DOCTOR OF PHILOSOPHY

Board characteristics and firm's financial performance

Evidence from public listed companies in China

Ojo, Andrew

Award date:
2021

Awarding institution:
Coventry University

BOARD CHARACTERISTICS AND FIRM'S FINANCIAL PERFORMANCE: EVIDENCE FROM PUBLIC LISTED COMPANIES IN CHINA

By

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PhD

August 2021

BOARD CHARACTERISTICS AND FIRM'S FINANCIAL PERFORMANCE: EVIDENCE FROM PUBLIC LISTED COMPANIES IN CHINA

A thesis Submitted in partial fulfilment of the university's requirements for the degree of Doctor of Philosophy

August 2021

Certificate of Ethical Approval

Applicant:

Andrew Ojo

Project Title:

Board characteristics and firm's financial performance: Evidence from public listed companies in China

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Date of approval:

09 March 2018

Project Reference Number:

P69114

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Faculty/URC:	BUSINESS AND LAW
Award:	PhD
Thesis Title:	BOARD CHARACTERISTICS AND FIRM'S FINANCIAL PERFORMANCE: EVIDENCE FROM PUBLIC LISTED COMPANIES IN CHINA

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ABSTRACT

Corporate governance has drawn the attention of investors and government after the incidence of the 2007 financial crisis worldwide. Research on board characteristics and firm performance based on evidence from public listed firms in China has been reported, though with gaps that call for further research. Therefore, this study employs the dynamic model approach to investigate the nexus between board characteristics and firms' financial performance of publicly listed firms in China. The research objectives were to investigate the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, CEO interlock, and board gender diversity), the impact of female directors' education, the moderating role of ownership concentration, and board-gender diversity in relation to board characteristics and firm performance. The study employed a multi-theoretical framework and longitudinal panel data samples of Chinese publicly listed non-financial firms from 2003 to 2016. The dynamic general method of moments and two-stage least square method was employed using Stata. This study reports a significant and positive association between board characteristics (board size, board independence, average board interlock and CEO interlock) and firm performance. Board gender diversity exhibits a positive relationship with ROA and a negative relationship with LnTobin's Q is reported. The performance-effect of CEO duality, female directors' education is non-significant. The performance-effect of interlocks is positively moderated by ownership concentration, while board gender diversity positively moderates the relationship between CEO duality, average board interlock, and firm performance. In contrast, the association between CEO interlock and firm performance is negatively moderated by board gender diversity. The board gender diversity performance effect is stronger in private controlled firms but not significant in state-controlled firms. The findings provide clear implications to policymakers and firm managers concerning corporate governance in China, these include: (i) ownership concentration can serve as an alternative proxy of monitoring and improve performance, especially in a weak institutional settings where the effect of independent directors are perfunctory, (ii) integrating arguments of agency theory and resource dependence theory in explaining the interaction of certain board characteristics and ownership concentration can improve firm performance, (iii) board gender diversity can improve the effectiveness of the board by acting as an proxy for board monitoring and, (iv) different ownership setting can affect the performance-effect of board characteristics in China.

Keywords: Corporate governance; Board characteristics; Ownership concentration; board gender diversity; firms' performance; China.

THESIS RELATED RESEARCH OUTPUTS

Two conference papers have been produced from this thesis.

Ojo, A. (2019). The effect of board characteristics and individual director dissimilarities on firms' financial performance. Evidence from a transitional economy. Paper submitted at British accounting and finance association conference, University of Birmingham, United Kingdom.

Ojo, A. (2019). Board interlock and firms' financial performance. Paper presented at the 5th annual ICGS conference, Essex Business School, University of Essex, United Kingdom.

AKNOWLEDGEMENTS

My PhD cannot be completed without the support of my family, friends, and colleagues. Especially, my wife, Mrs Olamide Ojo, who took up lots of responsibilities while I concentrate on my studies. Many thanks also to my brother, Mr Anthony Akinola Ojo for his immense financial and moral support.

My deepest appreciation goes to my director of studies, Dr Mei Yu, for her belief in me and continuous support, encouragement throughout this PhD journey. I can never forget how she have challenged me to bring out the best in me. You are a rare supervisor, and I will forever be grateful. Also, special thanks go to my second supervisor, Dr Hailin Liao for her critical feedbacks and support. Undoubtedly those feedbacks have improved the quality of my research. I also appreciate Dr Renfred Wong, my former Director of studies for laying the foundation of this research.

My deepest thanks also go to my mum, Mrs Victoria Ojo, my mother-in-law, Mrs Olabisi Bakare and my brother-in-law, Mr Olanrewaju Bakare for their unconditional love, support, patience, and understanding during my PhD studies. Words cannot express my appreciation.

I am grateful to my colleagues and friends, Simba Madzima, Dapo Osinaike, Joshua Onyango, Micheal Ikpea, Dr Omobolanle Omolabi, Obinna Ugwu, Dr Uduak, Dr Alein, Dr Alfred, and Dr Daniel Aghanya for their encouragement and support. They have been my source of strength and inspiration.

I cannot forget Marie Hardie and Steve Jowel who identified the rising star in me and wrote a letter of recommendation to support my PhD application. I am glad I have not disappointed you both.

Finally, to the entire family of Coventry University, especially the research doctorial college, I would say a big thank you. You guys are amazing and have done fantastically to make my dream a reality.

DEDICATION

I wish to honour the memory of my beloved dad, Mr Joseph Kolawole Ojo, by dedicating this thesis to him. Even though I was only 3 years old when I lost him, his academic and career achievements especially in accounting and finance has shaped my aspirations and goals.

I also dedicate this thesis to my late uncle Chief (Dr) Samuel Adekunle, who since the demise of my dad assumed the role of a father in my life until death took him away from us in 2012. Daddy, the discipline, and principles of success you instilled in me has made me who I am today. Continue to rest on. Amen.

CONTENTS

LIST OF ABREVIATIONS

AR (2) test	The Arellano-Bond test for second-order serial correlation
AR (1)	The first-order autoregressive process
BOD	Board of directors
BOS	Board of supervisors
CEO	Chief executive officer
DWH	Durbin-Wu-Hausman test for endogeneity
FE	Fixed-effects estimator
GMM	General method of moments estimator
IV-2SLS	Instrumental variable methods- two stage least squares
MAT	Multiple agency theory
OLS	Ordinary least squares estimator
OECD	Organisation for Economic Co-operation and Development
QFIIs	Qualifying institutional investors
RDT	Resource dependence theory
ROA	Return on assets
SAMC	State Assets Management Companies
SASAC	State-owned assets supervision and Administration Commission
SOEs	State-owned entities
The UK	The United Kingdom
The US	The United States of America
UET	Upper echelon theory
VIFs	Variance inflation factors
WTO	World trade organisation

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CHAPTER ONE

INTRODUCTION CHAPTER

1.0 Introduction

In the wake of the 2007-2008 financial crises, much attention has been drawn to firms' corporate governance and the need to revisit the effect of board characteristics on firms' performance. Scholars working on agency theory has defined corporate governance as the systematic provision of structure to monitor firm managers to secure investors' confidence (Daily et al., 2003). As a result, the corporate governance-performance relationship has attracted increasing research attention, especially concerning the role of the board of directors and whether an improved board structure or characteristics can lead to better corporate performance. To answer the question, extant studies have investigated the effect of board characteristics on firm performance (Liu et al., 2015, Shao et al., 2019). However, the empirical evidence in extant literature remains elusive and inconclusive, with most studies focusing on firms in developed economies and very few studies on emerging economies (Black et al., 2012). The lack of clarity and inconclusive empirical evidence in the literature on the effectiveness of board characteristics may have been affected by: (i) different ownership settings (Aguilera et al., 2008), (ii) different legal and institutional environments (Love et al., 2011), (iii) imperfection in estimation techniques (Wintoki et al., 2012), (iv) endogeneity bias (Ullah et al., 2018) and (v) lack of clarity on the effect of contingent factors on the board characteristics-performance relationship (Filatotchev et al., 2013).

To address these issues, first, this thesis extends to literature by focusing on China, where ownership is concentrated, the regulatory environment is weak, and the proportion of female representation on corporate boards is increasing. The thesis differs from antecedent studies that have excessively focused on developed countries like the US and UK. Ownership concentration and gender diversity can play a crucial monitoring role in the Chinese corporate governance system (Chen et al., 2013; Liu et al., 2014). Guo et al. (2019) documented that the largest shareholder in Chinese listed firms accounts for a stake exceeding 50% of the firm's outstanding shares. Therefore, investigating the effect of board characteristics on firm

performance without considering the contingent impact of ownership concentration and board gender diversity can result in misleading evidence.

To this end, this thesis employs a panel of 21,390 firm year observation for the period 2003-2016 and a multi theoretical framework that integrates agency theory, stewardship theory, and resource dependence theory to investigate whether the effect of board characteristics on firm performance in China is contingent on firms' ownership concentration and board gender diversity. The study explores the performance effects of board characteristics in a dynamic setting using the dynamic generalised methods of moments (GMM) and the two-stage least square method. These estimation techniques address the potential source of endogeneity concerns, including dynamic endogeneity, simultaneity, and unobserved time-invariant heterogeneity, which are inherent in most governance studies (Wintoki et al., 2012). This thesis aims to address this gap in the literature by examining the relationship between board characteristics and firm performance in China and how ownership concentration and board gender diversity can moderate the relationship.

1.1 Research Background and Motivations

The impact of board characteristics on firm performance has generated mixed research findings. Prior empirical studies may have suffered from endogeneity concerns. Yet very few like those reported by Wintoki et al., (2012), Nguyen et al., (2015) and Shao et al., (2019) have addressed issues regarding dynamic endogeneity in the relationship between board characteristics and firm performance. Others like Love (2011), Filatotchev et al., (2013), and Aguilera et al., (2015) have advocated the need to consider contingent factors that can affect the dynamics relationship between board characteristics and firm performance. Taken together, this could account for the diversity in empirical results reported so far. It is on this basis that the researcher identifies the following research motivations:

First, the study is motivated by recent literature on corporate governance in China. For example, the relationship between board independence, ownership concentration and firm performance in China (Li et al., 2015), the determinant of board size and independence (Chen and Al-Najjar., 2012), board interlocks and corporate performance among firms listed abroad (Peng et al., 2015), whether women directors improve firm performance in China (Liu et al., 2014); influential chief executive officers and firm performance: integrating agency and

stewardship theory (Qiao et al., 2017), and the relationship between corporate governance structure and firm performance in China (Shao et al., 2018). This thesis extends a range of investigations from recent corporate governance studies, but differ in the following aspects: first, this thesis supports the detailed analysis of the dynamic effect board characteristics (board size, board independence, CEO duality, board interlocks and board gender diversity) on firm performance to improve understanding on the Chinese corporate governance system. Second, the study extends to recent governance literature on board structure in China by providing evidence on the moderating effect of ownership concentration and board gender diversity on the relationship between board characteristics and firm performance.

Despite the global interest in female representation in corporate boards, only a few corporate governance studies like those reported by Lam et al., (2013) and Liu et al., (2014) have examined the impact of gender diversity on firm performance in China. It is important for firms, industry leaders and government to understand the implications of having a gender diversified board; this to a large extent would improve board structuring and reduce non-compliance to regulations on female representation on board. More importantly, female directors' education affects firm performance, as it can offer a complimentary monitoring effect especially in a weak institutional setting like China. Thus, it is not enough to achieve a critical threshold of female directors on board. Still, it would be interesting to explore the impact of female directors' education on the quality of decisions made and firms' financial performance. Unfortunately, empirical research on the effect of female directors' education on firm performance is very scant.

Based on relevant theories and Chinese unique institutional background, it is compelling to conduct this research, considering the influence of the Chinese government and controlling ownership on SOEs and other publicly listed firms. Unlike most developed countries including, the UK and US, the concentrated ownership setting in China offers a distinct setting to evaluate corporate governance performance relationship. However, in China, concentrated ownership structure can result in agency problems and the role of independent directors to effectively monitor controlling shareholders and managers remains unclear as previous studies have failed to reach a consensus. The lack of adequate knowledge on the complexities of the Chinese concentrated ownership setting, weaken monitoring role of independent directors (Wang, 2007), and the impact of controlling ownership (Chen et al., 2013) has motivated this research.

Finally, it becomes crucial to widening the research theoretical lens as prior scholars have excessively focused on agency theory in examining the impact of corporate governance on firm performance; this to a large extent, has limited available empirical evidence. Thus, the need to consider a multi-theoretical perspective in investigating the relationship between board characteristics and firm performance in China has motivated this research.

1.2 Gaps in literature

Whilst literature on corporate governance continues to grow, the empirical evidence providing insights into the relationship between board characteristics and firm performance remains mixed and has yielded inconclusive results (Lam et al., 2013; Liu et al., 2014; Qiao et al., 2017; Shao et al., 2019). Specifically, because of the divergent results reported in the literature, it becomes difficult to understand the effect of board characteristics on firm performance. More so, prior studies like those reported by Adams and Ferreira (2009), Guest et al., (2009), and Carter et al., (2010) that have investigated this relationship have excessively focused on developed economies making it difficult to generalise whether board characteristics-performance relationship is jurisdiction-specific or not. More interestingly, limited work has been conducted on the impact of board characteristics on firm performance, especially in a Chinese context. Chinese corporate governance structure is different from those of most developed economies. In China, ownership is highly concentrated, and businesses are built on connections, long-lasting trust, and the Chinese government remains a significant shareholder (Tang et al., 2011). It can be misleading to readily translate perceived best corporate practises from most developed economies in such a transiting economy. Unlike most developed economies like the US and the UK, where agency conflict is between the principal and the agent, as discussed in chapter 2 of this thesis, in China, controlling shareholders can greatly influence the direction of a firm, thereby creating a conflict with minority shareholders. Amazingly, very few researchers have explored the general effects of corporate governance on firm performance in a unique setting like China.

In the last decade, prior empirical evidence such as those reported by Peng et al. (2004), Wei et al. (2007), and Peng et al. (2007) have investigated the direct effect of board characteristics on firm performance without considering contingent factors that can affect the relationship. Filatotchev et al., (2013), and Love (2011) have advocated that future research considers the effect of contextual factors on board characteristics-performance relationship. Yet very few

studies like those reported by Zhou et al. (2017), Zattoni et al. (2017) and Chen et al. (2020) have yielded to this call. To this extent, examining the direct effects of board characteristics on firm performance without considering contingent factors like ownership concentration can be misleading. Specifically, in China, where ownership plays a crucial role and the representation of female directors on corporate board is beginning to rise, it becomes highly crucial to consider the interactive effect of ownership concentration and board gender diversity on the relationship between board characteristics and firm performance. Up until now, this remains elusive.

Finally, prior research has been limited in terms of methodological approach. For example, there are very few longitudinal studies, and most studies have been saddled with endogeneity issues that have rendered research findings misleading (Wintoki et al., 2012). Therefore, a longitudinal study can address concerns relating to sample size and short period. This research closes this gap by utilising longitudinal sample and a robust method (Dynamic GMM) to address endogeneity concerns including simultaneity, autoregressive effect, and unobserved variable bias.

1.3 Research Aims and Objectives

This study aims is to examine the relationship between board characteristics and firm performance in Chinese listed firms by integrating agency theory (Jensen and Meckling, 1976), resource dependence theory (Pfeiffer and Salancik, 1978), and upper echelon (Hambrick and Mason 1984) theory in addressing the following research objectives:

- To investigate the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, CEO interlock, and board gender diversity) and firms' financial performance in Chinese listed firms.
- To investigate the impact of female directors' education on firm performance.
- To examine the moderating role of ownership concentration on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firms' financial performance.
- To examine the moderating role of board gender diversity on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firms' financial performance.

1.4 Summary of key findings

First, the research findings in this thesis show that: board size, independent directors, average board interlock and CEO interlock exhibits a positive and significant relationship with firm performance, while the impact of board gender diversity on Ln_Tobin's Q and ROA is mixed. There is no significant relationship between CEO duality and firm performance. Additionally, the relationship between female director's education and firm performance is not significant.

Second, ownership concentration positively moderates the relationship between: (i) board interlock and firm performance, and (ii) CEO interlock and firm performance. There is no relationship between the moderating effect of ownership concentration on board size and firm performance, board independence and firm performance, and CEO duality and firm performance.

Third, board gender diversity positively moderates the relationship between: (i) CEO duality and firm performance, (ii) average board interlock and firm performance, and (iii) negatively moderates the relationship between CEO interlock and firm performance. There is no significant relationship between the moderating effect of board gender diversity on board size and firm performance and board independence and firm performance.

After splitting the sample size into state and private controlled firms, evidence reported affirm that the effect of board size on firm performance is not significant in private controlled firms but significant in state-controlled firms. Also, gender diversity effect is stronger in private controlled firms, but no significant effect is reported in state-controlled firms.

1.5 Contribution to the knowledge

This thesis contributes to the literature in the following aspects:

The thesis compliments and extend the integrative studies that examine the impact of corporate governance structure on firm performance in China (Li et al., 2015; Shao et al., 2019). Unlike Li et al., (2015) and Shao et al., (2019), the thesis extends the literature on corporate governance by investigating contingent factors that can moderate the impact of board characteristics on firm performance in China.

First, to the best of my knowledge, to date there is no integrative study that have investigated the moderating effect of ownership concentration (Top ten ownership) on the relationship

between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firm performance. Specifically, this is the first study to show that ownership concentration (Top10 ownership) can act as an alternative monitoring proxy in a weak regulatory environment like China. Therefore, by integrating agency theory and resource dependence theory, this thesis contributes to corporate governance literature and compliments the findings of Li et al. (2015) and Zona et al. (2018) by substantiating their position that ownership concentration can serve as an alternative monitoring mechanism. Additionally, the result expands on the findings of Zona et al. (2018), by evidencing that in a weak regulatory environment like China, ownership concentration (Top10 ownership) positively moderates the relationship between board interlock and firm performance.

Second, this study makes a novel contribution by investigating the moderating effect of ownership concentration (Top10 ownership) on the relationship between different types of interlocks and firm performance. Specifically, in China where CEO plays a significant role, this study compliment and extend the study of Yeo et al. (2003), by using a more recent and larger sample of Chinese firms that includes small, medium, and larger firms over the period 2003 to 2016 to show both the direct effect of CEO interlock on firm performance, and the positive moderating effect of ownership concentration on the association between CEO interlock and firm performance in a weak legal environment like China. This to date, is unexplored, despite the crucial role of CEOs in driving firm performance.

Third, to the best of my knowledge, no comprehensive study has investigated the moderating effect of board gender diversity on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock and CEO interlock) and firm performance in China. Specifically, this thesis findings substantiates the findings of Zaid et al., (2020) that a gender diversified board can serve as an alternative monitoring proxy and ameliorate the effectiveness of CEOs. However, different from Zaid et al., (2020) that have examined the moderating effect of board gender diversity on the relationship between corporate governance practices (including CEO duality) and capital structure decisions, this study makes a novel contribution by evidencing a positive moderating effect of board gender diversity on the relationship between CEO duality and firm performance. The study to date is lacking.

Fourth, the result renders support to both agency and resource dependence theory by evidencing that the performance-effect of a well-connected board can be improved in the presence of effective monitoring and control (e.g., Black et., 2012). In China, where the rule

of law is weak and the incidence of board interlock is high, the result indicates that the additional monitoring effect of female directors on board is significant and more important (Li and Chen, 2018). Therefore, this finding substantiates the finding by Li and Chen, (2018) and contributes to literature by offering a contingent approach to examine the relationship between average board interlock and firm performance. Specifically, by evidencing that a well-diversified board can improve the performance-effect of interlocking directors in China. The study differs from Li and Chen, (2018) that examined the moderating role of firm size on board gender-performance relationship in China but extends to the findings of Zona et al. (2018) by showing that board gender diversity can serve as an alternative monitoring mechanism and a contingent factor that moderates the relationship between average board interlock and firm performance. Again, to date, this is the first study to examine this contingent relationship.

Fifth, this thesis provides a comprehensive picture of board characteristics and its impact on firm performance in China by examining a comprehensive set of different board characteristics (board size, board independence, CEO duality, board interlocks, CEO interlock, female directors' education, and board gender diversity) to capture their impact on Chinese listed firms' performance. More importantly, unlike prior studies like Liu et al., (2015), Qiao et al., 2017, Peng et al., (2015), Jiang and Kim (2015) that have investigated a particular board characteristic (board independence, CEO duality, board interlock and board size), this thesis utilises a more recent dataset to investigate the effect of more comprehensive board characteristics on firm performance in China.

Finally, the study adds to the sparse literature on CEO interlock like Yeo et al., (2003) and Fich et al., (2005) that examine the direct effect of CEO reciprocal interlock on firm performance. It makes a novel contribution by showing a negative moderating effect of board gender diversity on the association between CEO interlock and firm performance. This suggests that gender diversity weakens the influence of CEO interlock and can act as an effective monitoring mechanism of the board. This is an important implication to be considered by policy makers when conceptualising new mechanisms that can improve board monitoring especially in an environment like China where the incidence of interlock is very high, and the rule of law is weak.

1.6 Structure of the Thesis

The thesis consists of seven chapters; this chapter (Chapter One) is the introductory chapter which presents an overview of the study, importance, and motivations for the study. The chapter also identifies the research objectives and original contributions the study makes to the body of knowledge.

Chapter Two presents a review of corporate governance in general. It provides an in-depth understanding of the Chinese economic reforms, the development of corporate governance in China, and a critique of the Chinese corporate governance system.

Chapter Three presents a detailed account of relevant corporate governance theories and general literature, especially agency theory, resource dependence theory, and upper echelon theory, to empirically respond to the research questions established in chapter one.

Chapter Four is the conceptual framework and hypothesis chapter; it develops the research conceptual framework and reviews literature on the impact of board characteristics and firm performance. The chapter would connect the Chinese context and relevant theories to support the related empirical studies on board characteristics and their impact on firms' financial performance. Consequentially, theoretical based hypotheses are developed considering Chinese context to empirically respond to the established research objectives which include explaining the direct effects of board characteristics on firm performance as well as the empirical and theoretical rationale for the moderating effects of ownership concentration and gender diversity on the board characteristics-performance relationship, especially in Chinese context.

Chapter Five is the data and methodology chapter. The chapter elaborates on the methodology adopted for the research, covering the research design, research sample, data collection method model specification, and variable definition. The chapter also addresses issues on endogeneity, tests for over-identification restrictions, and other estimation approaches.

Chapter Six is the data analysis and discussion chapter; the chapter would discuss the statistical techniques used in data analysis and the results of the empirical analysis. Specifically, the chapter will discuss the empirical results on (i) the direct effect of board characteristics on Chinese listed firm's performance, (ii) the moderating effect of ownership concentration (Top ten ownership) on the relationship between board characteristics and firm performance, (iii)

the moderating effect of board gender diversity on the relationship between board characteristics and firm performance.

Chapter Seven concludes the thesis by summarising the key research findings, contributions for academia and practitioners. The chapter also identifies the research limitations and provides recommendations for potential areas for future study.

CHAPTER TWO

INSTITUTIONAL BACKGROUND AND CORPORATE GOVERNANCE IN CHINA

2.0 Introduction

This chapter discusses corporate governance in China; it explores the institutional background of corporate governance by reviewing the Chinese code of corporate governance and the corporate governance mechanisms of Chinese listed firms.

The chapter also briefly introduce the evolution of corporate governance development in China, the peculiarity of the Chinese framework, and the Chinese code of corporate governance. Section 2.1 discusses the definition of corporate governance. Section 2.2 discusses the background of corporate governance in China. Section 2.3 describes the corporate governance systems in China. Section 2.4 discusses the Chinese code of corporate governance. Section 2.5 describes the Chinese stock market. Section 2.6 discusses the Chinese ownership structure. Section 2.7 discusses the Split share reform. Finally, section 2.8 is a critique of the Chinese corporate governance framework and Section 2.9 is the chapter summary.

2.1 Definition of corporate governance

There is no single definition of corporate governance, with different scholars having defined corporate governance in different ways. In a narrow perspective, the objective of firms' is to maximise shareholders wealth. Common definitions have focussed on the separation of ownership and control. In 1992, the United Kingdom (UK) Cadbury committee defined corporate governance as the mechanisms through which firms are directed and controlled, stressing the crucial relationship between board and its shareholders (Cadbury, 1992). Building on Cadbury definitions, Schleifer and Vishny (1997) stressed the importance of legal rules and concentration of ownership when defining corporate governance. Shleifer and Vishny (1997) defined corporate governance as the processes to guarantee investors return on investments. By implication, agency scholars including Jensen and Meckling (1976) and Fama and Jensen (1983) have described corporate governance as the mechanisms that align the actions and choices of managers with the interest of shareholders. With a focus on ownership and control,

Larcker et al., (2007) define corporate governance as the sets of mechanisms that influence decisions made by managers when there is the separation of ownership and control.

Other schools of thought, including Freeman (2010) have criticised the agency theory perspective of corporate governance definition, stressing that in a broader stakeholders' perspective, corporate governance should maximise stakeholders' interest rather than just shareholders' interest. Thus, for example, corporate governance should include the interest of employees, suppliers, customers, creditors, competitors, government, and the community at large.

The choice of definition is crucial as it shapes and influences the focus, structure, and interpretations of the research study analysis. Specifically, the application of corporate governance definition also depends on institutional settings which differ across different countries. For example, the agency theory approach to corporate governance have underpin most governance research in Anglo-Saxon countries like the UK, the US and Canada while in continental Europe, Japan, and China, where corporate governance systems are designed to protect the interests of wider stakeholders, a more wholistic definition as suggested by Freeman (2010) can be applied. For example, the Chinese code of corporate governance reflects the inclusion of wider stakeholders in designing corporate governance systems for listed firms. These include protecting investors interests' and rights, regulation for directors, supervisors, and top management team of listed firms. This study discusses Chinese corporate governance in a broader perspective and attempt to explore perplexing features of corporate governance regulations and institutional settings.

2.2 Background of corporate governance in China

Unlike developed economies, the development of corporate governance in China is phenomenal and diverse in social, economic, legal, and cultural systems. The evolution of modern corporate governance in China began with the changes recorded as the Chinese Communist Party (CCP) took power in 1949. During this period, the State-Owned Enterprises (SOEs) were the only business entities in China, and they were typically government-oriented (Zhang 2006). The evolution of corporate governance in China has been previously documented by Shan and Round (2012), stressing that adopting the best corporate practice in China was necessitated by the corporate financial scandals involving some listed companies in China, for example, Macat Optics and Electronics Company scandal in 2001, Pharmaceutical

Company Limited and Lantian Company Limited in 2001. This had prompted policymakers to take the issue of corporate governance very crucial in 2001 when the Chinese government came under public pressure to improve upon corporate governance mechanisms in the country. Until the late 1970s, the Chinese firms were predominantly state-owned with corporate decisions and regulations of companies controlled by the government which is different from what is obtained in developed economies like the UK and U.S.A where firms' ownership is well diversified with most stocks owned by institutional investors.

In 2001, China became a member of the World Trade Organization (WTO). This positively influenced growth and development in China as the Chinese government embraced the liberalisation of its capital markets. In line with this development, it becomes pertinent to quickly respond to in securing a long-lasting and efficient corporate governance system in place.

Presently, economic indicators from Organisation for Economic Co-operation and Development (OECD, 2019), indicates that China has a population of 1,385.6 billion people (well over 20 percent of the world population) and a gross domestic product of 16,633 US$ per capita, with a declining growth rate of 6.6% indicating China as an economic superpower ahead of Japan and Germany. China has two major stock exchanges, which are the Shanghai and Shenzhen stock markets. Both stock exchanges have experienced tremendous growth as China stock market develops in the recent past with the numbers of listed companies increasing because of changes in the governance structure (Shang and Round, 2012). Recent indicators obtained from the Shanghai stock market website show that there are 1,208 listed companies, 9441 listed securities, and 1,252 listed stocks. In comparison, the Shenzhen stock market has 1,897 listed companies and 4,518 listed securities. On average, both markets have 3105 listed companies, thereby depicting China as a fast-emerging economy and the most active market in the world with a stock trading value of RMB145.49 billion (Shenzhen stock market, 2017).

2.3 Chinese context and factors affecting corporate governance

In this section, the factors affecting corporate governance are discussed in the Chinese context, especially those distinct issues related to internal corporate governance in China. The significant factors affecting corporate governance in China include concentrated ownership, cultural factors, economic factors, political factors, regulatory/legal framework, and quality of accounting standards.

2.3.1 Concentrated ownership

In China, firm ownership is highly concentrated and plays a critical role in the effectiveness of corporate governance mechanisms. Guo et al. (2019) documented that the largest shareholder in Chinese listed firms accounts for a stake exceeding 50% of the firm outstanding shares. This implies that ownership is highly concentrated in Chinese listed firms. Unlike the US, the UK and Canada, where ownership is dispersed, and the conflict of interest is between the principal and the agent, under the concentrated ownership structure in China, managers expropriation is unlikely to be a serious problem, since controlling shareholders have both incentives and power to effectively monitor managers. Consequentially, the agency problem becomes the conflict of interest between controlling shareholders and minority shareholders (Yuan et al., 2009). However, in China, controlling shareholders may likely use their power to expropriate firms' resources at the expense of minority shareholders which is also known as tunneling, a practice which is more likely in China where the rule of law is weak, and the interests of minority shareholders is not well protected. Self-serving behaviors of controlling shareholders can occur. These include, outright theft, intercorporate loans, related party transactions (RPTs), holding excessive amounts of cash for private benefits, manipulation of information disclosures to hide self-dealings (Black et al., 2012). This makes it difficult for internal corporate mechanisms to work effectively.

In China, the state government often retains ultimate control over most partially privatised firms, and this can hinder the effect of private investors in such firms (Guo et al., 2019). Consequentially, fully privatized firms would achieve superior performance than government-controlled firms since profit driven private shareholders can exert control over managers of such firms. Bai et al. (2004) argues the effect of concentrated ownership in China but in a positive view, emphasising that the presence of a large shareholder besides the top shareholder can improve monitoring oversight and make illegal extraction of firms' resources more difficult. Li et al. (2015) stressed that in China, the impact of corporate governance mechanisms varies across ownership settings like state, private, and family-controlled firms.

2.3.2 Gender related institutional environment in China

This subsection discusses gender-related institutional environment in China. This is vital to strengthen the argument for the potential effect of gender diversity on Chinese board-performance relationship that will be discussed in chapter four. Consistent with Filatotchev et al. (2013), institutions may affect the impact of governance mechanisms and constitute the important antecedents of female representations in boardrooms. Institutional setting can influence the extent to which women are able to access board directorships (Kirsch, 2018) Many countries like France, Belgium, Italy, and Germany have introduced quota legislation and sanctions for non-compliance to improve female representation on corporate boards.

In China, gender diversity is still evolving; female representation on Chinese board is lower compared to mature markets like U.S.A and the UK. Despite the global call for board gender equality by lobby groups such as Women Corporate Directors (WCD), China still does not have any kind of legislation in place to promote board gender diversity. Compared to other Asia-Pacific countries, the level of board gender diversity in China is still low. Deloitte (2014) showed that women representation in Chinese boardrooms is 10.70% which is far less than Australia and New Zealand with 15.10% and 17.50% respectively. However, findings by Lam et al. (2013) affirms that female representation in China is on the rise with women making up about 4.4% of all Chief Executive Officers (CEOs) in Chinese listed firms.

More importantly, female representation is more pronounced in private control firms, buttressing the fact that firms' ownership type also plays a crucial role in the appointment of directors on board. For example, research by Liu et al. (2014) evidenced that the effect of female directors on firm performance is significant in legal controlled firms but insignificant in state- controlled firms. In summary, the surge in female representation across Chinese boards is well pronounced and makes China an interesting setting to investigate the performance effect of board gender diversity since more women are in board position and can exert influence on firm performance than ever before.

2.3.3 Cultural factors

China is a relational society, the under-development of the legal system in China has encouraged the dependence on informal private networks. Because the Chinese society is traditionally structured based on personal ties, businesses are built around social networks and

contracts are enforced considering the reputation of social networks rather than relying on the courts (Fan, 2014). So rather than applying formal, universal rules and regulations that govern businesses, members of social networks tend to rely on informal mutual obligations with regards to specific business transactions. This culture is often referred to as the traditional practise of guanxi-based transactions. Understanding the cultural setting in China is very important as it shapes the development of corporate governance in China, and it clarifies the reason why not all western governance mechanisms are appropriate in the Chinese institutional environment. For example, agency conflict in China is very complex and not all agency problem can be fixed by just appointing more independent directors, discouraging multiple directorships, or discouraging CEO duality. Specifically, because businesses are built on networks in China, such quick-fix solutions might not be appropriate.

In China, guanxi culture continues to remain a crucial substitute for weak legal institutions, businesses are most carried out between parties with close private and social ties (Lu et al., 2013), new businesses emerge through the combined initiatives of state agencies and private associations or connections of directors. This provides insights into explaining the complexity of Chinese cultural and state-society boundaries, as well as the reasons for high incidence of interlocking directorships in the transiting economy (Francis, 2001). For example, directors with government connections may hold multiple directorships as they serve their firms interests through their connections with government agencies, helping connected firms to secure resources in short supply. On the contrary, social networking requires time, attention and commitments which can potentially affect director's ability to effectively monitor. For example, well connected directors can become too busy to pay attention, they can even be distracted by their multiple commitments, and their level of concentration may not be enough for the purpose of promoting independence (Fich and Shivdasani, 2006). In this disposition, although building businesses around relational ties could be beneficial in the Chinese context, it equally has its disadvantage, although individual interests are protected within a network, there may also be conflicting interests of individuals outside such network or the society at large.

2.3.4 Political factors

The impact of country's political system on corporate governance cannot be over-emphasised, especially in emerging economies where the rule of law is weak. Roe (2003) argues that the efficacy of corporate governance mechanisms depends much more on getting the regulation right but equally on political control. In China, although the 2005 split share reform permits the the conversion of non-tradable shares into tradable A-share, allowing more qualifying institutional investors and granting autonomy to managers of SOEs. The central and regional governments still retain controlling rights in making crucial decisions including the appointment of CEOs of listed firms, mergers, acquisition, and disposal of shares. This to a large extent impacts the effectiveness of governance mechanisms. Studies have reported that in most western economies, control and decision-making power is shared amongst board of directors with the CEO and Chairman making the ultimate decisions. However, in China, especially in state-controlled firms, such power is devolved between the firm's chairman, CEO, and party secretary of the CCP's community in the listed firm. Such political influence can impair effective monitoring and control of the firm because state representatives are not able to effectively manage firms daily and such ineffectiveness can affect firms' value (Young et al., 2008).

In addition, the Chinese Communist party exerts significant control over disclosure of information by the financial industry and other intermediary institutions like accounting firms, investment banks and stock exchanges amongst others, making it difficult to have an effective real market for corporate control (Clarke, 2004). Therefore, firms that are politically connected can exert significant influence on the capital market by circumventing regulations and enjoying financial favours like access to debt financing which can affect the allocation of scarce resources.

While firms can benefit from political connections, minority shareholders investments can be impaired, given that many controlling shareholders are also politically connected and can induce tunnelling and discourage transparency (Jiang and Kim, 2020). In China, state-controlled firms have incentives to pursue government interests at the expense of minority shareholders interest of profit maximisation. Minority shareholders interest are often suppressed because they lack voting power on crucial firm decision including investment decision, appointment, and dismissal of directors. This creates a serious agency problem,

particularly the principal-to-principal conflict which is less pronounced in most western economies like the UK, the US and Canada.

2.3.5 Immature regulatory environment

Regulatory environment and the enforcement of laws is significant to the development of corporate governance in a country (La Porta et al., 1997). The effectiveness of financial system and the level of investors protection against expropriation by insiders reflects legal rules and quality of their enforcement. Therefore, an effective legal and regulatory system can mitigate agency problems and protect minority shareholders' interests. This is eminent, especially in China, where the influence of controlling shareholders is powerful as they take control the board and firm management.

Compared to western economies like the UK and the US, the rule of law in China is weak characterised by immature regulatory institutions. Weak regulatory environment discourages investments and affects liquidity. For example, when governance system is weak and investors protection will not be strong, there will be less incentive for entrepreneurs to invest because of high risk of expropriation. In China, the risk of expropriation by the government, the ease of doing business and reliability of contract enforcement remains issues of concern. Filatotchev et al., (2013) argues that the quality of corporate governance in a country depends on its institutions, especially the regulatory environment. Therefore, the effectiveness of corporate governance is not just limited to the protection of investors, but also depends on its fitness with the environment in which a firm operates (Filatotchev, 2007).

The main issue in Chinese regulatory environment is its judiciary system. There is no independent judiciary in China and the courts are controlled by state government which directly or indirectly own stocks in state firms. This makes it difficult for the judiciary system to be effective in China because the courts cannot serve as an ultimate arbiter considering the existing conflict of interests between the Chinese government and private parties (Fan et al., 2014). Therefore, in absence of an independent and effective judiciary system in China, much reliance is placed on the CSRC to ensure best corporate governance practices are sustained in Chinese listed firms and investors' rights are protected.

2.4 Chinese corporate governance system

The Chinese model of corporate governance is like the Japanese and German models which are based on a two-tier principle distinguishing a management board and a supervisory board without overlapping membership between them. The management board is like the structure of the Anglo-American firms', it consists of executives who are responsible for firms' management while the Supervisory board is equivalent to the American board of directors which is responsible for the appointment of the management board, supervising the board, formulating major policies and strategies (Cheung et al, 2013).

2.4.1 Board of directors, supervisory board, and management

The board of supervisors was introduced after the enactment of the company law in 1994 (Zhang, 2006). The board is expected to have at least three members of which one is elected by employees, and at least a representative of shareholders. For independence, important rights of control have been vested on the supervisory board; Chinese supervisory boards cannot have directors, managers, or finance officers as supervisors (Zhang, 2006). The role of the supervisory board is to monitor finances, performances, and policies of directors or senior management. Supervisory boards are often nominal in their activities and rarely conflict with the managerial or operating boards.

In principle, the supervisory board serves as a route to retain some level of control as they can influence the appointment of directors, decide on their remuneration, and request for independent audit where necessary (Liu, 2005). The lead duty of supervisory boards as suggested by the code of corporate governance for listed companies in China is to supervise the corporate finance of listed companies to achieve the accuracy of financial statements.
According to Article 50 of the Chinese company law, the serving term of a supervisor shall be three years and supervisors shall execute the following functions and powers (Company Law of the People's Republic of China, 2018):

- To examine the company's financial affairs.
- To supervise the actions of directors and managers violating laws or regulations while performing their duties.
- To demand managers to make amends if their actions are found to have damaged company interests.

- To propose scheduling of interim shareholders meetings
- Other duties stipulated in the company's article of association.

Furthermore, members of supervisory boards are not empowered to vote on executive matters including the right to elect directors, firm managers, and other finance officers to achieve effective monitoring of managerial board.

2.4.2 Board of directors

In China, the board of directors must contain between five and nineteen directors on average and should be well dominated by executive directors who should make up two-thirds of the average size of the board (Liu 2005). According to Article 46 of the Chinese company law, the board of directors shall be responsible to the shareholders (comprising of the state, legal person and individual investors) and exercise its powers in a various capacity relating to company financial and economic arrangements which include working out a financial plan and basic company management.

Other functions and powers include:

- To be responsible for convening shareholders meetings and report on its work on shareholders meetings.
- To implement resolutions agreed at shareholders meetings.
- To decide business plans for the company.
- To formulate a budget and financial plan for the company.
- To formulate plans for profit distribution and making up of losses.
- To formulate plans for increase and reduction of registered capital of the company.
- To decide on the establishment of company internal control.
- To formulate a basic management system of the company.
- To appoint or dismiss the company's general manager.

Table 2. 1 Comparison of the Supervisory Board and Board of Directors (Company Law of the People's Republic of China, 2019)

Description	Board of Directors	Supervisory Board
Size	5- 19 members	At least 3 members
Service Term	3 years	3 years
Renewal of Term	Yes	Yes
Employee Representation	No requirement	At least one third
Responsibility	Responsible for convening shareholders meeting, executing meeting resolutions, voting on vital issues involving the company's operation, making decisions on the setting of internal controls and management of the company, making decisions on employment and dismissal managers, vice managers and other issues relating to remunerations.	Responsible for supervision of companies' corporate finance, the accuracy of financial statements, and monitoring of board of directors and senior management.
Frequency of Meeting	At least twice a year	At least once every six months
Eligibility of management as a member	Yes	No

2.4.3 Management

The main duties of managers are to organise production in line with government directions and targets, they are appointed by state or local governments. Managers are limited in terms of their powers or roles as they cannot influence company internal control to a large extent as they depend on government plans or projections for firms since they do not have control over prices or quantity. Article 114 of the Chinese company law explains the appointment of a manager; it states that the board of directors shall decide to appoint a member of the board to simultaneously hold the post of a manager (Company Law of the People's Republic of China, 2018). Zhang (2006) believes that the management selection process remains a major challenge to SEOs reforms as the process permits governmental intervention. Often time the Chinese

government rotates managers of large SOEs to ensure accountability and avoid the development of personal interest.

Figure 2. 1 Corporate Governance Structure in Chinese Listed Firms (Zhang, 2006).

2.5 Chinese code of corporate governance

Just like most developed countries, the Chinese code of corporate governance is enacted to strengthen organisation control and direction. Its provisions are like the UK combined code of corporate governance. The code which consists of eight chapters was formulated to promote the establishment and development of a modern enterprise system by listed firms, to standardise and promote the healthy development of the Chinese securities market.

The first chapter of the code highlights the rights of shareholders. These include the right to protect their interest, rights to civil litigation, voting rights, knowledge of business activities, related party transactions, accountability, and fairness. Like most developed economy codes, this represents a step in the right direction even though the first chapter of the Chinese code is not detailed enough. This is because it fails to address in detail how issues on fairness and related party transactions should be addressed. This has been left vague without an explicit explanation (Jiang and Kim, 2015).

The second chapter of the code discusses the behaviour rules for controlling shareholders and the independence of listed firms in China. The code emphasises on the establishment of a reasonably balanced shareholding structure and controlling shareholders should not take advantage of their influence over other shareholders. This suggestion is rather interesting and explored in detail to see the effect of controlling shareholders on Chinese boards. Also, the chapter advises on how firms should be independent of its controlling shareholders, these include personnel, assets, and financial affairs.

Chapter three of the code focuses on the board of directors which is a vital internal governance mechanism, it is a vital chapter detailing on the election procedures for directors, duties, and responsibilities of directors, duties, and composition of the board of directors, rules, and procedures for the board of directors, independent directors and specialized committees. Most of the chapter recommendations are more prescriptive and not specific. For example, it is not clear on how to ensure a director is acting faithfully, honestly, and diligently in favour of a firm. On the second note, unlike in the UK code, there is no flexibility to permit situations where directors find it difficult to comply. Moreover, the language in the chapter is not explicit; issues on the board composition need to be clear in terms of having proper professional background and issues on accountability. With regards to independence, the chapter specifies that independent directors should not hold any other position in the company, but more interestingly such directors must not be related to any major shareholder.

Chapter four explains the duties, composition, and responsibilities of the supervisory board. The code clearly explains the duties of the supervisory board which is to supervise and examine directors, managers, and senior management personnel on firms' financial matters. To achieve these, supervisors are expected to have significant knowledge and experience in law and accounting. Prior research findings like those reported by Lin (2004) have documented that Chinese supervisory boards are weak: these are because the supervisory functions over the board remain loose and not explicit as described in the Chinese codes. Thus, some board of supervisors in some Chinese firms finds it difficult to perform their duties; they have not been effective in their governance role and end up duplicating the authority of the board of directors without corresponding responsibilities (Jiang and Kim 2015).

Chapter five of the code discussed the performance assessment for directors, supervisors and management personnel, selection of management personnel, and disciplinary systems for

management. Recruitment and firing of managers must be done fairly and transparently, standard, and procedures for performance assessment must also be fair and transparent.

Chapter six discussed the firms' relationship with its stakeholders including banks, creditors, employees, suppliers, consumers, and the community at large. Firms shall respect the legal rights of their stakeholders; provide necessary information to banks and creditors to enable the make judgment and decision relating to firms' financial position.

Chapter seven of the code pertains to information disclosure and transparency. A firm must fully and adequately disclose all information required by law; voluntary disclosure must be made of any item that could have a material effect on shareholders. Finally, Chapter eight emphasises the issuance date of the code.

2.6 The Chinese stock market

The importance of a high capitalised and liquid stock market to nations' economic development cannot be over-emphasised as the stock market contributes to the effective allocation of financial resources. Most importantly, stock markets serve as a mechanism of control and corporate discipline especially for firms listed in such markets, this role is achieved by rewarding firms that outperform the market with share price appreciation while firms that do not match market standards are penalised by having a decrease in their share prices. Generally, outperforming firms' signals market confidence and investors would see share price appreciation as a reflection of good corporate governance practices. There are two stock exchanges in China; the Shanghai and Shenzhen stock exchanges both found in March 1990 and November 1991 respectively to improve corporate discipline and promote the development of Chinese firms. Since then, the Chinese stock market has recorded significant development that it was ranked the seventh-largest stock exchange in the world in 2014 (China Daily, 2014). Like the UK, US, and even some emerging economies like South Africa, the Chinese stock market offers the platform to raise capital and trade firms' equity. Firms' trading on the Chinese markets is either Joint Stock Companies (JSC) or Limited Liability Companies (LLC) which is like UK Public and Private Companies. The market capitalisation in China is still relatively low compared to the US; however, with gradual improvement in the Chinese legal system and trading rules, the Chinese market has approached international standards (Pan and Mishra 2018). The equities traded on the Chinese stock markets are classified as the A shares and B shares. Tradable 'A' shares are called individual shares quoted in RMB and can be transferred

only between Chinese citizens, they are ordinary shares with good liquidity and account for a significant proportion of the Chinese market. Specifically, the total amount of A-shares issued by a listed firm in China must exceed 25% of its outstanding shares (Guo et al., 2013). Unlike the A-shares, the B-shares comes with restrictions. Only domestic investors in Hong Kong, Macau, Taiwan, and other countries are allowed to invest in B-shares since they are created for foreign investors to improve liquidity in foreign currency and international trade (Gu et al., 2013). This continued until 2001, when the Chinese government relaxed the rule to allow Chinese mainland residents who held valid foreign exchange deposit to invest in B shares since B shares are quoted in foreign currency (Pan and Mishra 2018), specifically US dollars for Shanghai stock exchange and Hong Kong dollars for Shenzhen stock exchange.

2.7 Ownership structure in China

Most distinctive is the firms' ownership structure and share classification in China. Unlike, in the UK and USA, ownership in banks, other financial institutions, and non-financial institutions are disperse and not less concentrated compared to China. In China, not until 2006 (after the split-share structure in 2005), most Chinese firms are state-owned, shareholdings are concentrated, and block holders monitor the performance of their investments through their representation on the supervisory boards. Specifically, while the market for corporate control helps discipline managers in developed economies like UK and USA, this is in contrast in the case of China as insiders like employees, banks and interlocking investors are well informed and it is their influence through the supervisory boards that help in achieving effective monitoring and disciplining of managers behavior. In Corporate governance, ownership structure cannot be neglected. In fact, in China, the concentrated ownership structure serves as an alternative proxy for monitoring and controlling in mitigating agency problems (Jensen and Meckling, 1976). Unlike in the USA, UK, and South Africa, Chinese large firms are controlled by the corporation of large block holders who have majority interests, and the interest of minority shareholders remains less recognized. In China, large share blocks are primarily held by governments (state) and families, for example, Yu (2013), document that the state is a major block shareholder of Chinese PLCs, even though the percentage of their shareholdings has continued to fall since the split-share reform in 2005. Based on these, minority shareholders' rights are less protected in China compared to the US and UK characterised by a well-developed legal framework and active take over markets. Another important factor to be considered in the Chinese governance system is the high incidence of dual shareholdings and

interlocking directorships that are produced. Chinese businesses are built on contact and connections (Tian and Yan, 2013).

Tradable Shares and Non-Tradable Shares

Tradable shares are classified as "A" and "B" shares. Tradable A-shares are those shares that can be purchased and traded by domestic investors (Chinese citizen), such shares are denominated in Renminbi (RMB) while B-shares are created to raise foreign currencies for firms involved in international trade, such shares are quoted in US dollar or Hong Kong dollar for those traded on Shenzhen stock exchange (Yeh et al., 2009).

Non-tradable shares are shares that cannot be publicly traded, they offer the same right as holders of ordinary shares and are usually State or domestic institution owned (Yeh et al., 2009). Non-tradable shares are classified as:

State-Owned Shares

State-owned shares are shares held by entities representing the Chinese Central government, local government, or government institutions including State Assets Management Companies (SAMC) or some state-owned entities (SOEs). Such shares cannot be traded on the stock exchange but can be transferred to other institutions subject to the approval of relevant authorizing bodies (Chen et al. 2013).

Legal-Person Shares

These are non-tradable shares owned by various domestic institutions with legal person status but limited to corporate SOEs, investment trust firms, security investment funds, private firms, foreign and joint ventures. A legal person in China is defined as a non-individual legal entity. Legal personal shares include state-controlled legal person, institutional legal person, collective enterprise legal person, and private enterprise legal person. Other types of shares include H-shares: Chinese companies' shares traded on Hong Kong stock exchange, N-shares: Chinese companies' shares traded on New York stock exchange, L-shares: Chinese companies' shares traded on London stock exchange and S-shares: Chinese companies' shares traded on Singapore stock exchange.

2.8 Split share structural reform

During 2005 – 2006, the Chinese government introduced the split share structure to allow more qualifying institutional investors (QFIIs), before this period, the Chinese domestic shares was segmented as tradable and non-tradable shares and ownership concentration was very high with most firms being controlled by the Chinese state (Yu, 2013). Huang and Zhu (2015) emphasised that before the split share reform, only ordinary "A" shares were the only domestic shares that are tradable as state-owned, and the institute shares were not tradable. Institute shares are units of equity owned by state enterprises and institutions, they represent a significant percentage of Chinese total domestic shares, thereby limiting the opportunities for qualifying foreign investments and improved liquidity. Consequentially, the Chinese government launched the split share reform in 2005 to permit the conversion of non-tradable shares into tradable A-shares. In this regard, non-tradable shareholders are required to make compensation offer to tradable "A" shareholders, the compensation offer can either be shares or cash, usually, most firms adopt three shares besides as compensation for every three tradable shares exchanged. This led to a more dispersed ownership structure, marked the beginning of China's privatisation process, improved liquidity, and the power of controlling shareholders in most firms becomes diluted (Jiang and Kim 2015). Interestingly, up until now the ownership structure in China remains concentrated. This is because the sale of tradable is still subject to approval and there is a limitation to the percentage of state shares to be held by state-controlled firms. As a result, Chinese shares (both A and B) were further classified as restricted and tradable shares. Restricted shares are shares that can only be transferred subject to the approval of relevant authority, usually at a discounted value close to the book value of the firm, or auctioned at a huge, discounted value relative to the value of freely traded shares in the same firm (Hou et al. 2012).

In a nutshell, the split-share reform has improved the Chinese privatisation process, but ownership remains concentrated and the expropriation of minority shareholders by controlling shareholders is still prominent.

2.9 The critique of corporate governance framework

The critique of the Chinese code of corporate governance offers the opportunity to compare best practices of corporate governance that are in existence before the launch of the Chinese

code of corporate governance. Specifically, an astute evaluation of the UK combined code of governance indicates the practice of the "comply and explain" principle, which means that firms must comply with code recommendations or explain the reasons why they do not comply. Although China is trying to adopt corporate governance practices like the United Kingdom, evidence suggests that not all practices are working out effectively and the influence of corporate governance remains contested. This is because of the influence of the Chinese culture and government system (Haß et al., 2014). The issue of corporate transparency and disclosure appears delinquent in the Chinese corporate management system (Qu and Leung, 2006). For example, in 2018, China ranked 87th out of 180 countries on Transparency International's Corruption Perception Index (Transparency International 2018). Chinese firms disclose less information to the stock market and investors' confidence is low as Chinese corporations fail to meet their expectations on information disclosure and transparency (Qu and Leung, 2006). Qu and Leung (2006) argued that the low level of information disclosure in most Chinese firms is associated with the Chinese culture which can change over time.

Concerning board composition, the UK and US board structure is based on a unitary system that is divergent to what is obtained in China. The UK code recommends at least three non-executive directors on board which is like the recommendation of the Chinese code. Specifically, board members lack sufficient independence in China, based on the following reasons;

First, the Chinese corporate governance code lacks clarity on who is responsible for nominating independent directors, it only stipulates that directors' can be appointed and removed at the shareholders meeting, making it difficult to establish any associated relationship between independent directors and those that nominate them. A study by Zhang (2006) reported that many firms' directors are nominated by government departments, thus finding it difficult to be objective and exert any significant influence.

Second, the Chinese two-tiered structure makes it difficult to monitor even though it was designed to strengthen monitoring. This is because the board of supervisors is not sufficiently independent of the board of directors as expected. The supervisors are limited in their actions and indirectly subject to the control of the board of directors since most supervisory board consist of board members who are firms' employees.

Third, in the case of China, ownership is not separated from control. Most Chinese firms are indirectly controlled by the Chinese state government, for example, in China, state and legal

persons share which are not traded on the Chinese stock exchange accounts for 60% of Chinese outstanding shares. Individual shares which are directly traded on the stock market still accounts for as low as 36%. This has contributed to the liquidity and market efficiency problem in China as the Chinese government struggled to find an appropriate capital structure needed to absorb external equity financing (Feinerman, 2017). Ownership concentration is a vital governance mechanism that can help to mitigate agency problem arising from the separation of ownership and control (Nguyen et al. 2015), even though, Filatotchev et al., (2013) accentuate that such mechanism can be an effective monitoring tool but often creates an expropriation effect, increasing the conflict of interest between large shareholders and minority shareholders. This is very distinctive from most western governance system where ownership is dispersed. To date, the Chinese government still retains control and ownership of most Chinese stock (Guo et al. 2013), making it difficult for governance monitoring to be effective compared to most western developed economies. Most listed firms in China are still influenced indirectly by the Chinese government, for example, the State-owned assets supervision and Administration Commission (SASAC) delegates' authority to intermediaries like the asset management companies who control the listed firms. This necessitates the need for a balanced relationship between the Chinese government, state-owned supervision commission, and Chinese firms' board of directors to achieve an effective corporate governance system. Furthermore, stock market liquidity is still relatively low compared to the US markets despite the launch of recent reforms on shares conversions. Specifically, the restrictions with converting non-tradable shares to tradable shares can still be improved upon to encourage market liquidity and efficiency.

Since corporate governance entails monitoring and controlling, it is imperative to consider the strength of the audit profession in China. Another bane in China’s corporate governance is the weak auditing profession (Zhang et al. 2001). Chinese firms are lagging in maintaining international standards concerning training, qualifications, services, and management. For example, the recent accounting scandal with one of China's largest accounting firms (Ruihua Certified Public Accountants) is fascinating after a listed firm it audited was found to have recorded inflated profits for over four years (Weindland, 2019).

2.10 Chapter summary

The chapter has explored the development of corporate governance in China. Its main objective has been to provide a detailed and critical account of the Chinese corporate governance system by evaluating the Chinese legal and regulatory framework. These include the Chinese stock exchange, corporate governance structure, ownership structure, share classification, Chinese code of governance, and major corporate governance reforms.

In China, the corporate governance system is unique and distinct to the UK corporate governance system. The Chinese two-tier system and ownership structure is quite complex and makes it difficult for corporate governance mechanisms to be effective. As a transiting economy, Chinese corporate governance is still evolving, a lot of regulatory and economic reforms have been achieved which has contributed to the development of the Chinese economy as the nation moves from a planned economy system to a market-driven system.

Despite these reforms, there are still some agency problems faced by Chinese listed firms, especially, the conflict of interest between controlling shareholders and minority shareholders because of concentrated ownership structure, weak independent of the board of directors', transparency, and disclosure issues. The next chapter is the theoretical chapter that discusses important corporate governance theories and literature.

CHAPTER THREE

THEORIES AND LITERATURE REVIEW

3.0 Introduction

The aim of this chapter is to review extant literature on board characteristics and discuss the underpinning corporate governance theories relevant to empirically respond to the research questions established in chapter one. To achieve this, the chapter explores (i) theoretical background by establishing a case for a multi-theoretical approach which integrates agency theory, resource dependence theory and upper echelon theory, (ii) the Chinese context and discusses in detail the factors affecting corporate governance in China, (iii) extant literature on board characteristics by discussing in detail what is unique in the Chinese context, (iv) the gaps in literature and necessity for research. Consequentially, the chapter establishes the foundation for the next chapter which discusses the research conceptual framework and the development of theoretically based hypothesis.

3.1 Theoretical background

Up until now, most governance studies have focused on agency theory (Fama, 1980; Schleifer and Vishny, 1986). Others including, Hillman and Dalziel (2003) have applied the resource dependence theory and even suggested the integration of agency theory and resource dependence theory. Research by Hambrick et al. (2008) identified the need to re-investigate governance-performance relationship from an upper-echelon perspective. More recent studies by Hoskisson et al. (2013) suggest the limitation of agency theory and introduce the multiple agency theory (MAT). Interestingly, other researchers have also considered the institutional theory and research on multi-theoretical perspectives are beginning to emerge (Aguilera et al. 2015).

As earlier mentioned, most corporate governance studies have focused on agency theory without having considered the institutional context of emerging markets where the conflict of interest is not just a principal-agent conflict, but also the principal-to-principal conflict as existing in China. Therefore, considering the integration of agency theory and other relevant theories in improving our understanding of the nexus between board characteristics and firms'

financial performance as suggested by Aguilera et al. (2015) would help fill some of the research void.

Based on the view discussed above, this study integrates agency theory, stewardship theory, resource dependence theory, and upper echelon theory in explaining the interconnectedness between board characteristics and firms' financial performance. This will be discussed in detail in the next sub-section 3.2.1, 3.2.2, 3.2.3 and 3.3.4 respectively to identify future theoretical research contributions that will also be discussed extensively in chapter 8.

3.1.1 Agency Theory

According to Jensen and Meckling (1976), an agency relationship is a contract under which one or more individual (principal) engages the services of another (agent) to perform some duties on behalf of the principal. This involves yielding some decision-making powers to the agent. Thus, agency theory focuses on the separation of powers between ownership and management; it posits that having a good board structure can reduce the conflict of interest between managers and owners of businesses, which is commonly referred to as the Agency problem. This problem has contributed to the development of corporate governance throughout the world as researchers have attempted to provide a solution through their empirical evidence. Eisenberg et al. (1998) identified three major problems that can occur in agency relationship to include, (i) the conflict of interest between the principal and agent, (ii) the cost and difficulty for the principal to verify agent's activities, and (iii) the problem of risk sharing that arises when the principal and agent share different perspective towards risk. All of these can be summarised as the difficulty of getting an efficient contract between the principal and the agent. Another agency problem identified by Schleifer and Vishny (1986) is managerial opportunism which can occur through misallocation of invested funds or expropriation of investors' funds. Schleifer and Vishny (1986) argue that managers who end up with significant discretion can expropriate funds in many ways including taking out cash through transfer pricing, allocating investors funds for personal benefits, and entrenching themselves by staying on their job even when they are no longer competent to run the firm.

To mitigate agency problems, Jensen and Meckling (1976) and Schleifer and Vishny (1986) suggested the idea of separating ownership and control as a way of solving agency problems, summarising the basis of agency theory as a relationship between the agent and the principal, which involves yielding some decision-making powers to the agent to perform services on

behalf of the principal. The crux of the argument of agency theory scholars revolves on the effective monitoring and control by corporate boards which comes at a cost and depends on the individual firm characteristics, the peculiarity of the business environment firms operates, and the challenges of managing directors' commitments to their principal. Jensen and Meckling (1976) have defined agency cost as the sum of monitoring cost, bonding cost, and residual loss. Monitoring cost include those expenses paid by the principal to observe and control the behavior of the agent; they may include the cost of audits, firing managers, and writing up compensation costs. While bonding cost is the cost of ensuring that agents adhere to set up structures that would enable them to act in the best interest of their principal, they may include the cost of additional information disclosures. Residual loss is the agency cost or loss arising from the conflict of interest between the principal and the agent despite any monitoring and bonding cost incurred.

From an agency perspective, researchers including Jensen and Meckling (1976) have argued that better monitoring and controlling are dependent on the quality of the board structure. A more effective governance structure can imply better performance. For example, Fama and Jensen (1983) stressed that to effectively solve the problem of decision management and control, an effective corporate board should be composed of largely outside independent directors holding outside managerial positions. In China, a study by Liu et al. (2015) also applauds the crucial role of independent directors as they evidenced that the positive relationship between board independence and firms' performance is stronger in government-controlled firms and firms with lower information acquisition costs. In countries with high ownership concentration, Nguyen et al. (2015) suggest from an agency perspective that a high level of ownership concentration and insider ownership can be an alternative proxy for monitoring.

To this end, the application of agency theory depends on the institutional context in which a firm operates (Filatotchev et al., 2012) and addressing corporate governance problems from a single lens of agency theory, especially in emerging countries like China characterised with a high level of ownership concentration, multiple directorships, and weak institutions might prove ineffective. Hoskisson et al. (2013) stressed that the application of Agency theory in explaining directors outside commitments and loyalty to the firms they govern does not hold a keen sense of justification. This is because in Agency theory, neither the principal nor the agent can maintain any form of outside commitment or contractual relationship. In this view, Agency theory on its own is narrow in perspective and fails to recognise the influence of directors'

dissimilarities which include their educational diversities, age heterogeneity, gender, and multiple connections of directors on their ability to effectively monitor and control (Filatotchev and Boyd, 2009). This could have limited previous empirical findings as they have not explored the increased complexity, diversity in directors' demographics as well as their cognitive capabilities to effectively monitor and control. So, instead of addressing board characteristics-performance relationship from an agency perspective alone, it may be interesting to integrate agency theory and other theories to achieve a broader perspective.

Principal to principal agency conflict

The primary agency problem in China is the conflict of interest between controlling shareholders and minority shareholders often referred to as the principal-principal problem (Filatotchev et al., 2013). Principal-agent problems are peculiar to economies where firm ownership is diffused while principal-principal problems are common to markets where external corporate governance mechanisms are underdeveloped, and ownership is concentrated. Listed firms in China are characterised by concentrated ownership, thereby making the principal-principal conflict a major agency problem in China. In China, controlling shareholders can extract benefits from firm resources at the expense of other shareholders (Young et al., 2008). For example, controlling shareholders can easily appoint senior managers who will protect their personal interests and not the overall interest of the firm due to lack of effective checks and balances offered by governance mechanisms. Controlling shareholders can also embark on strategies that would protect their self-dealing activities and make supplies purchases that are above their market value. Because of concentrated ownership in China, managers' expropriation is unlikely to be a major problem in China. Schleifer and Vishny (1986) argues that controlling shareholders have the incentive and power to monitor effectively, suggesting that controlling shareholders can discipline managers and reduce expropriation effect. This is because in the absence of effective corporate governance mechanism monitoring management can only be effective if ownership is concentrated (Heugens et al., 2009). The nature of agency problem varies from firm to firm and in the presence of concentrated ownership, the conflict of interest becomes more intense between the controlling shareholders and minority shareholders (La Porta et al., 1997).

In China, the impact of concentrated ownership on board characteristics and firm's performance is very contextual. Controlling shareholders can potentially weaken or strengthen the role of board of directors. For example, directors can be better monitors because controlling shareholders have strong incentive because of their investments to critically monitor the activities of board of directors. In divergent view, the presence of controlling shareholders can make the board less effective a finding corroborated by Liu et al., (2015) suggested that the role of independent directors is perfunctory and ineffective in China. They also reported that the impact of board independence on firm performance increases as ownership concentration declines, but this effect varies by the types of firm ownership. Yeh et al. (2001) also evidenced that controlling shareholders in form of family representation on board can result in centralisation in authority and decision-making powers while Ma et al., (2010) concludes that concentrated ownership enhances Chinese firm performance regardless of who are the concentrated owners.

3.1.2 Stewardship Theory

Stewardship theory is an alternative theory to agency theory for studying corporate governance. Stewardship theory draws background from psychology and sociology; it posits that a steward is expected to protect and maximise shareholders' wealth through firm performance, hence maximising steward's utility functions (Davis et al., 1997). In other words, managers are expected to act as good stewards of corporations and ultimately act to maximize shareholders' profit and returns (Letza et al., 2004).

Unlike, agency theory that emphasises managerial opportunism and monitoring, stewardship theory posits that senior managers are intrinsically trustworthy executives (Nicholson and Kiel, 2004). As such, managerial behaviour is driven by non-financial benefits in such a way that when confronted with a course of action which could be personally not profitable, managers may still act in the line of duty and commitment to the firms they govern. Specifically, stewardship theory argues that the availability of a wider range of motives and behaviours beyond self-interest can serve as a critical factor in the debate of separating firms' ownership and control. It emphasises that the blanket control applied to all managers may not be the critical factor for improving firms' performance (Muth and Donaldson,1998), rather Donaldson and Davis (1991) stress that, since stewards would always strive to do a good job and remain a corporate asset, the structure of a firm can be a determining factor that can enhance steward's

performance. For example, clarity in leadership structure (board duality) can be a step in the right direction. This is because the re-allocation of corporate control from owners to managers can improve managerial performance since good stewards will remain committed to objectively manage in the best interest of firms' even amidst complexities. More so, stewardship theory assumes that since executive managers usually spend their entire lives in the firm they govern, they are in a better position to understand firms' operation, offer informal and formal advice that can improve decision making and profitability (Fama and Jensen, 1983).

In a nutshell, proponents of stewardship theory argue from two basic perspectives; namely, that managers are naturally trustworthy, especially insider managers who have spent their lives working for firms' they govern and that/or agency costs will be reduced since senior managers are unlikely to risk their reputation which has been built over years (Donaldson and Preston, 1995). Consequently, from a stewardship perspective, it is expected that managers should be empowered to run the business of a firm because they are good and trusted stewards who will effectively utilise the resources of firms to improve performance.

3.1.3 Resource Dependence Theory

The resource dependence theory explains the fact that firms are open systems that relate to the environment in which they operate based on the allocation and utilisation of resources. The theory explains the role of the board of directors in the provision of external resources to firms. Pfeffer and Salancik (2003) affirms that board of directors perform service task and are expected to strive to introduce different types of resources to the firms which they govern so that such firms can benefit in-terms of (a) advice and counsel, (b) access to the channel of information between firms and environmental contingencies, (c) Preferential access to resources, and (d) external legitimacy and connections.

In this context, for directors to strive to achieve their role of providing resources, either in form of information resources, financial resources, or any essential resource needed by firms; they must understand firms' behaviour by relating activities in which the firms operate with their environmental conditions. Hillman and Dalziel (2003) argue that firms under the resource dependence theory are expected not just to benefit from ideas of boards but rather a board of directors is expected to evaluate and select strategic alternatives offered by top managers in such a way that quality and an appropriate decision would be achieved. Specifically, boards serve as a resource provider, while early studies like those reported by Pfeffer and Salancik

(2003) found that board size relates to firms' external needs and those with greater interdependence require a higher ratio of outside directors. More specifically, firms in highly regulated sectors like technological industries may depend on each other for resources as they need more outside experience to improve their corporate performance and small newer firms in such industry may lack the resources of many larger ones (Zhao and Aram, 1995).

In a more recent study by Pugliese et al. (2014) the ability of the board to achieve monitoring and access resources depends on their external legitimacy and connections. Drees and Heugens (2013) stress that firms respond to resource dependencies by forming inter-organizational arrangements like interlocks, alliances, mergers, joint ventures, and in-sourcing arrangements amongst others. For example, Zona et al. (2018) found that the effectiveness of interlocking directors depends on the firms' relative resources, power imbalance, ownership concentration, and CEO ownership. From this perspective, resource dependence theory facilitates social exchanges, access to diverse and unique information as well as opportunities to learn new corporate practices. Specifically, the call for the integration of theories in exploring the impact of corporate governance mechanisms on firms' financial performance has resulted in the growing research on the application of resource dependence theory. The recent focus on directors' responsibilities as an individual and not the board has created a theoretical renaissance with focus on resource dependence theory. In summary, sharing the views of Aguilera et al., (2015) it can be concluded that the major purpose of the resource dependence theory is to manage competing interests by creating interdependencies between firms, considering their internal and external stakeholders in such a manner that will achieve effective distribution of power and asymmetric resources.

3.1.4 Upper Echelon Theory (UET)

Reflecting on the upper echelon theory, Hambrick and Mason (1984) define organisational performance as a reflection of the values and cognitive biases of its directors and top management team. Individual directors make a strategic decision based on their cognitive state, belief system, and values. Based on this, corporate financial performance can be connected to the individual managerial characteristics of top directors on board which are often referred to as demographic factors (Nielsen, 2010).

Upper echelon theory explains board characteristics and their impact on corporate performance by grouping firms' internal influences into cognitive and demographic factors. For example,

some demographic factors include age, race, nationality, tenure, among others, while some cognitive factors include education, experiences, skilfulness, technical capabilities, and social ties or networks. From this point, the upper echelon argues that firms' achievements including financial performance, social performance, strategic directions, diversification, innovation, and creativity are influenced by the top management team. Therefore, this posits that firms with a well-diversified board in terms of age, gender, education, experience, and social connections would influence firms' performance (Cheng et al., 2010). For example, older directors tend to be more knowledgeable and experienced, while younger directors are energetic with better adaptability to technology and innovation. Therefore, from an upper-echelon perspective, an appropriate mix of directors on board can generate cognitive conflict, board independence, and a better understanding of marketplace which will improve firms' performance. Extant literature on upper echelon theory (UET) like Ting et al. (2015) investigated the relationship between CEO personal characteristics and firms financial leverage decisions where their research results were mixed as some characteristics like age of the CEO and prior experience was found to be significant and negatively related to leverage. Other characteristics including CEO education and tenure were found to be significant and positively related to leverage. In the same perspective, a study by Sambharya (1996) extended the application of upper echelon theory and found that top management team (TMT) with greater heterogeneity and a higher proportion of managers with foreign experience were significantly associated with firms' international involvement. This supports the views of Hambrick and Mason (1984) stating that career experiences besides functional track can influence organizational outcomes. Cheng et al. (2010) found that management demographic characteristics which include education level, title, age, and tenure of chairpersons exert significant influences on firms' performance.

Upper echelon research is multi-faceted and its impact on dissimilarities of directors has produced two perspectives; the information-decision-making perspective and the similarity attraction perspective as suggested by Jehn et al. (1999). The information decision making perspective supports the positive impact of directors' heterogeneity while in contrast; the similarity attractive perspective supports the positive impact of homogeneity. Thus, Anderson et al. (2011) argue that a high level of board diversity can lead to a broader perspective because of access to quality information and a better processing system which can affect firms' outcomes. This is because the diversity of board brings a variety of skills to the boardroom, broader discussions, higher quality deliberations, more effective communication and can improve management monitoring. In contrast, Lang (1986) argues that heterogeneity amongst

board members tend to trigger fear and uncertainty as individual directors tend to avoid relational conflict with unfamiliar or new board members, this can affect the decision-making process and quality, but the social homogenous group has greater transparency amongst members as communication barrier is low.

Therefore, the trade-off for UET studies is providing a balance between the information decision making perspective and the similarity attraction perspective in explaining the effects of individual director dissimilarity on firms' performance. To this end, there is also a strong basis for the integration of theories to achieve a better understanding of the board characteristics-performance relationship.

Table 3. 1 Summary of four theoretical perspectives and implications for boards.

Theory	Board role	Implications for board
Agency theory (Jensen and Meckling, 1976)	Managerial control Monitoring	Independent boards are effective monitoring mechanism for shareholders to retain ownership and control.
Stewardship theory (Donaldson and Davis, 1991)	Managerial empowerment	Managers are faithful stewards and should be empowered to manage firm assets responsibly.
Resource dependence theory (Pfeffer and Salancik, 2003)	Co-operation/ inter-organisational dependencies	Boards with strong external connections can serve as critical link for flow of resources.
Upper echelon theory (Hambrick and Mason, 1984)	Managerial Discretion, Experience and Values	Boards with experience and well-educated directors would effectively manage firms' resources and secure shareholders' interests.

3.2 Board characteristics and firms' financial performance

This section reviews literature on the relationship between board characteristics and firm performance. Extant literature has shown divergent results, for example, those reported by Lam et al., (2013), Liu et al., (2014), Qiao et al., (2017), and Shao et al., (2019). These studies were from different theoretical perspectives but predominantly agency theory.

Empirical evidence supports the effect of several board characteristics on firm performance. For example, In China, firm financial performance is linked positively with independent directors (Liu et al., 2015), CEO duality (Qiao et al.,2017), board interlock (Peng et al., 2015) and gender diversity (Liu et al., 2014). Generally, while providing support to existing theories, some empirical findings remain divergent. For example, firm performance is linked negatively with the size of the board (Liang et al., 2013), independent directors (Meng et al.,2018), CEO duality (Shao et al., 2019), board interlock (Cheung et al., 2013), and gender diversity (Saeed et al., 2017).

The following subsection presents the review of literature of the effects of various board characteristics (board size, board independence, CEO duality, board interlock, and board gender) on firm financial performance.

3.2.1 Board size

Dhamadasa et al. (2014) have described board size as the number of directors on a firms' board. Researchers have examined the impact of board size on a firm's financial performance; their findings have remained mixed in terms of direction and intensity of impact. Drawing guidance from the Chinese code, boards should not be excessively large, but need to be of enough size that can offer a balanced level of skills and experience appropriate for firms' business requirements.

A Study by Lipton and Lorsch (1992) emphasised that the effect of increasing the size of a firm's board could be a tradeoff that exists between the cost and benefits of adding a new director on corporate board. They posit that larger boards may be less effective when compared to smaller boards because of ineffective coordination and director free- riding, as an effective board need not be too large to allow for effective decision making, flexibility, and timeliness. Yermack (1996) explains that an effective board size should not exceed 8 or 9 members. This is because having a populated board could impact on firm financial performance, thus suggesting that a small board size may be more effective as they found an inverse relationship between board size and firm value for 452 large US firms. In China, Liang et al. (2013) examined 50 largest Chinese banks and found that board size negatively affects bank performance, while and Kumar and Singh (2013) analysed 176 Indian firms and found a negative relationship between board size and firm value. Also, from an agency perspective, Eisenberg et al. (1998) argued that the growing size of the board can create problems of communication, monitoring, and coordination which can ultimately decrease boards' ability to control. When control is weak, firms' financial performance may be negatively influenced since it becomes more difficult for directors to agree on quality decisions promptly because of fractional divisions and segments (O'Connell and Cramer, 2010; Jensen 2010).

On a contrary view, the proponents of board size believed a larger board size should positively influence firms' performance, for example, Zahra and Pearce (1989) have emphasised that large boards were predicted to contribute diverse skills, competencies, and quality in terms of actions and decision making. Larmou and Vafeas (2010) evidenced that a large board offers access to a pool of resources that a smaller board may not be able to provide. Such resources

range from expertise, skill, experience, technical capability as well as market networks. This was argued from a resource-dependent and stakeholder's perspective, thereby explaining the view that a large board size possesses greater collective information which will lead to higher performance. In the same context, Pratheepkanth et al. (2016), using a sample of 100 Australian and 100 Sri Lanka firms, found that larger boards of Australia firms' have a significantly stronger influence on firm performance than relatively smaller boards of Sri Lanka firms. Also, Mohapatra (2017) observed 35 India firms over six years, from 2005 to 2010 and found that board size has a positive impact on firm value, supporting the view that boards are more effective when the size is large because larger boards can offer benefits like better monitoring, wider access to a pool of resources, expertise, and more effective networking.

In summary, the study on board size and its impact on firms' performance has remained inconclusive; this is because the existing literature on board size does not provide a consensus on the impact of the board on firms' financial performance.

3.2.2 Board independence

The willingness and ability of a board to effectively monitor has been argued repeatedly concerning board members' independence (Aguinis et al. 2011). The role of the board which includes, the ability to monitor, control, or settles conflicts amongst top firm's decision-makers has become expedient for firms to seriously consider concerning the independence of their board-members either individually or as a group. In China, the CSRC issued the guidelines for introducing independent directors of listed firms in 2001, specifying that listed Chinese firms shall have at least one-third of its board comprising of independent directors.

From an agency theory perspective, a higher proportion of independent directors on board will result in greater monitoring which would positively affect firms' financial performance (Fama, 1980). This is because it is assumed that independent directors would be better monitors than executive directors who are less independent of the firms and are interested in protecting their interests rather than exercising objective opinions.

In this direction, several studies have explored the performance effect of board independence and the empirical evidence in this area has remained inconclusive. Earlier studies, for example, Beasley (1996), documented a positive impact of the appointment of outside directors on firms' performance. Fernández and Arrondo (2005), argued that firms with more non-executive

directors achieve better performance. Similarly, from a resource dependence view, Nicholson and Pugliese (2014) stressed the need for directors to monitor effectively by arguing that non-executive directors can provide a vital link to resources needed by firms and positively affect performance. Liu et al. (2015) found that independent directors have an overall positive effect on firms' operating performance but argue that the effect of government ownership on the association between board independence and firms' financial performance is ambiguous.

Another strand of research studies, for example, Hermalin and Weisbach (1991), controlled for biases caused by joint endogeneity of variables and concluded that board independence does not matter when compared to earnings before tax. Yermack (1996) documented that a high percentage of independent directors on board can result in poor performance. Bhagat and Black (2002), measured independence as a proxy of the fraction of independent directors minus the fraction of inside directors on firms' board and they found that board independence does not matter as firms with more independent board do not necessarily outperform other firms, but low-profitable firms would strive to increase the level of their board independence. In a more recent study, using data from 87 European firms, Krivogorsky (2006) also found that there is no strong relationship between the proportion of independent directors on the board and profitability in continental European firms.

In summary, it may be deductive to say that board independence does not matter when reviewing firms' performance. This is because board independence is an endogenous factor that can be affected by different internal factors peculiar to firms and the industry in which they operate. This makes it interesting to begin to think about the relationship between board independence and firm financial performance with a specific focus on internal and external factors that can moderate or mediate this relationship.

3.2.3 CEO duality

The debate on the duality-performance effect in academia and the corporate community has been extensive and it remains the most contentious issue in corporate governance (Aguilera et al. 2015). CEO duality describes the circumstances where the CEO and chairperson role are combined (Yu and Yang 2010). The debate on CEO duality developed from the United Kingdom and the USA with the introduction of the UK Cadbury report 1992 and Sarbanes

Oxley act 2002 in response to issues relating to the effective monitoring and controlling of corporate affairs.

The duties of the CEO include making major corporate decisions and taking responsibility for firms' performance. To achieve these duties, firms' CEO need to be acquainted with the operational activities of the firm and keep up to date with market competition by implementing strategies that would influence firms' financial performance and the board chairman (BOC) needs to effectively discharge their duties of planning board activities, managing firms' operational activities and frequency of board meetings.

The practice of separating the role of CEO and Chairman position is enshrined in the UK combined code of governance which relies on the universal concept of best governance practices. In practice, the separation of both roles can improve or inhibit firms' financial performance (Peng et al.2007; Ammari et al., 2014). Therefore, it is important to determine whether CEO duality enhances firms' financial performance or not, since the effectiveness of the board can be influenced by the CEO power relative to the entire power of the board.

Precisely, the empirical evidence on the effect of CEO duality on firms' performance from antecedent studies is mixed as some empirical studies have supported the separation of CEO and chair position (Peng et al., 2007), while some have not (Yu and Ashton, 2015), and others believe that CEO duality has no significant influence on firms' performance (Aguinis et al., 2011). CEO duality effects on firms' financial performance have been argued from different perspectives (Boyd 1995; Kim et al. 2009), drawing influences predominantly from the agency theory, resource dependence theory, and stewardship theory.

From an agency theory perspective, proponents of CEO duality argue that duality improves board role effectiveness which would result in the increased financial performance of firms (Boyd, 1995). This is because the separation of the CEO-chair position creates clear leadership and allows for some level of specialisation. In the same perspective, Jensen and Meckling (1976), explains that the separation of management and control decision allows more specialisation, creates an effective check and balance system that would improve firms' financial performance, allowing a CEO to have enough time working on firms' future strategies and the board-chairman concentrating on operational activities.

From a stewardship and resource dependence perspective, Reitz (1979) argued that CEO duality would promote more flexible leadership that would improve firms' effectiveness since a single person occupying both positions would remove internal and external complexity in

firms' processes and procedures. Yang and Zhao (2014) using the exogenous shock of the 1989 Canada-United States Free Trade Agreement, found that duality firms outperform non-duality firms when their competitive environments change. Peng et al. (2007) investigated the CEO-duality effect on 403 publicly listed Chinese firms' performance and found that CEO duality promotes firms' financial performance. On a contrary view, Baliga et al. (1996) examined the effect of changes in duality status on the operating performance of firms and found that there is little evidence of operating performance changes because of changes in firms' duality status. Other studies including those reported by Veprauskaitė and Adams (2013), Jermias and Gani (2014), and Yu and Ashton (2015) indicate that CEO duality impacts negatively on firms' performance. Veprauskaitė and Adams (2013) used a dynamic panel data estimation method to measure CEO power by applying the constructed power index and found that CEO duality is negatively associated with the performance of UK PLCs. Similar findings were reported for China by Yu and Ashton (2015) who found that CEO duality is not related to profitability ratios of Chinese PLCs, but it is linked to higher expense ratios. In the U.S, Jermias and Gani (2014), found a negative relationship between CEO duality and return on assets (ROA).

Therefore, by combining monitoring and control functions, CEO duality may also impact the quality of decisions made since CEOs are more prone to making decisions that would align with their self- interest at the expense of the other stakeholders' interest (Boyd 1995). This can lead to poor and extreme decisions been made because board members' power and independence to rigorously scrutinise and challenge CEO's influence could be compromised.

In summary, opponents of duality-performance effect have emphasised that despite the benefit of specialisation because of CEO duality, CEO duality may impose an additional cost on firms, impair on the clarity of leadership direction which can subsequently affect dealings with external parties and impact on firms' financial performance (Boyd 1995). Thus, research on CEO duality effects remains inconclusive. The inconclusive results on the relationship between board duality and firms' financial performance have been traced to endogeneity problems as the choice of leadership structure might be endogenous (Faleye, 2007). Research by Iyengar and Zampelli (2009) has documented that studies that treated CEO duality as an exogenous variable do not suffer from selection bias. This research investigates the relationship between CEO duality and firms' financial performance from a dynamic perspective allowing for possible influences from other governance characteristics.

3.2.4 Board interlocks

The concerns on board interlocks which is often referred to as board busyness have been a contentious governance issue in academia and all over the world as the subject area remains under-researched where available empirical evidence remains equivocal. Board interlock explains directors' multiple commitments in terms of the number of outside positions held (Ferris et al. 2003). It is a concept associated with directors' effectiveness in performing their role of advising, monitoring, and controlling, it can be used to improve contracting relationships especially in China where the quasi culture is dominant (Arioğlu and Kaya, 2015).

Early studies on board interlock could be traced to the empirical findings of Fama (1980), when they contested that the role of outside directors as a monitoring specialist role. They affirm that directors are perceived as valuable agents who are required to provide executives with much-needed contacts. Therefore, the ability of the board to fulfill these roles relies on the number of commitments and compromises made by interlocking directors; they can be ineffective in their role if their multiple connections affect their commitments with not enough time to perform their duties (Ferris et al.2003).

The concept of board interlock is peculiar to most emerging economies with weak legal and regulatory system like China (Peng et al. 2007). While interlocking directors may be less effective in monitoring; their experience, reputation, and contacts cannot be ignored as they offer valuable advice especially to small growing firms. Jiraporn et al. (2009) have argued the reputational effect of interlocking directors, explaining from a resource dependence perspective that interlocking directors are preferred due to their useful links, superior managerial skills, and business connections. Also, Sarkar and Sarkar (2009), using a sample of 500 large India firms found that interlocking directors are likely to be better directors because they offer better linkages to external resources. Field et al. (2013) affirms that interlocking directors' experience and contacts make them excellent advisors as they found that interlocking directors are common with IPO firms and contribute positively to firm value.

From an agency perspective, the role of interlocking directors has been considered ineffective. Interlocking directors cannot be effective monitors as they overstretch themselves by taking multiple directorships and compromising their responsibilities as effective monitors. Ferris et al. (2003) criticise firms that appoint interlocking directors, stressing that interlocking directors become over-committed and tend to spend less time on their board, compromising their

responsibilities and duties which may negatively affect firms' financial performance. In the same view, Fich and Shivdasani (2006) posit that increasing the number of interlocking directors can be detrimental to firms' financial performance as they found an inverse relationship between several accounting measures of performance and most boards with interlocking outside directors. Arioğlu and Kaya (2015) using multivariate investigated 290 Turkish firms and found that there is no significant relationship between interlocking directors or board advising quality and firm performance. Although the National Association of Corporate Director's guidelines (NACD) has recommended that firms' executives and CEOs should not hold more than three outside directorships, Sarkar and Sarkar (2009) have argued that multiple directorships do not necessarily impact on the quality of corporate governance.

3.2.5 CEO Interlock and Firms' Performance

According to Oh and Barker (2018), not all interlocks are equal as some are more influential in making strategic decisions. In China, the position of CEO and Chairman remain crucial, they have the influence and enthusiasm to set directions and pursue firms' short and long-term goals. Several scholars have studied CEO interlock, yet its impact on firms' performance remains unclear, some schools of thought advocate that CEO interlock is beneficiary as it promotes cost-effective monitoring and reduction of business environmental uncertainties (Yeo et al. 2003). Roy eta., (1994) defined interlocking director as a person sitting on the board of more than one firm. Their study reported a decrease in the number of potential interlocks in Australia.

Considering interlocks as a potential conduit of information, CEOs can influence information processing within a firm. For example, CEOs can decide what information is needed, which information matters, how and when such information should be processed to enhance firms' strategy. Thus, CEO-interlock can serve as a more effective channel for the exchange of vital information between connected firms by using their outside connections to gain insights into productive ideas, strategy, and key resources of other firms. Yeo et al. (2003) reported a positive relationship between CEO reciprocal interlock and firms' performance when measured using ROA. This supports the fact that more of CEO social connections can be beneficial to firms' financial performance.

On the contrary, others have argued that CEO interlock can escalate agency problems, reduce market efficiency and ultimately shareholders wealth, while Fich (2000) suggest that there is no relationship between the number of CEO interlocks and firms' value when measured with Tobin's Q, affirming that CEO interlocks do not improve firms' performance and there is no indication on how interlocks contribute to firms' strategy or decision-making process. Fich and White (2005) studied the reciprocal CEO interlock effect which they measured as the CEO of a firm sitting on the second board and the CEO of the second board sitting on the board of the first firm. They posit that reciprocal CEO interlock is less likely to be effective in advancing the interest of firms 'shareholders as they evidenced a negative association between the number of interlocking directorships and CEO turnover.

3.2.6 Board gender diversity

The role of women in the top management team has received increased attention and has become an actively debated topic by policymakers in many countries (Miller and Triana, 2009). In the UK, governance guidelines reported by Higgs (2003) draws attention to the need for increased diversity across the board. The case for more women representation on board develops from the quest to achieve improved firms' financial performance, gain access to a wider pool of resources, and strengthen corporate governance as suggested by Damodar (2004). Several studies have tested the performance effect of gender diversity where they affirmed that gender diversity is an asset to reducing agency costs (Adams and Ferreira 2009). From a resource-based view, Hillman et al. (2000) argue that a gender diversified board would facilitate firms' access to critical resources and from a legitimacy perspective, a woman holding an executive position may raise the reputation of a firm and enhance its standing in the eyes of the public.

Whilst board diversity literature continues to grow, the empirical evidence on gender diversity and firm performance remains equivocal with less evidence from emerging economies. Carter et al. (2010) examined the relationship between board gender diversity and firm value for fortune1000 firms after controlling for size, industry, and other corporate governance measures. They found a significant positive relationship between the fraction of women or minorities on board and firm value. A study in China by Liu eta. (2014) documented a positive and significant relationship between board gender diversity and firm performance, stressing

that female executive directors have a stronger positive effect on firm performance than female independent directors. Low et al. (2015) carried out a study in East Africa using a sample of Asia firms from Hong Kong, South Korea, Malaysia, and Singapore, where they found that female directors positively impact on firms' ROE, but the positive effects appear to diminish in countries with female economic participation and empowerment. Other studies such as those conducted by Kakabadse and Korac-Kakabadse (2001) studied 30 firms with women directors in the UK, US, and Ghana. They indicated that the presence of a minority of women on board has a insignificant effect on firms' performance. This suggests that it is not just enough to have women directors on board but what matters most is the amount of influence women directors can exert. A study conducted by Carter et al. (2010) in the USA posit that there is no significant relationship between gender or ethnic diversity of the board and firm performance, thereby suggesting that gender diversity-performance relationships appear to be endogenous.

In response to the future research directions suggested by Gabrielsson and Huse (2004) to explore the intervening or moderating factors on diversity- performance relationship, Miller and del Carmen Triana (2009) examined the racial diversity-performance relationship and found a positive relationship between board racial diversity and firm performance, stressing that the relationship is mediated by reputation and innovation. Furthermore, studies by Zona et al. (2013) investigated the moderating effect of firm size on the relationship between board characteristics (board size, board diversity, outsider ratio) and firm innovation, the empirical result of their research shows that the relationship between board characteristics and firm innovation changes for differently sized firms; thus, suggesting the need for more understanding of firm-specific characteristics. Using a different methodology, Ararat et al., (2015) studied the effect of board demographic density on firm performance where they combined multiple diversity attributes by building a composite (board diversity index) and found that board diversity index is positively related with firm performance if channelled through better monitoring. Thus, they posit that the positive relationship between board diversity index-performance relationships is enhanced by the presence of independent members, and ownership has a determining effect on the relationship between board diversity and monitoring. Consequently, there is no consensus in empirical findings as issues on gender diversity-performance relationship remains unresolved, it is unclear how and whether women on board have desired outcome on firm performance, also how firm-specific characteristics' affect the gender-performance relationship.

3.2.7 The Role of Female Directors Education

Extant literature on the relationship between board gender diversity and firms' financial performance has documented mixed results (Joecks, 2013). Yet very few studies have explored the reasons why empirical findings documented in the literature are so conflicting. Adams and Ferreira (2009) accentuate that female directorship contributes a significant change in the attribute of the board because the attributes of female directors differ from those of their male counterpart. Singh et al. (2008) argues that female directors are likely to be better educated and more likely to have business degrees than their male colleagues. Consequently, the need to explore those attributes including the cognitive ability of female directors cannot be over-emphasised. This chapter uses educational qualification of female directors as a proxy for female directors' cognitive ability. Education is a way of developing competence by acquiring skills and expertise. More educated directors can understand faster, process information better, analyse and provide timely solutions to complex problems (Johnson et al., 2013). From an upper echelon perspective, the quality of decisions made by the top management team reflects their level of education. Thus, it is not just enough to achieve a critical threshold of female directors on board, but it would be interesting to explore the impact of their education on the quality of decisions made and firms' financial performance. Although directors' capabilities in terms of education have been explored in literature, yet very few have examined how such capabilities can improve the board gender-performance relationship. For example, studies by Wailerdsak and Suehiro (2004) argued that the dynamic capability of board members can be measured by their educational level, stressing that the educational level of top executives is a direct reflection of their intellectual competence which is needed by firms to achieve competitive advantages and superior performances. Prior studies like those reported by Smith et al. (1994) also find that educational heterogeneity positively influence firms' financial performance. Cheng et al. (2010) while undertaking a study in China evidenced that university degrees held by board chairman are significant and positively associated with firms' financial performance measures. On the contrary, Gottesman and Morey (2006) found that firms managed by CEOs with MBA or law degrees do not perform better than firms with CEOs without graduate degrees while Bhagat et al., (2010) did not find a significant relationship between CEOs education and firms' long-term performance.

This study aimed to find out whether the educational level of female directors can be a salient attribute that can influence the board gender diversity-performance relationship. An answer to

this question cannot be discerned from a single theoretical perspective; therefore, the researcher seeks to integrate agency theory and upper echelon theory to investigate how female directors' education can affect the firms' financial performance. The level of education of directors' especially female directors who are presumed as effective monitors is very important. Cassar (2006) argued that in a firm, education and experience of directors provides skills to understand firms' business environment, deal with stakeholders, provide improved technical competence, make better corporate decisions, and subsequently improve firms' financial performance. Scholars like Kim et al., (2016) have suggested that a specific form of education and diversity of top management team formal education can enhance the capabilities of top managers to function amid business complexities, especially when such directors operate in their areas of expertise.

From an agency theory perspective, an increase in the proportion of female directors on board can improve monitoring and hence firms' financial performance. However, gender diversity comes with a lot of diversity in perspectives. For example, board gender diversity can also reduce firms' performance when the directors on board cannot effectively monitor; in this case, they become "rubber stamps" directors. Therefore, by integrating agency theory and upper echelon theory, the study can expand and improve our understanding of the gender-performance relationship.

3.3 Gap in literature and necessity of study

Whilst literature on corporate governance continues to grow, the empirical evidence providing insights into the relationship between board characteristics and firm performance remains mixed and have yielded inconclusive results (e.g Shao et al., 2019; Qiao et al., 2017; Liu et al., 2014; Lam et al., 2013). Specifically, because of the divergent results reported in literature, it becomes difficult to understand the effect of board characteristics on firm performance. More so, prior studies like Adams and Ferreira, (2009), Guest et al., (2009) and Carter et al., (2010) that have investigated this relationship have excessively focused on developed economies making it difficult to generalize whether board characteristics-performance relationship is jurisdiction specific or not? More interestingly limited work has been conducted on the impact of board characteristics on firm performance, especially in a Chinese context. Chinese corporate governance structure is different from those of most developed economy. In China, ownership is highly concentrated, businesses are built on connections, long lasting trust and

the Chinese government remains a significant shareholder (Tang et al.,2011). In such a transiting economy, it can be misleading to readily translate perceived best corporate practise from most developed economies. Unlike most developed economies like the US and the UK, where agency conflict is between the principal and the agent as discussed in chapter 2 of this thesis, in China, controlling shareholders can greatly influence the direction of a firm, thereby creating a conflict with minority shareholders. Amazingly, very few researchers have explored the general effects of corporate governance on firm performance in a unique setting like China.

In the last decade, prior empirical evidence like, (Peng et al. (2004), Wei et al. (2007) and Peng et al. (2007) have investigated the direct effect of board characteristics on firm performance without considering contingent factors that can affect the relationship. Scholars like Filatotchev, Jackson, and Nakajima (2013), and Love (2011) have advocated that future research considers the effect of contextual factors on board characteristics-performance relationship. Yet very few studies like (Zhou et al. (2017), Zattoni et al. (2017) and Chen et al. (2020) have yielded to this call. To this extent, examining the direct effects of board characteristics on firm performance without considering contingent factors like ownership concentration can lead to misleading evidence. Specifically, in China, where ownership plays a crucial role and the representation of female directors on corporate board is beginning to rise, it becomes extremely crucial to consider the interactive effect of both ownership concentration and board gender diversity on the relationship between board characteristics and firm performance. Till now, this remains elusive.

Finally, prior research has been limited in terms of methodological approach. For example, there are very few longitudinal studies and most studies have been saddled with endogeneity issues that have rendered research findings misleading (Wintoki et al., 2012). A longitudinal study can address concerns relating to sample size and short period). This research closes this gap by utilising longitudinal sample and a robust method (Dynamic GMM) to address endogeneity concerns including simultaneity, autoregressive effect, and unobserved variable bias.

3.4 Chapter summary and conclusion

The chapter has discussed relevant theories and extant empirical evidence on the effect of board characteristics on firm performance. The chapter identify gaps in literature, for example, there have been excessive focus on corporate governance in developed economies and existing studies have not adequately explore contingent factors that can affect board characteristics-performance relationship. it is not even clear whether best corporate practices are jurisdiction specific or to what extent can they be generalised across the globe. Specifically, in China where ownership concentration is high and gender representation on corporate board is increasing, it remains unclear how both ownership concentration and board gender diversity can affect the relationship between board characteristics and firm performance.

Based on these gaps, by using GMM dynamic panel, this research extends to literature by investigating how (i) ownership concentration moderates the relationship between board characteristics and firm performance, (ii) board gender diversity moderates the relationship between board characteristics and firm performance. The next chapter builds on this chapter by developing hypotheses in Chinese context that will address the gaps identified in extant literature.

CHAPTER FOUR

CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

4.0 Introduction

This chapter develops the research conceptual framework and reviews literature on the impact of board characteristics and firm performance. The chapter builds on chapter two and three by connecting Chinese context and relevant theories to support the related empirical studies on board characteristics and its impact on firms' financial performance. Consequentially, theoretical based hypotheses are developed considering Chinese context to empirically respond to the established research objectives discussed in chapter one. To achieve this aim, the chapter proceeds with the development of the research conceptual framework in section 4.1 by explaining the direct effects of board characteristics on firm performance as well as the empirical and theoretical rationale for the moderating effects of ownership concentration and gender diversity on the board characteristics-performance relationship, especially in Chinese context. Section 4.2 proceeds with the hypotheses development by considering the direct effect of board characteristics on firm performance and the moderating effect of gender diversity and ownership concentration. These are both discussed in section 4.2.1 and 4.2.2 respectively while section 4.3 summarises the chapter.

4.1 Conceptual framework

As discussed earlier in chapter 3, empirical findings on the impact of board characteristics on Chinese firms' performances has remained divergent and inconclusive (Chen et al. 2012), Liang et al. 2013; Liu et al. 2015 and Meng et al. (2018). In the last decade, most empirical studies like those reported by Peng et al. (2004), Wei et al. (2007), and Peng et al. (2007) have examined the direct impact of different board characteristics on firm performance in Chinese context. Very few recent studies like those reported by Zhou et al. (2017), Zattoni et al. (2017), and Chen et al. (2020) have considered the effect of moderating variables. Several scholars (Aguilera 2012; Zattoni et al. 2017; Jiang et al. 2020) have called for the investigation of more contextual factors that can affect board characteristics-performance relationship. Up until now,

research on the factors that can moderate the impact of board characteristics on firm performance, especially board gender and ownership concentration is still lacking. Both contextual factors are important, for example, in China ownership is highly concentrated and board female representation in China is on the rise with women making up about 4.4% of all CEOs in Chinese listed firm. Therefore, it will be interesting to investigate how concentrated ownership can affect board characteristics, and how the growing percentage of female directors on Chinese boards can make a difference prior to empirical evidence on board characteristics-performance relationship. To bridge this gap, the study examines the relationship between board characteristics and Chinese firm performance and considers the moderating effect of board gender and ownership concentration.

The conceptual framework is depicted in figure 4.1. The conceptual framework diagram encapsulates two-layer relationship between various governance variables and performance. The first phase would evaluate the effect of board characteristics (board size, board independence, CEO duality, board interlocks, female directors' education, and board gender diversity) on firm performance in Chinese context. The findings of these remains inconsistent as several research studies have found mixed results (Yu and Ashton, 2015).

In quest to better understand the board characteristics- performance relationship, the second phase of the model seeks to integrate the agency, stewardship theory and resource dependence in explaining the moderating effects of gender diversity and ownership concentration on board characteristics-performance relationship. Essentially, agency theory, stewardship theory and resource dependence theory have been separately applied to explain the effect of board characteristics on performance as depicted in the first stage of the research while the integration of multiple theories would be used to explain the second stage of the research which explores the moderating effect of gender diversity and ownership concentration. The board characteristics considered in the first stage result section include board size, CEO-duality, board independence, board interlocks, female directors' education, and board gender diversity, while the moderating effect of board gender diversity and ownership concentration will be investigated at the second stage of the research framework.

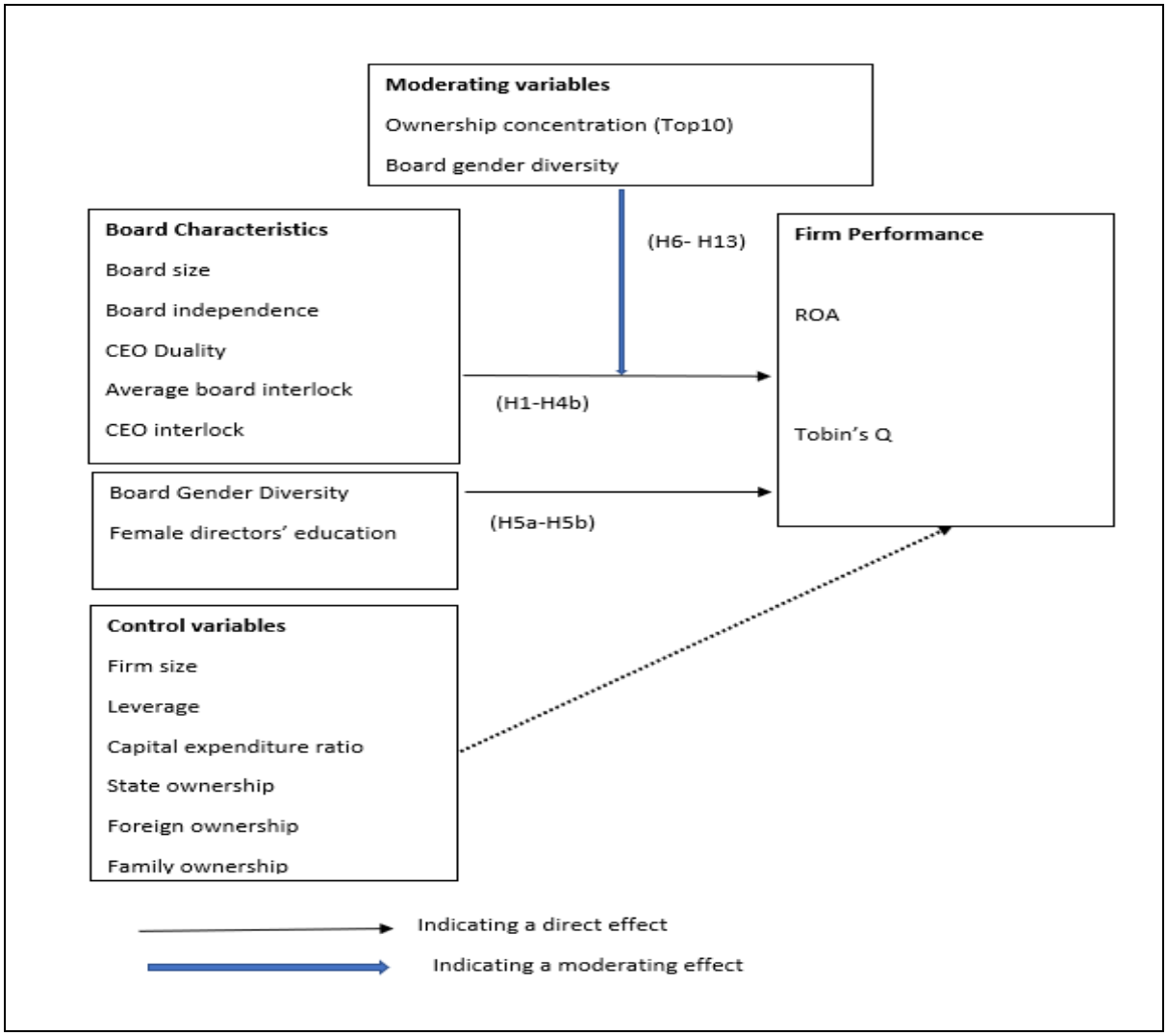

Figure 4. 1 Conceptual framework

Figure 4.1 above are the independent variables explaining the changes in financial performance measures. The independent variables include board characteristics variables which are expected to affect firms' financial performance.

The second phase of the framework examines the following moderating relationships; (i) the moderating effect of board gender on board characteristics-performance relationship and, (ii) the moderating effects of ownership concentration (top ten) on the board characteristics-performance relationship. Prior studies have examined the direct effects of board characteristics on firm financial performance only and have not strictly examined the moderating effect of ownership concentration and board gender diversity. This study used a robust data to analyse; (i) the impact of gender diversity on firm performance and how board gender diversity can moderate board characteristics-performance relationship, (ii) the moderating effect of ownership concentration (top ten ownership) on board characteristics-

performance relationship. The longitudinal dataset used in the research renders a more effective and comprehensive explanations of governance-performance dynamics compared to previous studies like those reported by Chen et al. (2015) and Shao. (2018) that used a smaller sample size and only examined the direct effect of board structure on Chinese firm performance. This study differs from prior studies and extend to literature by integrating and investigating several lines of research work; board size, board independence, CEO duality, board interlocks, female directors' education and how ownership concentration and board gender diversity can moderate the impact of board characteristics on Chinese firms' performance.

4.2 Hypothesis

The integration of multiple theories in explaining the complexities in the board characteristics-performance relationship is scarce. Theoretical underpinnings and applicability to board characteristics-performance relationship remains contextual (Filatotchev et al., 2013). By implication, predictions that holds in most western developed countries like the UK and the US, may not hold in Chinese context. Therefore, this thesis addresses the following three research objectives to understand the effect of (1) board characteristics on firm performance in Chinese context, (2) the moderating effects of concentrated ownership in Chinese context, and (3) the moderating role of gender diversity in the Chinese context. By linking relevant theoretical framework discussed in chapter three, hypotheses developed are classified into three subsections to address the research objectives. The first set of hypotheses relates to the relationship between board characteristics and firm performance. The second set of hypotheses relates to the moderating role of ownership concentration on the relationship between board characteristics and firm performance and, the third set of hypotheses relates to the moderating role of board gender diversity on the relationship between board characteristics and firm performance.

4.2.1 Board characteristics hypothesis

The influence of the corporate board on firms' financial performance cannot be over-emphasised (Dahya and McConnell 2007; Filatotchev 2007). Antecedents' scholars of corporate governance have predicted the impact of board characteristics from different theoretical backgrounds including agency theory, resource dependence theory, and stewardship theory amongst others which were discussed earlier in chapter three. Yet, empirical evidence

remains divergent and inconclusive. Wintoki et al. (2012) suggest that this can be because of endogeneity issues while Filatotchev et al. (2013) and Love (2011), affirms the need to consider factors upon which the board characteristics-performance relationship can be contingent.

In this regard, subsection 4.2.1 reviews the empirical evidence on the nexus between board characteristics and firms' performance. Accordingly, the theoretically based hypothesis on the performance effect of board size, board independence, CEO duality, board interlocks, board gender diversity, and female directors' education will be developed in this section.

4.2.1.1 Board size and firm performance in Chinese context

Studies like those reported by Dalton et al. (1999) have argued that board size is one of the important characteristics of the board, it can influence board functionality and firm performance. Till now, there is no consensus amongst extant studies on the impact of board size on firm performance. Fama and Jensen (1983) and Guest, (2009) have argued the impact of board size on firm performance from an agency theory perspective while Dalton et al. (1999) stressed the benefit of large board size from a resource dependence perspective. Agency theory posits that large boards are difficult to control, decision making takes more time and effective monitoring can be difficult to achieve. In contrast, resource dependence theory advocates that large board size can encourage diversity, skills, ideas, and firm interdependencies which improves performance (Chen et al., 2015). This makes the studies on board size and its effect on firm performance equivocal.

Consequentially, Aguilera et al. (2008) stressed that the equivocal views on the impact of board on firm performance reflects the neglects of how interdependencies between firms and their diverse environments affects performance outcomes. For example, in most Western countries like the US, the UK and Canada, governance scholars have argued from an agency perspective that smaller board size is beneficial for the purpose of quality and effectiveness, which may not necessarily hold in China. Chinese board size is primarily driven by complexities like firm size, ownership concentration and industry setting (Jiang and Kim, 2015). In a concentrated ownership setting like China, controlling shareholders manages and determine corporate relationships including board structure and board size, thereby rendering the effect of board size insignificant (Lin., 2004; Chen et al.,2012). Thus, controlling shareholders can increase or

decrease the size of the board depending on complexities and industry settings in which a firm operates especially in a less regulated environment like China.

Additionally, unlike most developed countries, Chinese legal institutions are weak, and businesses are built on trusts, long standing relationships, or connections. Chen and Al-Najjar (2012) found a positive relationship between board size and firm performance, establishing that bigger board size may be well associated with bigger firms which are complex and may require more monitoring. Given the fact that corporate governance in China is complex and businesses are built around long existing relationships, the effect of large board size can be beneficial. From a resource dependence view, large boards can offer larger network which is important in Chinese context (Chen et al., 2015). Firms can use their networks to access information and new opportunities. Importantly, larger board size can facilitate ties between firms and their external environment, thereby providing more needed resources to improve firm performance. Hence, in line with resource dependence perspective, in a complex setting like China with immature regulatory system (Jiang and Kim,2015), where businesses are built around long-standing relationships and firm complexity is high, this study predicts that large board size will improve firm performance.

Hypothesis 1. Board size exhibits a positive relationship with firms' performance.

4.2.1.2 Board independence

Board independence is supported on the ground that it enhances effective monitoring of management (Liu et al., 2015) and allows access to critical resources (Chen and Hsu, 2016). The performance effect of board independence is argued from both agency theory and resource dependence theory perspectives. Agency theory posits that more independent directors on board can improve board monitoring function and firm performance, since independent directors are less dependent on management and more interested in protecting their reputation (Zhu et al., 2016), and resource dependence theory argues that the presence of independent directors on board can offer access to unique expertise and improve decision making.

Up until now, the evidence on board independence remains equivocal. For example, some studies including those reported by Liang et al. (2013) and Chen et al. (2020) found a positive and significant relationship between board independence and firm performance. In contrast,

studies by Meng et al. (2018) reported a negative relationship while in other studies (Chen et al. 2012); Wang et al. 2014) it has been affirmed that the performance-effect of board independence is insignificant. Consequentially, Zattoni et al. (2017) stressed that governance-performance relationship can be contingent on specific national context. This makes it difficult to apply research from other countries in Chinese setting, considering the differences in institutional, regulatory and ownership setting. In China, the guidelines for introducing independent directors on board (CSRC, 2001b, Section 1.3) need to include this document in the ref list stipulates that at least one-third of a board shall be independent directors. Yu and Ashton (2015) document that Chinese listed firms from 2003 to 2010 were all compliant with the legal requirement of one-third of the board, suggesting that board independence in China is perfunctory, mainly driven by regulation and varies with different ownership setting (Chen et al.2012); Wang, 2014). The Chinese stock market is unique, and the effect of government ownership is ambiguous (Liu et al., 2015). Extant studies argue that ownership setting in China is highly concentrated and controlling shareholders play a critical role on the effectiveness of governance mechanisms. Li et al. (2015) argue that the impact of board independence increases as ownership concentration declines, but its effect varies by different types of ownership, suggesting that the effect of independent directors on firm performance can be driven by different ownership setting. For example, in a private controlled ownership setting where ownership concentration is low, the effect of independent directors can be more pronounced compared to a state-controlled ownership setting because controlling shareholders can actively intervene in firm management and compel firm managers to act in their social or political interests at the expense of other shareholders. In this context, independent directors may lack the ability to effectively monitor and discipline management since the regulatory setting in China is equally weak (Chen et al., 2015).

Hence, from an agency theory perspective, the major agency conflict in China is between minority shareholders and controlling shareholders. An important governance issue is the expropriation of firm resources at the expense of minority shareholders. Thus, to minimise this issue, the role of independent directors to effectively monitor cannot be overstated as shareholders relies on independent directors' efficiency in monitoring. Consistent with (Liu et al. (2015); Li et al. (2015)), the research predicts that more independent directors on board is positively associated with firms' financial performance for Chinese PLCs depending on different ownership setting.

Hypothesis 2. The proportion of independent directors on board exhibits a positive association with firms' performance.

4.2.1.3 CEO Duality

The role of CEO and board chair is very important in decision making and effective monitoring of firm management. However, whether to allow the combination of CEO and board chair role has been widely contested by governance scholars (Nicholson and Kiel, 2007). While stewardship theory assumes that CEOs are faithful stewards and are intrinsically motivated to pursue firm goals (Qiao et al., 2017). The agency theory in contrast assumes that CEOs are self-interested and powerful CEOs will naturally engage in more self-interested behaviours that can negatively affect firm performance (Shao, 2019). The divergent assumptions of both agency and stewardship theories regarding value judgement and commitment of CEOs makes it interesting and important to evaluate the impact of CEO duality on firm performance.

Different studies on the debate of CEO duality have evidenced mixed results. For example, Lipton and Lorsch (1992) and Duru et al. (2016) oppose CEO duality stressing that duality might reduce firm performance through managerial entrenchment. They contend that the presence of powerful CEO on board will compromises monitoring and makes board less effective. In contrast, supporters of duality have argued against the separation of the role of CEO and board chair, stressing that duality provides clarity in leadership and firm performance can be improved when CEO exerts full authority over his firms by equally serving as board chair (Tian et al.,2001; Peng et al.,2007 and Qiao et al.,2017). Qiao et al., (2017) reported that powerful CEOs in Chinese firms ultimately improve short-term and long-term firm performance, stressing how cultural factors can motivate CEOs to work in the interest of firms while Yu and Ashton (2015) reported that CEO duality can result in high agency cost but does not affect profitability ratio.

Prior research by Peng et al., (2007) provided support for the contingency view, stressing that CEO duality-performance relationship can be contextual based with more research needed with this view. Lam and Lee (2008) reported that neither agency nor stewardship theory alone can explain duality-performance relationship, but the relationship is contingent on the presence of family control. Lam and Lee (2008) stressed that CEO duality is good for non-family firms, while non-duality is good for family-controlled firms.

Within the Chinese context a study by Peng et al. (2007) provided support for the contingency perspective, as they found a positive relationship between CEO duality and firm performance especially in contingent conditions like resource scarcity and environmental dynamism where CEO duality may be especially valuable. In China, the performance-effect of CEO duality can be interesting and quite unique compared to most western developed economies. China's economy is characterised by its unique corporate governance system (two-tier board), immature capital markets, concentrated ownership setting, distinct cultural and social setting which can affect the findings of CEO duality-performance effect compared to most western economies like the US, the UK, and Australia (Shao.,2018). In this view, considering the Chinese context, Qiao et al (2017) argue that the Chinese cultural setting can motivate CEOs to work in the best interest of their firms and ultimately improve firms' short term and long-term performance. China has embraced long standing traditional values that is linked to the Chinese cultural background and social setting which can ultimately influence the behaviours and attitude of directors. Chinese culture stresses the importance of collectivism and good social relations which motivates board members to adopt behaviours that are in the best interest of the firm rather than self-interest (Davies et al., 1997). In such a resource dependence and culture sensitive environment, duality may be beneficial.

In contrast, because ownership concentration plays a significant role in China, Shao et al. (2018) argues from an agency theory perspective stressing that CEO duality is generally seen as a barrier to good governance and will negatively affect performance. They emphasised that CEO duality can increase agency loss, managerial opportunism, and expropriation of minority shareholders wealth. More so, in weak regulatory environment like China, CEO duality may not be beneficial because powerful CEOs can manipulate earnings to maximise their self-interest and possible conflicts of interests can jeopardise effective monitoring. Therefore, from an agency theory perspective, the third hypothesis of this research is proposed as follows:

*Hypothesis 3**:** CEO Duality is negatively related to firms' performance.*

4.2.1.4 Interlocks and firm performance

Board interlock exists when a person sits on multiple boards, providing link or interlock between them (Mizruchi ,1996). The performance-effect on board interlock have been debated from two prominent perspectives (Agency theory and Resource dependence theory).

Interestingly, both theoretical perspectives offer contrasting evidence on the impact of board interlocks on firm performance. For example, Cheung et al. (2013) from an agency theory perspective reported lower market valuation for firms with connected boards while Zona et al. (2018) renders support for resource dependence theory, stressing that interlock improves performance by relaxing resource constraints. Peng et al. (2015) also reported that networks and certain types of interlocks can improve performance.

Until now, international empirical evidence on the impact of board interlock on firm performance has remained equivocal. For example, studies by Fich and Shivdasani, (2006) and Cashman et al., (2012) reported that interlocking directorship is associated with weak corporate governance, and negatively affect firm value. Other studies, however, show that interlocking directorships correlates positively with firm performance (Sarkar et al.,2009) and directors interlock affects the extent of monitoring and resource provision (Hillman et al.,2008). Most of the empirical evidence on board interlocks are predominantly focused on developed countries, specifically to the US. Evidence from emerging countries, specifically China remains scarce, making it difficult to generalise the performance-effect of board interlocks. Thus, the equivocal views by antecedent scholars may reflect the uncertainties associated with the performance-effect of board interlocks in different countries. It is on this basis that studies like those reported by Zona et al. (2018) advocated that the performance impact of board interlock can be jurisdiction specific and contextual based. Zona et al. (2018) reported that interlocking directorates may exert either a positive or a negative effect on firm performance, depending on the firm's relative resources, power imbalance, ownership concentration, and CEO ownership.

Within the Chinese context, Lu et al. (2013) reported that firms with multiple directorships have better performance, stressing that business networking is very pronounced as the Chinese market is still emerging. Given the undeveloped nature of the Chinese market, trust is more likely to play a significant role, so businesses are easier established amongst networks (Guanxi)? unlike in a mature and well-established market where the rule of law is strong, and investments are well protected. In China, the incidence of board interlock is remarkably high, new businesses emerge through the combined initiatives of state agencies and private associations or connections of directors. This provides insights into explaining the complexity of Chinese cultural and state-society boundaries, as well as the reasons for the high incidence of interlocking directorships in the transiting economy (Francis 2001). Li et al. (2013) affirms that firms in China really suffer from insufficient resources and interlocking directors help to

relax such resource constraint by providing access to information and resources that flow or are embedded in interconnected networks. In the same perspective, Peng et al. (2000) and Peng et al. (2015) renders support for resource interdependencies by advocating that those directors with government connections may hold multiple directorships as they serve their firms' interests through their connections with government agencies, helping connected firms to secure resources in short supply.

Another peculiar factor in the Chinese context is ownership concentration. Ren et al. (2009) reports that government ownership is very prominent in China. The impact of interlocks on firm performance can differ in different ownership setting where research by Li et al. (2013) affirms that interlocking network is more pronounced in NSOEs compared to SOEs. Peng et al (2015) suggests that networks and certain type interlocks help improve performance. Empirical evidence in China suggests that ownership plays a critical role and concentrated ownership can serve as an alternative monitoring mechanism. Hence, from a resource dependence perspective, the paper predicts that board interlocks are positively associated with Chinese firms' financial performance.

Hypothesis 4a. *Ceteris paribus, Average board interlocks is positively associated with firms' performance.*

Hypothesis 4b. *Ceteris paribus, external connectedness of CEO interlock is significant and positively associated with firms' performance.*

4.2.1.5 Board Gender Diversity

The effect of board gender diversity on firm performance has been argued from different theoretical perspectives including agency theory and resource dependence theory. Both theories posit that gender diversity affects firm performance (Carter et al., 2010). Specifically, gender diversity is supported from an agency theory perspective on the ground that a gender diversified board can improve the monitoring function of the board of directors in extremely important mitigating principal-agent conflicts (Fama and Jensen, 1983). For instance, Ferreira et al. (2004) and Liu et al. (2014) document that firms with more diverse boards hold more board meetings and female directors tend to be active in monitoring activities. Other agency scholars like Adams and Ferreira, (2009) have reported that more gender diverse boards request

more audit. Consequentially, female directors can act as a proxy for independent directors who help to improve the monitoring capacity of a board.

Nevertheless, it is important to stress that a gender diverse board will not necessarily improve the monitoring function of the board and its performance. A credible reason could be that the performance-effect of board gender diversity can be contingent on the quality of firm governance. For instance, the performance effect of a gender-diversified board may be more pronounced and effective in firms operating in a weak regulatory environment compared to firms operating in a strong regulatory and well governed environment where unnecessary and excessive monitoring can be detrimental to firm performance (Adams and Ferreira, 2009).Additionally, from a resource dependence perspective, Pfeffer and Salancik (1978) argue that a large and well diversified board can serve as a linkage between firms and their external environments. By implication, firms with a large and well diversified board can easily access important resources which include benefiting from advice and counsel (Nadeem et al., 2017), gaining legitimacy (Cox et al.,1991) and achieving an improved communication channel (Hillman and Dalziel, 2003).

In summary, both theories establish that board gender-diversity can affect performance, but what remains unclear is the nature of such relationship and the effect of firm environmental contingencies. Until now, extant literatures have reported divergent opinions. For instance, some researchers argue that the relationship between board gender-diversity and performance is positive (Liu et al.,2014; Nadeem et al., 2017; Li and Chen, 2018) or negative (Adams and Ferreira, 2009; Ahern and Dittmar, 2012) or mixed (Bennouri et al., 2018; Saeed et al., 2017), while others (Ye et al., 2010; Kakabadse et al., 2015) reported that there is no significant relationship between board gender and firm performance. Farag and Mallin, (2016), reports a bidirectional relationship between board gender diversity and firm performance. The mixed empirical evidence documented by prior studies reflects the necessity to investigate contextual and contingent factors affecting board gender-performance relationship.

Within the Chinese context, gender diversity is still evolving and female representation on Chinese board is lower compared to mature markets like U.S and the UK. The legal institution in China regarding corporate governance, transparency, accounting standards and investors protection is weak. Therefore, the need for additional monitoring cannot be over-emphasised. Given these concerns, a gender-diverse board can enhance monitoring. More so, in a concentrated ownership setting like China where the government in most cases is the

controlling shareholder, there is little or no concern for shareholders maximisation rather excessive focus is on pursuing governmental interests and policies, tunnelling activities and other form of misappropriation of firms' resources which cannot be effectively challenged by a weak board or a board with less female representation. As earlier reported, Liu et al. (2014) suggested that female directors are better monitor. So, an increase in female representation on Chinese board can fill the monitoring gap created by controlling shareholders. Lam et al (2013) affirms that female representation in China is on the rise with women making up about 4.4% of all CEOs in Chinese listed firms. Importantly, female representation is more pronounced in private control firms, buttressing the fact that ownership also plays a crucial role in the appointment of directors on board. For example, Liu et al (2014) evidenced that the effect of female directors on firm performance is significant in legal controlled firms but insignificant in state- controlled firms. So interestingly, China offers the appropriate setting to investigate the effect of female directors on board across different ownership setting and in a weak governance environment. To date empirical evidence on gender-performance relationship remain equivocal, and few literatures have considered the effect of different ownership settings on such relationship.

Hypothesis 5a *Ceteris paribus, Board gender diversity positively affect firms' performance.*

4.2.1.6 Education qualification of female directors

Extant literatures on the relationship between board gender diversity and firms' financial performance have documented mixed results (Joecks et al. 2013). Yet very few studies have explored the reasons why empirical findings documented in literature are so conflicting. The quality of decisions made by top management team reflects their level of education and competencies (Carpenter and Westphal, 2001). So, it is not just enough to achieve a critical threshold of female directors on board, but it would be interesting to explore the impact of their education on the quality of decisions made and firms' financial performance. Empirical research on the effect of female directors' education on firm performance is very scant. In-fact very few studies like those reported by et al. Cheng (2010) and Darmadi et al. (2013) have examined the effect of board members education. Leading governance theories including agency theory, resource dependence theory and upper echelon theory have been employed to explain the performance effect of board members education. Agency scholars have argued that

board monitoring role can be effectively implemented if board members are competent and educated (Jensen and Meckling,1976), while resource dependence scholars stress that qualified and skilful directors are perceived as a strategic resource and critical link to external resources (Nicholson and Kiel, 2007) and upper echelon scholars maintains the view that organisational outcomes are partially predicted by top level management educational background and that a higher educational level is associated with critical reasoning, capacity for information management and tolerance for change (Hambrick and Mason,1984).

Several studies have found a positive relationship between female directors' education and firm performance (Smith et al.,1994; Wailerdsak and Suehiro, 2004; Cheng et al., 2010). Board members can benefit from diversity and mix of competencies (Carpenter and Westphal, 2001). Research by Cheng et al. (2010) reported that university degrees held by board chairman in China are significant and positively associated with firms' financial performance measures. It has been reported that female directors in China are perceived as effective monitors thus having more qualified female directors on board can stimulate board members to consider better investments alternatives and engage in taught processes of solving problems (Lu,2012). Furthermore, Lu (2012) and Wang (2013) documented the importance of directors' education in Chinese setting, stressing that director's degree of education is positively correlated with firms internal control efficiency and that personnel in Chinese private, small, and medium enterprises have weaker educational background compared to those in state-owned and large firms. By integrating both agency y and resource dependence theory, this thesis predicts that the educational level of female directors on board can affect firm financial performance.

Hypothesis 5b *Ceteris paribus, female directors' education is positively related to firms' performance.*

4.3 Rationale for the moderating effects of ownership concentration in Chinese context

Unlike most western countries, the critical agency problem in China is the conflict of interest between controlling shareholders and minority shareholders arising from concentrated ownership structure (Jiang and Kim, 2020). Thus, in China controlling shareholders rather than managers dominates where they have both incentive and power to effectively monitor managers (Jiang and Kim,2015). On the flip side, controlling shareholders can also expropriate

firm resources at the expense of minority shareholders which is also known as tunnelling. Consequentially, the impact of controlling shareholders in Chinese setting cannot be over-emphasised which is quite distinct from developed western countries like the US and UK. Controlling ownership in form of state ownership, family ownership, and top ten ownership can affect board characteristics-performance relationship. This have been debated from an agency theoretical perspective. For example, a study by Nguyen et al, (2015) suggests that concentrated ownership can reduce managerial opportunism by aligning owners' interests and agents' interest through improved monitoring. Research by Hope et al., (2017) documented that in China firms with outside block holders achieve better performance than firm without such block-holders. Similarly, Jiang and Wang (2017) reported that Chinese listed firms with majority owner achieve best performance while listed firms with controlling shareholders with less than 50% achieve worst performance. Thus, indicating that the effect of board characteristics on firm performance can be jurisdiction specific and moderated by ownership concentration. Therefore, building on agency theory, the conceptual framework in this research hypothesises that the performance effect of board characteristics can be contingent on firms' ownership concentration. This explains why it is important to examine board characteristics-performance relationship considering the trade-off between the monitoring effect and expropriation effect associated with ownership concentration, especially in China where the dominant agency problem is the horizontal agency conflict between the controlling and minority shareholders.

4.3.1 Moderating role of ownership concentration on board size-performance relationship

From extant literature, both board size and ownership concentration can improve firm performance. From a resource dependence theory, larger board size can serve as access to firms' critical resources and positively affect performance (Zahra and Pearce, 1989). Zahra and Pearce (1989) further emphasised that larger board size can contribute skills, competencies, and quality in terms of actions and decision making which smaller boards may not be able to provide. A study by Chen and Al-Najjar (2012) reported that board size is driven by firm complexities and resource constraints, establishing that larger board size may be well associated with bigger firms which are complex and may require more monitoring.

With regards to board monitoring role, agency theory suggest that ownership concentration can affect firm performance in two different ways. From an agency theory, concentrated ownership can affect firm performance because they have the incentive to monitor their investment effectively (Li et al., 2015). In a contrast, concentrated ownership can increase tunnelling effect and reduce firm value by diverting firm resources for private benefits (Liu et., 2015).

While several studies such as those reported by Mangena et al.(2012), and Shao et al.(2018) have investigated the direct effect of board size and ownership concentration on firm performance, studies on the effect of board size in the presence of dominant controlling shareholders especially in China where ownership is still very concentrated are lacking In a weak corporate governance setting like China where the rule of law is not strong enough while the effect of independent directors is considered perfunctory, the monitoring role of controlling shareholders might be extremely important and beneficial. Therefore, in the Chinese context, ownership concentration may be an alternative monitoring proxy and an effective mechanism to improve the impact of board size on Chinese firms' performance. Given the fact that corporate governance is complex in China, larger firms may require additional monitoring where controlling shareholders can be very influential especially where they are well connected with strong incentive to monitor several areas effectively. The performance-effect of board size will therefore improve as ownership concentration increases.

Hypothesis 6 *Ceteris paribus, the positive effect of board size on firm performance will increase when ownership concentration increases.*

4.3.2 Moderating role of ownership concentration on board independence-performance relationship

Drawing from agency theory, the important monitoring role of independent directors and their impact on firm performance cannot be over-emphasised (Dahya and McConnell, 2005). Until now, the empirical evidence on the performance-effect of board independence have remained mixed. For example, a study by Peng et al. (2004) reported a positive effect of independent directors on firm performance. Chen et al. (2012) affirms that in China, board independence is mainly driven by regulation, and it is negatively associated with state ownership while Wang (2014) reported that board independence has no significant impact on firm performance. Chen et al., (2015) advocates that in a weak property rights environment, more outside directors will improve corporate performance and empowering independent directors will increase firm value (Zhu et al.,2016). It is in this perspective that Zattoni et al. (2015) advocated the need to investigate contingent factors in specific national context that can affect board independence-performance relationship. Despite the call, only few studies such as those reported by Li et al. (2015) have examined the joint effect of board independence and ownership concentration on firm performance.

Filatotchev and Nakajima (2010) emphasised the important role of concentrated ownership stressing that both independent directors and controlling shareholders can be an effective monitoring mechanism and can substitute for a lack of protection in minimising expropriation by managers and resolving agency problems associated with weak legal environment. Nevertheless, the effectiveness of independent directors cannot be examined in China without considering the role of controlling shareholders in such a concentrated ownership setting. In China, ownership plays a significant role where the performance-effect of board independence has been described perfunctory because of the concentrated ownership. This is because, controlling shareholders can easily replace strong directors with weak ones where the rule of law and shareholders protection is weak (Dahya et al., 2008). Consequentially, a decline in ownership concentration can improve the effectiveness of independent directors monitoring capacity. In addition, concentrated ownership provides controlling shareholders the incentive to expropriate corporate resources for private benefits (Shleifer and Vishny, 1997). Therefore, this study argues that the impact of board independence on firm performance will be stronger as ownership concentration declines.

Hypothesis 7 *Ceteris paribus, the positive effect of board independence on firm performance will increase when ownership concentration decreases.*

4.3.3 Moderating role of ownership concentration on CEO Duality-performance relationship

Drawing from theoretical arguments that integrates agency theory and stewardship theories, this thesis proposes that ownership concentration enhances the relationship between CEO duality and firm performance. Firstly, controlling shareholders have incentive to monitor and control board activities. In a weak legal setting like China where businesses are built on longstanding relationships while ownership remain concentrated, controlling shareholders can enhance firm value by intensifying the performance effect of CEOs (Li et al., 2015). Firms with strong CEOs needs effective monitoring, especially in China where role of independent directors have been considered perfunctory (Chen et al.,2012) with and scholars having advocated for additional monitoring (Liu et al., 2015). Consequentially, from an effectiveness perspective, concentrated ownership can accentuate the benefit of duality and mitigate its costs, which will result in improved monitoring and firm performance.

Secondly, the resource provision role of controlling shareholders is particularly important in an emerging market like China where the effect of resource constraint is very significant, with trust likely to exert significant influence in businesses relationships than in established markets (Peng et al., 2007). The same author calls for the contingency effect on the relationship between CEO duality and firm performance, especially in terms of resource scarcity and environmental dynamism. This could include the effect of CEO-duality in different ownership setting. Whilst controlling shareholders can enhance monitoring, most controlling shareholders in China may also have strong political connections which are valuable and can serve as an access to critical firm resources. Additionally, well connected controlling shareholders can improve board leadership by offering timely information and advice that can enhance CEOs effectiveness and firm performance. Therefore, drawing from both theoretical and empirical evidence, this study argues from stewardship and resource dependence theory that the interaction of CEO duality and ownership concentration will improve Chinese firms' performance.

Hypothesis 8 *Ceteris paribus, the negative effect of CEO duality on firm performance will decrease when ownership concentration increases.*

4.3.4 Moderating role of ownership concentration on board interlocks-performance relationship

The impact of both ownership concentration and board interlock on firms' performance cannot be over-emphasised. Literature suggests that both governance mechanisms are crucial for the effective performance of the board (Shapiro et al. 2015). An astute review of the literature suggests that a well-connected board can improve firms' performance in the presence of effective monitoring and control (Black et al.2012). Agency theory also suggests that in China, ownership concentration can serve as a proxy for effective monitoring and an alternative substitute for a weak legal system. For example, concentrated ownership in the form of outside Top 10 shareholders ownership have been evidenced as alternative monitoring mechanisms (Tang, 2017). It has been argued that top ten shareholders have the unlimited motivation and ability to influence board decisions by their large shareholdings, thus mitigating agency problems which in turn improves firms' financial performance (Jensen and Meckling, 1976). In some markets, for example, China, where the rule of law is weak and the incidence of board interlock is high, the monitoring effect of ownership concentration on board interlock-performance relationship is even more important. Yet, few research studies have examined the performance effect of ownership concentration. Tang (2017) identified ownership as a moderator for board duality- performance relationship, while other researchers have explored on the moderating effect of ownership concentration on board independence-performance relationship, but they have failed to consider the moderating effect of ownership concentration, especially the top ten shareholders ownership as potential moderator for the performance effect of board interlock (Li et al. 2015).

Li et al., (2013) examined the effect of large shareholders on directors' interlock- performance relationship in China. The study further evidence that the economic effect of interlocking directorate network is more pronounced in a non-state-owned enterprise compared to a state-owned enterprise, affirming that large shareholders might enhance board monitoring and limit agency problems. Zona et al. (2018) developed a combined agency-resource dependence perspective and examined the performance effect of interlocking directorships in 145 Italian firms where they found that the performance-effect of board interlock is contingent on firms' relative resources, power imbalance, ownership concentration, and CEO ownership.

Contrarily, large shareholders in the form of top ten ownership may have interests different from other shareholders and might be adamant to acting in their interest at the expense of other shareholders. Thus, they can reduce firms' financial performance by diverting firms' resources for their private benefits, especially in emerging economies where the rule of law and investor protection is weak (Li et al. 2015). From, an agency theory perspective, the presence of ownership concentration can result in a principal- principal conflict as ownership concentration may increase the conflict of interest between controlling and minority shareholders (Filatotchevet al., 2013). In a different context, Nguyen et al., (2015) examined the dynamic performance effect of ownership concentration in Singapore and Vietnam where; they found that the performance effect of ownership concentration persists in both markets after taking consideration of the dynamic relationship between performance and ownership concentration.

Based on findings by Li et al. (2015) and Zona et al., (2018), the researcher argues that the impact of board interlocks on firms' financial performance will be strong when ownership concentration is high; thereby suggesting that ownership concentration can serve as check and balance to the flow of information in and out of Chinese firms because of the social connectedness of interlocking directors. This can be due to the following facts: (i) high ownership concentration will provide controlling shareholders with incentive and power to monitor and ensure that managers are operating firms efficiently (ii) controlling shareholders can serve as a disciplining function and limit CEOs agency problems. This can be achievable as controlling shareholders can serve as a rallying point for directors who might otherwise not express their interest when CEOs become unnecessarily autocratic. This thesis therefore argue that ownership concentration will strengthen the board interlock-performance relationship in China. Consistent with agency theory and resource dependence theory, the notion that large shareholders are efficient monitors in markets with concentrated ownership is supported.

Hypothesis 9a: *Ceteris paribus, the positive effect of average board interlock on firm performance will increase when ownership concentration increases.*

Hypothesis 9b: *Ceteris paribus, the positive effect of CEO interlock on firm performance will increase when ownership concentration increases.*

4.4 Rationale for the moderating effects of board gender diversity in Chinese context

Empirical studies like those reported by Aguilera et al. (2015) and Zona et al. (2018) have advocated the need to examine contingent factors affecting board characteristics in a specific jurisdiction, particularly in emerging markets where the rule of law is weak. The role of female directors on Chinese board is very important where such directors can offer a complimentary monitoring effect especially in a weak institutional setting like China. The effect of female representation on corporate board have been applauded and received international attention (Lam et al., 2013). Empirical studies document that female representation on Chinese corporate board is beginning to increase. Despite changes reported in the past few years, only few studies like those highlighted by Ararat et al. (2015), Ramly et al. (2015) and Li and Chen, (2018) have considered the moderating role of female directors on board while most studies have linked gender diversity directly with firm performance.

Drawing from an agency theory perspective and resource dependence perspective as reported by Pfeffer and Salancik, (1978) and Liu et al., (2015), the presence of more female directors on board can ameliorate the effect of board characteristics on firm financial performance by improving board monitoring and serving as an effective access to firm critical resources. A good example is from a study by Ramly et al. (2015) who reported that the positive effect of board independence on bank productivity is lost when moderated by the presence of female directors on board while Joshi and Roh (2009) documented that the performance effects of gender diversity is mediated by industry type. Considering institutional settings, Garcia-Meca et al. (2015) concluded that the performance effects of gender diversity in developed economies increases, but such effect is moderated by institutional characteristics like investors protection and regulatory regime Research therefore supports the fact that board gender diversity can play a crucial role in moderating the performance effects of board characteristics especially in China where there is need for additional monitoring as the role of independent directors is considered perfunctory and investors protection is weak (Chen et al.,2012).

4.4.1 Moderating role of Gender diversity on board size-performance relationship

The way board characteristics affect firm performance can be influenced by the level of female representation on the board. In countries like China, gender diversity is still evolving with the

level of female representation on Chinese board is increasing with women making up about 4.4% of all CEOs in Chinese listed firms (Lam et al., 2013). Hence, board members may be selected based their gender diversity which this can affect firm performance. By implication, the influence of board size on firm performance will be greater when the board is well diversified in terms of gender since greater diversity on board can ameliorate board effectiveness and firm performance (Liu et al.,2014).

Few studies have investigated the moderating effect of board gender diversity. Ararat et al. (2015) reported that the relationship between demographic diversity and firm performance is moderated by the board's monitoring capacity. A similar study by Garcia-Meca et al. (2015) posit that gender diversity increases performance but such effect is moderated by institutional characteristics. Chen et al. (2018) whilst undertaking research in China reported that the performance-effect of gender diversity can be moderated by firm size. This section therefore focuses on the interaction effect of board size and gender diversity on firm performance which is yet to be explored in the literature.

First, board gender diversity can moderate the relationship between board size and firm performance. From a resource dependence perspective, board size offers access to firms' critical resources (Zahra and Pearce, 1989) wider pool of skills and experience (Adams and Mehran, 2011) and make problem solving more effective (Nadeem et al., 2017) which can affect firm performance. However, from an agency theory perspective, gender diversity can ameliorate the effectiveness of board size by improving board monitoring and control. A well-diversified board can improve firm's legitimacy (Cox et al.,1991), quality of board discussions by bringing different perspectives (Hillman et al.,2007), access to firms' vital resources (Pfeffer and Salancik,1978), reduce agency conflicts (Liu et al.,2014), and performance (Adams and Ferreira,2009).

Prior studies have argued the efficacy of board size-performance relationship (Chen et al., 2015). As previously discussed in this chapter, the findings have been mixed and inconclusive. The empirical gap that remains void which could be addressed by evaluating the moderating effect of board gender diversity on the relationship between board size and firm performance. Consequentially, in China where corporate governance is weak and still evolving, scholars such as Gul et al. (2008) argue that having a gender diverse board can offer partial substitution effect to remedy the effect of weak governance as female directors are more likely to demand detailed managerial accountability. More so, with the call for more female representation on Chinese

corporate boards, it is expected that an increase in board size can provide more opportunity for gender diversity as well as improve board monitoring role (Carter et al., 2003). Therefore, from an agency theory perspective, and consistent with Gu et al., (2011), this research affirms that Chinese firms can remedy the effect of weak governance by having a more diverse board.

Hypothesis 10: *Ceteris paribus, the positive effect of board size on firm performance is higher when the board is comprised of a greater proportion of female directors.*

4.4.2 Moderating role of Gender diversity on board independence-performance relationship

Both gender diversity and board independence are very important proxies for board monitoring. The performance-effect of both governance mechanisms have been debated from agency theory and resource dependence theory. Despite the growing research interests on board gender diversity and independent directorships, most scholars including Li and Chen (2018), have explored the individual effects of both variables on firm performance and very few like Terjesen et al. (2016) and Kweha et al. (2019) have investigated the interaction effect of board gender diversity and board independence on firm performance. Liu et al. (2014) reported that female directors are better monitors, and an independent board can benefit from their qualities. For example, from an agency theory perspective, Fama and Jensen (1983) suggest that greater diversity can increase the independence of a board as female directors are more inclined to ask questions that would not be asked by their male counterparts. In a similar perspective, Terjesen et al. (2016) reported that the performance-effect of independent directors cannot be effective unless the board is gender diversified. As such, female directors can act as additional independent directors who help to improve board monitoring (Adams and Ferreira, 2009).

Taken together, in China where the rule of law is weak, this thesis argues that the need for greater monitoring cannot be neglected as Chinese listed firms operating in weak corporate governance environment can greatly benefit from adding female directors to their boards. Specifically, this thesis argues that, since female directors provide greater monitoring expertise, the interactive effect of board gender and board independence will improve firm performance.

Hypothesis 11: *Ceteris paribus, the positive effect of board independence on firm performance is higher when the board is comprised of a greater proportion of female directors.*

4.4.3 Moderating role of Gender diversity on CEO Duality-performance relationship

Over the decades, both gender diversity and CEO duality have been identified as important governance variables that can affect firm performance (Zaid et al., 2020). The relationship between CEO duality and firm performance has been widely explored from different theoretical perspective (Peng et al., 2007) and (Qiao et al., 2017). Prominent theories like agency theory, stewardship theory and resource dependence theory have been applied to explore the effect of CEO duality on firm performance. Results on this relationship have been divergent and inconclusive. Several studies like those reported by Peng et al., (2007) argued from a stewardship theory view where they reported a positive relationship emphasising that CEO duality may be good for performance due to unity of command. From an agency theory perspective, Shao et al. (2019) reported that the performance-effect of CEO duality is negative, stressing that in Chinese context, CEO duality is generally seen as a barrier to effective corporate governance. On this basis, it is not clear under what conditions can the benefit of CEO duality outweigh its cost (Finkelstein and D-Aveni,1994) and the need to consider contingent conditions affecting such relationship especially in China where governance mechanisms are still evolving cannot be over-emphasised (Peng et al.,2007).

Zaid et al., (2020) stressed the important role of gender diversity in ameliorating the effectiveness of CEOs, specifically in the moderating role of board gender on the relationship between CEO duality and firm leverage. Duru et al. (2016) documented that the performance-effect of CEO duality improves in the presence of board vigilance while Peng et al. (2007) reported a positive impact of duality on firm performance especially in contingent conditions like resource scarcity and environmental dynamism where CEO duality may be especially valuable. In this sense. board gender diversity can offer additional monitoring effect which reduce managerial entrenchment and improve firm performance. In China, where the rule of law is weak, powerful CEOs can entrench firm resources for their personal interest. Jensen and Meckling (1976) argued from an agency theory perspective that the monitoring role of board can be compromised when boards are not independent of management. Liu et al., (2013) reported that increasing the number of female directors on board can improve monitoring since female directors are more likely to confront powerful CEO when firm performance is low. Consequentially, Mohan (2014) stressed that the monitoring role of female directors can intensify the performance-effect of CEOs. For example, women participation in boardroom can reduce firm risk-taking and leadership style, both of which can affect performance. By

increasing the number of female directors on boards, firms can improve monitoring, communication amongst board members, quality the of decision-making process, and innovation. Therefore, drawing from studies that integrate agency and resource dependence theories (Aguilera et al.,2013), this thesis argues that gender matters for firm performance and can positively moderate the negative relationship between CEO duality and firm performance.

Hypothesis 12(Agency/Resource dependence theories): *Ceteris paribus, the negative effect of CEO Duality on firm performance is reduced when the board is comprised of a greater proportion of female directors.*

4.4.4 Moderating role of Gender diversity on board interlocks-performance relationship

The performance-effect of board interlock has attracted research attention, and empirical evidence about this relationship is scarce and equivocal. Researchers have explored this relationship from resource dependence view and agency theory perspective. Early studies on board interlocks reported a positive relationship (e.g., Lu et al. 2013), some reported a negative relationship (e.g., Cheung et al., 2013), with others reporting no relationship (e.g., Kiel et al.,2006).

In view of this evidence and to reconcile conflicting views, this thesis considers the moderating impact of gender diversity on the impact of board interlocks on firm performance. An astute review of literature suggests that a well-connected board can improve firms' performance in the presence of effective monitoring and control (Black et al.2012). By integrating agency and resource dependence theories (Fama and Jensen, 1983; Hillman and Dalziel, 2003; Faleye, 2007;), the study argues that the performance-effect of different types of board interlock depends on the ability of board members to effectively control and monitor the exchange of information amongst connected firms. For example, extant literature, by Liu et al. (2014) suggest that more female directors on board can improve monitoring and access to vital resources, while others argue that board gender diversity can affect firm performance if and only if the value of firm size is less than some critical value (Li and Chen, 2018). In markets, for example China, where the rule of law is weak and the incidence of board interlock is high, the monitoring effect of gender diversity on board interlocks-performance relationship is even more important. Yet, few research studies have examined the performance effect of gender, for

example, Ararat et al. (2015) identified the mediating role of board monitoring on the relationship between demographic diversity and performance. Others including have explored on the moderating effect of gender on board independence-performance relationship (Li et al. 2015), yet the moderating effect of board gender diversity on the relationship between different types of interlocks remain unexplored.

Taken together, in a complex governance environment like China, characterised with weak investors protection, having more female directors on board might be beneficial. As emphasised above, both theory and evidenced by Jensen (1993), Hillman and Dalziel (2003), and Liu et al., (2014) showed that gender diversity can enhance the monitoring role of the board. Even regulators in China considers the monitoring role of female directors important as they develop and implement regulations that encourages more female representation on board. An important example is the China National program for women development issued by the State Council, emphasising requirement to increase female representation on board. Consequentially, because of these developments, this thesis argues that female directors can provide greater monitoring, and the interactive effect of board gender and different types of interlock will improve firm performance.

Hypothesis 13a: *Ceteris paribus, the positive effect of average board interlock on firm performance will increase when there is greater proportion of female directors on board.*

Hypothesis 13b: *Ceteris paribus, the positive effect of CEO interlock on firm performance will increase when there is greater proportion of female directors on board.*

4.5 Firm specific factors

This section discusses firm specific factors that can affect board characteristics-performance relationship. These factors have been included and controlled for in the conceptual framework to reduce the effect of omitted variable bias which can affect the research estimations. Details on dealing with this effect are discussed in detail in the next chapter. In the conceptual framework, the following control variables are included: firm size, firm age, leverage, capital expenditure, state ownership, and family ownership.

Firm Size

The researcher controlled for firm size by taking the logarithm form of assets. Consistent with Nguyen et al., (2015), firm size remains an important variable affecting firms' financial performance as it accounts for potential variation in firms' performance because of the effect of economies of scale. For example, larger firms are at an advantageous position to access financial resources at a lower cost than small firms, as a result impacting their respective financial performance. Dang et al., (2018) document a positive relationship between different proxies of firms' size and financial performance. Consistent with Roberts and Whited (2013), firm size is considered endogenous, because larger firms are difficult to manage as they require more managerial expertise and skill. As a matter of emphasis, larger firms would require more attention and monitoring and more managers would be engaged. This buttresses the suggestion of Roberts and Whited (2013) that firm size should be treated as endogenous variables.

Firm Age

Firm age is an important control variable considered in this research work where it reflects a firm's maturity and level of experience which can affect firms' level of productivity and performance (Beyer et al., 2012). Firms that are consistent on the stock market for a long period of time will likely focus on their reputation and financial performance. This is consistent with Chen et al. (2018) who reported that firm age is positively related with firm financial performance.

Leverage

This is the ratio of firms' debt to the asset (Jameson et al.,2014). Controlling for debt is important as it can influence firms' value and financial performance. Pecking order theory suggests that firms can benefit from the tax shield effects of debt where debt levels of firms must be monitored to avoid default and improve firms' credibility for future borrowings (Schultz et al.2010). A study by Ibhagui and Olokoyo (2018) reported that the negative effect of debt on firms' financial performance diminishes as a firm grows.

CAPEX Ratio

Capital expenditure is measured as the ratio of capital expenditure divided by total assets (Schultz et al.2010). The researcher has included capital expenditure to sales ratio as a control variable since it is expected that capital expenditure investments would be relatively related to firms' future growth and performance.

State Ownership

In China, state ownership plays a crucial role on the relationship between board characteristics and firm performance. State owned enterprises currently accounts for one-third of firm members, but two-third of Chinese market capitalisation (Jiang and Kim, 2020). In China, political control by government as a controlling shareholder can escalate more agency problems between controlling shareholders and minority shareholders. Jiang and Kim (2020) pointed out that state-controlled firms have profit and political goals, hence maximising shareholders wealth might not be a priority. On the flip side, state-controlled firms can easily access resources they need, especially financial resources in form of government support, funding and additional loans which can improve board characteristics-performance relationship.

Family Ownership

Family ownership is another important factor to control for in Chinese corporate governance setting. Unlike state ownership, family-controlled firms have only profit maximisation as their sole objectives, as such the performance-effect in family-controlled firms is likely to be different in state-controlled firms. Hence it is important to control for the effects of family ownership separately from state ownership (Jiang and Kim, 2020)

4.6 Chapter summary

This chapter has discussed the research conceptual framework in detail and provided the theoretical underpinning for the analysis of the relationship between board characteristics and firm performance, considering both gender diversity and ownership concentration as

contingent factors that can affect the relationship. Building on the previous chapter, this chapter integrates agency theory, stewardship theory and resource dependence theory in establishing the impact of board characteristics on firm performance in Chinese context. Table 4.1 shows a summary of depicting predicted relationships, and theoretical perspectives.

Table 4. 1 Summary of predicted relationships, and theoretical perspectives

Hypothesis	Tested Relationships	Theoretical Perspectives	Predicted relationships
H1	Board size-Performance	Resource Dependence Theory	+
H2	Board independence-Performance	Agency Theory	+
H3	CEO duality-Performance	Stewardship/Resource Dependence Theory	+
H4a	Average Board Interlock-Performance	Resource Dependence Theory	+
H4b	CEO interlock-Performance	Resource Dependence Theory	+
H5a	Board gender-Performance	Agency Theory	+
H5b	Female directors' education-Performance	Agency Theory/Resource dependence theory	+
H6	Moderating effect of ownership concentration on board size-performance	Agency Theory/Resource Dependence Theory	+
H7	Moderating effect of ownership concentration on board independence-performance	Agency Theory	-
H8	Moderating effect of ownership concentration on CEO duality-performance	Agency Theory/Resource Dependence Theory	+
H9a	Moderating effect of ownership concentration on average board interlock-performance	Agency Theory/Resource Dependence Theory	+

H9b	Moderating effect of ownership concentration on CEO interlock-performance	Agency Theory/Resource Dependence Theory	+
H10	Moderating effect of board gender diversity on board size-performance	Agency Theory	+
H11	Moderating effect of board gender diversity on board independence-performance	Agency Theory	+
H12	Moderating effect of board gender diversity on CEO duality-performance	Agency Theory	+
H13a	Moderating effect of board gender diversity on average board interlock-performance	Agency Theory	+
H13b	Moderating effect of board gender diversity on CEO interlock-performance	Agency Theory	+

Note: the table presents empirical evidence based on different theoretical perspective on the nexus between board characteristics and firms' performance in China. Symbols (+), (-), and (□) indicate positive, negative and no significant relationship, respectively.

CHAPTER FIVE

DATA AND METHODOLOGY

5.0 Introduction

This chapter discuss the research philosophy, research approach, research design, data collection methods and estimation approaches. The explanatory longitudinal research adopted a quantitative analysis approach to explain the relationship between (i) board characteristics and firms' financial performance in Chinese listed firms, (ii) the moderating effects of ownership concentration on the board characteristics-performance relationship in Chinese listed firms and, (iii) the moderating effects of board gender diversity on the board characteristics-performance relationship in Chinese listed firms. To support the research aims and objectives, this chapter builds on the conceptual framework (chapter 4) by explaining the research methodology adopted to test the hypothesis developed in that chapter.

Therefore, the chapter expatiate on the criteria used for sample selection, and data sources to provide the foundation for identifying dependent and independent variables suitable for the research aims. Issues relating to endogeneity and the dynamic nature of governance-performance relationship will be discussed as well as the rationale for the use of multiple regression techniques. Other sections considered in this chapter include ethics, confidentiality, data validity, and reliability of research approach.

5.1 Research philosophy

The background of any research in social sciences is the philosophical underpinnings. Several researchers including Burrell and Morgan (2017) argued that researchers must select appropriate paradigm for their research. The research philosophy reflects the researcher's view of the world (Saunders and Lewis 2014) where such views form the basis of the research methods adopted by the researcher as part of the research strategy or approach.

According to Saunders (2011), there are several philosophies that researchers can adopt during their research work. These include positivism, realism, interpretivism, objectivism, subjectivism, and pragmatism amongst others. Positivism and interpretivism are the two major research philosophies that are commonly adopted by social science researchers (Collis and Hussey 2013). They are two extremes' paradigms around which many other paradigms exist with different philosophical assumptions. This study follows the positivism philosophy by developing the research hypothesis based on the notion that the impact of board characteristics on firms' financial performance can be investigated and tested empirically using research tools and strategy.

5.1.1 Positivism

Positivism paradigm is implicit philosophical doctrine which suggest that researchers are independent of the data and maintains an objective position rather than been subjective during their research (Collis and Hussey 2013). It is about constructing objective realities based on observable inferences. For example, positivism stresses the use of hypothesis testing, formal propositions, random sampling, aggregations, precision, and quantifiable measures of variables to achieve generalisability and contribution to universal knowledge (Stiles 2003). Positivism argues that corporate relationship can be explained in relation to causes and effects, by utilising quantifiable data from a large sample size that can permit detailed statistical analysis. Although, positivism paradigm is widely adopted by governance scholars including Stiles and Taylor (2001), it has also been criticised for over-looking critical variables that are not embodied in quantitative approach. Consequently, it is not possible to apply positivism in explaining the human behavioral aspects of corporate governance as it fails to manage the subjective variety of human life (Giddens, 1974). However, researchers who adopt positivism paradigm save time in terms of data analysis since positivism paradigm utilises readily available quantifiable measure of variables to draw research inferences. By implication, this makes it easier to generalise and defend their position on causal corporate governance relationships as well as other forms of social science research.

5.1.2 Interpretivism

Interpretivism argues that it is crucial for scholars to understand the differences between objectives and independent reality. It dwells on those research that are influenced by subjective

social realities rather objective truth as proposed by positivism paradigm (Collis and Hussey, 2013). Hence, interpretivism is associated with the use of inductive approach where data is collected and used to develop technique. Interpretivism paradigm tried to focus on the use of case studies, interviews, and ethnographical studies to describe and interpret the occurrence of phenomena in the social world rather than a quantitative method which limits interpretive understanding. Consequently, an inductive method allows the researcher to approach a study with openness of mind, collecting all relevant information for systematic analysis and interpretations which can be developed into theories and research contributions (Bryman and Bell, 2015).

It is crucial to stress that there is no paradigm better than the other, though the choice of a paradigm depends on the nature of the research being conducted, considering the research problems, aims and objectives. In a nutshell, the nature of this study implies implementing a deductive approach rather than an inductive approach which would be more appropriate based on the following reasons as suggested by Saunders (2011):

- The research is driven by scientific principles rather than human behaviors which are related to events.
- The research is built on hypothesis rather than building new theory.
- The research explores casual relationships amongst variables rather than clarifying an existing research context.
- The research uses quantitative data rather than qualitative data.
- The research is developed on a deductive approach rather than an inductive approach.
- The research sample size is sufficiently large (14-year panel data with 21,390 firm year observation) which allows for generalisation of conclusions.

5.2 Research approach

As mentioned earlier, there are different types of approach to any research. These include deductive and inductive approach. This study chose to use the deductive approach which involve the development of hypothesis to test possible outcomes. The use of quantitative analysis is employed to analyse the data collected. Berg (2004) argues that quantitative approach uses different types of statistical techniques and provide stronger basis for measurement, reliability, and generalisation. Quantitative approach is best used when it comes to dealing with larger sample size and longer time periods (Bryman and Bell, 2015). This research did not utilize qualitative approach because of its only suitable for small samples which are not representative enough for the purpose of generalisation, transparency and reliability, and qualitative research can be time consuming while outcomes are usually subjective (Berg 2004).

Therefore, due to the costs, risk and difficulties associated with obtaining primary data through interviews from different Chinese firms, as well as the probability of having a weak response rate, this research opted to apply the deductive positivism paradigm whereby pre-existing corporate governance theories are relied on in developing the research hypothesis which can be subject to tests based on the research empirical findings, thereby indicating whether the tested hypothesis are proven or rejected.

On this premise, the research design is explained in detail in section 5.3, and how the study employed regression analysis to investigate the relationship between board characteristics and Chinese firms' financial performance.

5.3 Research design

Research design is the critical framework and the overall structure upon which the research is built, including interrelationships between the various board characteristics. In this study, the research has been designed to draw inferences from the causal relationships amongst variables to evaluate relationship between board characteristics and firms' financial performance. Considering, the availability of electronic database sources for accounting data like; CSMAR database and online published reports, the researcher is persuaded that the choice of a quantitative method would be more suitable than a qualitative method as readily available

secondary data in form of absolute figures and percentages would be utilised in explaining the research objectives.

Furthermore, based on the theoretical background and empirical evidence explored in the literature review chapter, the researcher explores the causal relationship between firm level variables, country level variables and firm financial performance to achieve the following research objectives:

- To investigate the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, CEO interlock, and board gender diversity) and firms' financial performance in Chinese listed firms.
- To investigate the impact of female directors' education on firm performance.
- To investigate the moderating role of ownership concentration on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firms' financial performance.
- To investigate the moderating role of board gender diversity on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firms' financial performance.

5.4 Variable Measurement and Methods

The researcher used the baseline equation in figure 5.1 to examine the effect of board characteristics on firm performance while the equation in figure 5.2 examines the moderating effect of ownership concentration and board gender diversity on the relationship between board characteristics and firm performance.

Figure 5. 1 Baseline Equation

$$Perf_{it} = \beta X_{it} + \alpha_i + y_t + \varepsilon_{it}$$

Figure 5. 2 Econometric model for moderating effects

$$Perf_{it} = \beta X_{it} + \beta Z_{it} + \beta ZX_{it} + \alpha_i + y_t + \varepsilon_{it}$$

Where $Perf_{it}$ is *ln*Tobin's Q and return on assets (ROA) which are proxies for the financial performance of firm *i* at time *t*.

β = coefficients to be estimated.

i and *t* = indices for individuals and time

X = vector of independent variables and other firm-level control variables.

Z = moderating variable

ZX= interactive variable

Yt = Year fixed effects

α_t = Firm fixed effects

ε_{it}= classical error term

The researcher utilised panel data regression as stated above to test the relationship between (i) board characteristics and firm financial performance, (ii) board characteristics, ownership concentration and firm performance and, (iii) board characteristics, board gender diversity and firm performance. Panel data was chosen because it permits the repetition of one or more variables for several firm observations, taking note of the longitudinal cross-sectional series as applicable in this research study (Gujarati and Porter, 2003).

5.4.1 Board characteristics

Board size

Board size is measured as the total number of directors on board. In this chapter, board size is denoted as a natural logarithm (LnBoardsize). Drawing reference from an agency theory perspective, Yermack (1996) assumes that a smaller board size can improve firms' valuation.

However, proponents of resource dependence theory emphasised that larger board size can serve as a link to firms' critical resources which can improve performance (Dalton et al. 1999). Consistent with Schultz et al. (2010), board size is treated as an endogenous variable.

Board independence

Scholars like Fama and Jensen (1983); Jensen and Meckling (1976) have argued for the separation of ownership and control to reduce agency problems in order to achieve board effectiveness. It has been argued that separation of ownership and control can improve board independence which can translate into better monitoring (Duru et al.,2016; Peng et al., 2007). Consistent with previous studies, board independence is measured as the percentage of independent directors on board for Chinese firms.

CEO Duality

Following Peng, Zhang, and Li (2007) Board duality is coded "1" if the same person serves both as chairman and CEO or ‘’0’’ if otherwise. The information was extracted from the CSMAR, which is a well-recognised database for Chinese firms. The variable is to investigate whether separating the roles of CEO and board chairman can positively or negatively affect performance in Chinese listed firms.

Board interlock

Interlock is a situation where two or more firms share a common director. The researcher computes different measures of board interlock; each measure is calculated at the level of firms' board. For instance, average board interlock can be measured for a given board as the average number of directorships held by directors; whilst the directorships per independent directors can be measured by the average number of directorships held by independent directors of a given firm, and the CEO interlock is the number of directorships held by the CEO (Ferris et al., 2003).

Board gender Diversity

Consistent with agency theory (Fama and Jensen, 1983) and resource dependence theory (Hillman and Dalziel 2003), the role of board gender diversity on firms' performance remains

critical. Governance studies have reported divergent evidence due to the difference in the way researchers have treated board gender diversity. In this thesis, board gender diversity has been measured as the proportion of female directors on board (Liu et al, 2014).

Ownership concentration (Top 10)

Consistent with agency theory (Fama and Jensen, 1983) and resource dependence theory (Hillman and Dalziel 2003), ownership concentration plays a vital role on the relationship between board characteristics and Chinese firms' performance. In this thesis ownership concentration is measured as the ratio of shares held by the largest ten shareholders to total shares (Li et al.,2015).

5.4.2 Firm performance variables

Financial performance is the firms' ability to generate resources sufficient for its day-to-day operations over a given period (Yu and Ashton, 2015). This study uses LnTobin's Q and ROA as the primary performance measures. The study estimates LnTobin's Q as the logarithm form of the market value of equity divided by the total value of assets (Anderson et al. 2011) and ROA is the return on assets. Both measures of performance have its merits and demerits, for example, Dhamadasa et al., (2014) argue that the accounting-based measure considers the historical and current financial position of firms' where it evaluates management's ability to effectively utilise corporate assets and any other given resources. Nevertheless, market-based measure evaluates the perception and confidence of investors on firms' stock performance, Morck et al., (1988) argue that Tobin's Q will better reflect the value of firms' intangible assets.

There are theoretical supports for both measure of performance; for example, the agency theory predicts that limiting performance measures to accounting-based measure can be misleading as managers can manipulate ratios for appraisal or squander firms' profits on excessive salary and managerial priorities at the detriment of shareholders (Jensen and Meckling, 1976). Consequently, including multiple performance measures, especially the market measure (LnTobin's Q) will ameliorate the limitation of the accounting measure of performance. For example, it indicates the market performance of a firm that is not subject to manipulation by managers or accounting policies and inherent limitations in accounting statements as in the case of accounting measures of performance.

5.4.3 Firm specific variables

Firm size

The researcher controlled for firm size by taking the logarithm form of assets. Consistent with Nguyen et al. (2015), firm size remains an important variable affecting firms' financial performance as it accounts for potential variation in firms' performance because of the effect of economies of scale. For example, larger firms are at an advantageous position to access financial resources at a lower cost than small firms, as a result impacting their respective financial performance. Dang et al. (2018) document a positive relationship between different proxies of firms' size and financial performance. Consistent with Roberts and Whited (2013), firm size is considered endogenous, because larger firms are difficult to manage as they require more managerial expertise and skill. As a matter of emphasis, larger firms would require more attention and monitoring, and more managers would be engaged. This buttresses the suggestion of Roberts et al., (2013) that firm size should be treated as endogenous variables.

Proportion of debt

This is the ratio of firms' debt to the asset (Jameson et a.,2014). Controlling for debt is important as it can influence firms' value and financial performance. Pecking order theory suggests that firms can benefit from the tax shield effects of debt and debt levels of firms must be monitored to avoid default and improve firms' credibility for future borrowings (Schultz et al.2010). A study by Ibague and Olokoyo (2018) reported that the negative effect of debt on firms' financial performance diminishes as a firm grows.

Capital expenditure ratio (CAPEX)

Capital expenditure is measured as the ratio of capital expenditure divided by total assets (Schultz, et al.,2010). The researcher has included capital expenditure to sales ratio as a control

variable since it is expected that capital expenditure investments would be relatively related to firms' future growth and performance.

Year Dummy variables

A year dummy variable is included in the research models to account for time-specific effects, accounting for variations because of factors including inflation and other macroeconomic shocks that are peculiar to all firms and can change over some time. In a nutshell, year dummies are employed for thirteen years (from 2003 to 2016). Consistent with Wintoki et al., (2012), the researcher has treated year dummies as an exogenous variable and benchmark each category to avoid the dummy variable trap.

Lagged dependent variable

In this study, the researcher controlled for the autoregressive effect because of the dynamic relationship between board characteristics and firms' financial performance using lagged dependent variables. For each robust test, the researcher employed the natural logarithm transformation of one-year for each dependent variable (Tobin's Q and ROA). The reason for this is to permit the control for potential dynamic panel bias as suggested by (Wintoki et al. 2012).

Specifically, using lagged dependent variables permits the researcher to account for the impact of unobservable historical factors on the dependent variables. For example, the performance impact of a new director on board cannot be evaluated immediately; this can take at least a year or two. Thus, the application of the lagged dependent variable would account for such shocks.

Industry dummy variables

According to Liu et al., (2014), industry dummy should be considered when evaluating the performance-effect of board characteristics). The industry in which a firm operates can have a direct impact on board characteristics-performance relationship. Therefore, such impact has been accounted for by controlling for industry effects using industry dummy variables coded

as 0 and 1 to denote industry in which a particular firm operates. Thirty-nine industry dummy variables are employed for each Chinese industry. Consistent with Wintoki et al, (2012), industry variables are treated as exogenous variables.

5.5 Sources and method of data collection

The researcher has collected secondary data from relevant data base. Data on Chinese board characteristics were collected from the China stock market and accounting research database which offer data on the Chinese stock markets and financial statements of the Chinese listed firms as explained in Table 4.2. In China, there are two major stock exchanges: the Shanghai stock exchange and Shenzhen stock exchange, respectively. The list of publicly listed firms on these two exchanges classified by standard industry codes are provided by the CSMAR data base. This was cross checked against the list provided by the Shanghai and Shenzhen stock exchange official website (Shenzhen stock market, 2017). The final sample consisted of 21,390 firm-year observations after excluding financial firms and utility firms.

5.6 Justification of sample size and data

The researcher intends to evaluate all Chinese companies publicly listed on the Shanghai and Shenzhen stock exchange with the aim of achieving a good sample representation. Hence, the research obtains a panel data set for the period of fourteen years beginning from 2003 to 2016. The panel data set would be more reliable than a simple cross-sectional data as suggested by Low et al. (2015). Panel data is larger and spans for thirteen years, making it more powerful for controlling for heterogeneity and omitted variable (Campbell and Mínguez-Vera, 2008). The research sample starts from 2003 since the split share structure reform in China started in 2005 and hence has large effect on financial information disclosure and annual reporting of listed firms in China. Therefore, large reporting discrepancies would exist before and after 2006.

The following were considered while collecting data for the research:

1. Firms must be listed on Shenzhen or Shanghai stock exchanges.
2. Utility, banks, and other financial firms are excluded from research sample.
3. Firms' annual reports are publicly available, including on CSMAR database.
4. Firms listed less than 1year were also excluded.

The main reason for these selection criteria was to:

First, to achieve an unbalanced data set for Chinese listed firms. The All-share index was downloaded from CSMAR, accounting for period covering 2003 to 2016. The researcher accounted for sample selection bias by collecting as much data available and accounting for missing data, inconsistency in firms' operations because of insolvency or perhaps dissolution.

Second, consistent with prior literature as reported by Haniffa and Hudaib (2006), the researcher has excluded banks and other financial firms from their similar study. This is because financial institutions are highly regulated and such regulations can influence their operations making them distinct in operations from non-financial firms, especially in liquidity and governance. Most financial firms like banks are subject to specific accounting rules which make it difficult not just in calculating performance ratios, but also in making comparison to non-financial firms. Therefore, consistent with previous research studies reported by Ujunwa (2012), Nguyen et al., (2015), and Yu and Ashton (2015), the exclusion of financial firms would be worth considering. Table 4.3 provides a summary for industrial composition for Chinese firms.

Table 5. 1 Summary of industrial composition of Chinese firms (Shenzhen stock market, 2017).

5.7 Endogeneity issues in corporate governance

Empirical corporate governance research which attempts to explore the relationship between board characteristics, and financial performance has serious endogeneity problems (Wintoki et al., 2012). This arises when independent variables are correlated to the error term in a regression analysis, thus resulting in biased and inconsistent estimates that make it difficult to achieve reliable inferences (Nguyen et al., 2015).

Researchers have identified two major sources of endogeneity to include: unobserved heterogeneity and simultaneity (Wintoki et al., 2012). According to Roberts and Whited (2013), unobserved heterogeneity which is also known as omitted variable bias occurs when governance-performance relationship is affected by one or more unobserved factors. For example, in governance- performance relationship, unobserved factors may include managerial ability, company culture or employee influences which are unobservable and remains constant over time.

Simultaneity occurs when an independent variable concurrently explains the dependent variable in the model. For example, the number of outside directorships held by an independent director would affect the director's ability to monitor and indirectly affecting the firm's financial performance. However, some firms with directors holding multiple outside seats may achieve better performance as directors contributes diverse wealth of experience. This suggests that multiple directorship and firm performance may be jointly determined, and they affect each other simultaneously.

Nevertheless, following the work carried out by Wintoki et al., (2012), the researcher will control for endogeneity effect by applying a well-developed dynamic panel model to a data set of 2,667 non-financial publicly listed Chinese firms from 2003 to 2016. For example, dynamic panel model would evaluate the dynamic nature of the board characteristics-performance relationship by evaluating impact of board characteristics changes on past firm performance; this would reduce significant concerns on unobserved heterogeneity.

Furthermore, the dynamic panel estimator is a more reliable compared to the ordinary least squares and traditional fixed effects method in the following ways (Gujarati et al., 2003):

- First, dynamic generalised method of moment (dynamic GMM) estimator allows for the introduction of firm fixed effects to account for (fixed) unobserved heterogeneity.
- Second, unlike the traditional fixed effects, it permits the evaluation of current governance effects on previous past performance.
- Third, it permits the use of combination of variables from firms' history as a valid instrument to control for simultaneity.

Therefore, the dynamic effect of the board characteristics-performance relationship would be investigated using the dynamic GMM regression model.

5.8 Estimation approaches

This subsection introduces and justifies the use of different estimation techniques including Ordinary Least Squares (OLS), Fixed effects, dynamic fixed effects GMM and traditional two stage least square using instrumental variables (2SLS). The dynamic fixed effects remain the most feasible method to investigate board characteristics-performance relationship as it accounts for dynamic fixed effects and time invariant effects. The researcher selected the dynamic fixed effects GMM approach and employed the two stage least square method as a robustness check.

As mentioned in the literature chapter, most governance studies of this nature are limited by endogeneity concerns and existing literatures have examined the causal relationship between board characteristics and firms' financial performance from a static perspective without considering the dynamic nature of such relationship, thus resulting in biased estimates.

The OLS yields biased estimates as it fails to account for time invariant effects (μi) and autoregressive effects because of changes in the dependent variable and the ability of such changes to explain changes in board composition. Specifically, OLS does not account for endogeneity because of Yit-1 effects. To address these concerns of unobserved heterogeneity and simultaneity, the researcher employed the dynamic fixed effect method, and 2SLS (Wintoki et al 2012).

Based on work by Wintoki et al., (2012), the fixed effects estimations eliminate unobserved heterogeneity but fails to deal with autoregressive effects because of dynamic relationship between board variables and firms' performance. Specifically, the estimated coefficient on lagged dependent variable (Yit-1) produced by the fixed effects model is inconsistent and biased. This because of the correlation between the error term and Yit-1 (Nguyen et al.2015).

Furthermore, the researcher employed the dynamic panel data model using the dynamic FE estimation. This approach was designed to address the dynamic endogeneity which has affected previous research studies. Dynamic endogeneity occurs when a variables current value is influenced or determined by its value in the preceding time. Consistent with Schultz et al., (2010), the researcher emphasised the dynamic nature of board characteristics-performance relationship by accounting for the autoregressive effects of lagged dependent variables on current governance structure and control characteristics.

Finally, the researcher employed the dynamic fixed effect model as the main research model and the 2SLS method for robustness check. This is to account for endogeneity in the regressors and all causal relationship between board characteristics and performance measures (Wintoki et al., 2012). This approach will account for all spurious relationships that were not addressed by OLS and FE estimations because of simultaneity and unobservable heterogeneity. Such endogeneity issues were addressed in the dynamic model and 2SLS estimations by employing the test for autocorrelation, Hansen J over identifying restriction test and the F-Statistic first stage regressions.

Consequently, the researcher has treated board variables as endogenous and controlled for exogenous variables. The researcher has also employed instrumental variables to control for unobserved variable bias effects. Test for the validity of instruments was done by checking the predictability power of instruments and ensuring instruments are correlated with the endogenous variables but uncorrelated with the error term (Schultz et al., 2010).

Additionally, to check the robustness of the research findings across different estimation techniques, the researcher compared the results of the different estimation techniques with the results of other prior related studies. The researcher also compared the baseline approach of the Dynamic fixed effects model with other estimation techniques including the 2SLS to detect any potential biases in empirical estimates (Nguyen et al., 2015).

Dynamic GMM estimation

This thesis uses the two-step dynamic GMM to address endogeneity concerns due to unobserved heterogeneity, simultaneity, and reverse causality (Liu et al., 2015). Compared to the traditional IV-2SLS methods, the dynamic GMM has the following advantages: (i) it addresses endogeneity problems based on internal instruments rather than relying on external instruments which are not readily available, (ii) by including past firm performance as one of the regressors, the dynamic GMM controls for the dynamic nature of the relationship between board characteristics and firm performance (Nguyen et al., 2015) and , (iii) it addresses fixed effects problems i.e. the likelihood that the time-invariant firm characteristics (fixed effects contained in the error term in equation 5.1 may be correlated with the independent variables.

In the dynamic model, all the board characteristics variable and control variables except for industry and year dummies are potentially endogenous. Following Wintoki et al., (2012), the thesis includes one-year lagged ROA and Ln_Tobin's Q in the research equation 5.1 and 5.2,

respectively. The model simultaneously includes the lagged levels and difference of variables as instruments (Roodman, 2009). To ensure that the dynamic GMM is well specified, the researcher examines the exogeneity of instrument variables and the autocorrelation conditions using the first (AR1) and second order (AR2) differences in serial correlation (Arellano and Bover 1995). Additionally, the Hansen test (Hansen, 1982) is employed to check the validity and over-identifying restrictions of instruments. Results on validity and over identifying restrictions tests are reported in chapter six (data analysis and discussion chapter)

IV- 2SLS estimation

As mentioned earlier, the thesis uses the IV-2SLS estimation as an alternative standard method to address the endogeneity concerns in empirical corporate governance literature. In effort to confirm the robustness of the board characteristics-performance relationship, the IV-2SLS estimation controls for endogeneity issues by using a valid instrument. A valid instrument must have a strong correlation with the instrumented regressor but uncorrelated with the error term. using instrumental variables (two-year lagged differences of each regressors), the researcher controls for endogeneity based on each level of the board characteristics-performance relationship, this is to confirm that regressors can be treated as exogenous variables (Wintoki et al., 2012).

5.8.1 Durbin-Wu-Hausman (DWH) test for endogeneity of regressors

Consistent with Schultz et al., (2010), the endogeneity of the regressors in the research models is accounted for by checking whether the regressors are correlated with the error term by performing the DWH test for endogeneity (Wintoki et al., 2012). The results of these tests are reported in chapters 6 and 7.

5.8.2 Weak identification test (Cragg-Donald Wald F-statistics)

For an instrumental variable to be relevant, it needs to be correlated with the endogenous variable. Sanderson and Windmeijer (2016) affirms that when instrumental variable is weakly correlated with the endogenous variable, the likelihood of generating biased estimates becomes very high. Therefore, Stock et al., (2002) expatiates that when instrument variables estimate is biased, it is more likely that such estimates will support wrong statistical inferences than ordinary least squares regressions that makes no account for endogeneity. It is on this basis that

this study conducts a validity test to check for any weak instruments issue and ensuring that relevant measures are employed in addressing issues with weak instrumental variables.

Consistent with prior econometric studies like that reported by Kao et al., (2013), the researcher applied the standard instrument variable approach following the Cragg-Donald statistics to test for weak instruments. Where there is one endogenous variable, the statistics is simply the first stage F-statistics; in this case the instruments are jointly zero.

Since the null hypothesis of the test is to establish whether instruments used in the place of the endogenous variable are weak or whether they can fully replace the endogenous variable, the judgmental factor will be to reject the null hypothesis if none of the test statistic are greater than the F-statistics, supporting the fact that instruments employed are not weak and can fully define or replace the endogenous variable. Details on this test will be fully explained in chapter 6.

5.8.3 Test of under-identification

Also, consistent with prior studies such as those reported by Windmeijer (2018), the researcher conducted the under-identification test (Kleibergen-paap rk statistics). The null hypothesis states that instruments are less compared to endogenous variables and have insufficient power to predict the endogenous variables in the research model, suggesting that there is a problem of under-identification. The critical judgment in the test is to reject the null hypothesis if the p-value is significant and statistically different from zero, stressing that there is no problem of under-identification. Details on the result of the test is stated and discussed in chapter 6.

5.8.4 Test for over-identifying restrictions

It is remarkable to stress that the consistency of the 2SLS approach relies on the validity of instruments employed, so it is important to test the validity and predictability power of instruments used in the model. A valid instrument should have the following characteristics:

I. It must be correlated with the endogenous variable.

II. It must not be correlated with the error term.

III. It must not be correlated with both error term and endogenous variable (Schultz, Tan and Walsh, 2010).

Precisely, the researcher used the Hansen-J test of over-identifying restrictions to test if the instrumental variables are uncorrelated with the error term. The researcher did not used other method including the Arellano-Bond test for second-order serial correlation and Hausman specification test because the power of Hausman specification test can be questionable especially in the presence of outliers. Although, Arellano-bond test could also be applied since the research sample period exceeds 5years. The choice of Hansen J test of over-identification restriction is consistent with most governance study of this nature and it is considered as the standard test for validity of instruments in the 2SLS estimation (Roodman, 2009).

5.9 Validity, reliability, generalisability, and ethical consideration

Research quality can be improved by addressing issues including validity, reliability and generalisability as discussed in the sub-sections below:

5.9.1 Validity and reliability

When conducting a research of this nature, it is important to consider the validity and reliability of the research tool proposed in the research design; this can guide the researcher in achieving high quality data during data collection processes. The validity and reliability processes adopted in this research are enshrined in the positivism deductive paradigm as explained earlier in this chapter.

Validity and reliability are the two most important features in evaluating any measurement statistical tool in research. Validity evaluates to what extent an instrument can measure or predict and how well it does so, it is the degree to which results are truthful, emphasising that research instruments are precise in measuring what they are designed to measure (Goodenough and Waite, 2012). Validity encompasses the entire experimental process; it tests whether the results obtained have met the overall requirements of the scientific research method, beginning from the process of collecting data to the process of generating research findings (Oliver,

2010). Validity depends on the reliability of research instruments. Therefore, both validity and reliability complement each other. In-fact Shekhar (2014) argues that validity and reliability increase transparency and decreases the chances of a researcher in reporting biased estimates. Reliability measures consistency, precision, repeatability, and trustworthiness of a research (Oliver, 2010). It indicates to what extent a research is free of error or unbiased. In a quantitative research of this nature, reliability is achieved if results obtained are consistent in identical situations, but different circumstances.

As earlier discussed in section 5.8, the researcher addressed validity and reliability issues by conducting several experimental tests including:

- Weak Identification Test (Cragg-Donald Wald F-Statistics)
- Test of Under Identification
- Hansen J Test (Over Identification Test of Instruments)
- Durbin-Wu-Hausman (DWH) Test for Endogeneity of Regressors

Also, several robust tests using different proxies of firms' financial performances and under different ownership settings were performed to confirm reliability of findings. This is discussed extensively in each of the empirical chapters 6 and 7.

5.9.2 Generalisability

Generalisability can be described as the extent to which the findings of a research can be applied to different perspectives. The data collected during this research and its findings can be generalised as the research has made use of large sample of panel data collected over a long period of time (2003-2016).

5.9.3 Ethical consideration

It is important to consider how to address ethical issues associated with research of this nature. Ethics can be described as sets of rules, conduct or codes which a researcher is expected to observe and follow during a research activity (Reynolds, 1979). In this research study, the researcher has followed the Coventry University ethical standards and obtained ethical

approval from the Coventry University Ethics Committee before commencing and throughout the life span of the research.

5.10 Chapter summary

In this chapter, the researcher has discussed the research philosophy, design, and method of data analysis. Basically, the research approach which has been selected is deductive and quantitative method of data analysis deemed the most suitable method as the researcher collected data from the CSMAR database. The data collected was analysed using STATA 15 which is statistical software. The chapter has also described the research framework, operating model specification, variables, estimation techniques and specification tests. In this chapter, the researcher elaborated on the different estimation techniques used in this research which include Dynamic FE and 2SLS. The researcher checked the robustness of the effect of board characteristics on performance using the 2SLS to account and control for potential endogeneity concerns because of simultaneity and unobserved heterogeneity. Five explanatory variables and several control variables have been used to account for board characteristics-performance relationship. Furthermore, with the Dynamic FE model, the researcher controlled for time invariant and autoregressive effect using one lagged dependent variable.
The chapter also reports on several robust test and validity test including Hansen J test of over identifying restrictions and Hausman test of specification performed while controlling endogeneity. The researcher also reported on various steps taken to control for time invariant effects, industry effects and fixed effects.

The remaining parts of the thesis are chapter 6 which is on data analysis and discussion and chapter 7 which is the conclusion chapter of the thesis, summarising the research findings, discussing the research limitations, implications, areas of further studies and recommendations.

CHAPTER SIX

DATA ANALYSIS, RESULTS AND DISCUSSION

6.0 Introduction

Chapter 5 establishes the research philosophy underpinning this thesis and elaborates the research method, research empirical models, data, and measurement of variables. In this chapter, the researcher will discuss the statistical techniques used in data analysis and the results of the empirical analysis. Section 6.1 to 6.3 will discuss reports of the descriptive statistics, data transformation and correlation analysis. Section 6.4 discusses the empirical results on the direct effect of board characteristics on Chinese listed firm's performance. In contrast, the moderating effect of ownership concentration (Top ten ownership) and board gender diversity on the relationship between board characteristics and firm performance will be discussed in sections 6.5 and 6.6, respectively. Finally, results on robustness tests are discussed in Section 6.7 and Section 6.8 will provide the chapter summary.

6.1 Descriptive statistics

Table 6.1 shows summary statistics. The descriptive statistics provides an overview of the variables employed in the research model, it shows the nature of all variables employed considering the following statistical distributions; mean, standard deviation, minimum, maximum, skewness, and kurtosis for dependent and control variables.

Table 6. 1 Descriptive Statistics

	Observations	IQ25	Mean	Median	IQ75	STDEV	Skewness	Kurtosis	Minimum	Maximum
Firm size (Ln_Assets)	21,389	9.05	9.436	9.363	9.74	0.491	0.52	2.496	8.686	10.492
Firm size (‘000)	21,389	8,49	12,531	11,649	16,899	11,356	9.67	125	5,919	36,026
Leverage (debt)	21,385	0.29	0 .451	0.456	0.61	0.211	0.017	2.25	0	0.998
Capital Expenditure ratio	21,368	0.02	0.059	0.042	0.08	0.058	1.987	9.229	0	0.642
ROA	21,385	0.03	0.055	0.052	0.08	0.062	-0.487	6.631	-0.19	0.248
Tobin’s Q	20,584	1.36	2.44	1.884	2.89	1.676	2.312	9.387	0.896	10.28
Board size	21,390	3	9.03	18	18	1.857	0.807	5.128	3	18
Board independence	21,373	0.33	0.368	0.333	0.4	0.066	0.98	5.493	0	0.8
CEO duality	21,220	0	0.198	0	0	0.398	1.515	3.291	0	1
Gender Diversity	21,390	0	0.117	0.111	0.18	0.111	0.99	4.063	0	0.833
Female Dir Education	21,390	0	0.105	0	0	0.307	2.564	7.574	0	1
Average board interlock	21,385	0.22	0.807	0.555	1.15	0.779	1.211	3.593	0	2.82
CEO interlock	21,352	0	1.873	1	2	2.437	1.67	4.99	0	9
Top 10 ownership	21,384	0.48	0.583	0.596	0.7	0.155	-0.3	2.619	0.091	1
Family dummy	21,390	0	0.224	0	0	0.416	1.323	2.751	0	1
State ownership	21,386	0	0.134	0	0.24	0.219	1.415	3.609	0	0.971
Foreign ownership	21,174	0	0.018	0	0	0.06	3.187	11.475	0	0.243
State Controlled Firm Dummy	20,010	0	0.516	1	1	0.499	-0.063	1.004	0	1

Note: This table presents statistics of Chinese public listed firms from 2003-2016. It includes 21,390 firm year observations between listed firms on Shanghai or Shenzhen stock exchanges. ROA was winsorized at 1 and 99th percentile level, CEO interlock and average board interlock was winsorized at 5th and 95th percentile level, while Firm size (total assets) was reported in logarithm form. The dependent variables measure firms’ financial performance. The proxy for performance includes Return on assets (ROA) which is the ratio of net income divided by total assets and Tobin’s Q which is calculated as market value/ (total assets-intangible assets-net goodwill). IQ, interquartile range.

As explained in chapter 5, there are 21,390 firm-year observations in total during the period 2003-2016. As indicated in Table 6.1, the mean (median) firm size is RMB 12.5 (11.6) million before the natural logarithm transformation, suggesting skewness and necessitating transformation of data. The gearing ratio which is the percentage of debt has a mean value of 0.45, indicating that Chinese firms are almost 50% geared. This is consistent with the results reported by Liu et al., (2015). The average return on asset (ROA) is 5.5% with a minimum and a maximum of -0.19 and 0.248 which is consist with the outcome of Zhang et al. (2014) who reported a 5% ROA, and slightly less than the outcome of Yu and Ashton (2015) who reported a 6.5% ROA. The average market measure indicated by Tobin's Q is 2.44, with a minimum and maximum value of 0.896 and 10.28. This suggests that in terms of central tendency, the market value of listed Chinese firms in the sample is lower than the book value and that Chinese firms created wealth for their shareholders.

The average number of directors on boards of Chinese listed firms' is nine, which agrees with the size recommended by the Chinese code that on average, a board should consist of three to nine members. This is also consistent with results from other Chinese studies (Zeng and Lin, 2011; De Jonge.,2014; Shapiro et al., 2015; Yu and Ashton, 2015) and like the UK board size recommendation of eight to three members (Lipton and Lorsch, 1992). Furthermore, relative to Liang et al. (2013) which reported that the average size of Chinese bank boards is 13.8, the descriptive statistics substantiates that Chinese bank boards are relatively larger than non-financial firm boards.

Furthermore, on average, Chinese boards have 36.8% representation of independent directors closely similar to work by Li et al., (2015) who reported 34.7% representation of independent directors. Thus, again, the summary statistics shows an increase in independent directorships on Chinese boards, but also suggests that on average, independent directors' ratio merely reflects the deliberate actions of most Chinese firms to achieve the required threshold of one-third representation as suggested by CSRC.

CEO duality dummy equals to 1 when the position of a chairperson and CEO are combined and 0 if otherwise. On average, up till 2016, 19.8% of Chinese boards have the position of chairperson and CEO combined, thus representing a slight reduction compared to 2010 when Yu and Ashton (2015) reported 22.5%.

Board gender diversity depicts that on average, 11.7% of all directors are women in the research sample. This suggests a weak representation of women on board. However, relative to Liu, Wei

and Xie (2014) it represents an improvement in women representation on board from 10% in 2014 to 11.7% in 2016. In addition, the descriptive statistics in Table 6.1 shows that on average, 10.5% of Chinese female directors holds at least a masters' degree (female directors' education).

The mean of the average board interlock is 0.807, with a minimum 0 and a maximum of 2.82 concurrent positions held outside the firm. Given the institutional environment effect in China and the quasi-Chinese culture, the incidence of board interlock is relatively high in China compared to other countries such as India where research by Pombo and Gutiérrez (2011) reported a mean board interlock of 0.77. Pérez-Calero Sánchez and Barroso-Castro (2015) reported average board interlock of 0.54. The descriptive statistics also shows the mean of CEO interlock is 1.874. The CEO is very influential especially in directing corporate strategy and policy formulation; the high number of CEO interlocks reflects CEOs networking abilities, experience, and access to vital business information especially when CEOs are connected to larger firms in the same industry.

Regarding ownership concentration, the percentage of top ten shareholders is 58.2% suggesting that ownership of firms in China is concentrated. It should be noted that this proportion varies significantly from 0% to 100%, reflecting the uniqueness of Chinese concentrated ownership structure. Top ten ownership is the sum of shareholding percentage of top ten shareholders, and state ownership is the percentage of shareholdings by Chinese state government.

Other control variables, including family ownership indicates an average mean size of 0.224, indicating that 22.4% of Chinese firms are family controlled. The mean concentration of state ownership in Chinese listed firms was 13.4%, ranging from 0 to 97% from 2003 to 2016. This result is significantly lower than that of Chinese listed firms (34.13%) during 2001 (Choi et al., 2011), and 33.25% for Chinese listed manufacturing firms from 2005 to 2007 (Dong and Gou, 2010). The significant decrease in state ownership is attributable to the Chinese split share reform in 2005. Finally, the mean concentration of foreign ownership is 0.018 with a range of zero to 24%, suggesting that foreign ownership is still low in China.

6.2 Correlation Analysis

The correlation analysis explores the correlation between the dependent and independent variables. Following Yu and Ashton (2015), this study uses Spearman's rho correlation to analyse the correlation between individual independent and the dependent variables. The correlation effect is measured considering the strength and direction of a given variable, which

is depicted by the correlation coefficient r, which lies between -1 and +1. A positive value indicates a positive relationship while a negative value indicates a negative association, with a higher value indicates a strong association. Considering the magnitude and direction of correlation coefficients, makes it easier to quickly detect any potential multicollinearity problems within the variables.

This section presents the results of the univariate correlation analysis of board characteristics, ownership concentration and firm financial performance relationship. Table 6.2 reports the pair-wise correlation between the variables employed in the research equation 5.1 stated in chapter 5. As discussed in chapter 5, the dynamic fixed effect model will be used to test the research hypothesis while the two stage least square will be adopted as robustness test. Consequentially, it is important to test for multi-collinearity, autocorrelation, and homoscedasticity. First the multi-collinearity amongst independent variables is tested by performing a correlation matrix analysis. Table 6.2 provide the Pair-wise correlations amongst all independent variables that have been used in this thesis. The purpose of reporting the correlation estimates is to check for any multicollinearity issue in the regression analysis (Gujarati and Porter 2003). Table 6.2 reveals several significant relationships amongst all independent variables. Damodar (2004) and Gujarati and Porter (2009) noted that unless correlation coefficients amongst independent variables exceed 0.80, multi-collinearity cannot be a serious problem for multiple regression analysis. The highest significant correlation coefficient among independent variables is 0.712 which appears between average board interlock and CEO interlock. To mitigate the concerns of multi-collinearity, the two variables cannot be used simultaneously in the regression model. No other correlation coefficient has an absolute value that is greater than 0.8, which implies that multicollinearity cannot be a major concern. Also, the tolerance statistics depicted by the variance inflation factor (VIF) in Table 6.4 affirms that multi-collinearity cannot be a major concern as there is no VIFs exceeding 10 (Wintoki et., 2012). Gujarati and Porter (2009), stress that a VIF statistic value below three suggests non-existence of serious multi-collinearity problem.

Table 6. 1 Pairwise correlation test for multicollinearity

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1.Firm Size	1.000													
2.Leverage	0.365*	1.000												
	(0.000)													
3.Capital Exp ratio	-0.004	-0.095*	1.000											
	(0.602)	(0.000)												
4.Ln_Board size	0.219*	0.126*	0.067*	1.000										
	(0.000)	(0.000)	(0.000)											
5.Board independence	0.085*	-0.041*	-0.018*	-0.302*	1.000									
	(0.000)	(0.000)	(0.008)	(0.000)										
6.CEO duality	-0.133*	-0.160*	0.048*	-0.171*	0.108*	1.000								
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)									
7.Gender diversity	-0.113*	-0.079*	-0.003*	-0.096*	0.050*	0.102*	1.000							
	(0.000)	(0.000)	(0.010)	(0.000)	(0.008)	(0.000)								
8. Female directors' education	0.006	-0.022*	0.013	-0.016*	0.018*	0.023*	0.047*	1.000						
	(0.352)	(0.001)	(0.062)	(0.021)	(0.009)	(0.001)	(0.000)							
9.Average board interlock	0.142*	-0.051*	0.013	-0.076*	0.095*	0.070*	-0.010	0.052*	1.000					
	(0.000)	(0.000)	(0.066)	(0.000)	(0.000)	(0.000)	(0.154)	(0.000)						
10.CEO interlock	0.073*	-0.061*	0.025*	-0.049*	0.080*	0.098*	0.057*	0.046*	0.712*	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
11.Top 10 ownership	0.103*	-0.178*	0.161*	0.045*	0.018*	0.046*	0.019*	0.016*	0.090*	0.072*	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)	(0.000)	(0.006)	(0.016)	(0.000)	(0.000)				
12.Family ownership	-0.081*	-0.263*	0.101*	-0.127*	0.123*	0.194*	0.066*	0.025*	-0.033*	-0.025*	0.265*	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.016)	(0.002)	(0.016)	(0.000)			
13.State ownership	0.035*	0.102*	0.060*	0.205*	-0.168*	-0.183*	-0.107*	-0.062*	-0.162*	-0.151*	0.219*	-0.113*	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
14.Foreign ownership	0.056*	-0.035*	0.038*	0.034*	-0.016*	0.007	0.005	0.003	0.080*	0.089*	0.149*	-0.046*	0.006	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.022)	(0.276)	(0.497)	(0.671)	(0.000)	(0.000)	(0.000)	(0.000)	(0.418)	

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

6.4.1 Board characteristics and firms' performance

The main aim of Models 1 and 2 was to analyse the relationship between board characteristics and firm performance in Chinese listed firms. In Table 6.3, columns (1) to (4) showed the main regression (GMM) of the relationship between board characteristics and firm performance using LnTobin's Q and ROA after controlling firm-specific factors and dynamic fixed effects. The dynamic GMM estimation has included one year lag of firm performance measures to control for autoregressive effects. The assumption in the GMM regression is that all the variables except firm age are endogenous. The Model enables the relationship between board characteristics and firm performance to be estimated including historical data and fixed effects to account for the dynamic aspects and time-invariant unobservable heterogeneity.

In Table 6.3, Columns (1) to (4) report the results of the specification tests – the AR (2) second-order serial correlation tests and the Hansen J Test of over-identifying restrictions. The lowest AR (2) test across all six columns yields a p-value of 0.104, which means that the model cannot reject the null hypothesis of no second-order serial correlation. The results in Table 6.3 also reveal a J-statistic with the lowest p-value of 0.336, and as such, the models cannot reject the null hypothesis of the validity of instruments for (GMM) board characteristics in Table 6.3 after controlling the dynamic fixed effects.

The coefficients of board size and performance (LnTobin's Q and ROA) is positive and significant in Column (1) to (4), indicating that board size is found to be positive and significantly correlated at the 10 percent level or better with firm performance (β = 0.446, 0.393, 0.102, and 0.115) respectively. The positive coefficient of board size indicates that firms with larger number of directors achieve better performance. This finding is consistent with the resource dependence theory and prior research reported by Adams and Mehran (2005) and Mangena et al., (2012) documenting a positive and significant relationship between firms' performance measures and board size. However, it negates prior research findings by Yermack (1996), Cheng (2008), and Haniffa and Hudaib (2006) that suggests a statistically negative and significant relationship between board size and firm performance. Theoretically, the research findings support the resource dependence theory and depicts that the market perceives firms with larger boards as more effective since larger boards can offer greater access to pool of resources which can reduce uncertainties and facilitates the in-flow of critical firm resources (Zahra and Pearce 1989). In the context of the Chinese culture, where businesses are built on networks, the research findings support the fact that large boards are more likely to secure profitable government contracts that can increase their profitability when measured by

LnTobin's Q and ROA compared to their smaller counterparts. This supports the research hypothesis **H1**, suggesting that there is a positive and significant relationship between board size and Chinese firms' financial performance, a similar finding to those reported by Chen and Al-Najjar, (2012) and Chen et al., (2015) evidencing that from a resource dependence view, large boards can offer larger network which is important in Chinese context and firms can use their networks to access information and new opportunities.

The table also show a positive and statistically significant relationship between the board independence and firm performance when measured using LnTobin's Q ($\beta = 0.080$, t-stat = 2.98; $\beta = 0.081$, t-stat = 2.98) and ROA ($\beta = 0.018$, t-stat=1.84; $\beta = 0.017$, t-stat=1.83). The results indicate that boards with higher proportion of independent directors will achieve better performance. This is in line with agency theory that posits that a higher proportion of independent directors on board will result in greater monitoring positively affecting firms' financial performance (Fama 1980). This is because independent directors are less dependent on management and more interested in protecting their reputation (Zhu et al., 2016). The findings are consistent with prior studies (Liu et al., 2015; Zhu et al., 2016) that demonstrate that independent directors have a positive effect on firm operating performance. Thus, this result contributes to Liu et al. (2015) and Zhu et al. (2016) by substantiating their supposition and expanding on them with a larger sample size. The result is consistent with agency theory which suggests that an increase in the proportion of independent directors on board will improve monitoring and positively affect firm performance, supporting hypothesis **H2.** On the contrary, using 452 large US sample between 1984 and 1991, Yermack (1996) document an inverse association between independent directors and firm performance. Similarly using 934 largest US firms between 1985 and 1995, Bhagat and Black (2002) find no association between board independence and improved profitability of firms. The regression outcome in this research is significantly different because unlike Yermack (1996) and Bhagat and Black (2002) that uses only large US-based firms as its sample size, the study uses a more recent and larger sample size of Chinese firms that includes small, medium and larger firms over the period 2003 to 2016.

Again, the regression coefficients in Table 6.3 of the association between CEO duality and performance is positive and not statistically significant using LnTobin's Q and ROA as the dependent variables. This does not support the research hypothesis **H3**, stressing that there is a positive and significant relationship between CEO duality and Chinese firms' financial performance. The insignificant association can be contingent on contextual factors like

ownership settings included (e.g., Top 10 Ownership) in the regression analysis that will be investigated in section 6.5 of this research and may have absorb the impact of CEO duality. This is different from prior studies that have not included the variable in their regression analysis.

Again, in Table 6.3, the analyses find a positive and highly significant association between average board interlock and firm performance (LnTobin's Q) after controlling for endogeneity concerns (β = 0.081, t-stat = 2.72). Replicating the study using ROA as a performance measure to assess whether the outcome is sensitive to the performance variable used, the regression analysis shows that the coefficient on average board interlock is positive and statistically significant at the 10 percent level (β = 0.022, t-stat = 1.80) and collaborate the finding of Sarkar et al., (2009) that argue that average board interlock is associated with improved firm performance. Similarly, the study finds an association between CEO interlock and firm performance when performance is measured using LnTobin's Q (β = 0.048, t-stat = 2.90) and ROA (β = 0.014, t-stat = 1.78). The significantly positive results suggest that the appointment of a CEO with outside directorships is associated with higher firm performance. The findings provide support for the research hypothesis **H4a** and **H4b**. These findings are consistent with resource dependence view that points out that multiple directorships can serve as a channel of resources (Zona et al.,2018). In fact, in China where the quasi culture is predominant, having well-connected directors and CEO can improve business networks and provide critical resources at an efficient cost. So, board interlocks are not harmful to governance quality as firms can benefit from each other by sharing experiences, information, and ideas when they are well connected. This is in line with the findings of Li et al. (2013) and Peng et al. (2015) documenting that firms in China really suffer from insufficient resources and interlocking directors can help to relax such resource constraint by providing access to information and resources that flow or are embedded in interconnected networks. More specifically, directors with government connections can serve their firms interest through their connections with government agencies. Yeo et al., (2003) also affirm that CEO interlock is beneficial and can promote cost effectiveness, reduction of business environmental uncertainties, and effective management of scarce resources.

Gender diversity is negative and significant with Ln_Tobin's Q (β = -0.573, -0.521, t-stat = -2.66, -2.80) not supporting hypothesis **H5a**, but positive and significant with ROA (β = 0.134, 0.149, t-stat = 1.68, 1.68), supporting hypothesis **H5a.** This suggests that with regards to ROA, gender diversity enhances effectiveness in the board room and improve performance but in

contrast with LnTobin's Q (market-based measure of performance), the results implies that Chinese investors do not perceive gender diversification as an effective way of improving board monitoring and performance. More so, since female directors bring tougher monitoring to boardrooms, adding more female directors on board, is likely to provide unnecessary monitoring for well governed firms, which can be detrimental to long term performance (Ln-Tobin's Q). Hence, the critical issue remains striking a balance between the cost and benefits of gender diversification across Chinese boards. The empirical result with ROA supports the perspective of agency that women may have a more significant effect and improve board monitoring when they increase in number in a board. In other words, similar to the findings reported by Liu et al., (2014), the empirical result affirms that an increase in female board representation can improve board decision making and advisory role which eventually increase firms' performance. Both findings are also consistent with Bennouri et al. (2018) who evidenced a negative and significant effect of gender diversity with Tobin's Q, and a positive significant effect with ROA.

Concerning the impact of female directors' level of education on firm performance, the research findings fail to support hypothesis **H5b** which suggest a positive correlation between female directors' educational level and firm performance, such that female directors with higher qualification including master's degree and above, should exhibits a positive and significant relationship with measures of performance. The results show an insignificant relationship, suggesting that female directors with masters' and above do not significantly affect firm performance. This negates the findings of Cheng et al., (2010), suggesting that higher education attainment of female directors provides the confidence and capacity to effectively control and monitor.

Ownership concentration variables indicated statistically significant results. Top 10 ownership shows a positive and significant relationship with both performance measures (LnTobin's Q and ROA). The coefficient of Top 10 ownership is positive and statistically significant at 1% significant level with Tobin's Q (β =0.831,0.819) and 10% significant level with ROA (β = 0.037, 0.035) respectively. State ownership and performance (LnTobin's Q) is positive and significant with LnTobin's Q, but insignificant with ROA, while no statistically significant relationship is reported for foreign ownership across columns (1) to (4). Consistent with Li et al. (2015) the results affirms that ownership plays a significant role in Chinese corporate governance setting and ownership can serve as an alternative proxy for monitoring, especially

in China where ownership is concentrated.

Control variables include firm size, leverage and capital expenditure are also tested. Table 6.3 below shows that firm size is negatively related to Tobin's Q, consistent with Mangena et al., (2012), but positively related to ROA, in line with Haniffa and Hudaib (2006). The relationship between firm size and performance (LnTobin's Q and ROA) is statistically significant. Similar statistically significant result is reported for Leverage and performance (LnTobin's Q and ROA) in Columns (1) to (4) of Table 6.3. Leverage is not significant with Tobin's Q which is in line with the findings of Mangena et al., (2012), but negative and statistically significant with ROA, consistent with Shao et al., (2019). Capital expenditure and performance (LnTobin's Q and ROA) shows an insignificant relationship.

Table 6. 2 The relationship between board characteristics and firm performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.081***	-	0.022*	-
	(2.72)	-	1.80	-
CEO interlock		0.048***		0.014*
		(2.90)		(1.78)
LnBoard size	0.446***	0.393***	0.102*	0.115*
	(2.81)	(2.99)	(1.81)	(1.80)
Board Independence	0.082***	0.081***	0.018*	0.017*
	(2.98)	(3.20)	(1.84)	(1.83)
CEO Duality	0.013	0.014	0.004	0.002
	(0.98)	(0.72)	(0.71)	(0.44)
Gender	-0.573***	-0.521***	0.134*	0.149*
	(-2.66)	(-2.80)	(1.68)	(1.68)
Female Dir Education	0.007	0.008	-0.001	0.001
	(0.38)	(0.51)	(-0.17)	(0.03)
Top 10 Ownership	0.831***	0.819***	0.037*	0.035*
	(8.34)	(8.87)	(1.81)	(1.80)
State Ownership	0.079**	0.076**	-0.014	-0.015
	(2.08)	(2.14)	(-1.44)	(-1.44)
Foreign Ownership	-0.212	-0.197	-0.013	-0.009
	(-1.10)	(-1.10)	(-0.34)	(-0.21)
Firm size	-1.074***	-1.074***	0.047***	0.048***
	(-18.39)	-18.97)	(4.35)	(4.13)
Leverage	0.155	0.149**	-0.227***	-0.243***
	(2.13) *	(2.17)	(-10.38)	(-9.40)
Capital Expenditure	0.014	0.020	0.012	0.010
	(0.14)	(0.22)	(0.45)	(0.38)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.026	0.026
AR (2) test (p-value)	0.104	0.104	0.138	0.112
Hansen J) test (p-value)	0.376	0.336	0.381	0.381

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Table 6. 3 VIF Test

Variables	Dependent variable: LnTobin's Q		Dependent variable: ROA	
	Column 1:	Column 2	Column 3	Column 4
	VIFs	VIFs	VIFs	VIFs
1. Ave board interlock	1.16		1.11	
2. CEO interlock		1.08		1.1
3. Ln_Board size	1.25	1.25	1.26	1.25
4. Board Independence	1.16	1.16	1.16	1.16
5. CEO Duality	1.12	1.11	1.09	1.13
6. Gender	1.04	1.04	1.05	1.04
7. Female Dir education	1.01	1.01	1.01	1.01
8. Top 10 Ownership	1.7	1.51	1.23	1.71
9. State Ownership	1.4	1.65	1.64	1.64
10. Foreign Ownership	1.07	1.06	1.04	1.07
11. Firm size	1.42	1.42	1.72	1.72
12. Leverage	1.42	1.46	1.52	1.39
13. Capital Exp Ratio	1.07	1.12	1.1	1.07
Mean VIF	1.24	1.24	1.24	1.25

Note: VIFs statistics are from the statistical estimations depicted in Table 6.3

6.5 Moderating effects of ownership concentration on board characteristics and firms' performance

In this section, the research employs top ten ownership as a proxy for ownership concentration. Therefore, Tables 6.5 to Table 6.9 show the results of the moderating effect of ownership concentration (Top ten share ownership) on the relationship between board characteristics (board size, board independence, CEO Duality, average board interlock and CEO interlock), and firm performance (LnTobin's Q and ROA) after controlling for firm-specific factors and endogeneity concerns.

Columns (1) to (4) of Table 6.5 show the moderating effect of Top ten share ownership on the relationship between board size and firm performance (LnTobin's Q and ROA). The interaction effect of Top ten share ownership on the board size-performance relationship is insignificant, suggesting that when ownership is concentrated the effect of board size on firm performance is not significant because top ten ownership of firms have the power to reduce or increase the size of a board depending on business needs and complexities. This is in line with the study of Jiang and Kim (2015), stressing that Chinese board size is primarily driven by complexities like firm size, ownership concentration and industry settings. Specifically in China where ownership is still concentrated, controlling shareholders manages and determine corporate relationships including board size, thereby rendering the performance-effect of board size insignificant (Lin., 2004; Chen et al.,2012). The findings negate agency theory perspective that concentrated ownership promotes firms' financial performance by significantly increasing board monitoring and the performance effect of board size. Thus, hypothesis **H6** is not supported when performance is measured by LnTobin's Q and ROA.

Table 6. 4 Moderating effect of ownership concentration (Top10 ownership) on board size-performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.090***		0.022*	
	(2.72)		(1.78)	
CEO interlock		0.041***		0.014*
		(2.81)		(1.76)
LnBoard size	0.597**	0.586**	0.130	0.150
	(2.06)	(2.13)	(1.38)	(1.41)
Board Independence	0.083***	0.084***	0.017*	0.016*
	(2.99)	(3.12)	(1.82)	(1.81)
CEO Duality	0.021	0.014	0.004	0.002
	(0.99)	(0.68)	(0.73)	(0.47)
Gender diversity	-0.566***	-0.530***	0.129*	0.144*
	(-2.67)	(-2.74)	(1.67)	(1.66)
Top 10 Ownership	1.502*	1.1541*	0.155	0.189
	(1.87)	(1.99)	(0.73)	(0.80)
State Ownership	0.081**	0.078**	-0.014	-0.014
	(2.13)	(2.15)	(-1.43)	(-1.42)
Foreign Ownership	-0.213	-0.209	-0.014	-0.010
	(-1.12)	(-1.16)	(-0.36)	(-0.24)
Moderation Effects				
Boardsize* Top 10	-0.307	-0.325	-0.055	-0.070
	(-0.86)	(-0.95)	(-0.59)	(-0.68)
Control Variables				
Firm size	-1.072***	-1.084***	0.047***	0.047***
	(-18.27)	(-18.59)	(3.39)	(4.18)
Leverage	0.155**	0.146**	-0.226***	-0.233***
	(2.13)	(2.07)	(-10.54)	(-9.56)
Capital Expenditure	0.017	0.016	0.013	0.011
	(0.18)	(0.18)	(0.50)	(0.43)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.016	0.021
AR (2) test (p-value)	0.103	0.102	0.143	0.136
Hansen J) test (p-value)	0.368	0.351	0.104	0.103

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Columns (1) to (4) of Table 6.6 show the moderating effect of top ten share ownership on the relationship between board independence and firm performance (LnTobin's Q and ROA). The interaction effect of Top ten share ownership on the board independence-performance relationship is insignificant. The insignificant coefficient of the interactive term of board independence and top ten ownership in Table 6.6 indicates that independent directors and top ten owners may not work together towards the influencing performance of Chinese listed firms. Although both top ten shareholders and independent directors can act as effective monitors, top ten shareholders may not necessarily share the same perspective with independent directors especially when there is a conflict of interest between top shareholders expectation and firms' overall goal. When ownership is concentrated, an independent director cannot efficiently control and may be constrained in terms of inside information that is valuable for strategic decision making. Thus, this result negates hypothesis **H7** stressing that, from an agency theory perspective, the effect of board independence on firm performance will increase when ownership concentration decreases similar to findings reported by (Li et al., 2015).

Table 6. 5 Moderating effect of ownership concentration (Top10) on board independence-performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	-0.003		0.001	
	(-0.05)		(0.14)	
CEO interlock		0.001		0.003
		(0.31)		(0.05)
LnBoard size	0.014	0.014	0.004	0.004
	(0.58)	(0.60)	(0.53)	(0.56)
Board Independence	0.125	0.122	-0.021	-0.023
	(0.86)	(0.84)	(-0.53)	(-0.59)
CEO Duality	0.009	0.009	0.002	0.002
	(0.82)	(0.80)	(0.84)	(0.84)
Gender	-0.024	-0.023	0.004	0.004
	(-0.57)	(-0.52)	(0.33)	(0.33)
Top 10 Ownership	0.747***	0.743***	-0.017	0.018
	(7.10)	(7.03)	(-0.66)	(-0.70)
State Ownership	0.073***	0.073***	-0.012**	-0.012**
	(3.30)	(3.33)	(-2.33)	(-2.27)
Foreign Ownership	-0.251**	-0.251**	-0.032*	-0.032*
	(-2.47)	(-2.46)	(-1.94)	(-1.93)
Moderation Effects				
Board Independence* Top 10	-0.071	-0.066	0.072	0.119
	(-0.29)	(-0.26)	(1.14)	(1.14)
Control Variables				
Firm size	-1.018***	-1.019***	0.048***	0.049***
	(-26.52)	(-26.54)	(6.33)	(6.61)
Leverage	0.195***	0.195***	-0.202***	-0.203***
	(5.16)	(5.11)	(-17.43)	(-17.53)
Capital Expenditure	0.076	0.076	0.031**	0.030**
	(1.43)	(1.44)	(2.05)	(2.03)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.000	0.066
AR (2) test (p-value)	0.109	0.356	0.232	0.637
Hansen J) test (p-value)	0.108	0.091	0.102	0.118

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Columns (1) to (4) of Table 6.7 show the moderating effect of Top ten share ownership on the relationship between CEO Duality and firm performance (LnTobin's Q and ROA). The interaction effect of top ten share ownership on CEO duality-performance relationship is insignificant, suggesting that under a higher concentrated ownership setting, CEO duality becomes less effective and does not affect firm's performance in China. This negates hypothesis **H8** which argues that from both resource dependence perspective and stewardship theory that the interaction of CEO duality and ownership concentration will improve Chinese firms' performance. Therefore, the research result concludes that that the performance-effect of CEO duality is not contingent on firm' level of ownership concentration.

Table 6. 6 Moderating effect of ownership concentration (Top10) on CEO duality-performance

	Dependent variable: LnTobin's Q		**Dependent variable: ROA**	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.091***		0.048*	
	(2.71)		(1.85)	
CEO interlock		-0.002		0.029*
		(0.61)		(1.82)
LnBoard size	0.429***	0.421***	0.221*	0.225*
	(2.81)	(2.88)	(1.84)	(1.82)
Board Independence	0.084***	0.082***	0.017*	0.016*
	(2.99)	(3.05)	(1.87)	(1.85)
CEO Duality	0.003	-0.002	0.003	-0.009
	(0.05)	(-0.03)	(0.11)	(-0.03)
Gender	-0.573***	-0.564***	0.282*	0.286*
	(-2.66)	(-2.72)	(1.74)	(1.72)
Top 10 Ownership	0.826***	0.813***	0.270**	0.258**
	(8.17)	(8.35)	(2.02)	(1.99)
State Ownership	0.080**	0.077**	0.018	0.015
	(2.08)	(2.09)	(0.74)	(0.62)
Foreign Ownership	-0.214	-0.192	0.022	0.025
	(-1.11)	(-1.01)	(0.29)	(0.33)
Moderation Effects				
CEO Duality* Top 10	0.033	0.043	0.004	0.007
	(0.28)	(0.37)	(0.08)	(0.13)
Control Variables				
Firm size	-1.072***	-1.050***	-0.340*	-0.326
	(-18.16)	(-18.91)	(-1.66)	(-1.61)
Leverage	0.155**	0.152**	-0.107	-0.119
	(2.12)	(2.15)	(-1.48)	(-1.65)
Capital Expenditure	0.013	0.029	0.028	0.028
	(0.14)	(0.32)	(0.67)	(0.66)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.002	0.002
AR (2) test (p-value)	0.103	0.107	0.107	0.108
Hansen J) test (p-value)	0.376	0.333	0.103	0.103

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Table 6.8 show the effect of ownership concentration (Top ten Share ownership) on the average board interlock-performance relationship. From columns (1) to (4), hypothesis **H9a** is widely supported as the regression result show a positive and statistically significant relationship between the moderating effect (average board interlock * Top10) and performance when measured using LnTobin's Q ($\beta = 0.071$, t-stat = 2.43; $\beta = 0.215$, t-stat = 2.69) and ROA ($\beta = 0.014$, t-stat=1.84; $\beta = 0.055$, t-stat=1.89). The result indicates that the effect of average board interlock on firms' performance is positively moderated by the controlling power of top ten shareholders such that average board interlock has a positive impact on firms' financial performance when the proportion of top ten ownership is zero. However, as ownership concentration increases, the strength of the positive relationship between average board interlock and financial performance increases, suggesting that an increase in the percentage of shareholdings of top ten shareholders would positively affect the overall ability of the board to effectively monitor and hence improve the average board interlock-performance relationship. This is because top ten shareholders have both incentive and power to effectively monitor and control (Jiang and Kim,2015). Thus, from an agency theory perspective, in China, ownership concentration can serve as a proxy for effective monitoring and an alternative substitute for a weak legal system (Tang 2017).

The result compliments the findings of Li et al. (2015) and Zona et al. (2018) by substantiating their position that ownership concentration can serve as an alternative monitoring mechanism. Additionally, the result expands on the findings of Zona et al. (2018), by integrating agency theory and resource dependence theory to evidence the positive moderating effect of ownership concentration on the relationship between board interlock and firm performance in China which remain unexplored.

Table 6. 7 Moderating effect of ownership concentration (Top10) on Average board interlock-performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.051		0.015	
	(1.12)		(1.21)	
CEO interlock		0.021**		0.005*
		(2.41)		(1.97)
LnBoard size	0.469***	0.444***	0.106*	0.115*
	(2.69)	(2.74)	(1.81)	(1.84)
Board Independence	0.084***	0.083***	0.017*	0.016*
	(2.93)	(2.90)	(1.84)	(1.87)
CEO Duality	0.023	0.023	0.004	0.004
	(0.96)	(1.03)	(0.70)	(0.72)
Gender	-0.574***	-0.594***	0.138*	0.152*
	(-2.66)	(-2.59)	(1.69)	(1.72)
Top 10 Ownership	0.775***	0.661***	0.027	0.002
	(7.16)	(6.72)	(1.01)	(0.09)
State Ownership	0.079**	0.084**	-0.014	-0.012
	(2.08)	(2.13)	(-0.41)	(-1.18)
Foreign Ownership	-0.217	-0.228	-0.013	-0.013
	(-1.12)	(-1.15)	(-0.33)	(-0.31)
Moderation Effects				
Ave Board Interlock* Top 10	0.071**	0.215***	0.014*	0.055*
	(2.43)	(2.69)	(1.84)	(1.89)
Control Variables				
Firm size	-1.070***	-1.063***	0.048***	0.049***
	(-18.20)	(-17.95)	(4.30)	(4.14)
Leverage	0.154**	0.156**	-0.228***	-0.230***
	(2.10)	(2.07)	(-10.15)	(-9.75)
Capital Expenditure	0.014	0.015	0.011	0.009
	(0.14)	(0.15)	(0.42)	(0.32)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,731	14,731	15,820	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.001	0.002
AR (2) test (p-value)	0.110	0.102	0.136	0.132
Hansen J) test (p-value)	0.393	0.421	0.139	0.137

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Table 6.9 shows the moderating effect of ownership concentration (Top ten Share ownership) on the CEO interlock-performance relationship. From columns (1) to (4), hypothesis **H9b** is widely supported as the regression result show a positive and statistically significant relationship the moderating effect (CEO interlock*Top ten ownership) and performance when measured using LnTobin's Q ($\beta = 0.061$, t-stat = 2.06; $\beta = 0.051$, t-stat = 1.92) and ROA ($\beta = 0.008$, t-stat=2.04; $\beta = 0.363$, t-stat=2.59). This suggest that the positive impact of CEO interlock on firms' performance still holds even after controlling for endogeneity concerns when top ten ownership increases. From a resource dependence view, the result affirms that, in China where the quasi culture is predominant, having a well-connected CEO would improve business networks and provide critical resources at an efficient cost. Thus, well connected CEOs can improve the governance quality and firms' performance. CEO interlocks are not harmful to governance quality as firms can benefit from each other by sharing experiences, information, and ideas when they are well connected. This is consistent with the findings of Yeo et al., (2003) accentuating that CEO reciprocal interlock is beneficial as it promotes cost effective monitoring, reduction of business environmental uncertainties, and effective management of scarce resources. By integrating agency theory and resource dependence theory, ownership concentration will strengthen the relationship between CEO interlock and firm performance. This is because; (i) high ownership concentration will provide controlling shareholders with incentive and power to monitor and ensure that managers are operating firms efficiently (ii) Controlling shareholders can serve as a disciplining function and limit CEOs agency problems.

Therefore, different from Yeo et al., (2003), that investigated the direct effect of CEO reciprocal interlocks on performance of French corporations, this study compliment and extend the study of Yeo et al. (2003), by using a more recent and larger sample of Chinese firms that includes small, medium and larger firms over the period 2003 to 2016 to show both the direct effect of CEO interlock on firm performance, and also the positive moderating effect of ownership concentration on the relationship between CEO interlock and firm performance in a weak legal environment like China. This to date, is unexplored.

Table 6. 8 Moderating effect of ownership concentration (Top10) on CEO interlock-performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.209**		0.031*	
	(2.02)		(1.95)	
CEO interlock		0.029*		0.229**
		(1.88)		(2.59)
Board size	0.392***	0.420***	0.109*	0.135**
	(3.04)	(2.89)	(1.88)	(2.41)
Board Independence	0.083***	0.082***	0.017*	0.016**
	(3.23)	(3.07)	(1.92)	(2.49)
CEO Duality	0.017	0.021	0.004	0.001
	(0.89)	(0.99)	(0.72)	(0.21)
Gender	-0.525***	-0.562***	0.143*	0.166**
	(-2.87)	(-2.73)	(1.75)	(2.24)
Top 10 Ownership	0.687***	0.724***	0.054*	0.727***
	(7.18)	(7.56)	(1.71)	(2.61)
State Ownership	0.066*	0.078**	-0.013	-0.022*
	(1.93)	(2.10)	(-1.26)	(-1.64)
Foreign Ownership	-0.153	-0.197	0.011	0.050
	(-0.83)	(-1.03)	(-0.26)	(0.86)
Moderation Effects				
CEO Interlock* Top 10	0.061**	0.051*	0.008**	0.363**
	(2.06)	(1.92)	(2.04)	(2.59)
Control Variables				
Firm size	-1.021***	-1.048***	0.047***	0.033**
	(-19.02)	(-18.88)	(4.13)	(2.04)
Leverage	0.140**	0.152**	-0.228***	-0.230***
	(2.13)	(2.15)	(-10.30)	(-9.37)
Capital Expenditure	0.058	0.030	-0.010	-0.003
	(0.68)	(0.33)	(0.36)	(0.10)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,820	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.003	0.003
AR (2) test (p-value)	0.152	0.113	0.102	0.127
Hansen J) test (p-value)	0.333	0.376	0.106	0.106

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

6.6 Moderating effects of gender diversity on board characteristics and firms' performance

This section shows the results of the moderating effects of gender on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firm performance (Tobin's Q and ROA) after controlling firm-specific factors and dynamic fixed effects.

Columns (1) to (4) of Table 6.10 show the moderating effect of gender diversity on the relationship between board size and firm performance (LnTobin's Q and ROA). The interaction effect of gender diversity on the board size-performance relationship is insignificant with performance when measured using LnTobin's Q (β = -0.147, t-stat = -0.35; β = -0.112, t-stat = -0.28) and ROA (β = -0.032, t-stat=-0.31; β = -0.018, t-stat=-0.16), suggesting that the positive impact of board size on firms' performance is weaker as board gender diversity increases. The findings negate agency theory perspective that gender diversity can ameliorate the effectiveness of board size by improving board monitoring and control (Liu et al., 2014). Thus, hypothesis **H10** is not supported when performance is measured by LnTobin's Q and ROA. This is because when boards are excessively large, it becomes more difficult to monitor effectively and in China, female representation on corporate board is still very low.

Table 6. 9 Relationship between Board size, Gender and Performance

	Dependent variable: Ln Tobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.091***	-	0.023*	
	(2.72)	-	(1.80)	
CEO interlock		0.048***		0.014*
		(2.90)		(1.78)
LnBoard size	0.445***	0.406***	0.107*	0.112*
	(2.83)	(3.00)	(1.81)	(1.79)
Board Independence	0.083***	0.082***	0.017*	0.016*
	(2.98)	(3.20)	(1.84)	(1.82)
CEO Duality	0.021	0.014	0.003	0.002
	(0.96)	(0.71)	(0.70)	(0.44)
Gender	-0.259	-0.282	0.067	0.112
	(-0.27)	(-0.32)	(0.30)	(0.45)
Top 10 Ownership	0.832***	0.819***	0.037	0.038
	(8.33)	(8.87)	(1.41)	(1.36)
State Ownership	0.079**	0.076**	-0.014	-0.015
	(2.07)	(2.13)	(1.44)	(-1.44)
Foreign Ownership	-0.212	-0.197	-0.013	-0.009
	(-1.11)	(-1.10)	(-0.33)	(-0.22)
Moderation Effects				
Board size* Gender	-0.147	-0.112	-0.032	-0.018
	(-0.35)	(-0.28)	(-0.31)	(=0.16)
Control Variables				
Firm size	-1.072***	-1.074***	0.048***	0.048***
	(-18.19)	(-18.99)	(4.34)	(4.13)
Leverage	0.155**	0.148**	-0.227***	-0.234***
	(2.12)	(2.16)	(-10.37)	(-9.40)
Capital Expenditure	0.013	0.020	-0.012	-0.010
	(0.14)	(0.22)	(0.45)	(0.38)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.025	0.002
AR (2) test (p-value)	0.104	0.103	0.112	0.131
Hansen J) test (p-value)	0.373	0.333	0.102	0.103

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Columns (1) to (4) of Table 6.11 depicts the moderating effect of gender diversity on the relationship between board independence and firm performance (LnTobin's Q and ROA). The interaction effect of gender diversity on the board independence-performance relationship is insignificant, suggesting that the impact of board independence on firms' performance is weaker as board gender diversity increases. The findings negate Agency theory perspective that gender diversity can ameliorate the effectiveness of independent directors by improving board monitoring and control (Liu et al., 2014). Thus, hypothesis **H11** is not supported when performance is measured by LnTobin's Q and ROA, this is consistent with the findings of Kweha et al., (2019). The insignificant coefficient of the interaction of board gender diversity and board independence on firm performance show that the proportion of female directors and independent directors may not work towards influencing firm performance, thus the effect of board independence on firm performance does not vary with board gender diversity.

Table 6. 10 Relationship between Board Independence, Gender and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	-0.004	-	0.001	
	(-0.08)	-	(0.05)	
CEO interlock		-0.001		-0.001
		(-0.10)		(-1.48)
Board size	0.012	0.014	0.004	0.004
	(0.47)	(0.58)	(0.56)	(0.59)
Board Independence	0.101*	0.097*	0.020	0.020
	(1.72)	(1.68)	(1.56)	(1.58)
CEO Duality	0.008	0.009	0.002	0.002
	(0.76)	(0.82)	(0.84)	(0.86)
Gender	0.012	0.014	0.013	0.014
	(0.09)	(0.11)	(0.43)	(0.47)
Top 10 Ownership	0.679***	0.718***	0.008	0.008
	(13.16)	(13.78)	(0.78)	(0.80)
State Ownership	0.067***	0.074***	-0.012**	-0.012**
	(3.01)	(3.33)	(-2.34)	(2.27)
Foreign Ownership	-0.248**	-0.250**	-0.032**	-0.033*
	(-2.38)	(-2.45)	(-1.97)	(-1.96)
Moderation Effects				
Board Independence* Gender	-0.098	-0.098	-0.024	-0.028
	(-0.29)	(-0.29)	(-0.32)	(-0.37)
Control Variables				
Firm size	-0.983***	-1.019***	0.048***	0.049***
	(-25.92)	(-26.53)	(6.62)	(6.63)
Leverage	0.195***	0.194***	-0.202***	-0.203***
	(5.16)	(5.12)	(17.43)	(-17.51)
Capital Expenditure	0.075	0.077	0.031**	0.031**
	(1.43)	(1.44)	(2.07)	(2.05)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.000	0.0000
AR (2) test (p-value)	0.109	0.102	0.233	0.238
Hansen J) test (p-value)	0.091	0.092	0.092	0.092

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

The results in Table 6.12 in columns (1) to (4) shows the moderating effect of gender diversity on the relationship between CEO Duality and firm performance when measured using LnTobin's Q ($\beta = 0.278$, t-stat = 1.73; $\beta = 0.275$, t-stat = 1.82) and ROA ($\beta = 0.494$, t-stat=1.86; $\beta = 0.499$, t-stat=1.88). The interaction effect of gender diversity on the CEO Duality-performance relationship is positive and significant, evidencing that CEO duality is contingent on board's gender diversity. This implies that CEO duality has an insignificant impact on firm performance when board gender diversity is equal to zero, i.e., when there are no female directors on board, but that this effect is positively moderated as the proportion of female directorships increase on board. This supports hypothesis **H12** stressing that the effectiveness of CEO duality increases when the board comprises a greater proportion of female directors and supports literature that argues that effective monitoring by a gender diversified board coupled with powerful CEO's influence can serve as a channel of firm's competitive advantage. Therefore, similar to Zaid et al., (2020), a gender diversified board can ameliorate the effectiveness of CEOs by providing access to important resources which include benefiting from advice and counsel (Nadeem et al., 2017), gaining legitimacy (Cox et al.,1991) and achieving an improved communication channel (Hillman and Dalziel, 2003).

Different from Zaid et al., (2020) that have examined the moderating effect of board gender diversity on the relationship between corporate governance practices and capital structure decisions, this study makes a novel contribution by evidencing a positive moderating effect of board gender diversity on the relationship between CEO duality and firm performance. This to date is lacking. Additionally, this finding renders support to both resource dependence and agency theory by substantiating the findings of Zaid et al., (2020) that board gender diversity can enhance the effectiveness of CEOs and serve as additional channel for effective monitoring.

Table 6. 11 Relationship between CEO Duality, Gender and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.092***		0.008	
	(2.72)		(1.12)	
CEO interlock		0.048***		0.004
		(2.91)		(0.94)
LnBoard size	0.430***	0.395***	-0.086	-0.093
	(2.81)	(2.98)	(-1.43)	(-1.60)
Board Independence	0.083***	0.083***	0.016	0.016
	(2.98)	(3.20)	(0.44)	(0.35)
CEO Duality	-0.013	-0.020	-0.832	-0.833
	(-0.47)	(-0.75)	(-1.13)	(-1.12)
Gender	-0.631***	-0.577***	0.113*	0.111**
	(-2.86)	(-3.07)	(1.84)	(1.85)
Top 10 Ownership	0.833***	0.820***	0.133**	0.039**
	(8.31)	(8.85)	(2.31)	(2.34)
State Ownership	0.080**	0.077**	0.033	0.033
	(2.09)	(2.15)	(0.98)	(1.18)
Foreign Ownership	-0.213	-0.198	0.003	0.008
	(-1.10)	(-1.20)	(0.05)	(0.15)
Moderation Effects				
CEO Duality* Gender	0.278*	0.275*	0.494*	0.499*
	(1.73)	(1.82)	(1.86)	(1.88)
Control Variables				
Firm size	-1.070***	-1.072***	-0.115	-0.306
	(-18.07)	(-18.85)	(-0.52)	(-1.48)
Leverage	0.154**	0.148**	-0.156	-0.093
	(2.11)	(2.14)	(-1.79)	(-1.17)
Capital Expenditure	0.011	0.017	0.030	0.06
	(0.12)	(0.19)	(0.53)	(1.21)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.001	0.002
AR (2) test (p-value)	0.101	0.108	0.107	0.106
Hansen J) test (p-value)	0.376	0.335	0.489	0.593

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

The results in Table 6.13 in columns (1) to (4) shows the moderating effect of gender diversity on the relationship between average board interlock and firm performance when measured using LnTobin's Q (β = 0.178, t-stat = 1.81; β = 0.131, t-stat = 2.83) and ROA (β = 0.055, t-stat=2.18; β = 0.039, t-stat=2.41). The interaction effect of gender diversity on the average board interlock-performance relationship is positive and significant. The result indicates that the effect of average board interlock on firms' performance is positively moderated by the proportion of female directors on board such that average board interlock has a positive impact on firms' financial performance when the proportion of female director is zero. However, as the proportion of female director increases, the strength of the positive relationship between average board interlock and financial performance increases, suggesting that an increase in the percentage of female directors would positively affect the overall ability of the board to effectively monitor and hence improve the average board interlock-performance relationship. This supports hypothesis **H13a** stressing that the effectiveness of average board interlock increases when the board comprises a greater proportion of female directors. This is because more female directors on board can improve board monitoring and serve as a proxy for effective monitoring especially in a weak regulatory environment like China (Tang 2017). More so, a well-diversified board can provide access to important resources which include benefiting from advice and counsel (Nadeem et al., 2017), gaining legitimacy (Cox et al.,1991) and achieving an improved communication channel (Hillman and Dalziel, 2003). The result renders support to both agency and resource dependence theory by evidencing that the performance-effect of a well-connected board can be improved in the presence of effective monitoring and control (Black et.,2012). In China, where the rule of law is weak and the incidence of board interlock is high, the result indicates that the additional monitoring effect of female directors on board is significant and more important (Li and Chen, 2018).

This finding substantiates the finding by Li and Chen, (2018) and contributes to literature by offering a contingent approach to examine the relationship between average board interlock and firm performance. Specifically, by evidencing that board gender diversity positively moderates the relationship between average board interlock and firm performance in China, the study differs from Li and Chen, (2018) that examined the moderating role of firm size on board gender-performance relationship, but extends to the findings of Zona et al. (2018) by showing that board gender diversity can serve as an alternative monitoring mechanism that moderates the relationship between average board interlock and firm performance. Again, to date, this is the first study to examine this contingent relationship.

Table 6. 12 Relationship between Average board interlock, Gender and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.072**		0.008**	
	(2.43)		(2.03)	
CEO interlock		0.010**		0.001***
		(2.32)		(2.65)
LnBoard size	0.429***	0.422***	0.031**	0.034**
	(2.80)	(2.81)	(2.13)	(2.27)
Board Independence	0.084***	0.083***	0.017**	0.017**
	(2.97)	(2.98)	(2.23)	(2.38)
CEO Duality	0.021	0.024	0.003	0.003
	(0.99)	(1.10)	(0.98)	(0.90)
Gender	-0.715***	-0.898***	0.080**	0.071**
	(-2.69)	(-2.80)	(2.05)	(2.09)
Top 10 Ownership	0.548***	0.546***	0.061***	0.062***
	(8.32)	(4.54)	(3.35)	(3.35)
State Ownership	0.079**	0.092**	-0.015**	-0.014**
	(2.07)	(2.43)	(-2.51)	(-2.12)
Foreign Ownership	-0.212	-0.210	-0.025	-0.025
	(-1.11)	(-1.11)	(-1.29)	(-1.30)
Moderation Effects				
Ave board interlock* Gender	0.178**	0.131***	0.055**	0.039**
	(1.81)	(2.83)	(2.18)	(2.41)
Control Variables				
Firm size	-0.993***	-0.981***	0.049***	0.049***
	(-18.14)	(-18.79)	(6.65)	(6.53)
Leverage	0.142**	0.143**	-0.211***	-0.212***
	(2.11)	(2.13)	(-17.22)	(-17.11)
Capital Expenditure	0.012	0.019	0.024	0.023
	(0.12)	(0.14)	(1.53)	(1.42)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,820	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.000	0.000
AR (2) test (p-value)	0.103	0.109	0.276	0.276
Hansen J) test (p-value)	0.370	0.315	0.106	0.102

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Columns (1) to (4) of Table 6.14 show the moderating effect of gender diversity on the relationship between CEO interlock and firm performance when measured using LnTobin's Q (β = -0.082, t-stat = -2.21; β = -0.307, t-stat = -2.91) and ROA (β = -0.008, t-stat= -2.87; β = -0.032, t-stat= -2.68). The interaction effect of gender diversity on the CEO interlock-performance relationship is negative and significant. The findings do not support hypothesis **H13b** suggesting that the positive effect of CEO interlock on firm performance increases when the board is comprised of more female directors. Although, by integrating agency theory and resource dependence theory, it is expected that gender difference on board should certainly bring unique knowledge to businesses and improve monitoring capacity. In contrast, the research results in Table 6.14 depicts that excessive monitoring of female directors on board is not beneficial to CEO interlock-performance relationship. this is because female directors are more inclined to ask questions that would not be asked by male directors, creating conflicting views to CEOs agenda and weakens the influence of CEO interlocks on firm performance. The finding is similar to Liu et al., (2014), supporting the proposition that female directors can act as an effective monitoring mechanism of the board. This is an important implication to be considered by policy makers when conceptualising new mechanisms that can improve board monitoring especially in an environment like China where the incidence of interlock is very high, and the rule of law is weak. Again, this finding extends the findings of Yeo et al., (2003) and Fich et al., (2005) that examined the direct effect of CEO reciprocal interlock on firm performance. In addition, it makes a novel contribution by showing a negative moderating effect of board gender diversity on the relationship between CEO interlock and firm performance.

Table 6. 13 Relationship between CEO interlock, Gender and Performance

	Dependent variable: Ln_Tobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.108***		0.010***	
	(2.74)		(2.80)	
CEO interlock		0.074***		0.008**
		(2.95)		(2.56)
Ln_Board size	0.430***	0.371***	0.038**	0.040**
	(2.80)	(2.95)	(2.49)	(2.52)
Board Independence	0.082***	0.081***	0.016***	0.016***
	(2.97)	(3.19)	(2.67)	(2.72)
CEO Duality	0.021	0.011	0.002	0.002
	(1.03)	(0.60)	(0.79)	(0.65)
Gender	-0.419**	0.053	-0.026	0.015
	(-2.34)	(0.59)	(1.23)	(0.83)
Top 10 Ownership	0.526***	0.502***	0.062***	0.062***
	(4.68)	(4.76)	(3.24)	(3.03)
State Ownership	0.086**	0.082**	-0.014**	-0.012**
	(2.34)	(2.38)	(2.27)	(-2.12)
Foreign Ownership	-0.275	-0.217	-0.024	-0.021
	(-1.6)	(-1.31)	(1.19)	(-1.00)
Moderation Effects				
CEO interlock* Gender	-0.082**	-0.307***	-0.008***	-0.032***
	(-2.21)	(-2.91)	(-2.87)	(-2.68)
Control Variables				
Firm size	-0.986***	-0.983***	0.048***	0.049***
	(-19.52)	(-20.81)	(6.38)	(6.55)
Leverage	0.149**	0.150**	-0.212***	-0.213***
	(2.18)	(2.18)	(-16.9)	(-16.88)
Capital Expenditure	0.014	0.022	0.021	0.02
	(0.15)	(0.24)	(1.25)	(1.20)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.000	0.011
AR (2) test (p-value)	0.108	0.108	0.136	0.136
Hansen J) test (p-value)	0.378	0.395	0.101	0.104

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

6.7 Robustness checks with 2SLS Models

Several robustness tests were conducted to investigate the sensitivity of research results. The thesis utilised an alternative method, which is the two stage least squares method, to check the robustness of the research results. The sensitivity of the results to the 2005 Chinese split share reform and the 2008 financial crises was checked and depicted in Table 6.15 below. To control for the impact of split share reform, this thesis utilised a dummy variable (Split share reform dummy) that took the value of 0 for years 2003 to 2004 and 1 for years 2005 to 2016. While to control for the 2008 financial crises, the thesis utilises the dummy variable (financial crises dummy) that took the value 1 for 2007-2008 and 0 for the other years.

After the checks, the coefficients of board characteristics, including board size, board independence, CEO duality, average board interlock, CEO interlock and board gender diversity, remain unchanged in terms of magnitude and direction when compared with the results of the dynamic GMM reported earlier in Table 6.3. Both types of interlocks, board size, and board independence positively and significantly effect on firm performance. Board gender diversity exhibits a mixed result, and a negative effect is documented with LnTobin's Q and a positive effect was documented with ROA. CEO duality had no effect on firm performance.

Table 6. 14 Board characteristics and firm performance using 2SLS.

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
2SLS models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.013***		0.003***	
	(2.69)		(4.27)	
CEO interlock		0.004**		0.001***
		(2.37)		(3.67)
Board size	0.005***	0.008***	0.004*	0.006*
	(6.36)	(5.55)	(1.85)	(1.87)
Board Independence	0.443***	0.413***	0.036**	0.036**
	(4.32)	(4.02)	(2.46)	(2.46)
CEO Duality	0.064	0.056	-0.001	-0.001
	(0.23)	(0.38)	(-0.82)	(-0.84)
Gender	-0.026*	-0.029**	0.004**	0.004**
	(-1.89)	(-2.06)	(2.24)	(2.16)
Top 10 Ownership	0.524***	0.445***	0.038***	0.038***
	(23.19)	(21.50)	(12.77)	(12.91)
State Ownership	0.098***	0.090***	-0.009***	-0.009***
	(5.52)	(5.02)	(-3.37)	(-3.35)
Foreign Ownership	0.047	0.094**	-0.016***	-0.016***
	(1.25)	(2.54)	(-3.06)	(-2.98)
Control Variables				
Firm size	-0.522***	-0.507***	0.031***	0.031***
	(-74.84)	(-74.77)	(32.05)	(32.58)
Leverage	-0.386***	-0.371***	-0.110***	-0.110***
	(-23.70)	(-22.87)	(-48.17)	(-48.25)
Capital Expenditure	0.293***	0.221***	0.094***	0.094***
	(5.57)	(4.24)	(12.69)	(12.66)
Financial crises Dummy	-0.676***	-0.651***	0.024***	0.024***
	(-41.84)	(-40.95)	(10.87)	(10.67)
Split share reform Dummy	0.818***	0.779***	0.017***	0.016***
	(44.79)	(44.15)	(6.65)	(6.45)
Family ownership Dummy	0.033***	0.007***	0.006***	0.006***
	(3.88)	(3.82)	(5.05)	(4.88)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Number of observations	17,949	17,917	18,370	18,370
Number of instruments	25	25	25	25
R-Square	0.53	0.53	0.18	0.19
Hansen J) test (p-value)	0.562	0.614	0.106	0.105

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively.

Sensitivity to different ownership setting in China (State vs. Private firms)

To check for the robustness of results in different ownership setting, the researcher split the research sample into two sets: state-controlled firms and private controlled firms. Results for the effect of board characteristics on firm performance in state-controlled firms are reported in Table 6.16. In contrast, results for the effect of board characteristics on firm performance in private controlled firms are reported in Table 6.17.

From Table 6.16 below, the results reported indicated that in state-controlled firms, both type of interlock, board size, board independence and CEO duality positively affect performance. The table also indicated that the effect of gender diversity is not strong in state controlled firms as the impact of gender diversity is not significant with both measures of performance.

Table 6. 15 Board characteristics and firm performance in State controlled firms using 2SLS

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
2SLS models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.031***		0.005***	
	(3.45)		(4.63)	
CEO interlock		0.004**		0.002**
		(2.37)		(3.46)
Board size	0.055*	0.061**	0.001*	0.062**
	(1.89)	(2.07)	(1.85)	(3.23)
Board Independence	0.706***	0.727***	0.063***	0.062***
	(4.56)	(4.69)	(3.27)	(3.23)
CEO Duality	0.087***	0.086***	0.006**	0.006**
	(3.85)	(3.78)	(2.21)	(2.21)
Gender	0.002	0.001	0.002	0.003
	(0.08)	(0.02)	(0.79)	(0.88)
Top 10 Ownership	0.413***	0.422***	0.026***	0.026***
	(11.93)	(12.24)	(5.74)	(5.84)
State Ownership	-0.290***	-0.297***	0.013***	0.012***
	(-13.49)	(-13.87)	(4.91)	(4.69)
Foreign Ownership	0.01	0.011	-0.006	-0.005
	(0.18)	(0.21)	(-0.84)	(-0.67)
Control Variables				
Firm size	-0.322***	-0.317***	0.024***	0.024***
	(-32.56)	(-32.37)	(19.46)	(20.31)
Leverage	-0.596***	-0.605***	-0.114***	-0.115***
	(-23.66)	(-24.03)	(-37.09)	(-37.28)
Capital Expenditure	-0.068	-0.073	0.162***	0.161***
	(-0.83)	(-0.89)	(15.89)	(15.78)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Number of observations	9,420	9,420	9,583	9,583
Number of instruments	25	25	25	25
R-Square	0.23	0.53	0.19	0.19

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively.

In Table 6.17, the results indicated that both types of interlock, board independence, and CEO duality positively affect performance in private controlled firms. The table also indicated that the effect of board size is not strong in private controlled firms as the impact of board size is not significant with both measures of performance. Unlike Table 6.16, gender diversity plays a significant role in private firms and positively affect private firms' financial performance.

Table 6. 16 Board characteristics and firm performance in private controlled firms using 2SLS

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
2SLS models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.046***		0.002*	
	(5.52)		(1.91)	
CEO interlock		0.006***		0.001*
		(2.62)		(1.90)
LnBoard size	-0.033	-0.039	0.01	0.009
	(-0.68)	(-0.79)	(1.58)	(1.59)
Board Independence	0.899***	0.961***	0.021*	0.023*
	(8.49)	(8.78)	(1.89)	(1.89)
CEO Duality	0.075***	0.076***	0.003*	0.003*
	(4.65)	(4.68)	(1.68)	(1.68)
Gender	0.068***	0.067***	0.004*	0.004*
	(2.79)	(2.74)	(1.78)	(1.77)
Top 10 Ownership	0.114***	0.131***	0.065***	0.065***
	(2.85)	(3.26)	(13.69)	(13.61)
State Ownership	-0.858***	-0.883***	-0.041***	-0.036***
	(-7.56)	(-7.75)	(-3.21)	(-2.80)
Foreign Ownership	-0.240***	-0.210***	-0.017**	-0.016*
	(-3.08)	(-2.69)	(-2.09)	(-1.90)
Control Variables				
Firm size	-0.472***	-0.461***	0.036 **	0.036***
	(-33.19)	(-32.58)	(22.05)	(22.33)
Leverage	-0.428***	-0.433***	-0.103***	-0.102***
	(-13.67)	(-13.79)	(-29.33)	(-29.1)
Capital Expenditure	-0.553***	-0.537***	0.066***	0.065***
	(-5.52)	(-5.34)	(6.05)	(5.99)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Number of observations	8,246	8,246	8,494	8,494
Number of instruments	25	25	25	25
R-Square	0.22	0.21	0.18	0.19
Hansen J) test (p-value)	0.168	0.162	0.106	0.105

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively.

Sensitivity of board characteristics-performance relationship to the moderating effect of alternative measure of ownership concentration (block ownership)

This section explores the moderating effect of ownership concentration on the relationship between board characteristics and firm performance using block ownership as an alternative proxy for ownership concentration. After controlling endogeneity concerns, the findings reported in section 6.2 remain consistent and unchanged. In the interest of brevity, results on the moderating effect of block ownership are reported in Tables 8.3 to Table 8.7 of the Appendix section.

6.8 Chapter summary

This chapter has presented and discussed the empirical results of testing the research hypothesis on the relationship between board characteristics, ownership concentration and firm performance discussed in the conceptual framework chapter (chapter four). The first set of hypotheses (see section 6.4) examined the direct effect of board characteristics on firm performance. In contract, the second set of hypotheses (see section 6.5) investigated the moderating effect of ownership concentration on the relationship between board characteristics and firm performance. Finally, the third set of hypotheses (see section 6.6) investigated the moderating effect of board gender diversity on board characteristics-performance relationship.

Summing up, the results discussed in this chapter renders support for some hypotheses as indicated in Table 6.16 below. First, the research findings in this chapter show that: board size, independent directors, average board interlock and CEO interlock exhibits a significant and positive relationship with firm performance, while the impact of board gender diversity on Ln_Tobin's Q and ROA is mixed. There is no significant relationship between CEO duality and firm performance. Second, ownership concentration positively moderates the relationship between: (i) board interlock and firm performance, and (ii) CEO interlock and firm performance. There is no statistically significant relationship between the moderating effect of ownership concentration on board size and firm performance, board independence and firm performance, and CEO duality and firm performance. Third, board gender diversity positively moderates the relationship between: (i) CEO duality and firm performance, (ii) average board interlock and firm performance, (iii) CEO interlock and firm performance. There is no significant relationship between the moderating effect of board gender diversity on board size and firm performance and board independence, and firm performance.

Table 6. 17 Summary Table

Hypothesis	Tested Relationships	Theoretical Perspectives	Support Hypothesis	Findings
H1	Board size-Performance	Resource Dependence Theory	Yes	+*
H2	Board independence-Performance	Agency Theory	Yes	+*
H3	CEO duality-Performance	Stewardship/Resource Dependence Theory	No	∅
H4a	Board interlocks-Performance	Resource Dependence Theory	Yes	+*
H4b	CEO interlocks-Performance	Resource Dependence Theory	Yes	+*
H5a	Board gender-Performance	Agency Theory	No	Mixed
H5b	Female directors' education-performance.	Agency Theory	No	∅
H6	Moderating effect of ownership concentration on board size-performance	Agency Theory/Resource Dependence Theory	No	∅
H7	Moderating effect of ownership concentration on board independence-performance	Agency Theory	No	∅
H8	Moderating effect of ownership concentration on CEO duality-performance	Agency Theory/Resource Dependence Theory	No	∅
H9	Moderating effect of ownership concentration on average board interlock-performance	Agency Theory/Resource Dependence Theory	Yes	+*
H9b	Moderating effect of ownership concentration on CEO interlock-performance	Agency Theory/Resource Dependence Theory	Yes	+*
H10	Moderating effect of board gender diversity on board size-performance	Agency Theory	No	∅
H11	Moderating effect of board gender diversity on board independence-performance	Agency Theory	No	∅
H12	Moderating effect of board gender diversity on CEO duality-performance	Agency Theory	Yes	+*
H13a	Moderating effect of board gender diversity on average board interlock-performance	Agency Theory	Yes	+*
H13b	Moderating effect of board gender diversity on CEO interlock-performance	Agency Theory	NO	-*

Note: the table presents empirical evidence based on different theoretical perspective on the nexus between board characteristics and firms' performance in China. Symbols (+), (-), and (∅) indicate positive, negative and no significant relationship, respectively.

CHAPTER SEVEN

CONCLUSIONS, IMPLICATIONS, AND CONTRIBUTIONS

7.0 Introduction

This thesis has investigated: (i) the relationship between board characteristics and firms' performance, (ii) the moderating effect of ownership concentration on the relationship between board characteristics and firms' performance, and (iii) the moderating effect of board gender diversity on the relationship between board characteristics and firms' performance in Chinese listed firms for the period of 2003-2016. The chapter provides a summary of the empirical findings reported in chapter 6 concerning the relationship between board characteristics, ownership concentration, and financial performance of publicly listed firms in China. Key research findings, implications and contributions to knowledge are discussed in sections 7.1 and 7.2, respectively. Finally, section 7.3 and 7.4 discuss the research limitations, recommendations for future research and conclusion.

7.1 Key Research Findings and Implications

The key research findings in this thesis are as follows:

First, the research findings show that: board size, independent directors, average board interlock and CEO interlock exhibits a positive and significant relationship with firm performance, while the impact of board gender diversity on Ln Tobin's Q and ROA is mixed. There is no significant relationship between CEO duality and firm performance. Additionally, the relationship between female director's education and firm performance is not significant.

Second, ownership concentration positively moderates the relationship between (i) board interlock and firm performance, and (ii) CEO interlock and firm performance. There is no relationship between the moderating effect of ownership concentration on board size and firm performance, board independence, CEO duality and firm performance.

Third, board gender diversity positively moderates the relationship between: (i) CEO duality and firm performance, (ii) average board interlock and firm performance, and (iii) negatively

moderates the relationship between CEO interlock and firm performance. There is no significant relationship between the moderating effect of board gender diversity on board size and firm performance, and board independence and firm performance.

After splitting the sample size into state and private controlled firms, evidence reported in chapter 6 affirms that the effect of board size on firm performance is not significant in private controlled firms but significant in state-controlled firms. Also, gender diversity effect is stronger in private controlled firms, but no significant effect is reported for state-controlled firms.

Policy Implication

By examining traditional board variables including board size, board independence, CEO duality, board interlocks and board gender diversity in a transiting economy with a distinct institutional setting like China, the thesis results provide insights to policymakers on the importance of considering institutional and cultural specifics in the recommendation of best corporate governance practices. Specifically, regarding the relationship between board characteristics and firm performance, and the monitoring effect of ownership concentration and board gender diversity on the relationship, the research findings imply that good corporate practices cannot be universal but is contingent upon institutional environment in which firms operate. Therefore, firms and shareholders in China may observe that in the presence of weak corporate governance structure, ownership concentration and board gender diversity can be employed as one of the key strategies to monitor management and, to a large extent, improve firms' performance.

Furthermore, given that firm performance is driven by ownership concentration in China the effort to set up corporate governance mechanisms, should not undervalue the role of ownership concentration. Therefore, regulatory bodies in China, must put more effort on improving the effectiveness of corporate governance mechanisms with specific focus on the effect of concentrated ownership structure.

Additionally, the significant effect of board gender diversity implies in China's that in the current state of weak corporate governance, an appropriate balance between the benefits and costs of a gender-diverse board can be beneficial to firm performance.

The findings in this thesis provide policymakers and firm managers with useful guidance on corporate governance in China. Moreover, for government and policymakers, the research findings motivate an appropriate mix of policies that would improve female representation on board.

Practical Implication

The findings of this thesis have some important practical implications. For firm managers, the findings support the ethical role of female directors on the board, and affirm the need to balance between the cost and benefits of a gender diversified board to achieve effectiveness and improved performance.

Second, it draws the attention of policy makers in transiting economies to introduce and conceptualise new mechanisms that can improve board monitoring and firm performance. For example, consideration can be given to a minimum quota for the proportion of female directors on Chinese corporate board.

Third, for academia, this thesis has several important implications. First, it enriches understanding of the effect of board characteristics on firm performance, especially in an emerging economy like China. The thesis suggests that the relationship between some board characteristics and firm performance is moderated by ownership concentration and board gender diversity. For example, both ownership concentration and gender diversity moderate the relationship between board interlocks and firm performance. Therefore, the clear empirical implications in this thesis are: (i) ownership concentration can serve as an alternative proxy of monitoring and improve performance, especially in a weak institutional setting like China where the effect of independent directors are perfunctory (Liu etal., 2015), (ii) by integrating arguments of agency theory and resource dependence theory, the interactive effect of board interlocks and ownership concentration can improve firm performance. Well-connected directors enhance board capability by providing valuable resources which will enhance firm's competitive advantage and improve performance, (iii) gender diversity can improve the effectiveness of board and can act as a proxy for board monitoring, and (iv) board gender diversity positively moderates the relationship between CEO duality and firm performance in China. Considering this, the thesis noted that despite the sufficient power of the CEO, the presence of more female directors on board could act as an effective monitoring proxy and ameliorate the effectiveness of CEOs.

Theoretical Implication

The findings support the need to explore other relevant theories and avoid excessive focus on agency theory. Although agency cost exists, it is not as high like in most developed economies. This thesis renders more support for agency theory, stewardship theory and resource dependence theory. The benefit of more resourceful board and dedicated stewards outweighs agency cost in a culturally sensitive settings like China. In this regard, the thesis supports the call of Aguilera et al., (2008) and Hoskissons (2013) to widen our theoretical lens by integrating multiple theories in exploring board characteristics-performance relationship.

7.2 Contributions to Literature, Theory and Practice

This thesis contributes to the literature in the following aspects:

The thesis compliments and extend the integrative studies that examine the impact of corporate governance structure on firm performance in China (Li et al., 2015; Shao et al., 2019). Unlike Li et al., (2015) and Shao et al., (2019), the thesis extends the literature on corporate governance by investigating contingent factors that can moderate the impact of board characteristics on firm performance in China.

First, to the best of my knowledge, to date there is no integrative study that have investigated the moderating effect of ownership concentration (Top ten ownership) on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock, and CEO interlock) and firm performance. Specifically, this is the first study to show that ownership concentration (Top10 ownership) can act as an alternative monitoring proxy in a weak regulatory environment like China. Therefore, by integrating agency theory and resource dependence theory, this thesis contributes to corporate governance literature and compliments the findings of Li et al. (2015) and Zona et al. (2018) by substantiating their position that ownership concentration can serve as an alternative monitoring mechanism. Additionally, the result expands on the findings of Zona et al. (2018), by evidencing that in a weak regulatory environment like China, ownership concentration (Top10 ownership) positively moderates the relationship between board interlock and firm performance.

Second, this study makes a novel contribution by investigating the moderating effect of ownership concentration (Top10 ownership) on the relationship between different types of

interlocks and firm performance. Specifically, in China where CEO plays a significant role, this study compliment and extend the study of Yeo et al. (2003), by using a more recent and larger sample of Chinese firms that includes small, medium and larger firms over the period 2003 to 2016 to show both the direct effect of CEO interlock on firm performance, and also the positive moderating effect of ownership concentration on the association between CEO interlock and firm performance in a weak legal environment like China. This to date, is unexplored, despite the crucial role of CEOs in driving firm performance.

Third, to the best of my knowledge, no comprehensive study has investigated the moderating effect of board gender diversity on the relationship between board characteristics (board size, board independence, CEO duality, average board interlock and CEO interlock) and firm performance in China. Specifically, this thesis findings substantiates the findings of Zaid et al., (2020) that a gender diversified board can serve as an alternative monitoring proxy and ameliorate the effectiveness of CEOs. However, different from Zaid et al., (2020) that have examined the moderating effect of board gender diversity on the relationship between corporate governance practices (including CEO duality) and capital structure decisions, this study makes a novel contribution by evidencing a positive moderating effect of board gender diversity on the relationship between CEO duality and firm performance. The study to date is lacking.

Fourth, the result renders support to both agency and resource dependence theory by evidencing that the performance-effect of a well-connected board can be improved in the presence of effective monitoring and control (e.g., Black et., 2012). In China, where the rule of law is weak and the incidence of board interlock is high, the result indicates that the additional monitoring effect of female directors on board is significant and more important (Li and Chen, 2018). Therefore, this finding substantiates the finding by Li and Chen, (2018) and contributes to literature by offering a contingent approach to examine the relationship between average board interlock and firm performance. Specifically, by evidencing that a well-diversified board can improve the performance-effect of interlocking directors in China. The study differs from Li and Chen, (2018) that examined the moderating role of firm size on board gender-performance relationship in China but extends to the findings of Zona et al. (2018) by showing that board gender diversity can serve as an alternative monitoring mechanism and a contingent factor that moderates the relationship between average board interlock and firm performance. Again, to date, this is the first study to examine this contingent relationship.

Fifth, this thesis provides a comprehensive picture of board characteristics and its impact on firm performance in China by examining a comprehensive set of different board characteristics (board size, board independence, CEO duality, board interlocks, CEO interlock, female directors' education, and board gender diversity) to capture their impact on Chinese listed firms' performance. More importantly, unlike prior studies like Liu et al., (2015), Qiao et al., 2017, Peng et al., (2015), Jiang and Kim (2015) that have investigated a particular board characteristic (board independence, CEO duality, board interlock and board size), this thesis utilises a more recent dataset to investigate the effect of more comprehensive board characteristics on firm performance in China.

Finally, the study adds to the sparse literature on CEO interlock like Yeo et al., (2003) and Fich et al., (2005) that examine the direct effect of CEO reciprocal interlock on firm performance. It makes a novel contribution by showing a negative moderating effect of board gender diversity on the association between CEO interlock and firm performance. This suggests that gender diversity weakens the influence of CEO interlock and can act as an effective monitoring mechanism of the board. This is an important implication to be considered by policy makers when conceptualising new mechanisms that can improve board monitoring especially in an environment like China where the incidence of interlock is very high, and the rule of law is weak.

7.3 Study Limitations and Potential Future Research

First, a major limitation of this study is that data was collected from publicly available secondary sources like the CSMAR database amongst others. If there are any problems with the data disclosed by the CSMAR database, then this would limit the validity of the findings in this research.

Second, the study results might be subject to endogeneity bias because some unobserved or omitted variables affect the board characteristics-performance relationship. For example, the research focuses on a certain set of board characteristics while some important characteristics like; ethnicity, occupational background and tenure have not been explored because of time constraints. Future research could explore other factors like; tenure and directors' occupational background that can moderate board characteristics–performance relationship.

Third, this thesis has integrated agency theory and resource dependence in establishing the arguments in this research, future research can consider drawing inferences from a networking and social theory perspective to explore directors' social connections as a possible moderating factor for board characteristics-performance relationship.

Fourth, the study has focused on Chinese listed firms excluding financial institutions, insurance, and utility companies which although consistent with literature, this offers a basis for reliability, validity, and generalizability, future research could explore institutional impact by conducting a cross country research in this area or even possibly explore the uniqueness of another dataset, especially by focusing on small firms (family dominated firms) to identify any possible ownership effect on the research findings.

Fifth, the research focused on performance measures including Tobin's Q, and ROA. Future research studies can explore the impact of board characteristics, especially board interlocks on innovation, productivity, and directors' attention to monitoring.

Sixth, this thesis explored different types of interlocks including board interlocks and CEO interlocks but did not examine interlocks considering the specific industry in which these directors hold multiple seats. Perhaps industry experience or the reciprocal effects of their relationship with their interlocking firms may significantly influence on results obtained in this study. Future researchers can consider this.

Seventh, the study used longitudinal data and instrumental variables to control for time-invariant endogeneity effects. Future research can adopt a similar approach in a qualitative study to explore the interconnections between various governance mechanisms, institutional pressures, and key investors.

7.4 Conclusions

This chapter concludes the thesis with a summary of key findings, contributions, policy, and research implications. The focus of the thesis includes: (i) whether the relationship between board characteristics and firm performance persists when the dynamic nature inherent in this relationship is considered, (ii) whether the relationship is contingent on the level of firms'

ownership concentration, and (iii) whether board gender diversity moderates the relationship between board characteristics and performance in Chinese publicly listed firms.

Using dynamic system GMM modelling approach, this thesis investigates a panel dataset of 21,390 firm-year observations collected from the Chinese CSMAR database covering period from 2003 to 2016. The thesis is motivated by studies that have examined the dynamic nature of board characteristics-performance relationship (Wintoki et al., 2012; Chang and Zhang, 2015, and Shao et al., 2018) and scholars who have called for the investigation of contingent factors that can affect the relationship between board characteristics and firm performance (Peng et al.,2007, Aguilera et al., 2015). The uniqueness of the Chinese corporate governance system has also necessitated this study. Compared to western economies like the US and the UK, the greatest difference in Chinese corporate governance system is that ownership concentration plays a major role, and its impact on firm performance cannot be over emphasised. Very few studies like Shao et al., (2018) have investigated the effect of corporate governance structure on firm performance in China. Unlike Shao et al., (2018), this study does not just investigate the direct effect of board characteristics on firm performance in a dynamic setting, it extends to identify contingent factors like ownership concentration and board gender diversity that can affect board characteristics-performance relationship. Therefore, this thesis extends to literature by supporting a comprehensive survey of the moderating effect of ownership concentration and board gender diversity on board characteristics-performance relationship of Chinese publicly listed firms. Specifically, the thesis documents that: (i) board characteristics do have impacts on Chinese firms' performance even after controlling the dynamic nature of this relationship, (ii) ownership concentration has a significant moderating effect on the relationship between board characteristics (board independence, average board interlock and CEO interlock) and firm performance; and (iii) board gender diversity has a significant moderating effect on board characteristics (CEO duality, average board interlock, and CEO interlock) and performance of Chinese publicly listed firms. The study did not find a significant moderating effect of gender diversity on board size-performance relationship, and board independence-performance relationship, because in China, listed firms may merely increase board size and the number of independent directors on board to meet institutional regulations. Therefore, in China, while reshaping board structure regulations, policy makers can consider firm specific characteristics.

Compared to other empirical evidence and theoretical underpinnings, this thesis provides useful empirical guidance to firm managers and policy makers concerning board characteristics and firm performance in China. Considering Chinese cultural background, where businesses are built on trust and connections, the thesis evidence that larger board size, board independence and board interlocks are beneficial to listed firms in China. Additionally, by integrating agency theory and resource dependence theory, ownership concentration (Top10) and board gender diversity can serve as alternative monitoring proxies and improve the performance-effect of board characteristics in Chinese listed firms.

8.0 APPENDICES

Table 8.1 The relationship between board characteristics and firm performance

	Dependent variable 1: LnTobin's Q		Dependent variable 2: ROA	
OLS models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.016***	-	0.004***	-
	(4.31)	-	(7.10)	-
CEO interlock		0.001***		0.001***
		(4.15)		(4,75)
LnBoard size	0.005***	0.003***	0.008***	0.007***
	(3.34)	(3.19)	(3.77)	(3.27)
Board Independence	0.321***	0.323***	0.007***	0.007***
	(7.31)	(7.34)	(3.90)	(3.92)
CEO Duality	0.054***	0.053***	0.003***	0.002***
	(7.55)	(7.44)	(2.90)	(2.85)
Gender	-0.130***	-0.134***	0.015***	0.014***
	(-5.26)	(-5.41)	(4.18)	(4.03)
Female Dir Education	0.018**	0.019**	0.004***	0.004***
	(2.01)	(2.13)	(2.96)	(3.05)
Top 10 Ownership	0.554***	0.555***	0.057***	0.057***
	(26.04)	(26.05)	(18.48)	(18.34)
State Ownership	0.075***	0.072***	-0.010***	-0.011***
	(4.81)	(4.62)	(-4.60)	(-4.62)
Foreign Ownership	0.046	0.054	-0.017	-0.016
	(1.36)	(1.60)	(-3.52)	(-3.30)
Firm size	-0.533***	-0.529***	0.020***	0.020***
	(-85.11)	(-85.15)	(22.04)	(22.84)
Leverage	-0.371	-0.372	-0.094***	-0.094***
	(-24.63)	(-24.63)	(-43.37)	(-43.26)
Capital Expenditure	0.264***	0.263***	0.109***	0.109***
	(5.55)	(5.50)	(15.77)	(15.68)
Year effects	Yes	Yes	Yes	Yes
Number of observations	20,355	20,325	21,124	21,091
R-squared	0.54	0.54	0.18	0.17

Table 8.2 The relationship between board characteristics and firm performance

	Dependent variable 1: LnTobin's Q		Dependent variable 2: ROA	
Fixed Effects models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.020***	-	0.002**	-
	(4.79)	-	(2.45)	-
CEO interlock		0.009***		0.001***
		(6.97)		(2,75)
LnBoard size	0.028	0.027	0.005	0.005
	(1.54)	(1.47)	(1.61)	(1.53)
Board Independence	0.104***	0.097**	0.031***	0.031***
	(2.63)	(2.48)	(4.59)	(4.55)
CEO Duality	0.020**	0.018**	0.005***	0.005***
	(2.53)	(2.29)	(3.68)	(3.66)
Gender	-0.080***	-0.086***	0.003	0.001
	(-2.76)	(-2.97)	(0.08)	(0.04)
Female Dir Education	0.006	0.005	0.001	0.001
	(0.67)	(0.65)	(0.57)	(0.56)
Top 10 Ownership	0.432***	0.421***	0.077***	0.076***
	(15.62)	(15.56)	(16.49)	(16.39)
State Ownership	0.251***	0.248***	-0.009***	-0.009***
	(17.00)	(16.76)	(-3.48)	(-3.43)
Foreign Ownership	-0.108**	-0.113	-0.018**	-0.019**
	(-2.22)	(-2.32)	(-2.15)	(-2.19)
Firm size	-0.868***	-0.867***	-0.007***	-0.006***
	(-76.04)	(-76.30)	(-3.59)	(-3.48)
Leverage	-0.022	-0.020	-0.087***	-0.086***
	(-1.09)	(-0.99)	(-25.71)	(-25.42)
Capital Expenditure	0.494***	0.498***	0.081***	0.082***
	(11.54)	(11.62)	(10.94)	(10.97)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Number of observations	20,355	20,325	21,124	21,091
R-squared	0.56	0.54	0.18	0.17

Table 8.3 Relationship between Board size, Block ownership, and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.067		0.024	
	(2.87) **		(2.82) **	
CEO interlock		0.035		0.014
		(3.05) **		(2.81) **
Board size	0.409	0.379	0.170	0.171
	(2.75) **	(2.89) **	(2.95) **	(2.95) **
Board Independence	0.133	0.134	0.003	0.007
	(3.00) **	(3.17) **	(2.73) **	(2.72) **
CEO Duality	0.016	0.011	0.001	-0.000
	(0.96)	(0.71)	(0.22)	(0.05)
Gender	-0.140	-0.130	0.046	0.048
	(-2.69) **	(-2.82) **	(2.63) **	(2.64) **
Block Ownership	1.301	1.233	0.572	0.569
	(1.90)	(1.95)	(2.32) *	(2.33) *
State Ownership	0.082	0.080	0.020	0.019
	(2.56) *	(2.64) **	(1.36)	(1.32)
Foreign Ownership	-0.281	-0.278	0.034	0.034
	(-1.55)	(-1.63)	(0.62)	(0.63)
Moderation Effects				
LnBoard size* Block ownership	-0.443	-0.412	-0.247	-0.245
	(-1.48)	(-1.49)	(-2.41) *	(-2.41) *
Control Variables				
Firm size	-0.870	-0.872	-0.290	-0.290
	(-20.63) **	(-21.93) **	(-2.36) *	(-2.35) *
Leverage	0.048	0.043	-0.028	-0.031
	(0.87)	(0.81)	(0.67)	(0.76)
Capital Expenditure	-0.029	-0.022	0.014	0.016
	(-0.31)	(-0.25)	(0.47)	(0.50)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.002	0.002
AR (2) test (p-value)	0.143	0.141	0.103	0.107
Hansen J) test (p-value)	0.294	0.290	0.105	0.106

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

Table 8.4 Relationship between board independence, Block ownership, and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.004		0.000	
	(0.84)		(0.59)	
CEO interlock		0.003		0.001
		(1.18)		(1.78)
Board size	0.006	0.006	0.003	0.009
	(0.26)	(0.29)	(0.76)	(1.81)
Board Independence	0.133	0.134	0.003	0.007
	(2.12) *	(2.14) *	(0.22)	(0.56)
CEO Duality	0.008	0.008	0.000	0.000
	(0.83)	(0.79)	(0.26)	(0.12)
Gender	-0.014	-0.012	0.002	0.001
	(-0.33)	(-0.29)	(0.21)	(0.08)
Top 10 Ownership	0.444	0.438	0.062	0.106
	(6.65) **	(6.58) **	(5.19) **	(5.16) **
Block Ownership	0.271	0.281	-0.061	-0.040
	(2.28) *	(2.36) *	(-2.84) **	(-1.70)
State Ownership	0.072	0.073	-0.007	-0.004
	(3.44) **	(3.47) **	(-1.82)	(-0.74)
Foreign Ownership	-0.401	-0.400	-0.047	-0.043
	(-4.23) **	(-4.23) **	(-2.90) **	(-2.34) *
Moderation Effects				
Board Independence* Block ownership	-0.155	-0.171	0.026	0.005
	(-0.57)	(-0.63)	(0.53)	(0.11)
Control Variables				
Firm size	-0.837	-0.838	-0.008	-0.110
	(-30.93) **	(-30.97) **	(-1.59)	(-2.69) **
Leverage	0.085	0.084	-0.103	-0.064
	(2.52) *	(2.48) *	(-14.28) **	(-4.11) **
Capital Expenditure	0.060	0.061	0.013	0.030
	(1.02)	(1.03)	(1.18)	(2.40) *
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,759	15,849	15,849
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.000	0.000
AR (2) test (p-value)	0.119	0.120	0.733	0.719
Hansen J) test(p-value)	0.294	0.291	0.118	0.117

Table 8. 5 Relationship between CEO Duality, Block ownership, and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	0.067		0.024	
	(2.87) **		(2.84) **	
CEO interlock		0.001		0.014
		(0.50)		(2.83) **
Board size	0.322	0.315	0.117	0.118
	(2.76) **	(2.81) **	(2.81) **	(2.81) **
Board Independence	0.133	0.134	0.003	0.007
	(3.01) **	(3.06) **	(2.75) **	(2.74) **
CEO Duality	0.007	0.004	-0.000	-0.001
	(0.27)	(0.15)	(-0.02)	(-0.07)
Gender	-0.142	-0.142	0.045	0.047
	(-2.71) **	(-2.75) **	(2.64) **	(2.66) **
Top 10 Ownership	0.437	0.428	0.168	0.164
	(4.49) **	(4.47) **	(3.00) **	(2.98) **
Block Ownership	0.326	0.324	0.030	0.033
	(3.06) **	(3.12) **	(0.72)	(0.78)
State Ownership	0.082	0.080	0.019	0.018
	(2.52) *	(2.55) *	(1.31)	(1.27)
Foreign Ownership	-0.282	-0.269	0.032	0.032
	(-1.55)	(-1.49)	(0.60)	(0.60)
Moderation Effects				
CEO Duality* Block ownership	0.043	0.057	0.005	0.000
	(0.38)	(0.52)	(0.15)	(0.01)
Control Variables				
Firm size	-0.866	-0.851	-0.281	-0.281
	(-20.63) **	(-21.19) **	(-2.33) *	(-2.32) *
Leverage	0.047	0.047	-0.031	-0.034
	(0.83)	(0.85)	(-0.75)	(-0.85)
Capital Expenditure	-0.031	-0.015	0.014	0.015
	(-0.32)	(-0.17)	(0.45)	(0.49)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,759	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.002	0.002
AR (2) test (p-value)	0.144	0.170	0.104	0.106
Hansen J) test (p-value)	0.301	0.267	0.103	0.103

Table 8. 6 Relationship between Average board interlock, Block ownership, and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	-0.132		-0.036	
	(-2.04) *		(-1.99) *	
CEO interlock		-0.009		-0.003
		(-1.96)		(-2.03) *
Board size	0.318	0.322	0.117	0.116
	(2.81) **	(2.74) **	(2.81) **	(2.82) **
Board Independence	0.133	0.134	0.003	0.007
	(3.06) **	(2.98) **	(2.74) **	(2.77) **
CEO Duality	0.016	0.017	0.001	0.001
	(0.98)	(1.00)	(0.15)	(0.19)
Gender	-0.145	-0.141	0.047	0.045
	(-2.75) **	(-2.67) **	(2.67) **	(2.66) **
Top 10 Ownership	0.432	0.433	0.164	0.166
	(4.51) **	(4.45) **	(2.98) **	(3.03) **
Block Ownership	-0.174	-0.101	-0.120	-0.043
	(-0.90)	(-0.95)	(-2.18) *	(-1.26)
State Ownership	0.077	0.082	0.017	0.018
	(2.43) *	(2.52) *	(1.19)	(1.30)
Foreign Ownership	-0.285	-0.286	0.030	0.031
	(-1.64)	(-1.59)	(0.57)	(0.58)
Moderation Effects				
Ave Board Interlock* Block ownership	0.630	0.290	0.184	0.089
	(2.55) *	(2.97) **	(2.56) *	(2.96) **
Control Variables				
Firm size	-0.850	-0.859	-0.268	-0.274
	(-21.52) **	(-20.86) **	(-2.26) *	(-2.32) *
Leverage	0.051	0.051	-0.032	-0.031
	(0.94)	(0.92)	(0.79)	(0.76)
Capital Expenditure	-0.010	-0.023	0.017	0.015
	(-0.11)	(-0.23)	(0.55)	(0.50)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,731	14,731	15,820	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.002	0.002
AR (2) test (p-value)	0.210	0.242	0.105	0.104
Hansen J) test (p-value)	0.328	0.307	0.103	0.103

Table 8.7 Relationship between CEO interlock, Block ownership, and Performance

	Dependent variable: LnTobin's Q		Dependent variable: ROA	
Dynamic models	Column 1	Column 2	Column 3	Column 4
Ave board interlock	-0.028		-0.003	
	(1.58)		(0.31)	
CEO interlock		-0.003		-0.001
		(1.12)		(0.41)
Board size	0.008	0.005	0.124	0.123
	(0.38)	(0.25)	(2.70) **	(2.69) **
Board Independence	0.133	0.134	0.003	0.007
	(2.34) *	(2.87) **	(2.61) **	(2.61) **
CEO Duality	0.007	0.008	0.001	0.001
	(0.77)	(0.80)	(0.12)	(0.13)
Gender	0.001	0.004	0.051	0.050
	(0.11)	(0.47)	(2.57) *	(2.56) *
Top 10 Ownership	0.438	0.439	0.171	0.171
	(6.57) **	(6.59) **	(2.92) **	(2.93) **
Block Ownership	0.168	0.177	0.023	0.021
	(2.54) *	(2.69) **	(0.53)	(0.50)
State Ownership	0.071	0.073	0.020	0.019
	(3.41) **	(3.47) **	(1.31)	(1.31)
Foreign Ownership	-0.393	-0.400	0.039	0.038
	(-4.16) **	(-4.24) **	(0.67)	(0.66)
Moderation Effects				
CEO Interlock* Block ownership	0.025	0.020	0.007	0.007
	(2.21) *	(2.18) *	(1.12)	(1.25)
Control Variables				
Firm size	-0.834	-0.837	-0.293	-0.291
	(-30.81) **	(-31.09) **	(-2.29) *	(-2.29) *
Leverage	0.084	0.085	-0.026	-0.026
	(2.47) *	(2.51) *	(-0.59)	(-0.61)
Capital Expenditure	0.066	0.063	0.020	0.019
	(1.12)	(1.07)	(0.62)	(0.61)
Year effects	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Lagged Dependent Variables included	Yes	Yes	Yes	Yes
Number of observations	14,731	14,731	15,849	15,820
Number of instruments	27	27	27	27
AR (1) test (p-value)	0.000	0.000	0.003	0.003
AR (2) test (p-value)	0.138	0.129	0.101	0.102
Hansen J) test (p-value)	0.277	0.281	0.102	0.102

Note: The table reports the regression coefficients and t-statistics (in parentheses). *, **, *** represents level of significance at 1%, 5% and 10% level, respectively. AR (1) and AR (2) are test for first order and second order serial correlation.

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