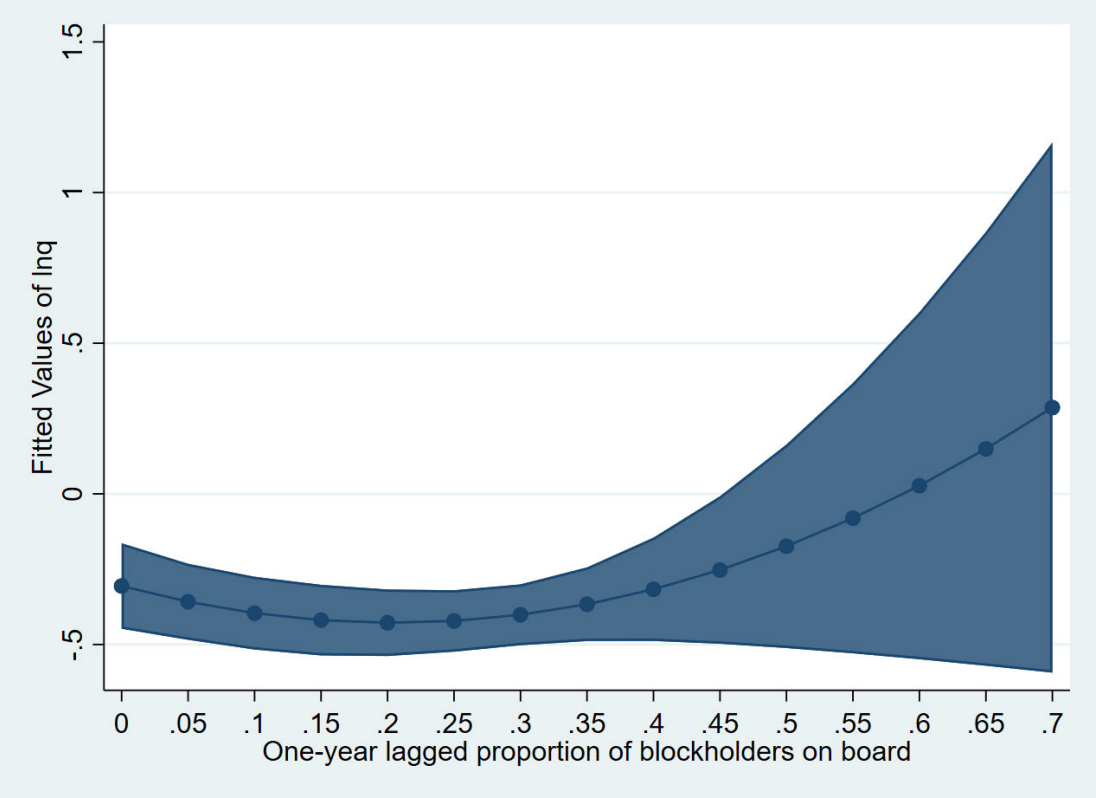

Figure 5-6: Plots of the relationships between Tobin's Q and proportion of blockholders on board

Table 5.18 The Effect of Blockholders in the Board on Firm Performance

Dependent variable	Model 25 lnq	Model 26 ROA	Model 27 ROE
Performance(t-1)	0.692***	0.330***	0.389***
	(5.962)	(4.162)	(6.488)
Performance(t-2)	-0.00457	0.0869	0.123*
	(-0.0686)	(0.987)	(1.775)
Performance(t-3)	0.0903*	0.0124	0.0323
	(1.860)	(0.252)	(0.745)
propdir(t-1)	-1.192*	14.74	0.130
	(-1.891)	(0.974)	(0.00420)
propdirsquared (t-1)	2.911*	-12.30	14.12
	(1.825)	(-0.344)	(0.251)
lnageplus1(t-1)	0.00706	0.436	-1.034
	(0.221)	(0.469)	(-0.960)
lnsize(t-1)	0.0355	-0.0901	1.319
	(0.509)	(-0.115)	(0.866)
leverage(t-1)	-0.285	0.462	-12.51
	(-0.626)	(0.0612)	(-1.223)
CapexTA(t-1)	1.393	-2.910	-57.43*
	(1.502)	(-0.178)	(-1.690)
Constant	-0.962	1.450	-16.17
	(-0.628)	(0.0851)	(-0.496)
Serial correlation (p value)			
AR(1)	0.001	0.000	0.000
AR(2)	0.804	0.640	0.787
Hansen (p value)	0.372	0.341	0.648
Observations	744	685	741
Number of firms	93	92	93
Number of instruments	88	55	55

*** p<0.01, ** p<0.05, * p<0.1; two-tailed tests.

All t-statistics were based on Windmeijer-corrected standard errors and reported in parentheses.

Notes: *All models include year dummies but are unreported. AR(1) and AR(2) are the first-order and second-order autocorrelation of residuals respectively. The Hansen test is the test of over-identifying restrictions. Lag 2 to lag 6 of size(t-1), lev(t-1) and CapexTA(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 2 of propdir(t-1) and propdirsquared(t-1) were employed as GMM-type instruments for the first-differenced equation. All available lags from lag 3 of lnq but available lags from lag 2 of ROA and ROE were employed as GMM-type instruments for the first-differenced equation. Lag 1 of the first differences of size(t-1), lev(t-1) and CapexTA(t-1), propdir(t-1) and propdirsquared(t-1) were employed as GMM-type instruments for the equation in levels. Lag 2 of the first differences of lnq was employed as GMM-type instruments for the equation in levels. Lag 1 of the first differences of ROA and ROE were employed as GMM-type instruments for the equation in levels. Year dummies and age(t-1) were treated as exogenous variables.*

5.5 Conclusion

This chapter has discussed the data analysis techniques such as descriptive statistics, univariate analysis, correlation analysis, and multivariate analysis. The descriptive statistics offered an overview of the data and its distribution. Subsequently, data transformation such as logarithmic transformation and winsorisation were carried out to improve the normality of the data. Although the correlation analysis did not infer any causal effects, it is possible to obtain some preliminary results from the association between the firm future performance and the independent variables. To test the hypotheses, multivariate regression was used since it allowed for isolation of the contribution of each independent variable to explain variance in the dependent variable while maintaining the influence of the other factors constant. The two-step System GMM was employed in the estimation method for the panel data as it could address the three sources of endogeneity (unobserved heterogeneity, simultaneity and dynamic endogeneity). Both OLS and fixed effects models provided inconsistent and biased estimates. In addition, the results from the two-step System GMM were robust to heteroskedasticity.

Furthermore, the empirical findings of testing hypotheses regarding the relationships between distinct blockholder groups (insiders, family, SWFs and pressure-resistant institutions) and firm performance were provided in this chapter. The interaction (moderating) effects of non-family blockholders, non-SWF blockholders and non-presssure resistant institutional investors on firm performance in a dominant family-owned firm, SWF owned firm and pressure-resistant institution owned firm respectively were also presented. Finally, the effects of the changes in the largest blockholding size to the total blockholding size and the proportion of directors in the board on firm performance were also presented. It is observed that the results were not homogenous between the long-term firm performance (measured by Tobin’s Q) and the short-term accounting performances (measured by ROA and ROE).

The next chapter discusses the empirical findings' outcomes as well as the theoretical implications of these findings.

Chapter 6: Discussion of Results

6.1 Introduction

This chapter critically engages with the findings and relates them to the research aims, objectives, research questions and gaps. The findings are examined with reference to the discussion in the earlier chapters of this Study (introduction, literature review, theoretical framework and research methodology). Interpretation of these findings is also provided in this chapter.

Four research objectives were specified in Chapter 1, which are:

1. To explain and predict the relationship between the diverse classes of blockholders and firm performance.

2. To explain and predict the relationship between the dominant blockholder class and the non-dominant blockholders on firm performance.

3. To explain and predict the effect of blockholder engagement on firm performance.

4. To develop a coherent body of knowledge to understand better the relationships of blockholders on firm performance using a multiple theoretical approach by applying the agency theory, stewardship theory and resource dependence theory.

This chapter is structured as follows. Section 6.2 discusses the results of the impact of the diverse blockholder classes on firm performance. The main and interaction effects of non-dominant blockholder classes on firm performance are discussed in Section 6.3. Findings and discussions on the engagement by blockholders are presented in Section 6.4. Finally, Section 6.5 summarises the chapter and provides the concluding remarks.

6.2 Discussion of Results of the Impact of Blockholder Classes on Firm Performance

This section discusses on the findings on hypotheses 1a to 1d which predicted the effect of blockholdings of insiders, families, SWFs and pressure-resistant institutions on firm performance (Tobin's Q, ROA and ROE).

6.2.1 Impact of Insiders on Firm Performance

Hypothesis 1a predicted that the blockholdings of insiders would have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting ROA and ROE. Hypothesis 1a is supported when company performance is assessed by Tobin's Q, but not when company performance is measured by ROA or ROE.

The results suggest that initially Tobin's Q decreased when the insiders increased their equity holdings to around 17.7% and then the Tobin's Q increased when the insiders increased their equity holdings beyond 17.7%. However, further increases of equity by insiders beyond 66.9% resulted in a decrease in Tobin's Q. This finding is similar to Morck, Shleifer, and Vishny (1988) on Fortune 500 firms who reported a decrease in Tobin's Q when insiders increased their equity ownership from 5% to 25%, but further increased by insiders beyond the 25% level resulting in an increase in Tobin's Q. However, Morck, Shleifer and Vishny (1988) only concluded a U-shaped relationship between insider ownership and Tobin's Q. The findings from this Study suggest there is a cubic relationship between the level of equity ownership by insiders and Tobin's Q. Although a later study by Bhabra et al. (2003) on Singapore firms reported a cubic relationship between directors' equity holdings and Tobin's Q, there are two differences that exist between the findings in this Study and Bhabra et al. (2003). First, Bhabra et al. (2003) only considered directors as insiders in their study, unlike this Study that includes both managers and directors as insiders. Second and more importantly, Bhabra et al. (2003) reported a cubic relationship that is inverted to the findings in this Study. Bhabra et al. (2003) reported that when directors' equity holdings increased from 5% to 20.34%, there was an increase in Tobin's Q, but further

increases to 52.73% resulted in a decrease in Tobin's Q. However, further increases beyond 52.73% resulted in an increase in Tobin's Q.

Unlike Bhabra et al. (2003), the findings in this Study suggest that when insiders increase their equity holdings from 5% to 17.7%, the decrease in Tobin's Q is caused by the extraction of private benefits from the directors and managers in line with the private benefits hypothesis. When insiders increase their equity ownership from 17.7% to 66.9%, Tobin's Q increases because the insiders align their interest with the other shareholders in line with the agency theory due to their higher equity stake. However, firms with larger ownership by insiders beyond 66.9% would probably indicate that the insiders are very entrenched. The entrenchment caused by the insiders could result in very little participation or contribution from the other shareholders in terms of the strategic direction of the firm. To this extent, such firms could have too many insiders in the board or in the senior management team. Thus, such firms might not be managed optimally and results in a corresponding decrease in Tobin's Q. One reason for a different cubic relationship from Bhabra et al. (2003) is that this Study considered the dynamic endogeneity in the panel data where past performances can have a significant impact on current performance. This view is supported by the study of Nguyen, Locke and Reddy (2014) who reported that the coefficients of regressors can change sign and become statistically significant when using the System GMM model as compared to the earlier studies such as Bhabra et al. (2003) using OLS or fixed effects models.

As for ROA and ROE used as firm performances, this Study reported insignificant relation between the levels of insider ownership and firm performance. The findings in this Study on ROE does not lend support to a study by Short and Keasey (1999), who reported that directors' equity holdings have a cubic relationship with ROE. An explanation for this difference is that Short and Keasey (1999) did not take into account the dynamic endogeneity where past performance can significantly affect current performance in their study. Thus, to the same extent, this Study argues that after considering the dynamic endogeneity, the plausible result is an insignificant relationship between the level of equity ownership by insiders and ROA

On one hand, this Study presents evidence that the level of insider ownership and Tobin's Q has a curvilinear relationship (cubic function). The Tobin's Q is regarded as a proxy for a firm's growth prospects and firm value (Fattoum-Guedri, Guedri and Delmar 2018; Muniandy, Tanewski and Johl 2016; Yin, Ward and Tsolacos 2018). Thus, it seems to suggest that investors pay attention to the level of equity ownership by insiders. Moreover, as the level of insider ownership takes longer to manifest its effect on firm performance, the effect is observed in Tobin's Q as it is also regarded as a long-term firm performance. However, this Study argues that ROA and ROE are unlikely to exhibit a similar relationship to Tobin's Q as they are both considered as backward-looking accounting profitability indicators and short-term performances of the firm. This view is supported by the study of Muniandy, Tanewski and Johl (2016) who reported the impact of institutional investors on Tobin's Q and ROA. Muniandy, Tanewski and Johl (2016) reported that it is possible for the sign of the coefficients of the regressors to change and/or become statistically significant or insignificant when using Tobin's Q and ROA interchangeably as the dependent variable for firm performance. The authors argued that the impact on long-term performance (Tobin's Q) and short-term performance (ROA) were considered differently by the institutional investors. To this extent, it is reasonable to suggest the effect of the level of insider ownership will be different for long-term firm performance (Tobin's Q) and short-term firm performances (ROA and ROE).

6.2.2 Impact of Family Blockholders on Firm Performance

Hypothesis 1b predicted that the blockholdings of family would have a curvilinear relationship (cubic function) on firm performance in terms of market valuation and accounting returns on ROA and ROE. Hypothesis 1b is supported when company performance is assessed by Tobin's Q, but not when company performance is measured by ROA and ROE.

The results suggest that there are two turning points for Tobin's Q, the first at 16.5% and the second at 61.6%. Initially Tobin's Q decreased when the family increased the equity holdings to around 16.5% and then Tobin's Q increased when the family increased the equity holdings beyond 16.5%. However, further

increases of equity by family beyond 61.6% resulted in a decrease in Tobin's Q. Thus, a cubic relationship is observed between the family equity stake and Tobin's Q in this Study. This is a significant finding as past studies such as Anderson and Reeb (2003), Isakov and Weisskopf (2014), Miller et al. (2007) and Poutziouris, Savva and Hadjielias (2015) observed a concave (U-shaped) relationship between family equity stake and Tobin's Q. The turning points for the studies of Anderson and Reeb (2003), Isakov and Weisskopf (2014) and Poutziouris, Savva and Hadjielias (2015) were 31%, 35.02% and 41.7% respectively. In such a concave relationship, at smaller family equity stakes there is an alignment between the family and other shareholders until the turning point is reached. The turning point is the level at which the initial alignment turns to entrenchment for the family. As the family becomes more entrenched due to the higher equity stake, the resulting effect is a lower Tobin's Q for the firm.

One possible explanation for the cubic relationship observed in this Study is that dynamic endogeneity, where past instances of Tobin's Q can significantly influence the current Tobin's Q, in the panel data is considered. This is supported by Nguyen, Locke and Reddy (2014) and Wintoki, Linck and Netter (2012) who reported that dynamic relationship exists between current governance and past firm performance. Taking into account the dynamic endogeneity problem, Nguyen, Locke and Reddy (2014) reported that the coefficients of regressors can change sign and become statistically significant when using the System GMM model as compared to the earlier studies using OLS and fixed effects models. An alternative explanation could be the confounding effect caused by the types of family (Dyer 2006). For instance, Dyer (2006) proposed that clan firms and professional firms with high family assets perform better than other types of family firms with high family liabilities. Firms with greater family assets create social capital to obtain required resources, and family resources are also utilised to assist the firm through tough times. Furthermore, considerable human capital may be found in clan companies since family members bring with them the talents and dedication required for the firm's survival and development. Professional family firms, on the other hand, rely on external managers but have a professional control

structure in place to verify that resources are not spent by the family or management. Family firms with large liabilities, on the other hand, may be self-interested family enterprises in which family members promote their self-interest at the expense of the firm and, in many cases, other family members.

In terms of theory, the cubic relationship of family blockholdings and Tobin's Q suggests that the stewardship theory is not supported at all levels of family equity ownership. At smaller equity ownership from 5% to around 16.5%, there is a corresponding decrease in Tobin's Q suggesting one of two possible explanations. First, a smaller equity stake by family is not sufficient for the firm to be positively influenced by the family stewardship behaviour. Second, a smaller equity stake by family might not bring out the stewardship behaviour as the family is more inclined to extract private benefits from the firm at the expense of other shareholders. Subsequent increases of equity holdings by family beyond 16.5% to around 61.6% aligns the interest of the family with the other shareholders because of the higher equity stake. First, a higher equity stake discourages the family from exploiting the firm as it affects the long-term value of their shareholdings to a greater extent. Second, a higher equity stake gives more power to the family and could allow for the stewardship behaviour in the firm to flourish. Thus, this results in a corresponding increase in Tobin's Q. However, too high a family equity ownership beyond 61.6% suggests that the family is very much entrenched in the firm. The entrenchment caused by the very dominant family could result in very little participation or contribution from the other shareholders in terms of the strategic direction of the firm. To this extent, such firms could have too many family members on the board or in the senior management team. A board deprived of outside rich directors could undermine the firm from access to critical resources necessary for the firm's competitive advantage as according to the resource dependence theory. To put it succinctly, such highly dominant family firms might not be managed optimally. This results in a corresponding decrease in Tobin's Q.

As for ROA and ROE used as firm performances, this Study reported insignificant cubic relation between the levels of family ownership and firm performance. This finding is contrary to the significant findings of a concave

relationship by the earlier studies of Anderson and Reeb (2003), Isakov and Weisskopf (2014) and Poutziouris, Savva and Hadjielias (2015), who reported inflection points of 27.6%, 49.9% and 20.5% respectively on ROA. In addition, Kowalewski, Talavera and Stetsyuk (2010) reported a significant concave relationship between ROE and family ownership levels, but no turning point was worked out.

On one hand, this Study presents evidence that the level of family ownership and Tobin's Q has a curvilinear relationship (cubic function). The Tobin's Q is regarded as a proxy for a firm's growth prospects and firm value (Fattoum-Guedri, Guedri and Delmar 2018; Muniandy, Tanewski and Johl 2016; Yin, Ward and Tsolacos 2018). Thus, it seems to suggest that investors pay attention to the level of family ownership. Moreover, as the effect of family ownership takes a longer time to manifest itself on firm performance, the effect is observed more significantly in Tobin's Q as it is regarded as a market-based performance indicator as well as a long-term firm performance indicator. However, this Study argues that although the cubic relationship is maintained, there might be a loss in the statistical significance as both ROA and ROE are considered as backward-looking accounting profitability indicators and short-term performances of the firm. This evidence is supported by the study of Muniandy, Tanewski and Johl (2016) who reported the impact of institutional investors on Tobin's Q and ROA. Muniandy, Tanewski and Johl (2016) reported that it is possible for the sign of the coefficients of the regressors to change and/or become statistically significant or insignificant when using Tobin's Q and ROA interchangeably as the dependent variable for firm performance. The authors argued that the impact on long-term performance (Tobin's Q) and short-term performance (ROA) are considered differently by the institutional investors. To this extent, it is reasonable to suggest the effect of the level of family ownership will be different for long-term firm performance (Tobin's Q) and short-term firm performances (ROA and ROE).

6.2.3 Impact of SWF Blockholdings on Firm Performance

Hypothesis 1c predicted that the size of the equity stake of SWFs in the firm would have a positive relationship on firm performance at lower levels of

ownership due to stronger monitoring, but would have a negative relationship on firm performance at higher levels of ownership due to the pursuit of non-financial objectives. Hypothesis 1c is not supported when firm performance is assessed by Tobin's Q, ROA or ROE.

The findings are contrary to Kubo and Phan (2019) who reported a concave relationship of SWF ownership on Tobin's Q and ROA. The turning points for the concave relationship are generally around 45%. The authors concluded that both Tobin's Q and ROA increased with SWF ownership up to around 45% due to better monitoring and then decreased with higher SWF ownership beyond 45%. However, the results of those findings were based on instrumental variable regression which did not consider the dynamic endogeneity in the panel data. Thus, the findings could be biased and inaccurate according to Wintoki, Linck and Netter (2012). Other studies by Ang and Ding (2006) and Fernandes (2014) reported significant linear relations of SWF ownership on firm performance. The findings from Ang and Ding (2006) using fixed effects panel regression found that equity ownership by Temasek and its subsidiaries in the years 1990 to 2000 were positively related to Tobin's Q. Similarly, Fernandes (2014) found that SWF ownership in the years 2006 to 2010 was positively related to Tobin's Q. However, the fixed effects panel regression could similarly provide inaccurate and biased estimates if dynamic endogeneity existed in the panel data. Heaney, Li and Valencia (2011) concluded that the ROE of firms invested by Temasek in the years 2003 and 2004, relative to other firms, were higher when using a univariate analysis. However, this finding is inconclusive as the results from a univariate analysis are not causal.

One of the possible reasons for the insignificant relationship for the SWF ownership and firm performance across all three measures (Tobin's Q, ROA and ROE) is that this Study has taken into account the dynamic endogeneity in the panel data where past performance has an influence on current performance. Wintoki, Linck and Netter (2012) illustrated that traditional OLS and fixed-effects estimates, which disregard the dynamic relationship between present governance and previous company performance, may be flawed. For

example, Wintoki, Linck and Netter (2012) reported insignificant results for the relation between board size or board independence and ROA when the System GMM model was applied. This is in stark contrast to the fixed-effects model's findings, which showed that the coefficient on board size was significantly negative and the coefficient on board independence was significantly positive. Wintoki, Linck and Netter (2012) argued that fixed-effects model produced significant results because the model ignored the dynamic relation of board size and board independence with past firm performance. The intuition is that board size is positively related to past firm performance because better performing firms will get larger and have larger boards. However, board independence is negatively related to past firm performance because better performing firms will need less monitoring by the board. If these intuitions are true, then the fixed-effects model might give biased coefficients on board independence and board size. Using a similar argument in this Study, SWF ownership could be positively related to past firm performance. If this is true, then SWFs will increase their equity holdings at time t when past performance is good and past instances, such as at time t-1 or time t-2. However, the increase in SWF equity holdings at time t might not have a causal effect on firm performance at time t or future firm performance at time t+1.

6.2.4 Impact of Pressure-Resistant Institutional Blockholders on Firm Performance

Hypothesis 1d predicted that the blockholdings of pressure-resistant institutional investors would have a concave (inverted-U) relation with firm performance. Hypothesis 1d is not supported when company performance is assessed by Tobin's Q or ROE. However, there is partial support for a U-shaped relation between the blockholdings of pressure-resistant institutions and ROA.

The findings in this Study are opposed to Chizema et al. (2020) who reported a concave relationship between Chinese mutual fund ownership and firm performance (Tobin's Q, ROA and ROE). Chizema et al. (2020) reported significantly positive coefficients of mutual fund ownership for Tobin's Q, ROA and ROE and significantly negative coefficients of their squared values for

ROA and ROE. The turning points for the concave relationship ranged from 16% to 26% of mutual fund ownership across the three model specifications. The differences in the results of this Study and Chizema et al's (2020) findings are better understood in the context of the institutional settings in China. According to Chizema et al. (2020), China has three different institutional settings: high levels of ownership concentration, an undeveloped legal structure in capital markets, and poor governance systems. Unlike the U.S. where firms are normally characterised by dispersed ownership, Chinese firms normally have concentrated ownership. As a result, the expropriation of minority shareholders (also known as 'tunnelling' or 'self-dealing') by the controlling shareholder is more prevalent. Furthermore, the legal system in China is undeveloped, and minority shareholder protection is lax, resulting in the dominant stockholders reaping significant private gains from tunnelling (Shleifer and Vishny 1997). Additionally, the Chinese mutual fund sector lacks the required governance structure and voting rights legislation to guarantee robust legal protection for minority investors (Firth, Lin and Zou 2010; Huang 2016). Given these institutional settings in the Chinese stock markets, Chizema et al. (2020) argues that Chinese mutual funds are more prone to collude with the controlling shareholders of their invested businesses to protect their private interests after they reach a particular level of mutual fund ownership. However, this Study argues that the same institutional setting is not applicable in the Singapore context. Although there is concentrated ownership in Singapore firms, Singapore is reputed for its strong legal environment and strong corporate governance (Tan 2020). To this extent, the concave relationship observed between firm performance and mutual fund ownership in China might not be expected to exist in the Singapore stock market.

Other studies such as Muniandy, Tanewski, and Johl (2016) and Ruiz-Mallorquí and Santana-Martín (2011), found positive significant relationships between firm performance and the equity holdings of pressure-resistant institutions. Muniandy, Tanewski and Johl (2016) found that pressure-resistant institutions had a positive relation to ROA but not Tobin's Q. Ruiz-Mallorquí and Santana-Martín (2011) found that if the dominant owner was an

investment fund, there was a positive relation of the voting rights of the dominant owner on the Tobin's Q of the firm. One possible explanation for the insignificant or absence of positive relationships between pressure-resistant institutional ownership and firm performance is that Singapore's corporates are dominated by government-linked and family-owned firms, in which institutional investors do not have a significant shareholding (Puchniak and Tang 2019). According to a recent empirical analysis of 195 Singapore listed firms representing 83% of total market capitalisation, institutional shareholders account for just 12% of market capitalisation weighted ownership (De La Cruz, Medina and Tang 2019). As a result, institutional investors have played a small role in Singapore corporate governance, particularly when compared to state and family controlling shareholders.

Overall, it is conceivable that pressure-resistant institutions in Singapore have no substantial influence on company performance because the majority of shares in Singapore's listed companies are not owned by institutional owners. This contrasts with other nations where pressure-resistant institutional shareholders have a beneficial impact on business performance, such as the U.S., the UK and Australia. Furthermore, there is no indication that institutional owners have leveraged their small shareholdings to actively participate in corporate governance. In Singapore, unlike in the U.S. and the UK, the role of shareholder activists and even proxy advice firms has been severely limited (Puchniak and Tang 2019). Thus, contrary to Hypothesis 1d, the findings in this Study suggest that pressure-resistant institutional equity holdings in Singapore do not have any significant relation with the performance of their invested firms. This could be a significant finding as the results are different from those observed in other developed markets as well as emerging markets.

6.3 Discussion of Results of the Effects of Non-Dominant Blockholders on Firm Performance

This section discussesn the findings on Hypotheses 2a to 2c which predicted the effects of non-dominant blockholders on firm performance (Tobin's Q, ROA and ROE).

6.3.1 Effect of Non-Family Blockholdings in a Family Firm

Hypothesis 2a predicted that when the family owners are the dominant shareholders in the firm, increases in the shareholdings by non-family owners in the firm would have a negative relationship on firm performance for lower levels of ownership due to greater contestability, but would have a positive relationship for higher levels of ownership due to a more balanced voting power among family and non-family blockholders. Hypothesis 2a is not supported when firm performance is assessed by Tobin's Q, ROA and ROE. Based on the main effect and interaction effect, the lagged value of non-family blockholdings has a significant negative relation on Tobin's Q and ROE. However, the squared lagged value of non-family blockholdings had an insignificant positive relation on Tobin's Q and ROE.

The results of this Study are contrary to the study of Cai, Hillier and Wang (2016) for Chinese companies to some extent. Cai, Hillier and Wang (2016) reported that as the second largest shareholder initially increased the equity ownership to around 16.2%, there was an increase in Tobin's Q. Beyond the 16.2% level, the Tobin's Q declined due the collusion with the largest shareholder. Thus, an inverted (concave) relation was observed by Cai, Hillier and Wang (2016) as opposed to the absence of a curvilinear relationship as reported in this Study. The intuition behind Cai, Hillier and Wang (2016) was that there was a trade-off between the monitoring effect of the second largest shareholder and collusion with the controlling shareholder to extract private benefits. At lower levels of equity ownership, the second largest shareholder is incentivised to provide more monitoring to safeguard its interest. However, as the ownership level increases beyond a certain threshold, the second largest shareholder finds it more profitable to collude with the controlling shareholder to extract private benefits at the expense of the shareholders. This is probably explained by the intuition that the Chinese stock market has an underdeveloped legal system and weak governance mechanisms (Chizema et al. 2020). In such an institutional setting, where the expropriation of minority shareholders by the controlling shareholder is more prevalent, the second largest shareholder finds that the costs of exit at higher stake is much higher as well.

In addition, the findings of this Study do not lend support to the study of Fattoum-Guedri, Guedri and Delmar (2018), who reported that a reasonably equal voting power among family and non-family blockholders may be a desirable compromise since all stakeholders may participate in strategic decision making and value generation together. In the presence of the dominant family blockholder, too little voting rights in the hands of non-family may lead to a situation of under-monitoring of the firm leading to poorer performance according to the agency theory. On the other hand, if the voting power of non-family blockholders is significantly greater than that of the family, an over-monitoring scenario may emerge. Strong non-family blockholder supervision may backfire at times because it inhibits the family from making costly firm-specific investments to establish and preserve distinctive familiness in attaining competitive advantage (Sirmon and Hitt 2003). The findings in this Study suggest that as the non-family blockholders increase their equity stake both Tobin's Q and ROE decreases. This is supported by the perspective of the principal-principal conflict in the agency theory. As a result, there could be significant divergence regarding proposed strategic actions for the family firm (Goodstein, Gautam and Boeker 1994).

6.3.2 Effect of Non-SWF Blockholdings in a SWF Firm

Hypothesis 2b predicted that when SWFs are the dominant shareholders in the firm, increases in the shareholdings by non-SWFs in the firm would have a positive relationship on firm performance for lower levels of ownership due to the monitoring effect, but would have a negative relationship on firm performance for higher levels of ownership due to collusion. Hypothesis 2b is not supported when the firm performance is assessed by Tobin's Q, ROA or ROE.

The insignificant results of the main and interaction effects of non-SWF blockholdings in a SWF dominant firm is probably driven by the very high concentration of equity holdings of SWFs versus the non-SWF equity holdings in a SWF dominant firm. As can be seen from Table 5.2, the SWF equity holdings amount to an average of more than 45% whereas the non-SWF equity holdings average around 1.78%. As the primary SWF for Singapore corporates

are controlled by the voting rights of Temasek, it seems to suggest that Temasek may have a preference to hold large blockholdings in its investments. In addition, according to Heaney, Li and Valencia (2011), Temasek prefer to invest in firms that have significantly fewer directors holding more than five percent of firm shares and firms that have a greater percentage of independent directors on the board. It can be presumed that Temasek favours maintaining a controlling interest in the firm it invests in. All these could mean that the non-SWF blockholders could play an insignificant role in the strategic direction and overall performance of Temasek firms. Thus, it might not be surprising that the effect from the non-SWF blockholdings could be insignificant in a SWF dominant firm.

6.3.3 Effect of Non-Pressure Resistant Institutional Blockholdings in a Pressure Resistant Institutional Firm

Hypothesis 2c predicted that when pressure-resistant institutional owners are the dominant shareholders in the firm, increases in the shareholdings by non-pressure resistant institutional investors such as SWFs and family owners in the firm would have a positive relationship on firm performance due to the monitoring effect. Hypothesis 2c is supported when firm performance is assessed by Tobin's Q, but not when the firm performance is assessed by ROA or ROE.

The results of this Study lend support to the study of Attig, El Ghoul and Guedhami (2009) who found that the presence and voting power of families or state as the second largest shareholder resulted in higher Tobin's Q. The authors argued that the family or state had greater incentives and could provide better monitoring on the controlling shareholder. Although Hypothesis 2c is not supported when firm performance is measured by ROA or ROE due to statistical insignificance, it is interesting to note the positive relation observed between firm performance and non-pressure resistant institutional blockholdings. In addition, it is interesting to note the insignificant positive relations observed on the interaction effects of non-pressure resistant institutional blockholdings on firm performance. Indeed, Table 5.16 shows that the coefficients of the interaction effects for the three model specifications are

1.54, 1.50 and 2.71 respectively for Tobin's Q, ROA and ROE. This Study argues that the non-significant result could be driven by the smaller sub-sample of the 13 pressure-resistant institutional dominant firms as observed in Table 5.2. A smaller sub-sample would lead to a higher standard error in the distribution, thus leading to insignificant results. Thus, this Study proposes that future research should work on a different population in a similar jurisdiction which could provide a much larger sub-sample of pressure-resistant institutional dominant firms. To this extent, with a smaller standard error in the distribution, a statistically significant result might be possible.

6.4 Discussion of Results on the Engagement by Blockholders on Firm Performance

This section discusses on the findings on Hypotheses 3a and 3b, which predicted the effect of the change in the blockholding size of the largest blockholder to the total blockholding size and the proportion of blockholders on the board respectively on firm performance (Tobin's Q, ROA and ROE).

6.4.1 Change in Blockholding Size of Largest Blockholder

Hypothesis 3a predicted that decreases (increases) in blockholding size of the largest blockholder to the total blockholding size would have a negative (positive) relationship on firm performance in terms of market valuation and accounting returns on assets and equity. Hypothesis 3a is supported when firm performance is assessed by Tobin's Q, but not when company performance is assessed by ROA or ROE.

The results of this Study support the view that the lagged change in the largest blockholding size relative to the total blockholding size is positively related to the long-term firm performance and firm valuation as measured by Tobin's Q. Thus, percentage increases (decreases) in the lagged change of the largest blockholding size to the total blockholding size in year t-1 have statistically significant increases (decreases) on Tobin's Q in the current year t. The findings lend support to the claims of Lehmann and Weigand (2000) and *UniSuper* (2016a) pertaining to the behaviour of committed shareholders. Expanding further the concept by Pound (1995) of a governed corporation

rather than a managed corporation, Lehmann and Weigand (2000) advocated that committed shareholders do not exit from their investments at the first sign of trouble. Committed shareholders should have high willingness to participate and intervene actively in the governance of the firm, such as through involvement in picking senior management or replacing incompetent managers, to ensure sound management of the firm. On the other hand, there are times when the direction of the firm changes, or the blockholder loses confidence in the board and management to execute the strategy. In these rare situations the blockholder's interest may no longer align with the firm. In such instances, selling shares can be the most appropriate response (*UniSuper* 2016a).

However, the findings of this Study do not lend support to the view that the change in the blockholding size of the largest blockholder to the total blockholding size has a positive relation on the short-term firm performance as measured by ROA and ROE. In contrast, the signs of the coefficients for the lagged change in the equity stake of the largest blockholder turned negative, but were not statistically significant when the firm performance is measured using ROA or ROE. A possible explanation for the surprising change in the signs of the coefficients is that investors view long-term performance (Tobin's Q) differently from short-term performances (ROA and ROE). This view is supported by financial literature that uses Tobin's Q ratio extensively as a proxy for a firm's growth prospects and firm value (e.g. Fattoum-Guedri, Guedri and Delmar 2018; Muniandy, Tanewski and Johl 2016; Yin, Ward and Tsolacos 2018). A larger Tobin's Q signals greater investors' expectations of the firm's future cash flows and value. In addition, Kang et al. (2017) and Muniandy, Tanewski and Johl (2016) claimed that Tobin's Q captured the long-term value creation and long-run firm value. ROA is an indicator of how profitable a firm is relative to its total assets and is regarded as a backward-looking accounting profitability indicator of the firm (Isakov and Weisskopf 2014). To this extent, the ROA measures how efficient a firm is at using its assets to generate earnings. Similarly, ROE is regarded as a backward-looking accounting profitability indicator of the firm. According to Heaney, Li and Valencia (2011), ROE measures a firm's profitability as it essentially captures

a firm's efficiency in using all the available resources to generate income. However, comparisons of ROE among firms may be limited due to the leverage effect and variations in the user cost of capital (Lehmann and Weigand 2000). Thus, this Study advocates that both ROA and ROE are short-term performance indicators as in the study of Muniandy, Tanewski and Johl (2016). Further evidence is provided by Muniandy, Tanewski and Johl (2016) who reported that it is possible for the sign of the coefficients of the regressors to change and/or become statistically significant or insignificant when using Tobin's Q and ROA interchangeably as the dependent variable for firm performance. The authors reported that the impact on long-term performance (Tobin's Q) and short-term performance (ROA) were considered differently by the institutional investors.

To this extent, this Study argues that investors are concerned with the long-term performance of the firm when there is a change in the equity stake of the largest blockholder. The change in the equity stake of the largest blockholder takes a longer time to manifest its effect but is reflected in the long-term performance measured by Tobin's Q. In contrast, the change in equity stake of the largest blockholder would not have an immediate impact on the short-term performances of the firm (ROA and ROE). Therefore, this Study advocates that the impact of the change in the size of equity stake of the largest blockholder to the total blockholding size has a positive signalling effect on future market expectations (Tobin's Q), but no impact on immediate accounting returns (ROA and ROE).

6.4.2 Blockholders on the Board

Hypothesis 3b predicted that a U-shaped relation exists between the proportion of blockholders on the board and firm performance. Hypothesis 3b is supported when firm performance is assessed by Tobin's Q but not when company performance is assessed by ROA or ROE.

Initially when the proportion of blockholders in the board increased, the effect is a decrease in Tobin's Q. However, further increases in the proportion of blockholders in the board beyond 20.5% had a positive effect on Tobin's Q.

Based on an average board size of 10.1 directors in 2016 (Stuart 2018), this worked out to around two blockholders for the threshold value. This means that firms with at least two blockholders on the board have higher Tobin's Q than firms with only one or zero blockholders on the board. The findings in this Study lend support to the study of Agrawal and Nasser (2019) and Bhagat and Bolton (2019). Agrawal and Nasser (2019) reported that the presence of an independent director who is a blockholder had a positive effect on the industry-adjusted Tobin's Q. However, Agrawal and Nasser (2019) used OLS and fixed effects models for their regression analysis which did not account for dynamic endogeneity. Similarly, Bhagat and Bolton (2019) reported that director ownership was positively related to ROA on U.S. firms using two-stage least squares regression. However, the two-stage least squares regression does not consider the past performance.

Unlike the study of Nguyen, Locke and Reddy (2014), who reported that the proportion of independent directors on the board in comparison to the total number of directors on the board had no statistically significant relation with Tobin's Q, the findings from this Study suggests blockholders on the board play a significant positive role in the long-term performance and valuation of the firm. Investors perceive that blockholders on the board are committed and ensure more vigilant monitoring on the management. This Study argues that this is probably explained by the higher levels of equity ownership that align the interest with the other shareholders in the firm (Agrawal and Nasser 2018; Jentsch 2019).

In terms of theory, the presence of blockholders on the board on firm performance supports the monitoring hypothesis as according to the agency theory. Blockholders with significant shareholdings have more direct voting power, the capacity to create coalitions with other major shareholders, and greater influence on the board than other outside directors with minor shareholdings. The findings do not lend support to the private benefits hypothesis as the firm performance is not negatively affected by higher proportions of blockholders on the board. On the contrary, this Study argues that the presence of more blockholders on the board allows for more critical

resources to be acquired from the environment as according to the resource dependence theory. Some of these blockholders could be classified as “business experts”, “support specialists” and “community influential” (Hillman, Cannella and Paetzold 2000).

However, the findings of this Study suggest that there is no relation between proportion of blockholders on the board and short-term firm performance as measured by ROA and ROE. The differences in the results with Tobin’s Q can be explained by the nature of the financial performance measure. In theory, accounting based measurements such as ROA and ROE are used for short-term performance while the market-based performance is measured through Tobin’s Q as a proxy of future long-term performance (Al-Matari, Al-Swidi and Fadzil 2014). Other authors also regard Tobin’s Q as a proxy for a firm’s growth prospects and firm value (Fattoum-Guedri, Guedri and Delmar 2018; Muniandy, Tanewski and Johl 2016; Yin, Ward and Tsolacos 2018). Thus, Tobin's Q measures the investors' ascribed value to the firm's tangible and intangible assets based on projected revenue and expense streams. Thus, this Study argues that ROA and ROE are unlikely to exhibit a similar relationship to Tobin’s Q as they are both considered as backward-looking accounting profitability indicators and short-term performances of the firm. Accounting profit measurements are likewise constrained by accounting rules and accountability, but Tobin's Q is commonly utilised by investors, who are constrained by judgments such as acumen, optimism and pessimism (Al-Matari, Al-Swidi and Fadzil 2014). Empirical evidence is supported by the study of Muniandy, Tanewski and Johl (2016) who reported the impact of institutional investors on Tobin’s Q and ROA. Muniandy, Tanewski and Johl (2016) reported that it was possible for the sign of the coefficients of the regressors to change and/or become statistically significant or insignificant when using Tobin’s Q and ROA interchangeably as the dependent variable for firm performance. To this extent, it is reasonable to suggest that the proportion of blockholders on the board has a positive signalling effect on future market expectations (Tobin’s Q), but no impact on immediate accounting returns (ROA and ROE).

6.5 Conclusion

This chapter discussed the results of the hypotheses testing using multivariate analysis. The first group of hypotheses in Section 6.2 considered the effects of inside blockholders, family blockholders, SWF blockholders and pressure-resistant institutional blockholders on firm performance. The second group of hypotheses in Section 6.3 considered the main and moderating effects of non-family blockholdings, non-SWF blockholdings and non-pressure-resistant institutional blockholdings on firm performance in firms controlled by the family, SWFs and pressure-resistant institutions respectively. Finally, the third group of hypotheses in Section 6.4 considered the effects of the change in blockholding size of the largest blockholder to the total blockholding size and the proportion of blockholders on board on firm performance. The discussion related the findings of this Study to those of other studies. Explanations of the results from theory and prior literature were made for both findings that supported the hypotheses as well as those insignificant or contrary findings that did not support the hypotheses. Thus, alternative explanations of the findings were considered, rather than those that only fit this Study's prior assumptions or biases. To this extent, a key purpose of the research for discovery of new knowledge can be achieved.

The next chapter is the conclusion chapter to this Study. It begins with a recap of the research objectives and questions. Next, an overview of the arguments made so far in this Study is provided. Considering these arguments, the research questions are addressed, and in so doing, how this Study has made a valid and useful contribution to knowledge. Implications for practice and policy are also discussed. Finally, the chapter discusses the limitations of this Study and suggestions for future research.

Chapter 7: Conclusion

7.1 Introduction

This Study has investigated the relationship between various blockholder classes and firm performance, the main and interaction effects of non-dominant blockholders on firm performance, and the impact of engaged blockholders on firm performance in Singaporean listed firms over the Study Period (2006 to 2016). Because most earlier studies in the US have been focused on firms with dispersed ownership, Singapore provides a unique environment for investigating these concerns in concentrated ownership structures for a developed market. Firms having dispersed ownership are more likely to have agency issues between company management and shareholders (Berle and Means 1932; Jensen and Meckling 1976). However, most corporates in Singapore are dominated by family members and Temasek Holdings or its subsidiaries through their shareholder voting rights (Puchniak and Tang 2019). Indeed, this Study reported that the family or SWFs control on average 45% of the shares in family dominant or SWF dominant firms. In such a highly concentrated environment, the conflict between shareholders and managers could have less importance. A more serious conflict between large and minority shareholders or principal-principal conflicts could instead arise (Huyghebaert and Wang 2012; Lozano, Martinez and Pindado 2016; Pindado, Requejo and Torre 2012).

This chapter begins with a recap of the research questions and objectives. This is followed by a summary of the research methodology, research results, thesis contributions, implications, and limitations. Finally, future study directions are offered.

7.2 Recap of Research Questions and Objectives

The aim of this Study was to investigate the relationship between blockholders and firm performance under concentrated ownership structures using a multi-theoretical approach based on the agency theory (Jensen and Meckling 1976),

stewardship theory (Donaldson and Davis 1991) and resource dependence theory (Pfeffer and Salancik 1978).

Specifically, this Study addressed the following research objectives:

1. To explain and predict the relationship between the diverse classes of blockholders and firm performance.

2. To explain and predict the relationship between the dominant blockholder class and the non-dominant blockholders on firm performance.

3. To explain and predict the effect of blockholder engagement on firm performance.

4. To provide a cohesive body of knowledge for a better understanding of the relationships between blockholders and firm performance using different theoretical approaches such as agency theory, stewardship theory and resource dependence theory

The research questions arising out of this Study to address the research objectives were:

1. Which blockholder classes affect the performance of Singapore listed firms in terms of market valuation of the firm and accounting returns to the firm?

2. For firms with more than one blockholders class, how is the overall firm performance of Singapore listed firms affected in terms of market valuation of the firm and accounting returns to the firm by the non-dominant blockholders?

3. Do blockholders' engagement matter to the performance of Singapore listed firms in terms of market valuation of the firm and accounting returns to the firm?

7.3 Summary of Research Methodology

This Study is based on a panel data analysis of a total of 1067 firm-year observations from the Study Period. The Study Period was chosen to incorporate the most recent data accessible when this Study began. Most of the accounting data of the firms were obtained from Orbis database. Data pertaining to blockholder information were sourced from published annual reports available on the firms' websites. All information was cross-checked with other sources of financial information available on the Singapore Exchange or the Yahoo Finance Singapore websites to ensure integrity of the data.

Three empirical research models were created to answer the research's aim and objectives. To fulfill the first study objective, the first model is used to evaluate the impacts of various kinds of blockholders such as insiders, families, SWFs and pressure-resistant institutions on firm performance. To achieve the second study objective, the second model is used to evaluate the interaction (moderating) impacts of non-dominant blockholders on firm performance. Finally, the third model is used to test the effect of blockholder engagement such as change in the largest blockholding relative to the total blockholding size and proportion of blockholders on board to address the third research objective.

Firm performance is measured using a market-based performance measure Tobin's Q and the two accounting-based performance measures ROA and ROE. The key difference between a market-based performance measure and accounting-based measure is that a market-based measure is regarded as a long-term performance indicator whereas the latter is regarded as a short-term performance indicator. The intuition to this is that a market-based performance indicator such as Tobin's Q captures the investors' consensus of the present value of the firm's future cash flows based on current and future information (Ganguli and Agrawal 2009). On the other hand, ROA and ROE are regarded as backward-looking profitability indicators (Isakov and Weisskopf 2014). The ROA is an indicator of how profitable a firm is relative to its total assets regardless of its financing decisions. In contrast, ROE focuses on return to

shareholders of the firm and could affect firms differently with high debt levels. The ownership variables include the equity stake of blockholders of insiders, family members, SWFs and pressure-resistant institutional investors. The changes in the equity stake of the largest blockholder relative to the total blockholding size and the proportion of directors who are blockholders as well are used to measure the level of intensity of the blockholders' engagement. The control variables are the firm-specific factors, namely firm size, firm age, leverage and capital expenditure to total assets.

The descriptive analysis, correlational analysis and multivariate analysis were all used to analyse the data. A basic knowledge of the data and its distribution was provided by the descriptive analysis of the sample for the dependent, independent and control variables. When the data of variables were not normally distributed, the data transformation was performed. The correlational analysis used Pearson's correlation coefficients to analyse the relationships between variables to uncover potential multi-collinearity issues in the regression model. The multivariate analysis is used to test the hypotheses in Section 3.7 and Table 3.2. Consideration of the possible estimation methods were made and justifications for the selection which was the two-step system GMM method were provided. The system GMM estimator controls for unobserved heterogeneity such as family culture, and dynamic endogeneity which controls for past firm performances. Following Nguyen, Locke and Reddy (2014) and Wintoki, Linck and Netter (2012) to examine the reliability of the estimates and confirm that the results did not arise from methodological issues, the Arellano-Bond second-order autocorrelation test (AR2), the Hansen test of over-identification, and the difference-in-Hansen test of exogeneity were performed. All the specification models failed to reject the AR2 tests, indicating a lack of second order serial correlation of the first differenced residuals. The Hansen over-identification tests were not significant, suggesting that the instruments were valid and unrelated to the error term. Furthermore, the difference-in-Hansen tests for exogeneity were not significant, indicating that the extra subset of instruments used in the system GMM estimates was exogenous.

7.4 Research Findings

All the four research objectives in this Study were addressed by the findings. In the discussion chapter (Chapter 6), explanations of the findings were provided including those findings that defied expectations. Possible reasons for non-significant results were also discussed. Such discussions could provide an avenue for raising new questions that future researchers can explore. This section summarises the key findings in this Study to address the research questions.

Research Question 1 was to investigate the blockholder classes that could have an impact on firm performance of Singapore listed firms in terms of market valuation and accounting returns to the firm. The results of the multivariate analysis are captured in Tables 5.10 to 5.13. Table 5.10 showed there was a curvilinear relationship (cubic function) between the level of insider ownership and Tobin's Q, but no significant relationship was observed for ROA and ROE. This Study argues that the impact on a market-based and long-term performance (such as Tobin's Q) and accounting returns and short-term performance (such as ROA or ROE) can be different in line with a related study by Muniandy, Tanewski and Johl (2016). The results suggest that initially Tobin's Q decreased when the insiders increased their equity holdings to around 17.7% (consistent with private benefits hypothesis) and then the Tobin's Q increased when the insiders increased their equity holdings beyond 17.7% (consistent with convergence of interests). However, further increases of equity by insiders beyond 66.9% resulted in a decrease in Tobin's Q (consistent with entrenchment hypothesis). Table 5.11 also showed a similar cubic relationship between the level of family equity ownership and Tobin's Q. The turning points for family equity ownership were 16.5% (minimum point) and 61.6% (maximum point). However, although a similar cubic relationship is observed for ROA and ROE, there was a loss of statistical significance. This Study argues that the impact of on short-term performances such as ROA and ROE are not so pronounced. Table 5.12 showed insignificant relationships between SWF ownership and firm performance across all three measures (Tobin's Q, ROA and ROE). This is contrary to prior studies of SWF ownership on firm performance. One possible explanation is that, unlike prior studies, this

Study has considered the dynamic endogeneity in the panel data where past performance has an influence on current performance. This finding is supported by related studies of Nguyen, Locke and Reddy (2014) and Wintoki, Linck and Netter (2012) on corporate governance and firm performance. Table 5.13 showed no significant relationships between pressure-resistant institutional ownership and firm performance across all three measures (Tobin's Q, ROA and ROE). One possible explanation for the weak relationships between pressure-resistant institutional ownership and firm performance is that Singapore's corporates are dominated by government-linked and family-owned businesses, in which institutional investors do not have large shareholdings (Puchniak and Tang 2019). This is unlike other jurisdictions such as US, UK and Australia where pressure-resistant institutional shareholders have a positive relation on firm performance.

Research Question 2 was to investigate the effect of non-dominant blockholder classes on firm performance in firms dominated by family, SWFs or pressure-resistant institutional ownership. The results of the multivariate analysis are captured in Tables 5.14 to 5.16. Table 5.14 does not report a curvilinear relation for the effects of non-family equity holdings on firm performance in a family dominant firm. On the contrary, the findings suggest that as the non-family blockholders initially increased their equity stake both Tobin's Q and ROE decreased due to the principal-principal conflicts because of divergent motivations and interests. Table 5.15 showed insignificant results on the main and moderating effects of non-SWF blockholdings in a SWF dominant firm. A possible explanation for this outcome is the very high concentration of equity holdings of SWF versus the non-SWF equity holdings in the average SWF dominant firm. In such a firm, the SWF equity holdings is around 45% whereas the non-SWF equity holdings is around 1.78%. Table 5.16 showed significant results for the effects of non-pressure resistant institutional equity holdings on Tobin's Q, but insignificant results for ROA or ROE in a pressure-resistant institution dominant firm. As the coefficients of the moderating effects of non-pressure resistant institutional equity holdings across all three model specifications are large and positive, a likely explanation for the statistical insignificance is the smaller sub-sample of 13 pressure-resistant institutional

dominant firms observed in the panel data. A smaller sub-sample would lead to a higher standard error in the distribution, leading to insignificant results.

Research Question 3 was to investigate blockholders' engagement on the performance of Singapore firms in terms of market valuation and accounting returns to the firm. Two measures of blockholder engagement were proposed in this Study, namely the change in blockholding size of the largest blockholder relative to the total blockholding and the proportion of blockholders on the board. Table 5.17 showed that the lagged change in the largest blockholding size relative to the total blockholding is positively related to Tobin's Q, but no significant relationships were observed for ROA and ROE. This Study argues that there is a positive signalling effect of the change in the largest blockholding size relative to the total blockholding size on the long-term future market expectations (Tobin's Q), but no impact on immediate accounting returns (ROA and ROE). The percentage increases (decreases) in the lagged change of the largest blockholding size in year t-1 have statistically significant increases (decreases) on Tobin's Q in the current year t. The findings lend support to the claims of Lehmann and Weigand (2000) and *UniSuper* (2016a) pertaining to the behaviour of committed shareholders. Committed shareholders participate actively in the affairs of the firm and do not exit at the first sign of trouble. Selling of shares occurs only in rare instances such as changes in direction of the firm that do not align with the blockholder's interest. Using this line of argument, this Study reasons that increases in the equity holdings by the largest blockholder reflected greater confidence and commitment in the firm whilst decreases in the equity holdings by the largest blockholder indicated loss of confidence and/or reduced commitment in the firm. Table 5.18 showed that the lagged proportion of blockholders on the board has a significant effect on Tobin's Q, but no significant effect on ROA and ROE. Similary, this Study argues that a higher proportion of blockholders on the board sends a positive signal to investors in terms of long-term future expectations but does not impact the immediate accounting returns. Initially when the proportion of blockholders in the board increased, the effect is a decrease in Tobin's Q. However, further increases in the proportion of blockholders in the board beyond 20.5% had a positive effect on Tobin's Q.

Based on an average board size of 10.1 directors in 2016 (Stuart 2018), this worked out to around two blockholders for the threshold value. This means that firms with at least two blockholders on the board have higher Tobin's Q than firms with only one or zero blockholders on the board.

7.5 Contributions of Thesis

This Study makes several important contributions to the literature. The contributions can be categorised as theoretical contributions, methodological and empirical contributions (Ågerfalk and Karlsson 2020).

7.5.1 Theoretical Contributions

Through the perspective of agency theory, researchers have mostly investigated the influence of ownership structures on firm performance. This Study's empirical findings support the assumptions of agency theory, stewardship theory and resource dependency theory. This implies that researchers must employ a variety of theoretical approaches to examine the relation between blockholders and firm performance. For example, the cubic relationship between family blockholders and Tobin's Q suggests that the stewardship behaviour is not supported at all levels of family equity ownership. Agency theory and resource dependence theory are needed to explain the possible extraction of private benefits and entrenchment of family members in the board on firm performance.

First, using panel data, this Study adds to the literature on the influence of blockholders on firm performance in listed firms in a developed country. The majority of research on listed firms in developed countries such as the US and the UK has highly dispersed ownership structures (e.g. Anderson and Reeb 2003; Basu, Paeglis and Rahnamaei 2016; Clifford and Lindsey 2016; Poutziouris, Savva and Hadjielias 2015). Although Singapore is considered a developed economy with a strong legal environment and strong corporate governance, the ownership structures in the listed firms are highly concentrated and dominated by government linked and family owned companies (Puchniak and Tang 2019; Tan 2020). Such concentrated

ownership structures are normally found in emerging economies such as China, India, Turkey and Vietnam (Chizema et al. 2020; Ciftci et al. 2019; Jameson, Prevost and Puthenpurackal 2014; Kubo and Phan 2019). Thus, Singapore presents a unique context in which to examine the issue of a concentrated ownership structure in a developed economy. Some of the findings in other developed countries might not apply in Singapore. Pressure-resistant institutional shareholders, for example, have little influence on firm performance. In Singapore, unlike in the US and the UK, shareholder activists and even proxy advice firms do not play a significant role in the corporate scene (Puchniak and Tang 2019). This is probably explained by the dominance of family firms and firms controlled by Temasek and its subsidiaries. As a result, this Study contends that there is little evidence that institutional owners have used their limited shareholdings to actively participate in corporate governance. In addition, this Study has provided evidence that some of the findings in markets with concentrated ownership structures are not applicable to Singapore. For example, the study of Cai, Hillier and Wang (2016) on Chinese companies reported that the second largest shareholder colluded with the largest shareholder when the equity holdings went beyond the threshold. As a result, Cai, Hillier and Wang (2016) reported a concave (inverted U-shaped) relation. However, this Study did not find any evidence of a collusion by non-family blockholders in a family dominant firm at higher levels of equity ownership.

Second, this Study extends a limited stream of literature on Singapore which focuses on the effects of ownership structures on firm performance (e.g. Ang and Ding 2006; Bhabra et al. 2003; Chen and Ho 2000). Most of the developing stream of literature focuses mainly on the effects of board structures on firm performance (e.g. Mak and Kusnadi 2005; Nguyen, Locke and Reddy 2014). One significant contribution of this Study is examining the effect of blockholder ownership and board structures on firm performance. Prior studies on independent directors and non-executive directors with negligible stockholdings showed that they do not affect the firm performance (Nguyen, Locke and Reddy 2014; Wintoki, Linck and Netter 2012). Unlike the study of Nguyen, Locke and Reddy (2014) who reported that the proportion of

independent directors to the total number of directors on the board exhibited no statistically significant relationship with Tobin's Q, this Study suggests that blockholders on the board play a significant positive role in the long-term performance and valuation of the firm (Tobin's Q). Blockholders with significant shareholdings have more direct voting power, the capacity to create coalitions with other major shareholders, and greater influence on the board than other outside directors with minor shareholdings. The Study also argues that the presence of more blockholders on the board allows for more critical resources to be acquired from the environment as according to the resource dependence theory.

7.5.2 Methodological Contributions

Unlike previous studies (e.g. Ang and Ding 2006; Agrawal and Nasser 2019; Bhabra et al. 2003; Kubo and Phan 2019), this Study uses a dynamic approach by applying the system GMM to a panel data covering an 11-year period from 2006 to 2016. There are at least two advantages of employing the system GMM. First, the system GMM is used to estimate the parameters in panel data with endogenous explanatory variables when the model is dynamic in nature (Blundell and Bond 1998; Roodman 2009). Second, the system GMM mitigates the potential problem of reverse causality caused by blockholder ownership and firm performance, as well as other potentially underlying unobservable factors impacting performance. In addition, a larger time frame of 11-years allows for more lagged independent variables to be used as valid instruments which can improve the estimates.

Prior research on ownership structures and firm performance should be read with caution since the econometric approaches used in these studies, such as OLS and fixed-effects models, fail to account for various types of endogeneity. According to Wintoki, Linck and Netter (2012), unobserved heterogeneity, reverse causality, and dynamic endogeneity are the three sources of endogeneity in the model, and failure to control even one source of endogeneity in the model can result in inconsistent and biased findings. Dynamic endogeneity occurs when a firm's history or current performance influences existing or future governance factors (Wintoki, Linck and Netter

2012). For example, past poor firm performance may cause blockholders to leave the firm or reduce their blockholding size. Given the dynamic nature of the ownership-performance relation, the system GMM model incorporates the lag impact of the dependent variables (firm's previous financial performance) as an instrument (explanatory variable) to account for dynamic endogeneity. For instance, the findings of some researchers reported concave or positive linear relationship between firm performances (Tobin's Q and ROA) and SWF ownership using the fixed-effects model (Ang and Ding 2006; Fernandes 2014; Kubo and Phan 2019). However, this Study reported insignificant relations between SWF ownership and firm performances across all three measures (Tobin's Q, ROA and ROE) after taking into account the dynamic nature of the SWF ownership and performance. Thus, the emergence of GMM methodology has eliminated the spurious relationships uncovered using the fixed-effects model.

7.5.3 Empirical Contributions

This Study has taken a novel approach by using multiple financial performance measures that are market-based as well as accounting-based. Taken as a whole, the findings showed that the impact of blockholders is more significant on a market-based performance indicator such as Tobin's Q relative to accounting-based performance indicators such as ROA and ROE. For example, the blockholdings of insiders and family members exhibit a curvilinear relationship with Tobin's Q, but insignificant relations were observed with ROA and ROE. This Study argues that investors pay attention to the level of insider and family ownership. As the effect of insider and family ownership takes a longer time to manifest itself on firm performance, the effect is observed more significantly in Tobin's Q as it is regarded as a market-based performance indicator as well as a long-term firm performance indicator. Similarly, the change in the blockholding size of the largest blockholder to the total blockholding size and the proportion of blockholders on board are significantly related to Tobin's Q, but not to ROA and ROE. In contrast, this Study argues that although the relationship is maintained, there is a loss in the statistical significance as both ROA and ROE are considered as backward-

looking accounting profitability indicators and short-term performances of the firm. Thus, the use of multiple financial performance measures gives a more balanced representation of the firm performances.

7.6 Policy and Practical Implications of Thesis

As a result of the previous section's theoretical, methodological and empirical contributions, this Study offers some policy and practical implications that might aid decision-making by various market organisations.

First, policy makers should urge owner-managers of family businesses and insider-controlled businesses to avoid amassing excessive authority, which can lead to entrenchment, nepotism and oligarchic behaviour. This view is supported by the negative relationship on Tobin's Q when family equity ownership and insider ownership increased beyond 61.6% and 66.9% respectively in this Study. The entrenchment and nepotism in a very dominant family or insider-controlled firm could result in very little participation or contribution from the other shareholders in terms of the strategic direction of the firm. To this extent, such firms could have too many family members or insiders in the board or in the senior management team. A board deprived of outside rich directors could undermine the firm from access to critical resources necessary for the firm's competitive advantage as according to the resource dependence theory. Furthermore, public policy on such dominantly owned firms should place a greater emphasis on the protection of minority shareholders. As a result, best practices in governance and strategic planning must be implemented to protect listed businesses' long-term development and success.

Second, the insignificant relationships between SWF ownership and firm performance suggest that the regulators should encourage more broad-based participation by other large shareholders who can provide for a more balanced and effective contribution in terms of governance and strategic planning towards the long-term development and performance of firms. According to Heaney, Li, and Valencia (2011), the local SWFs have a predisposition to invest in firms that have fewer director blockholders. In such firms, the local

SWFs appoint directors to the board to take care of its interest. Most of these directors are employees of the local SWFs and do not hold a significant number of shares in the firms that the local SWFs have shareholdings in.

Third, policy makers should be aware that independent directors with negligible shareholdings do not contribute to the long-term performance of the firm. The listing rules in SGX require that a listed firm's board has at least two independent, non-executive directors. With effect from 1 January 2022, the listing rules will require that at least one-third of the board of listed firms be independent. In light of this, public policy toward shareholders should encourage active involvement and engagement of blockholders in order to encourage such investors to have a long-term investment perspective. This viewpoint is backed by this Study's conclusion that a larger share of blockholders on the board is related to long-term firm performance. Blockholders have more direct voting power, the capacity to join coalitions with other major owners, and more influence on the board than other outside directors, who generally have minor shareholdings. In addition, the presence of more blockholders on the board allow for more critical resources to be acquired from the environment as according to the resource dependence theory.

Finally, the findings of this Study may inspire managers to consider their ownership and corporate governance structures in a broader context to improve company performance. The findings of this Study imply that a business should be cognisant of the amounts of stock ownership held by insiders and family members to avoid the accumulation of excessive powers that lead to entrenchment, nepotism, and oligarchic behaviour. In addition, the firm should properly select the independent directors and other directors on the board that show more commitment and could bring in more critical resources for the firm survival and long-term performance. To this extent, this Study suggests that the firm should encourage more blockholders to be on the board as such board members have greater influence and provide better monitoring relative to other outside directors, who typically have negligible shareholdings. Firm performance is enhanced with the presence of more

blockholders on the board as it reduces the agency problems further in the firm.

7.7 Limitations of Thesis

A trade-off must be made between this Study's aims of generalisability, precision and simplicity. To this extent, every study has limitations due to constraints on research design or methodology. Thus, this Study is no exception. Although there are several limitations considered in this Study, these limitations do not undermine the value of the research undertaken.

First, the sample in this Study did not randomly include all Singapore listed firms as firms listed on the SGX Catalist are excluded since the listing requirements are less stringent than those on the SGX Main Board. In addition, the financial industry is excluded from the sample since the high leverage that is normal for these firms does not infer higher likelihood for financial distress as in the case of non-financial firms. This makes the calculation of the profitability and valuation of financial firms difficult to compare with firms in other sectors (Claessens et al. 2002). Furthermore, there is limited access to the data in privately held firms. The absence of these firms may make generalising the findings to all industrial sectors and firms in Singapore difficult. Furthermore, the data in this Study is limited to Singapore, which may make it difficult to generalise conclusions to other nations with diverse institutional systems, laws and cultures.

Some of the insignificant results reported in this Study should also be considered in the light of some limitations. For instance, the insignificant results for the moderating effects of non-pressure resistant institutional blockholdings in a pressure-resistant institutional dominant firm could be driven by the smaller sub-sample. A smaller sub-sample would lead to a higher standard error in the distribution and lead to insignificant results although the coefficients are relatively large and positive. Similarly, the insignificant relationship of pressure-resistant institutions equity holdings on firm performance should also be taken in the context specific of Singapore where the corporates are dominated by government linked and family-owned firms.

Finally, there are several ways to assess corporate performance, including financial and non-financial metrics (e.g. customer ratings and percentage of returns due to quality issues) (Neumann, Roberts and Cauvin 2011). Only financial performance measures were examined in this Study. It is believed that the inclusion of non-financial indicators might give a more comprehensive picture of the effect of blockholders on business performance.

7.8 Suggestions for Future Research

The limitations of this Study point to potential future research directions. Further study might focus on either one or both themes and methodologies. Removing some constraints may open new avenues of investigation. To this extent, this Study has identified the following opportunities for future research.

First, this Study has excluded listed firms in the financial industry as well as those held privately. Future research could attempt to examine the financial industries and privately held firm in different institutional settings where blockholder information are more readily available. Replicating the research in a different institutional setting with a different law and culture might allow for comparative studies. Furthermore, a comparative study between listed firms and privately held firms would be interesting.

Second, the insignificant results of the moderating effects of non-pressure resistant institutional blockholdings in a pressure-resistant institutional dominant firm could be specific to the Singapore data because of the smaller sub-sample. As a result, it is acknowledged that a study based on a larger sample size in a different population and country could yield significant or other interesting results.

Third, other firm performance measures including non-financial measures such as customer ratings and employee turnover could be considered in future studies. It is believed that the inclusion of non-financial indicators might give a more comprehensive depiction of blockholder impact on firm performance.

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Appendix 1: Listing Requirements for SGX Main Board and Catalist

Prospective firms that want to list on the SGX Main Board need to satisfy one of the following stringent financial criteria:

- Minimum consolidated pre-tax profit of at least S$30 million for the most recent fiscal year, with at least three years of operating history, or
- Profitable in the most recent fiscal year, with a market capitalisation of at least S$150 million based on the issue price and post-invitation issued share capital, and with at least three years of operational history, or
- Operating revenue in the most recently completed fiscal year and a market capitalization of at least S$300 million based on the issue price and post-invitation issued share capital with at least a one-year operating record. Real Estate Investment Trusts and Business Trusts that meet the S$300 million market capitalisation criteria, but lack previous financial information, may apply under this regulation if they can show that they will produce operational revenue immediately following listing.

Catalist businesses are directly supervised by their sponsors, as opposed to issuers listed on the SGX's Main Board. Sponsors are certified professional firms with corporate finance and compliance advising experience. SGX authorises and regulates them through stringent admission standards and ongoing duties.

An approved Catalist Sponsor must sponsor a firm that wishes to list on the SGX Catalist. Catalist firms are listed depending on the Sponsor's evaluation of their suitability. SGX does not have any minimum quantitative entrance criterion, but Sponsors must be satisfied with the listing applicants' appropriateness after doing reasonable due diligence and inquiries. The business' Sponsor and directors must include a statement in the Offer Document stating that the company has sufficient operating capital for the current needs and for at least 12 months following listing.

Appendix 2: Variable Definition

Type	Variable	Description
Dependent	lnq	Tobin's Q's natural logarithm is used. Tobin's Q is calculated as the ratio of the market value of common stock plus the book value of preferred stock and long-term debt to the total asset book value
	ROA	Net income returned as a percentage of the firm's total assets
	ROE	Return on net income as a percentage of shareholders' equity
Independent	Insider	Percentage shareholdings of inside blockholders
	Family	Percentage shareholdings of founder/founding families
	SWF	Percentage shareholdings of sovereign wealth funds
	InsensitiveFI	Percentage shareholdings of pressure-resistant financial institutions
	Familydom	Dummy variable set to 1 if the largest shareholdings in the firm are from family members and 0 otherwise
	SWFdom	Dummy variable set to 1 if the largest shareholdings in the firm are from the sovereign wealth funds
	InstResdom	Dummy variable set to 1 if the largest shareholdings in the firm are from pressure-resistant institutional owners
	Nonfamily	Percentage of shares owned by non-family members in the firm
	NonSWF	Percentage of shares owned by non-SWFs in the firm
	NonInstRes	Percentage of shares owned by non-pressure resistant institutional owners
	Relchangeblk	The percentage change in blockholding size of the largest blockholder relative to the total blockholding size in the firm over a one-year period
	Propdir	The proportion of blockholders on the board in a year
Control	Firm size	The natural logarithm of the book value of total assets

Type	Variable	Description
	Firm age	The natural logarithm of the number of years since the firm's incorporation
	Leverage	The ratio of company's total debt to its total assets
	CapexTA	Ratio of the capital expenditure incurred in a year to the total asset in that year
	Industry dummies	Dummies for each industry
	Year dummies	Dummies for the years from 2006 to 2016